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JPRS L/8492

1 June 1979

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# EARTHQUAKES IN THE USSR IN 1974

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APPROVED FOR RELEASE: 2007/02/09: CIA-RDP82-00850R000100060003-1

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# EARTHQUAKES IN THE USSR IN 1974

Moscow ZEMLETRYASENIYA V SSSR V 1974 GODU in Russian 1977
signed to press 30 Aug 77 pp 1-204

[Book edited by I.V. Gorbunova, N.V. Kondorskaya, and N.V. Shebalin, Izdatel'stvo "Nauka", 1200 copies]

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PUBLICATION DATA


| | | |
|---|---|---|
| English title | : | EARTHQUAKES IN THE USSR IN 1974 |
| Russian title | : | ZEMLETRYASENIYA V SSSR V 1974 GODU |
| Author (s) | : | |
| Editor (s) | : | I.V. Gorbunova, N.V. Kondorskaya and N.V. Shebalin |
| Publishing House | : | Nauka |
| Place of Publication | : | Moscow |
| Date of Publication | : | 1977 |
| Signed to press | : | 30 Aug 77 |
| Copies | : | 1200 |
| COPYRIGHT | : | Izdatel'stvo "Nauka", 1977 |

[Text] Abstract

This collection EARTHQUAKES IN THE USSR IN 1974 includes articles with a description of the instrument and macroseismic data on earthquakes of various seismically active zones (Carpathia, Crimea, The Caucasus, Kopetdag, Central Asia, Northern Tyan'-Shan', Altay-Sayany, Baykal, Yakutiya, the Northeast of the USSR, the Arctic, Sakhalin, the Kuril Islands, Kamchatka) located in the territory of the USSR and bordering regions. All of the articles contain earthquake catalogs and maps of the epicenters. There are also articles with a brief survey of the seismicity of the territory of the USSR with respect to earthquakes with M≥4.5 and the world with M≥6.

The most noteworthy seismic events this year occurred in the Caucasus. They include four earthquakes: the 7-point Kilyatlinskiye and Salatauskoye in Dagestan accompanied by foreshocks and aftershocks; the Bezhtinskoye earthquake of the same strength in the vicinity of the Dzhavakhetskiy Island, at the border of the Armenian SSR and the Georgian SSR, and force 6-7, the Shakhnazarskoye, at the border of Georgia and Dagestan.

The collection is intended for a broad class of seismologists, including specialists in the field of earthquake-resistant construction and engineering seismology. It is of interest for geophysicists and geologists studying the tectonic processes in seismically active zones.

Foreword

The greater part of the territory of the USSR, especially its southern and eastern edges, is subject to earthquakes. More than 200 stationary seismic stations record these earthquakes in order to obtain observation materials for studying the seismic danger of individual regions, the

deep structure of the earth and also the precursors of strong earthquakes.

After primary processing and generalization with respect to individual large regions, this material is published annually in the articles of this collection. The articles contain a brief analysis of the seismic activity for the year and are accompanied by an earthquake catalog, the epicenter map and the macroseismic information.

The earthquake catalogs compiled in the form of the EARTHQUAKE ATLAS OF THE USSR contain the following: the time of occurrence of the earthquake (Greenwich mean time), the coordinates of the epicenter (in tenths and hundredths of a degree), the depth of center (without parentheses, by the instrument data and in parentheses, by the macroseismic data), the accuracy class (A -- the errors do not exceed 25 km, B -- the same at 50 km, A -- the same at 5 km, B -- the same at 10 km; if the graph is not satisfied, the error can be more than 50 km). The parameters of all of the earthquakes in the regional catalogs are determined by the data of the experimental structures. Frequently the network of regional stations turns out to be located very one-sidedly at the epicenter, and the accuracy of determining the hypocenter of the earthquake is lowered in this case. This pertains primarily to the earthquakes located in the boundary region.

The parameters of strong earthquakes with M~4.5 are then more precisely determined at the Earth Physics Institute of the USSR Academy of Sciences using the data of the regional stations and the teleseismic world network with good encirclement of the epicenter with stations. Therefore all of the earthquake parameters placed in the seismological bulletin of the network of reference seismic stations of the USSR and in the catalog for the "strong earthquakes in the territory of the USSR" are more exact. For this earthquake with more precise determination of the coordinates of the hypocenter, a magnitude is defined. The magnitudes ($M_L$ and $m_{PV}$) and the energy class (K) are determined in accordance with the instructions on procedures for performing and processing observations at the seismic stations of the united system of seismic observations of the USSR, 1966. For relatively strong earthquakes numbers are placed in the catalog by which they are easily found on the epicenter map. For Carpathia, the Caucasus, Northern Tyan'-Shan', Altay, Yakutia and Sakhalin, the numbers are given for the earthquakes with $K \geq 11$; for Central Asia, Baykal, and Kamchatka, with $K \geq 12$; for the Kuril Islands, with $M \geq 5.5$. In addition, the numbers of the regions are placed in the catalog in accordance with the diagram for separation of the zone into smaller regions for seismotectonic areas, and macroseismic data are presented which were obtained in small amount and are not included in the text of the item.

For regions with relatively low level of seismicity or a small number of seismic stations, two recorded earthquakes are put in the catalog for which the epicenters are determined (Carpathia, Crimea, Kopetdag, Northern Tyan'-Shan'), for Yakutia and Sakhalin with $K \geq 8$, for the Far

East with K≥10 and for the remaining regions with K≥9. The data on the mechanism of the center are presented in tables where the directions and the angles of incidence of the possible fracture planes (Az, e, a), the relative values of the shift components in the direction of strike and incidence of the fracture planes (the plus sign indicates the upthrow faults or overthrusts and right shifts, and the minus sign indicates normal faults or underthrusts and left shifts), the orientation parameters of the stress axes are as follows: Az is the azimuth of the stress axis reckoned from the north direction to the horizontal projection (upper) end of the axis, and its angle formed by the stress axis with the horizontal.

The articles with earthquake descriptions are prepared by republic and peripheral institutions. A list of basic zones is presented in the table, their boundaries and the institutions responsible for writing the articles are indicated.

The data on strong earthquakes within the USSR (with M≥4.5) and the world (with M≥6) are being generalized at the Earth Physics Institute.

| Zone | Zone boundary φ°N | λ°E | Institutions responsible for writing the articles |
|---|---|---|---|
| Carpathian | 45-50 | 22-31 | L'vov Mathematical Physics Branch of the Mathematics Institute of the Ukrainian SSR Academy of Sciences |
| Crimea | 43-45 | 32-37 | Seismology Division of the Geophysics Institute of Ukrainian SSR Academy of Sciences |
| Caucasus | 38-45 | 37-52 | Geophysics Institute of the Georgian SSR Academy of Sciences (responsible), Geology Institute imeni I. M. Gubkin of the Azerbaydzhan SSR Academy of Sciences |
| Kopetdag | 36-44 | 52-65 | Earth and Atmosphere Physics Institute of the Tadzhik SSR Academy of Sciences |
| Central Asia | 36-46 | 65-81 | Seismology Institute of the Uzbek SSR Academy of Sciences (responsible), Institute of Earthquake Proof Construction and Seismology of the Tadzhik SSR Academy of Sciences, Seismology Institute of the Kirgiz SSR Academy of Sciences, Seismology Institute of the Caucasus SSR Academy of Sciences |
| Altay and Sayany | 45-56 | 80-100 | Geology and Geophysics Institute of the Siberian Dept of the USSR Academy of Sciences |
| Baykal | 48-60 | 100-120 | Earth's Crust Institute of the Siberian Dept of the USSR Academy of Sciences |
| Yakutia | 54-72 | 120-148 | Yakut branch of the Siberian Department of the USSR Academy of Sciences |
| Northeast [cont] | 58-66 | 144-158 | Northeastern Complex Scientific Research Institute of the Far Eastern Science Center of the USSR Academy of Sciences |

[Table, contd]

| Zone | Zone boundary φ°N | Zone boundary λ°E | Institutions responsible for writing the articles |
|---|---|---|---|
| Far East | 43-52 | 130-157 | Sakhalin Complex Scientific Research Institute of the Far East Science Center of the USSR Academy of Sciences |
| Kamchatka & Komandorskiye Islands | 50-60 | 156-168 | Vulcanology Institute of the Far Eastern Science Center of the USSR Academy of Sciences |
| Arctic | 60-90 | 38-169 | Pulkovo Central Seismic Station of the Earth Physics Institute of the USSR Academy of Sciences |

STRONG EARTHQUAKES IN THE TERRITORY OF THE USSR

[Article by I. V. Gorbunova]

A brief survey has been made annually of the seismicity of the territory of the USSR on the basis of the data on earthquake parameters with M~4.5 taken from the Seismology Bulletin of the network of USSR reference seismic stations.

In 1974 when compiling this bulletin the level of magnitude from which the parameters of the earthquake centers are usually determined was reduced to M~4, which made it possible to make small-magnitude earthquakes representative in many zones (M~4.5). The missing of such earthquakes is discussed in the seismicity survey for 1973.

The parameters of the earthquake centers are determined in the first version by regions according to the data from the regional stations. At the Earth Physics Institute the parameters of strong earthquakes are more precisely defined for which the results of the regional and teleseismic stations of the world network are used with good azimuthal encirclement of the epicenter by the stations. In individual cases only, when there were few data for more precise determination of the epicenter or the determination by the regional data is confirmed by more precise determination by regional and teleseismic data, regional data are included in the catalog (K=12.13). This refers primarily to the earthquakes with M=4.5 from the Baykal zone and the northeastern part of the country. The epicenters, just as before, were determined on a computer by the EPI program. Numbers are entered in the catalog for strong earthquakes with M≥5.5, by which they are easily found on the epicenter map (Fig 1).

There were 284 earthquakes with M≥4.5 in the USSR in 1974. This number includes the earthquakes at Gindukush and the Kurilo-Kamchatka Arch but with M≥5. The distribution of the earthquakes with respect to magnitudes and seismically active zones is indicated in the table. By the previously adopted magnitude of the provisional deformation in units of $10^{10}$ $ergs^{1/2}$ a comparison was made between the level of activity of the seismic zones, and its variation with time for the last 16 years is illustrated for four seismically active zones (Fig 2, 3). An analysis of the epicenter map,

the tables and the presented graphs indicates that, just as before, the most active region in 1974 was the Far East.

The number of earthquakes with K=12 for which the magnitude was determined is included in parentheses.

Here the greatest activity was observed in the north and south of the Kuril Islands. In the north it was a continuation of the aftershock activity after the strong earthquake of 28 February 1973. In the epicentral region of this earthquake two earthquakes were recorded in May with M=6.7 and 5.8 (Nos 18, 19). In the south, south of the island of Shikotan, an earthquake occurred on 27 September with M=7.2 (No 28),which was almost not accompanied by aftershocks. The activity of the central part of the Kuril Islands increased significantly by comparison with the past year, where an earthquake with M=6.9 (No 21) was observed on 28 July accompanied by a large number of repeated shocks. An earthquake of almost the same strength occurred on 9 September at 0732 hours (No 29) southeast of Urup Island with M=6.8.

In the territory of Kamchatka, the Avachinskiy Bay and Komandorskiye Islands were distinguished somewhat with respect to the level of seismic activity. The strongest earthquake was the earthquake of 27 July with M=5.9 (No 20).

In the Sea of Okhotsk the epicenters of the large earthquakes are arranged in a belt extending from south to north through its central region. The strongest earthquake occurred at a depth of 435 km on 20 December with $m_{PV}$=5.5 (No 37) in its central region.

In Sakhalin, the seismic activity was manifested basically by weak earthquakes, the strongest of which was on 17 August at 1513 hours with M=5.4 occurring northeast of Sakhalin Island.

In second place with respect to the level of seismic activity is Central Asia. Here it is possible to isolate two regions: Northern Pamir and Gindukush. In Northern Pamir, in the vicinity of the articulation of the Sarykol'skiy and Zaalayskiy ridges, a strong earthquake with M=7.3 (No 2) occurred on 11 August at 0113 hours accompanied by a large number of repeated shocks. The earthquake was felt over a large area, and at a distance of 40 km from the epicenter its intensity reached force 6-7. In the epicentral region its intensity could be force 8 with a depth of center of 5 km. The more precisely defined epicenter agrees better than the regional one with the macroseismic data. By the macroseismic data two versions of the isoseisms were drawn by different authors. The aftershock distribution is still in favor of the first version. However, this earthquake will be investigated in still more detail by seismologists and geologists, and the final results of the research will be published.

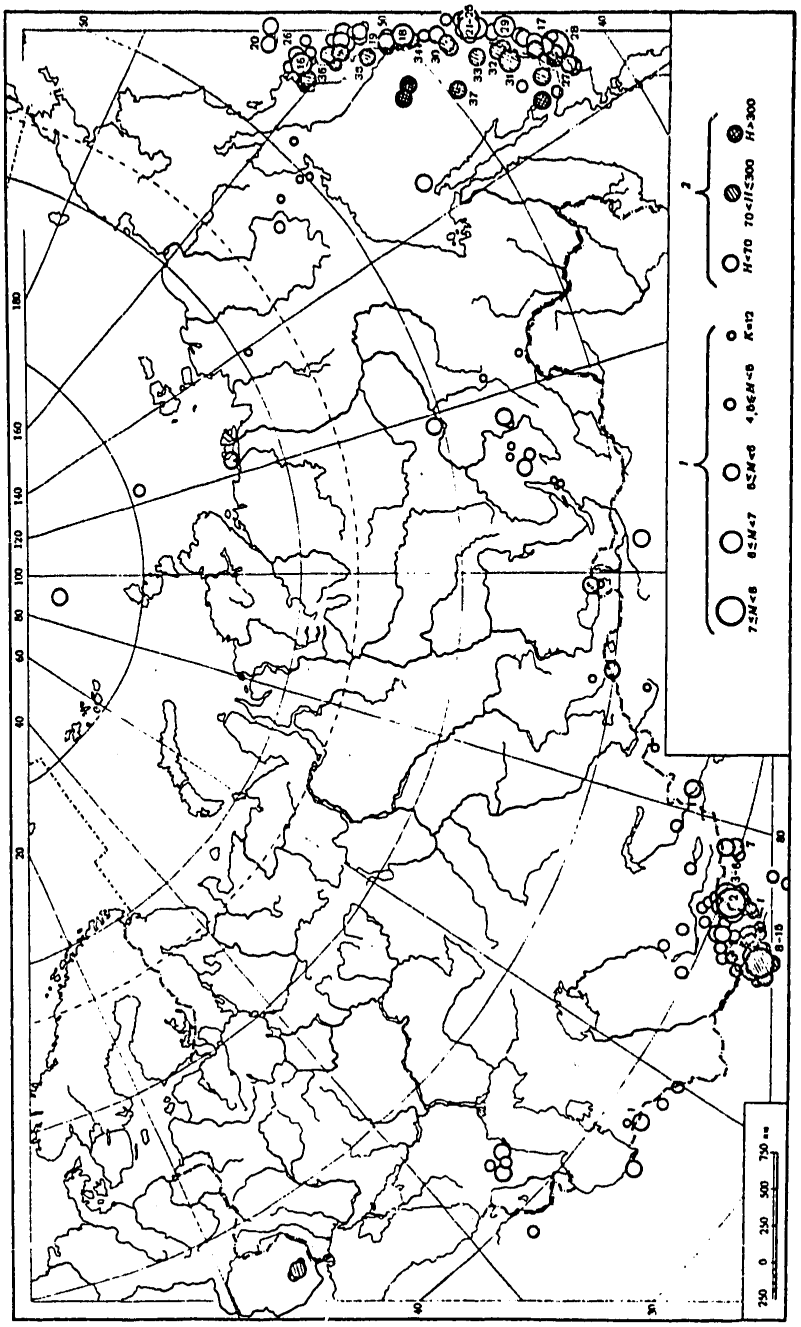

Figure 1. Map of the epicenters of the earthquakes in the USSR with M≥4.5.
1 -- magnitude; 2 -- depth of center, km. The numbers on the map are the numbers of the earthquakes with M≥5.5 (according to the catalog).

Earthquake Distribution with M≥4.5 by Zones

| Zone | No of earthquakes | | | | Total |
|---|---|---|---|---|---|
| | 4≤M<5 | 5≤M<6 | 6≤M<7 | 7≤M<8 | |
| Arctic | 3 | - | - | - | 3 |
| Altay-Sayany | -(3) | 2 | - | - | 5 |
| Baykal | 2(8) | 2 | - | - | 12 |
| Yakutia | 2(6) | - | - | - | 8 |
| Caucasus | 3 | 2 | - | - | 5 |
| Carpathian | 1(1) | 1 | - | - | 3 |
| Kopetdag | 3(1) | 1 | - | - | 5 |
| Crimea | - | - | - | - | - |
| Far East: | | | | | |
| Earth's crust | 41 | 19 | 6 | 1 | 67 |
| Under crust | 20 | 2 | 2 | - | 24 |
| Central Asia: | | | | | |
| Earth's crust | 68(43) | 12 | 2 | 1 | 126 |
| Under crust | 19(2) | 4 | - | 1 | 26 |
| Total | 226 | 45 | 10 | 3 | 284 |

The second earthquake with respect to strength in Central Asia had $m_{PV}$=7.3 on 30 July at 0512 hours in the central part of Gindukush at a depth of 200 km (No 13). This earthquake was felt over an enormous area. At force 3 it was noted at a distance of 700 km from the epicenter. A somewhat weaker earthquake with $m_{PV}$=5.7 occurred here on 10 December at 0141 hours at a depth of 205 km.

In Southern Pamir the strongest earthquake was the one on 6 April at 2019 hours with M=4.8.

Southern Tyan'-Shan' had low seismic activity that year: in the eastern part, on the Kokshaal-Tau Ridge, the strongest earthquake was recorded on 4 January at 0927 hours with M=5.1.

In Central Tyan'-Shan' the strongest earthquake was noted in the eastern part of the FerganaValley on 20 February with M=4.9, which was felt at force 6-7 in a radius of 13 km from the epicenter. An earthquake of somewhat less force (M-4) occurred near the city of Fergana on 22 January, also perceived as force 6.

In Northern Tyan'-Shan' two earthquakes were the strongest: one in the vicinity of Dzhungarskiy Alatau on 4 March with $m_{PV}$=4.7 and the other on 2 July at 1641 hours with M=4.9 in the southeast end of the Kirgiz Ridge. Both earthquakes were felt over a large area, and the macroseismic information about them was included in the article entitled "Earthquakes of Central Asia."

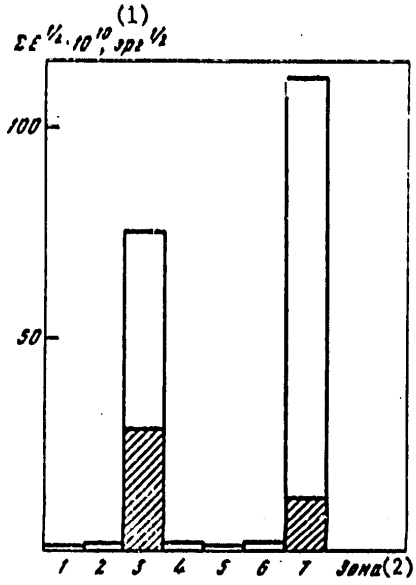


Figure 2. Distribution of the value of $\Sigma E^{1/2}$ with respect to seismic zones. The crosshatched part corresponds to the energy of deep earthquakes (H≥100 km).
1 -- Carpathian; 2 -- Caucasus; 3 -- Central Asia; 4 -- Baykal; 5 -- Yakutia; 6 -- Altay-Sayany; 7 -- Far East

Key:
1. ergs; 2. zone

This year the Altay-Sayany zone is on the average level of seismic activity of the past years. Two earthquakes were the strongest; the epicenter of one of them occurring on 29 November was in the vicinity of the southeastern edge of Tuva and Mongolia. The earthquake was accompanied by aftershocks. The second earthquake was an aftershock of the Ureg-Nurskoye earthquake of 1970.

In the Baykal region the epicenters of all strong earthquakes are coordinated with the Baykal rift zone. The most significant event was an earthquake on the spurs of the Udokanskiy Ridge on 21 June with M=5.1 felt over a large territory.

The second strongest earthquake with M=5.4 occurred on 18 December in the aftershock region of the Mogotskoye earthquake of 1967. It is especially necessary to note the earthquake on 8 October at 0307 hours with M=4.6, which was recorded near the northern boundary of the Baykal region.

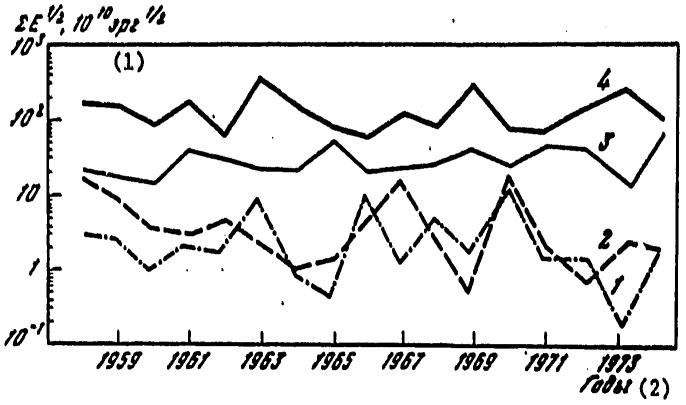


Figure 3. Variation of $\Sigma E^{1/2}$ with time in 1958-1974 for the basic seismically active zones.
1 -- Caucasus; 2 -- Baykal; 3 -- Central Asia; 4 -- Far East.

Key:
1. ergs
2. years

The epicenter of this earthquake is located in the territory of the southwestern part of Yakutia in the Prilenskoye plateau where no earthquakes have been observed previously. It was felt to a distance of 400 km from the epicenter, and similar information about it was included in the article on "Earthquakes of the Baykal Region."

In Yakutia the most active region was the system of Cherskiy ridges where on 19 June at 0309 hours one of the strongest earthquakes of the year occurred with M=4.9. The intensity of the tremors in the epicenter reached force 7. The activity of the north shore of the Sea of Okhotsk where the earthquakes were recorded on 29 August with K=12 and 25 September with K=13 increased.

To the west of the Central Asian zone in Kopetdag, all of the strong earthquakes occurred in the border zone, in the territory of Iran where four earthquakes were noted with M~4.5. In Turkmenia, only one earthquake with K=12 was recorded in the western region.

In the Caucasus, the most significant events were four earthquakes felt in the epicentral region as force 7. One of them, Shakhnazarskoye, occurred on 30 March at 0034 hours in the vicinity of the Dzhavakhetskoye Highland; the second, Bezhtinskoye, occurred in the southwestern part of the Greater Caucasus Ridge on 4 August at 1506 hours; two of the earthquakes were recorded in mountainous Dagestan: Kilyatlinskoye on 13 November at 0236 hours and Salatauskoye on 23 December at 0522 hours. The results of studying the consequences of these earthquakes make up separate articles in this collection.

In the Crimea, the seismic activity was manifested as earthquakes with M<4.5.

In the Carpathian zone the strongest earthquakes occurred in Romania, in the cities of Vrancha, 10 June at 0511 hours with $m_{PV}$=4.8 and on 17 July at 0509 hours with $m_{PV}$=5.7. The latter was felt over a large territory; in Kishinev, its force reached 3.

In the Arctic in that year three comparatively strong earthquakes were recorded: two in the Sea of Laptev, the strongest of which was on 19 August at 0837 hours with M=4.1, and one north of the Island of Severnaya Zemlya on 4 March at 0617 hours with M~4.

Catalog of USSR Earthquakes with M≥4.5 in 1974

| № (1) | Месяц (2) | Число (3) | Момент возникновения, час мин сек (4) | Координаты эпицентра (5) φ°N | λ°E | Глубина очага, км (6) | $M_L$ | $m_{PV}$ | K | (7) Район |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Carpathian | | | | | | |
| | II | 22 | 13 40 48 | 45,6 | 26,4 | 150 | | | 12 | Eastern Carpathian |
| | VI | 10 | 05 11 01 | 45,7 | 26,5 | 150 | | 4,8° | | " " |
| | VII | 17 | 05 09 22 | 45,7 | 26,5 | 140 | | 5,7 | | " " |
| | | | | Caucasus | | | | | | |
| | III | 12 | 06 53 52 | 38,5 | 44,1 | 45 | 4,4 | 4,9° | | Turkey |
| | VI | 15 | 00 52 03 | 43,1 | 45,3 | 16 | 4,2 | 4,7° | | Caucasus |
| | VIII | 4 | 15 06 12 | 42,4 | 45,9 | 5 | 5,1 | 5,8 | | " |
| | XI | 13 | 02 36 23 | 42,8 | 46,5 | 25 | 4,7 | 5,6° | | " |
| | XII | 23 | 05 22 05 | 43,2 | 46,9 | 13 | 5,0 | 5,0° | | " |
| | | | | Kopetdag | | | | | | |
| | I | 21 | 22 08 33 | 37,1 | 59,8 | 10 | | 4,7° | | Kopetdag Ridge |
| 1 | III | 7 | 11 35 59 | 37,7 | 55,9 | 5 | 5,6 | 5,4° | | Iran |
| | VI | 29 | 14 11 47 | 37,2 | 58,1 | 40 | 4,2 | 4,7° | | |
| | XI | 5 | 20 02 19 | 36,4 | 52,8 | 33 | | 5,0° | | Elbrus Mountains |
| | | 23 | 03 31 59 | 38,3 | 55,0 | 45 | | | 12 | Western Turkmenia |

Key:

1. No
2. Month
3. Day
4. Time of occurrence, hours, minutes, seconds
5. Coordinates of the epicenter
6. Depth of center, km
7. Region

| № (1) | Месяц (2) | Числ. (3) | (4) Момент возникновения, час мин сек | Координаты эпицентра (5) φ°N | λ°E | (6) Глубина очага, км | $M_L$ | $m_{PV}$ | K | (7) Район |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Central Asia | | | | | | |
| | | | | Earthquakes with centers in earth's crust | | | | | | |
| | I | 4 | 09 27 58 | 40,8 | 77,7 | 33 | 5,1 | 5,3° | | China |
| | | 11 | 22 44 56 | 41,6 | 70,6 | | 4,6 | | | Western Tyan'-Shan' |
| | | 22 | 06 08 08 | 40,3 | 71,9 | 35 | | 4,8° | | Southern Tyan'-Shan' |
| | II | 19 | 21 30 02 | 37,7 | 69,6 | 10 | | 4,7° | | Northern Pamir |
| | | 20 | 11 43 04 | 40,7 | 73,3 | 30 | 4,9 | 5,3° | | Fergana Valley |
| | | 24 | 06 21 33 | 40,2 | 67,6 | 10 | | 4,7° | | Southern Tyan'-Shan' |
| | III | 4 | 14 03 55 | 44,2 | 78,6 | 15 | | 4,7° | | Duzhungarskiy Alatau |
| | | 20 | 15 30 31 | 36,7 | 70,6 | | | | 12 | Gindukush |
| | IV | 4 | 04 20 00 | 39,2 | 71,6 | 0–5 | 4,5 | 5,1° | | Northern Pamir |
| | | 6 | 20 19 29 | 37,1 | 72,6 | | 4,8 | 5,5 | | Southern Pamir |
| | | 13 | 08 59 11 | 42,1 | 68,9 | 10 | 4,6 | | | Kyzylkum Sands |
| | V | 4 | 19 07 23 | 38,94 | 70,49 | 5 | | | 12 | Northern Pamir |
| | | 9 | 02 56 31 | 39,0 | 70,6 | 33 | | 4,7° | | Northern Pamir |
| | | 15 | 00 12 44 | 36,4 | 76,8 | 40 | 4,2 | 4,8° | | Western Kun'lun' |
| | | 18 | 19 58 43 | 38,5 | 71,8 | 33 | | 4,5° | | Northern Pamir |
| | | 23 | 02 11 09 | 38,7 | 75,0 | | | | 12 | Kun'lun' |
| | | 29 | 01 47 06 | 38,81 | 70,38 | | | | 12 | Northern Pamir |
| | VI | 3 | 23 35 20 | 39,3 | 71,6 | 10 | | 5,1° | | Northern Pamir |
| | VII | 2 | 16 41 05 | 42,4 | 75,3 | 24 | 4,9 | 5,0° | | Northern Tyan'-Shan' |
| | | 5 | 07 17 47 | 37,2 | 72,8 | 20 | | 5,0° | | Southern Pamir |
| | | 23 | 07 11 04 | 39,2 | 72,2 | 15 | 4,7 | 5,1° | | Northern Pamir |
| | | | 07 36 49 | 39,5 | 73,1 | 20 | 4,6 | 4,8° | | " " |
| | | | 10 21 42 | 39,2 | 72,3 | | | | 12 | |
| | | 26 | 20 45 35 | 36,8 | 69,6 | | | | 12 | Gindukush |
| | | 28 | 04 10 07 | 39,0 | 75,2 | 50 | 4,8 | 4,9° | | Western Kun'lun' |
| | | 29 | 17 28 56 | 39,8 | 77,6 | 30 | | 4,6° | | Kun'lun' |
| 2 | VIII | 11 | 01 13 55 | 39,4 | 73,9 | 5 | 7,3 | 6,9 | | Takla-Makan Desert |
| | | | 02 29 47 | 39,3 | 73,7 | 15 | | 4,7° | | Northern Pamir |
| | | | 02 37 09 | 39,3 | 73,5 | 15 | | 4,9° | | " " |
| | | | 02 44 52 | 39,3 | 73,5 | | | | 12 | " " |
| | | | 03 05 10 | 39,3 | 73,5 | 30 | | 4,6° | | " " |
| | | | 04 28 46 | 39,3 | 73,7 | 15 | 4,9 | 5,2° | | " " |
| | | | 04 40 34 | 39,3 | 73,7 | | | | 12 | " " |
| | | | 05 12 30 | 39,3 | 73,7 | 15 | 5,2 | 5,6 | | " " |
| | | | 05 19 32 | 39,4 | 73,7 | 15 | 5,2 | 5,2° | | " " |
| | | | 05 33 45 | 39,3 | 73,6 | | | | 13 | " " |
| 3 | | | 05 23 51 | 39,5 | 73,8 | 15 | 5,5 | 5,8° | | " " |
| | | | 07 02 06 | 39,3 | 73,7 | 15 | 5,3 | 5,3° | | " " |
| | | | 08 02 55 | 39,3 | 73,9 | | 4,5 | 5,0° | | " " |
| | | | 09 08 57 | 39,3 | 73,8 | 15 | 5,0 | 5,4 | | " " |
| | | | 12 06 21 | 39,3 | 73,6 | | | | 13 | " " |
| | | | 12 20 28 | 39,3 | 73,7 | 15 | | 4,6° | | " " |
| | | | 12 45 02 | 39,3 | 73,7 | | | | 12 | " " |
| | | | 13 21 15 | 39,3 | 73,7 | 0–5 | 4,4 | 4,7° | | " " |
| | | | 13 38 22 | 39,3 | 73,7 | 0–5 | | 4,7° | | " " |
| | | | 13 59 21 | 39,3 | 73,8 | 0–5 | | 4,7° | | " " |
| | | | 19 30 35 | 39,3 | 73,6 | 0–5 | 4,4 | 4,5° | | " " |
| 4 | | | 20 05 27 | 39,6 | 73,7 | 15 | 5,8 | 6,2 | | " " |
| 5 | | | 21 21 34 | 39,5 | 73,6 | 15 | 6,3 | 6,6 | | " " |
| | | | 21 51 04 | 39,5 | 73,6 | | | | 12 | " " |
| | | | 21 50 08 | 39,2 | 73,5 | 15 | | 4,6° | | " " |
| | | | 21 56 29 | 39,4 | 73,5 | 15 | | 4,5° | | " " |
| | | | 23 18 55 | 39,4 | 73,6 | 15 | 4,7 | 5,2° | | |

| (1) № | (2) Месяц | (3) Число | (4) Момент возникновения, час мин сек | (5) Координаты эпицентра φ°N | λ°E | (6) Глубина очага, км | $M_L$ | $m_{PV}$ | K | (7) Район | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | VIII | 12 | 00 48 54 | 39,2 | 73,9 | | | | 12 | Northern Pamir | |
| | | | 13 40 02. | 39,6 | 73,8 | | 4,4 | | | " | " |
| | | | 13 48 56 | 39,4 | 73,7 | | 4,5 | | | " | " |
| | | | 14 14 49 | 39,6 | 73,8 | 15 | 4,9 | 4,9* | | " | " |
| | | | 21 17 47 | 39,3 | 74,0 | 20 | 5,0 | 5,1* | | " | " |
| | | | 21 57 17 | 39,3 | 73,6 | 15 | 4,7 | 4,7* | | " | " |
| | | | 22 02 30 | 39,3 | 73,9 | | | | 12 | " | " |
| | | | 22 44 30 | 39,4 | 74,2 | | | | 12 | " | " |
| | | 13 | 11 14 38 | 39,4 | 73,5 | 15 | | 4,8* | | " | " |
| | | | 21 19 16 | 39,3 | 73,7 | 15 | | 4,7 | | " | " |
| | | 14 | 02 18 49 | 39,3 | 73,7 | | | | 12 | " | " |
| | | | 05 02 29 | 39,3 | 73,7 | | | | 12 | " | " |
| | | | 06 18 14 | 39,4 | 73,8 | | | | 12 | " | " |
| | | | 07 50 53 | 39,4 | 73,7 | | | | 12 | " | " |
| | | | 22 06 52 | 39,4 | 73,8 | 15 | 4,6 | 4,9* | | " | " |
| | | 15 | 04 38 36 | 39,4 | 73,7 | | | | 12 | " | " |
| | | | 08 26 30 | 39,3 | 73,7 | | | | 12 | " | " |
| | | | 11 22 47 | 39,2 | 73,8 | | | | 12 | " | " |
| | | | 23 43 42 | 39,3 | 73,9 | | | | 12 | " | " |
| | | 16 | 00 11 06 | 39,5 | 73,7 | 15 | 4,6 | 4,9* | | " | " |
| | | 17 | 23 50 58 | 39,3 | 73,8 | 15 | 4,9 | 5,0* | | " | " |
| | | 18 | 16 03 14 | 39,6 | 73,7 | 15 | | 4,8* | | " | " |
| | | 19 | 23 36 56 | 39,4 | 73,6 | | | | 12 | " | " |
| | | 20 | 10 18 39 | 39,3 | 73,6 | | | | 12 | " | " |
| | | | 15 14 32 | 39,3 | 73,7 | | | | 12 | " | " |
| | | | 16 42 20 | 39,4 | 73,6 | 15 | | 4,6* | | " | " |
| | | 21 | 18 08 27 | 39,4 | 73,8 | 15 | | 4,7* | | " | " |
| | | | 18 45 14 | 39,3 | 74,0 | 15 | 4,5 | 5,0* | | " | " |
| | | 22 | 07 05 36 | 39,4 | 73,7 | | | | 12 | " | " |
| | | 23 | 16 26 28 | 39,4 | 73,7 | 15 | 4,1 | 4,5* | | " | " |
| | | 24 | 06 00 38 | 39,5 | 73,7 | | | | 12 | " | " |
| | | | 11 21 42 | 39,4 | 73,7 | 10 | | 4,7* | | " | " |
| | | | 12 14 36 | 39,4 | 73,7 | 10 | 4,8 | 4,8* | | " | " |
| | | 25 | 17 41 18 | 39,3 | 73,7 | | | | 12 | " | " |
| | | 27 | 05 43 31 | 39,3 | 73,8 | 15 | | 4,7* | | " | " |
| 6 | | | 12 56 00 | 39,6 | 73,8 | 15 | 6,0 | 6,2 | | " | " |
| | | | 13 37 08 | 39,4 | 73,7 | | | | 12 | " | " |
| | | | 14 24 44 | 39,4 | 73,7 | | | | 12 | " | " |
| | | | 17 34 56 | 39,4 | 73,9 | 15 | 5,0 | 5,6 | | " | " |
| | | | 18 04 52 | 39,3 | 73,6 | | | | 12 | " | " |
| | | 28 | 09 22 04 | 39,3 | 73,7 | | | | 12 | " | " |
| | | 29 | 07 45 44 | 39,7 | 73,8 | | | | 12 | " | " |
| | | | 08 25 20 | 39,5 | 73,8 | | | | 12 | " | " |
| | | 31 | 17 13 54 | 39,4 | 73,7 | | | | 12 | " | " |
| | IX | 2 | 18 54 15 | 39,0 | 74,5 | | | | 12 | " | " |
| | | 3 | 08 59 40 | 39,3 | 73,7 | | | | 12 | " | " |
| | | | 19 41 17 | 39,5 | 73,7 | 15 | 5,0 | 5,6* | | " | " |
| | | 4 | 01 41 03 | 39,6 | 73,8 | 33 | | 4,7* | | " | " |
| | | | 15 30 28 | 39,4 | 73,7 | | | | 12 | " | " |
| | | 5 | 12 14 16 | 39,5 | 73,5 | 15 | | 4,7* | | " | " |
| | | 6 | 15 23 57 | 39,4 | 73,6 | 15 | 5,0 | 5,1* | | " | " |
| | | 7 | 15 46 30 | 39,3 | 73,8 | 20 | 4,8 | 4,9* | | " | " |
| | | 12 | 06 02 57 | 39,3 | 74,1 | 33 | 4,6 | 4,8* | | " | " |
| | | | 06 27 50 | 39,5 | 73,8 | 15 | 4,5 | 4,9* | | " | " |
| | | 16 | 16 45 51 | 39,5 | 73,5 | 15 | 4,7 | 5,2* | | " | " |
| 7 | | 29 | 15 51 51 | 40,3 | 78,0 | 30 | 5,5 | 5,8 | | China | |
| | X | 1 | 13 10 47 | 39,4 | 74,1 | | | | 12 | Northern Pamir | |
| | | 8 | 22 23 41 | 39,7 | 74,0 | | | 4,5* | | " | " |

| (1) № | (2) Месяц | (3) Число | (4) Момент возникновения, час мин сек | (5) Координаты эпицентра $\varphi^{\circ}N$ | $\lambda^{\circ}E$ | (6) Глубина очага, км | $M_L$ | $m_{PV}$ | $K$ | (7) Район |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 10 | 21 54 22 | 39,6 | 73,7 | | | | 12 | Northern Pamir |
| | | 16 | 05 01 13 | 39,4 | 74,1 | 20 | | 5,0* | | " " |
| | XI | 3 | 10 27 30 | 43,8 | 81,9 | 20 | | 5,1* | | China |
| | | 10 | 04 31 42 | 39,3 | 73,5 | | | 4,8* | | Northern Pamir |
| | | 15 | 22 31 25 | 37,6 | 76,9 | 33 | 4,8 | 4,9* | | Western Kun'lun' |
| | | 21 | 15 06 23 | 40,8 | 73,0 | 33 | | 4,7* | | Fergana Valley |
| | | 25 | 22 03 32 | 39,8 | 74,7 | | | 4,8* | | China |
| | | 26 | 12 50 55 | 40,2 | 77,8 | | | | 12 | " |
| | | 28 | 14 57 43 | 39,8 | 74,9 | 33 | | 4,7* | | " |
| | XII | 1 | 00 09 54 | 36,5 | 70,3 | 20 | | | 12 | Gindukush; |
| | | 8 | 06 51 47 | 38,7 | 69,9 | 8 | 4,2 | 5,1* | | Northern Pamir |
| | | 18 | 02 31 51 | 39,4 | 73,8 | 33 | | 4,9* | | " " |
| | | | 03 26 05 | 37,4 | 72,8 | 33 | | 4,8* | | Southern Pamir |
| | | 29 | 04 59 06 | 39,2 | 71,6 | 33 | | 5,1* | | Northern Pamir |
| | | | Deep Pamir-Gindukush Earthquakes | | | | | | | |
| | I | 11 | 02 03 48 | 36,4 | 70,8 | 140 | | 5,2* | | Gindukush |
| | II | 19 | 04 09 04 | 36,0 | 70,8 | 90 | | 4,9* | | " |
| 8 | | 22 | 03 33 25 | 36,6 | 71,4 | 100 | | 6,0 | | " |
| | IV | 26 | 23 00 09 | 35,9 | 70,0 | 100 | | 5,0* | | " |
| | | 27 | 09 20 13 | 38,2 | 74,1 | 166 | | 4,7* | | Southern Pamir |
| | V | 3 | 14 01 56 | 36,2 | 69,8 | 130 | | | 13 | Gindukush |
| 9 | | 13 | 17 40 30 | 36,5 | 70,9 | 180 | | 6,0 | | " |
| 10 | | 17 | 13 45 15 | 36,5 | 70,8 | 200 | | 5,5 | | " |
| 11 | VI | 3 | 11 45 36 | 36,9 | 71,2 | 100 | | 5,6 | | " |
| 12 | | 6 | 19 03 26 | 36,4 | 70,6 | 220 | | 5,7 | | |
| | | 14 | 17 53 09 | 37,3 | 71,7 | 120 | | 4,7* | | Southern Pamir |
| | | 24 | 22 49 40 | 37,2 | 71,5 | 110 | | 4,8* | | " |
| 13 | VII | 30 | 05 12 40 | 36,4 | 70,7 | 200 | | 7,1 | | Gindukush |
| | VIII | 13 | 04 27 12 | 36,3 | 69,7 | 110 | | | 13 | " |
| | | 29 | 01 02 28 | 36,5 | 71,2 | 230 | | 5,0* | | " |
| | IX | 5 | 14 32 58 | 37,4 | 71,6 | 120 | | 4,7* | | Southern Pamir |
| | | 13 | 02 08 09 | 36,5 | 70,7 | 200 | | 4,8* | | Gindukush |
| | | 21 | 01 07 11 | 37,6 | 71,9 | 130 | | 4,6* | | Southern Pamir |
| | | 30 | 09 55 42 | 37,8 | 72,3 | 140 | | 4,6* | | " |
| | X | 3 | 11 11 57 | 36,5 | 70,8 | 200 | | 5,0* | | Gindukush |
| | | 10 | 16 09 34 | 37,6 | 71,6 | 105 | | 4,9* | | Southern Pamir |
| | | | 21 14 17 | 38,2 | 74,0 | 165 | | 4,5* | | " " |
| | | 22 | 17 49 18 | 37,7 | 72,1 | 100 | | 4,7* | | " " |
| 14 | XII | 10 | 01 41 06 | 36,4 | 70,5 | 205 | | 5,7 | | Gindukush |
| | | | | | | | | 5,9* | | |
| | | 24 | 19 55 33 | 36,5 | 70,4 | 200 | | 5,0* | | " |
| 15 | | 30 | 04 47 46 | 36,3 | 69,7 | 110 | | 5,6 | | " |
| | | | Altay and Sayany | | | | | | | |
| | III | 6 | 21 35 39 | 46,4 | 84,3 | | | | 12 | China, Dzhungariya |
| | | 22 | 18 13 36 | 50,0 | 90,7 | 33 | 5,1 | 5,7* | | Mongolia, vicinity of Ureg-Nur Lake |
| | IX | 5 | 03 57 13,7 | 51,17 | 89,47 | | | | 12 | Western Sayan |
| | | 25 | 06 51 31 | 47,8 | 89,7 | | | | 12 | Mongolian Altay |
| | XI | 17 | 13 04 51,1 | 51,73 | 98,51 | | | | 12 | Eastern Sayan |
| | X | 29 | 21 05 30 | 51,9 | 98,6 | 20 | 5,2 | 5,7 | | " " |
| | | | Baykal | | | | | | | |
| | I | 22 | 22 25 36 | 55,0 | 112,6 | 20 | | 4,7* | | Trans-Baykal |
| | II | 19 | 02 05 48,2 | 56,39 | 112,69 | | | | 12 | " " |
| | IV | 13 | 05 01 32 | 55,5 | 111,2 | | | 5,0* | | " " |

| (1) № | (2) Месяц | (3) Число | (4) Момент возникновения, час мин сек | (5) Координаты эпицентра φ°N | λ°E | (6) Глубина очага, км | $M_L$ | $m_{PV}$ | K | (7) Район |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | VI | 21 | 20 56 45 | 56,3 | 117,4 | 20 | 5,1 | 5,3* | | Stanovoye Highland Ridge |
| | | 24 | 08 30 30,2 | 56,85 | 122,22 | | | | 12 | The same |
| | VII | 1 | 05 21 44,2 | 56,09 | 113,81 | | | | 13 | Trans-Baykal |
| | VIII | 22 | 04 46 14,9 | 53,83 | 109,08 | | | | 12 | Lake Baykal |
| | X | 10 | 00 43 34,2 | 53,83 | 109,10 | | | | 12 | " " |
| | XII | 18 | 07 54 39 | 48,3 | 103,3 | 33 | 5,4 | 5,9 | | Mongolia |
| | | | Yakutia and Northeast USSR | | | | | | | |
| | IV | 6 | 19 00 50 | 62,1 | 153,1 | | | | 12 | Cherskiy Ridge |
| | VI | 19 | 03 09 35 | 63,2 | 150,9 | | 4,9 | 5,2* | | " " |
| | VIII | 24 | 16 37 03 | 69,6 | 139,5 | | | | 12 | |
| | | 29 | 06 18 49 | 59,8 | 152,8 | | | | 12 | North coast of the Sea of Okhotsk |
| | X | 8 | 03 07 15 | 60,5 | 118,3 | 40 | | 5,4* | | Southern Yakutia, Prilenskoye Plateau |
| | | 21 | 02 35 04,2 | 54,05 | 123,74 | | | | 13 | Amur Region |
| | XII | 17 | 16 40 13 | 60,2 | 153,0 | | | | 12 | North coast of the Sea of Okhotsk |
| | | | Arctic | | | | | | | |
| | III | 4 | 06 17 31 | 85,3 | 91,6 | 20 | | 5,0* | | Northern Severnaya Zemlya Island |
| | VIII | 29 | 08 37 21 | 73,1 | 123,3 | 33 | | 5,1* | | Sea of Laptev |
| | XI | 27 | 20 38 03 | 79,2 | 124,4 | 33 | | 4,7 | | " " |
| | | | Far East | | | | | | | |
| | | | Earthquakes with centers in earth's crust | | | | | | | |
| | I | 9 | 02 49 48 | 51,6 | 159,6 | 50 | 5,4 | 5,7* | | East of Kamchatka |
| | | 10 | 02 37 02 | 51,5 | 159,9 | 33 | 5,0 | 5,3* | | The same |
| | | | 05 18 57 | 51,6 | 159,6 | 50 | 5,4 | 5,7* | | " " |
| | | 14 | 20 31 49 | 48,8 | 155,1 | 40 | 4,6 | 5,2* | | East of the Kuril Islands |
| | | 17 | 08 39 07 | 43,7 | 147,4 | 70 | | 5,4* | | The same |
| 16 | | 22 | 13 28 21 | 55,0 | 162,3 | 63 | 6,1 | 6,3 | | East of Kamchatka |
| | | | | | | | | 5,7* | | |
| | II | 1 | 15 04 51 | 54,4 | 162,1 | 35 | 4,5 | 5,2* | | The same |
| | | 6 | 02 51 21 | 52,6 | 160,6 | 10 | | 5,1* | | |
| | | 7 | 19 04 09 | 49,8 | 156,1 | 70 | 4,8 | 5,2 | | East of the Kuril Islands |
| | | 8 | 14 21 38 | 54,4 | 167,2 | 10 | 5,4 | 5,9* | | Komandorskiye Island |
| | | | | | | | 5,1 | | | |
| | | 9 | 18 22 15 | 50,4 | 157,5 | 60 | 4,6 | 5,1* | | East of Kuril Islands |
| 17 | | 25 | 05 46 29 | 44,0 | 147,9 | 40 | 5,7 | 6,4 | | The same |
| | | | | | | | 5,8 | 5,8* | | " " |
| | III | 15 | 22 11 27 | 49,4 | 158,6 | 30 | 4,7 | 5,4* | | " " |
| | | 23 | 06 51 21 | 47,1 | 153,4 | 30 | | 4,8 | | |
| | IV | 18 | 10 31 04 | 54,0 | 163,2 | 35 | 4,6 | 5,6* | | East of Kamchatka |
| | | 21 | 02 08 04 | 46,1 | 145,4 | 30 | 4,9 | 5,3* | | Sea of Okhotsk |
| | | 27 | 10 00 59 | 55,8 | 163,1 | 0–5 | 4,9 | 5,3* | | East of Kamchatka |
| | V | 2 | 22 36 12 | 51,6 | 159,8 | 20 | 4,4 | 5,0* | | The same |

| (1) № | (2) Месяц | (3) Число | (4) Момент возникновения, час мин сек | (5) Координаты эпицентра φ°N | λ°E | (6) Глубина очага, км | $M_L$ | $m_{PV}$ | K | (7) Район |
|---|---|---|---|---|---|---|---|---|---|---|
| 18 | V | 15 | 18 59 56 | 49,9 | 156,2 | 50 | 6,7<br>6,6 | 6,5<br>6,2<br>6,1* | | East of the Kuril Islands |
| | | 20 | 00 14 19 | 51,3 | 159,8 | 40 | 4,5 | 5,1* | | East of Kamchatka |
| 19 | | 27 | 04 41 26 | 50,7 | 157,3 | 50 | 5,8<br>6,0 | 6,2<br>5,7* | | East of Kuril Islands |
| | | 31 | 09 10 39 | 52,8 | 160,3 | 40 | 4,8 | 5,3* | | East of Kamchatka |
| | VII | 7 | 12 53 22 | 46,7 | 152,7 | 65 | 4,2 | 5,0* | | East of Kuril Islands |
| | | 18 | 00 17 00 | 52,2 | 160,3 | 15 | 4,7 | 5,1* | | East of Kamchatka |
| | | | 00 31 34 | 52,2 | 160,3 | 15 | | 5,0 | | The same |
| | | 27 | 00 56 01 | 43,0 | 147,3 | 30 | 4,1 | 5,2* | | East of Hokkaido Island |
| | | | 04 26 29 | 55,5 | 166,2 | 20 | 5,2 | | | Komandorskiye Islands |
| 20 | | | 04 26 46 | 55,4 | 166,3 | 33 | 5,9<br>5,9 | 5,9<br>5,5* | | The same |
| 21 | | 28 | 11 34 59 | 46,5 | 153,1 | 45 | 6,9<br>6,8 | 6,9<br>6,6* | | East of Kuril Islands |
| | | | 11 52 51 | 46,7 | 153,3 | 30 | | 5,2* | | The same |
| | | | 11 59 43 | 46,5 | 153,1 | 25 | | 5,2* | | " " |
| | | | 13 04 17 | 46,5 | 152,9 | 30 | | 5,1* | | " " |
| 22 | | | 13 31 38 | 46,4 | 153,3 | 40 | 5,9<br>5,6 | 6,4<br>5,7* | | " " |
| 23 | | | 13 41 37 | 46,7 | 153,3 | 30 | 5,8 | 6,5<br>5,5* | | " " |
| | | | 15 10 34 | 46,2 | 153,0 | 30 | | 5,0* | | " " |
| | | | 16 22 56 | 46,2 | 153,1 | 45 | | 5,0* | | " " |
| | | | 16 27 31 | 46,2 | 153,2 | 30 | | 5,2* | | " " |
| | | | 16 33 55 | 46,4 | 153,2 | 35 | 5,3 | 5,2* | | " " |
| | | | 16 56 31 | 46,1 | 153,1 | 20 | | 5,0* | | " " |
| | | 28 | 17 05 40 | 46,3 | 153,0 | 30 | | 5,0 | | " " |
| | | | 18 00 46 | 46,5 | 153,3 | 30 | 5,0 | 5,2* | | " " |
| | | 29 | 02 13 48 | 46,4 | 153,2 | 40 | 4,6 | 5,0* | | " " |
| 24 | | | 03 15 16 | 46,3 | 152,9 | 40 | 6,5<br>6,3 | 6,5<br>6,5<br>6,0* | | " " |
| 25 | | | 07 16 26 | 46,1 | 153,0 | 35 | 6,6<br>6,4 | 6,2<br>6,7<br>6,2* | | " " |
| | | | 14 21 16 | 46,2 | 152,8 | 20 | 4,8 | 5,1* | | " " |
| | | | 19 50 43 | 46,1 | 152,9 | 30 | 4,4 | 5,1* | | " " |
| | | 30 | 22 39 45 | 46,4 | 153,1 | 40 | 5,1 | 5,3* | | " " |
| | VIII | 1 | 22 39 22 | 49,7 | 156,1 | 50 | 5,3 | 5,9<br>5,4* | | " " |
| | | 17 | 05 13 12 | 54,7 | 144,3 | 15 | 5,4 | 5,2* | | Sea of Okhotsk |
| 26 | IX | 13 | 07 53 02 | 55,2 | 162,2 | 60 | 5,8<br>5,7 | 6,1<br>5,9* | | East of Kamchatka |
| | | 16 | 20 57 02 | 44,3 | 148,7 | 45 | 5,2<br>5,4 | 5,5* | | East of Kuril Islands |
| | | 17 | 08 52 33 | 52,3 | 160,2 | 0–5 | 4,4 | 5,0* | | East of Kamchatka |
| | | 19 | 01 49 14 | 43,2 | 147,6 | 30 | 4,3 | 5,0* | | East of Hokkaido |
| 27 | | 20 | 00 53 01 | 43,1 | 144,8 | 45 | 5,5<br>5,6 | 6,3<br>5,8* | | The same |

| (1) № | (2) Месяц | (3) Число | (4) Момент возникновения, час мин сек | (5) Координаты эпицентра φ°N | λ°E | (6) Глубина очага, км | $M_L$ | $m_{PV}$ | K | (7) Район |
|---|---|---|---|---|---|---|---|---|---|---|
| 28 | | 27 | 05 47 29 | 43,1 | 146,7 | 45 | 7,2<br>7,3 | 6,9<br>7,0<br>6,7* | | East of Hokkaido Island |
| | X | 4 | 17 36 11 | 52,3 | 160,3 | 60 | 4,7 | 5,3* | | East of Kamchatka |
| | | | 17 55 40 | 52,4 | 160,3 | 58 | 4,8 | 5,1* | | " " |
| | | | 17 58 14 | 52,5 | 159,8 | 60 | 5,2 | 5,4* | | " " |
| | | | 22 35 27 | 52,2 | 160,6 | 60 | | 5,6* | | " " |
| 29 | | 9 | 07 32 03 | 44,7 | 150,3 | 50 | 6,8<br>6,8 | 7,1<br>6,5* | | East of Kuril Islands |
| | | 30 | 10 33 48 | 44,6 | 143,3 | 20 | 4,8 | 5,3* | | Sea of Okhotsk |
| | XI | 7 | 00 02 20 | 44,2 | 148,5 | 30 | | 5,4* | | East of Kuril Islands |
| | | | 04 59 09 | 43,3 | 146,2 | 50 | | 5,2 | | The same |
| | | 12 | 03 16 35 | 45,1 | 150,8 | 55 | | 5,5* | | " " |
| | | 17 | 17 24 19 | 54,7 | 161,8 | 25 | 4,4 | 5,1* | | Kamchatka |
| | XII | 3 | 19 18 56 | 48,1 | 154,1 | 40 | | 5,1* | | East of Kuril Islands |
| | | 14 | 12 31 31 | 47,1 | 154,5 | 30 | 4,7 | 5,2* | | The same |
| | | | Deep Earthquakes | | | | | | | |
| | II | 26 | 06 23 48 | 53,2 | 159,9 | 80 | | 5,5* | | Kamchatka |
| 30 | III | 11 | 11 37 32 | 48,1 | 153,2 | 165 | | 6,3<br>6,0* | | Kuril Islands |
| | | 17 | 01 19 52 | 44,2 | 147,5 | 90 | | 5,1* | | East of Kuril Islands |
| | IV | 1 | 15 34 51 | 43,6 | 145,8 | 80 | | 5,1* | | East of Hokkaido |
| | | 6 | 22 07 15 | 43,4 | 146,2 | 75 | | 5,1 | | The same |
| 31 | | 9 | 13 11 26 | 45,8 | 148,1 | 150 | | 6,5<br>5,7* | | Kuril Islands |
| 32 | V | 5 | 19 10 40 | 46,0 | 149,4 | 150 | | 5,5<br>5,1* | | West of Kuril Islands |
| | | 31 | 01 57 05 | 54,0 | 159,7 | 120 | | 4,8* | | Kamchatka |
| | VII | 14 | 16 25 30 | 51,7 | 152,9 | 450 | | 5,1* | | Sea of Okhotsk |
| | | 15 | 09 06 56 | 55,5 | 160,9 | 160 | | 5,1* | | Kamchatka |
| | | 22 | 13 18 45 | 55,5 | 160,9 | 170 | | 5,0* | | " |
| 33 | VIII | 6 | 16 49 23 | 47,1 | 150,4 | 180 | | 5,5* | | Sea of Okhotsk |
| 34 | IX | 16 | 21 55 53 | 49,7 | 155,9 | 80 | | 5,9<br>5,7* | | East of Kuril Islands |
| 35 | | 21 | 15 54 59 | 52,1 | 157,4 | 130 | | 5,8<br>5,6* | | Kamchatka |
| | | 24 | 07 32 45 | 55,8 | 160,3 | 210 | | 4,9* | | " |
| | X | 7 | 09 53 10 | 45,7 | 143,3 | 325 | | 5,1* | | Sea of Okhotsk |
| 36 | | 21 | 12 48 19 | 53,8 | 160,3 | 90 | | 5,5* | | East of Kamchatka |
| | | 27 | 02 29 24 | 44,9 | 145,0 | 225 | | 5,1* | | Sea of Okhotsk |
| | XI | 2 | 19 43 41,7 | 43,0 | 144,4 | 120 | | 5,3* | | East of Kuril Islands |
| | | 9 | 05 46 24 | 48,1 | 152,8 | 145 | | 5,0* | | Sea of Okhotsk |
| | XII | 5 | 22 58 56 | 45,9 | 149,2 | 190 | | 5,0* | | " " |
| | | 20 | 12 16 50 | 50,8 | 157,1 | 80 | 4,5 | 5,3* | | East of Kuril Islands |
| 37 | | | 16 38 56 | 49,5 | 149,5 | 435 | | 5,5* | | Sea of Okhotsk |
| | | 25 | 15 03 17 | 52,3 | 152,2 | 530 | | 5,2* | | " " |

The magnitudes of $M_L$ and $m_{PV}$ were determined by the SK, SKD and SKM-3 equipment. The latter are indicated by an asterisk.

EARTHQUAKES OF CARPATHIA

[Article by O. P. Kostyuk, I. M. Rudenskaya, R. S. Pronishin]

In processing the Carpathian earthquakes in 1974, the observation data for the seismic stations of the Ukrainian SSR were used: L'vov, Uzhgorod, Rakhov, Mezhgor'ye, Kosov (see the table) and also the bulletins of the seismic stations: Kishinev, the Moldavian SSR: Chernovtsy, Chernovitskiy State University: the stations of the Crimean network and foreign stations: Bulgaria, Hungary, Romania, Poland and Czechoslovakia.

As a result of the complex processing of the instrument data, the coordinates of the epicenters and other basic parameters were obtained for 19 earthquakes which are presented in the catalog: the location of the epicenter is indicated on the map (see Fig 1). As is obvious, all of the earthquakes are concentrated in two seismically active regions: the northwestern part (region No 1) and Vrancha (region No 2).

In 1974 the seismic activity of the first region was quite high. Thirteen earthquakes were noted here, of which 8 occurred in Transcarpathia, in the vicinity of the city of Irshava, 4 in Marmarosh, 1 in Precarpathia, in the vicinity of the Dolina city. In the second region five deep-focus earthquakes were recorded in the mountains of Vrancha and one with surface center in the vicinity of Tekuch-Byrlad.

The series of Transcarpathian earthquakes in the vicinity of Irshava started on 25 February witha force 5 earthquake at 0159 hours. Two hours later, at 0345 hours, came a repeated shock with an intensity of approximately force 3. On 5 March three earthquakes occurred in this vicinity at 2045 hours, 2046 hours and 2324 hours (the last two were felt as about force 4). The final shocks were the earthquakes on 28 March at 2138 hours, 31 March at 0606 hours and 0609 hours. The macroseismic information about the earthquakes on 25 February and 5 March was gathered by I. M. Rudenskaya and R. S. Pronishin by interrogating the population and familiarization with the region and also by letters from correspondents. The diagram of the earthquake isoseisms on 25 February at 0159 hours is presented in Fig 2. A description is presented below of the nature of the manifestation of an earthquake in certain populated areas.

Zavidovo (No 1). In the houses made of raw brick and mixed log and brick masonry, cracks were observed, and sometimes pieces of the plaster collapsed. In one house the bricks fell out of the chimney. The people felt a strong vibration of the ground, the dishes and windows rattled. People who were asleep woke up and ran out into the street (force 5).

Basic Parameters of the Recording Equipment

| (1) Станция | (2) Тип аппаратуры | Z | | E-W | | N-S | |
|---|---|---|---|---|---|---|---|
| | | $V_{max}$ | $T_{max}$ | $V_{max}$ | $T_{max}$ | $V_{max}$ | $T_{max}$ |
| (3) Львов | СКД (9) | 1 050 | 0,3-20 | 1 090 | 0,3-20 | 1 050 | 0,3-20 |
| (4) Ужгород | СКД | 1 000 | 0,3-20 | 1 000 | 0,3-20 | 1 000 | 0,3-20 |
| (5) То же, павильон* | СКМ (10) | 44 000 | 0,2-0,9 | 44 000 | 0,2-0,9 | 44 000 | 0,2-0,9 |
| (6) Рахов | СКМ | 61 000 | 0,2-1,0 | 43 000 | 0,2-1,0 | 44 000 | 0,2-1,0 |
| (7) Межгорье | СКМ | 26 000 | 0,2-0,9 | 32 600 | 0,2-0,9 | 29 300 | 0,2-0,9 |
| (8) Косов | СКД | 1 050 | 0,3-20 | 1 090 | 0,3-20 | 1 100 | 0,3-20 |
| | СКМ | 8 850 | 0,2-1,4 | 10 650 | 0,2-1,4 | 10 850 | 0,2-1,4 |

Key:
1. Station
2. Type of equipment
3. L'vov
4. Uzhgorod
5. The same, an arbor*
6. Rakhov
7. Mezhgor'ye
8. Kosov
9. SKD
10. SKM

*In Uzhgorod, the SKM-3 instruments were installed in an arbor, 6 km to the northeast of the station.

Zagat'ye (No 2). All of the people inside facilities felt the earthquake. The people sleeping woke up and ran out into the streets. In a store a picture fell of the wall and books and dishes fell off the shelves. Unlocked doors and windows opened and again slammed shut. Thin cracks were observed in the houses. A rumble underground was heard (force 5). The earthquake in the city of Negrovo (No 3) was felt with the same force.

Dorobratovo (No 4). The earthquake was noted by the majority of the population. The people felt a vibration and ran out into the street. Unstable objects turned over, windows and dishes rattled. A ceiling light fixture fell down in one house (force 4-5).

Gorbok (No 5). Many people who were sleeping felt the house and furniture tremble (force 4).

Klimovitsa (No 6). The vibrations from the earthquake were similar to the tremor created by a passing tractor. The windows, doors and dishes rattled (force 4).

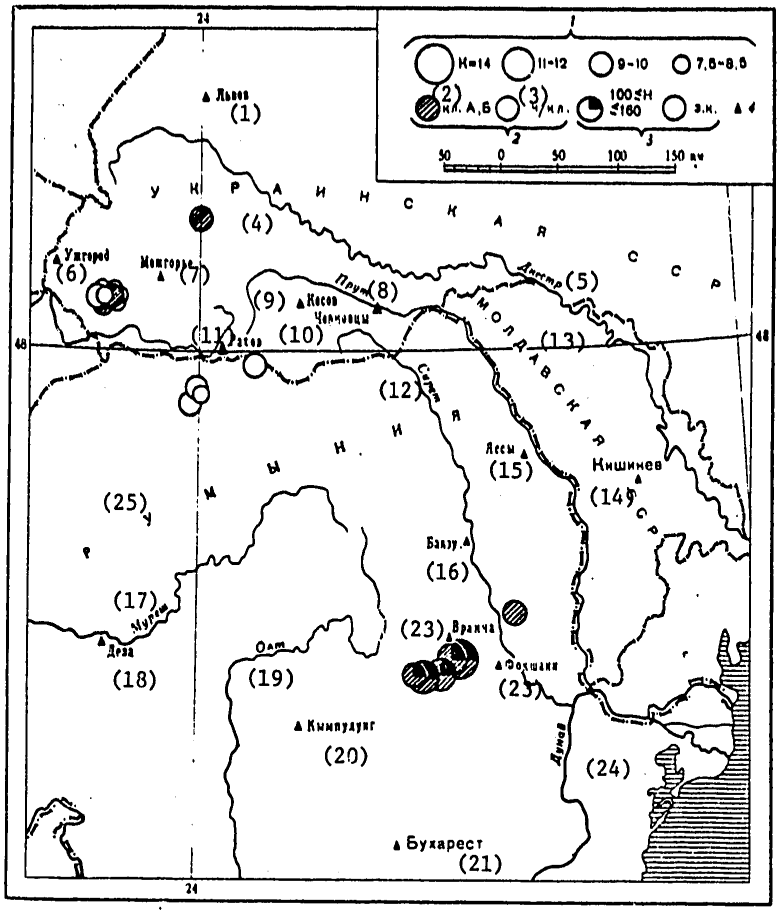


Figure 1. Map of the epicenters of the earthquakes of Carpathia

1 -- energy of the earthquake; 2 -- accuracy of determining the epicenter; 3 -- depth of center, km; 4 -- seismic stations

Key:

1. L'vov
2. kl.
3. ch/kl.
4. Ukrainian SSR
5. Dnestr
6. Uzhgorod
7. Mezhgor'ye
8. Prut
9. Kosov
10. Chernovtsy
11. Rakhov
12. Siret
13. Moldavian SSR
14. Kishinev
15. Yassy
16. Bakeu
17. Muresh
18. Deva
19. Olt
20. Kympulung
21. Bucharest
22. Vrancha
23. Fokshani
24. Danube River
25. Romania

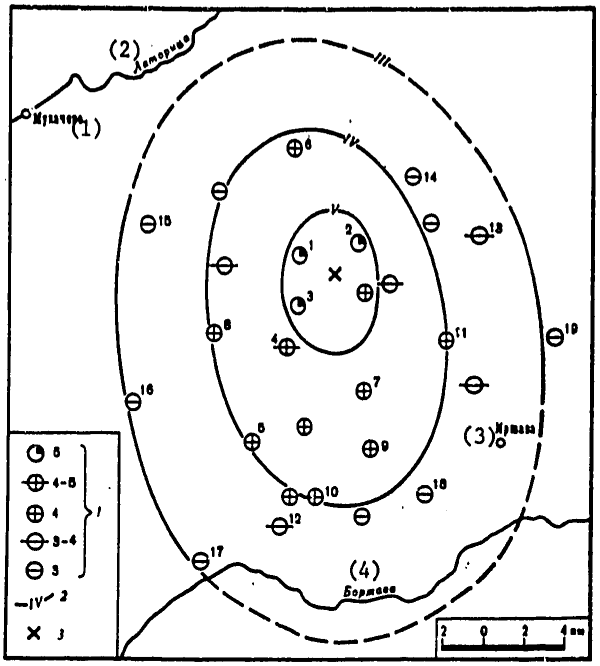


Figure 2. Diagram of the isoseisms of the Transcarpathian earthquake of 25 February 1974
1 -- intensity in force points; 2 -- isoseisms; 3 -- epicenter

Key:
1. Mukachevo
2. Latoritsa
3. Irshava
4. Borzhava

Ardanovo (No 7). The earthquake was felt by the majority of the population. The windows, dishes and tin roof rattled (force 4).

Zaluzh'ye (No 8). The earthquake was also felt by many people, and the people sleeping woke up. Windows and dishes rattled (force 4). The tremors in the settlements of Medenitse (No 9), Bogarevitse (No 10), Brod (No 11) were of the same force. The tremors in the settlements of Khmel'nik (No 12) and Podgornoye (No 13) were force 3-4.

Lokot' (No 14). Only individual people noticed the earthquake. Slight shaking of the windows was observed (force 3).

Lalovo (No 15), Makarevo (No 16), Nizhniye Remety (No 17), Sel'tso (No 18), Il'nitsa (No 19). The earthquake was noted by some people inside facilities (force 3).

When processing the instrument data on the earthquakes of the northwestern region, the materials from the regional stations of Mezhgor'ye, Rakhov, Uzhgorod, and Kosov were used, and in the case of stronger earthquakes ($K \geq 8.5$), the seismic station of L'vov, the Hungarian stations of Yoshvafe, Pikshtety, the Romanian stations of Deva and Vrancha. When processing the earthquake of 25 February we had at our disposal also data from the Polish seismic station of Nedzitsa and the Hungarian station of Sopron.

The coordinates of the epicenter of the earthquake of 25 February $\phi=48.40°N$, $\lambda=22.98°E$, obtained by the instrument data, coincide with the macroseismic coordinates. The magnitude was determined by the shifts in the volumetric waves according to the data from four stations ($M=2,3$), and by the macroseismic materials ($M=2.5$) [1], the depth of center $h=3$ km except according to the macroseismic data.

The earthquakes in the vicinity of Marmarosh on 16 April at 2155 hours, 23 June at 0722 hours and 0736 hours occurred in the Sigetskiy junction, the seismicity of which was especially manifested in 1970-1971. The energy class of these earthquakes K=7.5 to 9.0.

The earthquake of 14 May at 0830 hours, the center of which was located in Predkarpat'ye [Precarpathia] arouses special interest. The earthquake was felt in the city of Dolina of the Ivanovo-Frankovskaya Oblast with force 4 (K=10.0). It was recorded well by the seismic stations at a distance of 400 km, including the Polish, Hungarian and Romanian stations, and the Czechoslovakian stations of Prugonitsa and Kashperskiye Mountains ($\Delta=700$ to 800 km) noted transverse waves. Thus, the coordinates of the epicenter were determined with sufficient accuracy, which is especially important, for this was the first earthquake recorded in this area.

Out of the 13 earthquakes of the northwest regions, 7 had an energy class of K=9.0 to 10.0 (to estimate the energy classes of the earthquakes with the centers in the earth's crust the Rautian nomogram was used).

The coordinates of the epicenters were determined by the method of the Yevseyev epicentrals, and in the case of a small number of initial data, by the hyperbola method ($V_{\overline{P}}=5.7$ sec/km).

When determining the coordinates of the earthquakes in the Vrancha region, the epicentral procedure was used. Data were used from all of the stations of the Carpathian zone both Soviet and foreign. When processing the earthquake with K>11 we had at our disposal the data from the stations of the Crimean network and the remote foreign stations.

The energy class of the deep earthquakes was estimated by the recording range, and the depth, by the convergence of the time at the center with respect to the Jeffries-Bullen hodograph.

The strongest earthquake in this region was the deep-focus earthquake of 17 July at 0509 hours recorded by the stations in the Soviet Union at a distance of 8000 km. It was felt in Kishinev as force 3.

The earthquake on 4 April at 1026 hours occurred in the vicinity of Tekuch-Byrlad (K=10.5). The epicenter was determined quite reliably by the data from our Carpathian stations, Romanian and Hungarian stations. The center is located within the limits of the earth's crust at a depth of about 33 km.

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Catalog of Carpathian Earthquakes in 1974

| (1) Дата | (2) Момент возникновения, час мин сек | (3) Координаты эпицентра $\varphi^0$N | $\lambda^0$E | (4) Глубина очага, км | (5) Класс точности | $M^*$ | $K$ | (6) № района | (7) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|
| 5.I | 04 28 09 | 45,6 | 26,3 | 100 | Б | | 10 | 2 | |
| 22.II | 13 40 48 | 45,6 | 26,4 | 150 | Б | | 12 | 2 | |
| 25.II | 01 59 04 | 48,4 | 23,0 | 3 | Б | 2,3(4) | 9,0 | 1 | Завидово, Загатье, 5 баллов; лужье, 4 балла (8) |
| 25.II | 03 45 33 | 48,4 | 23,0 | | | 1,5(4) | 7,5 | 1 | Загатье, 3 балла (9) |
| 5.III | 20 45 32 | 48,4 | 22,9 | | | 1,4(3) | 7,5 | 1 | |
| 5.III | 20 46 10 | 48,4 | 22,9 | | | 2,2(4) | 9,0 | 1 | Завидово, Загатье; 4 балла (10) |
| 5.III | 23 24 26 | 48,3 | 22,9 | | Б | 2,0(4) | 9,0 | 1 | Завидово, Загатье, 4 балла (11) |
| 28.III | 21 38 08 | 48,4 | 22,9 | | | 1,9(4) | 8,5 | 1 | |
| 31.III | 06 06 03 | 48,4 | 23,0 | | | 2,0(3) | 8,5 | 1 | |
| 31.III | 06 09 39 | 48,4 | 23,0 | | | 2,0(3) | 8,5 | 1 | |
| 4.IV | 10 26 13 | 46,0 | 27,4 | 33 | Б | 3,2(2) | 10,5 | 2 | |
| 16.IV | 21 55 44 | 47,6 | 23,9 | | | 2,0(3) | 9,0 | 1 | |
| 14.V | 08 30 43 | 49,0 | 24,0 | | Б | 2,7(5) | 10,0 | 1 | Долина, 4 балла (12) |
| 10.VI | 05 11 00 | 45,6 | 26,6 | 160 | А | 4,8** | 12 | 2 | |
| 23.VI | 07 22 18 | 47,7 | 24,0 | | | 2,3(2) | 9,0 | 1 | |
| 23.VI | 07 36 34 | 47,7 | 24,0 | | | 1,4(3) | 8,0 | 1 | |
| 17.VII | 05 09 23 | 45,7 | 26,8 | 160 | А | 5,7** | 14 | 2 | Кишинев, 3 балла (13) |
| 18.VII | 22 28 23 | 45,7 | 26,7 | 160 | Б | | 11 | 2 | |
| 14.XI | 14 28 02 | 47,9 | 24,6 | | | 2,4(4) | 9,5 | 1 | |

Key:

1. Date; 2. Time of occurrence, hours, minutes, seconds; 3. coordinates of the epicenter; 4. depth of center, km; 5. accuracy class; 6. region No.; 7. macroseismic data.
8. Zavidovo, Zagat'ye, force 5; luzh'ye, force 4; 9. Zagat'ye, force 3; 10. Zavidovo, Zagat'ye, force 4; 11. Zavidovo, Zagat'ye, force 4; 12. Dolina, force 4; 13. Kishinev, force 3.

[See notes on following page]

[Notes to table on preceding page]:

*The magnitude was determined by the formula $M=\lg A_{max}+1.3\lg\Delta$ km; the number of stations the data of which were used to make the determinations is indicated in parentheses.

**The seismology bulletin of the network of reference seismic stations of the USSR.

CRIMEAN EARTHQUAKES

[Article by I. B. Dubinskiy, S. A. Kapitanova, I. I. Popov]

The network of seismic observations in 1974 in the Crimea was made up of four stationary seismic stations in the seismology division of the Geophysics Institute of the Ukrainian SSR Academy of Sciences: Simferopol', Yalta, Alushta and Feodosia. The processing of the seismic observations remained the same as in 1973.

The coordinates in the epicenters of the near earthquakes were determined, just as before, with the application of the intersection method by the standard Crimean hodograph [1]. In individual cases the Vadati method was used. The energy class of the earthquakes was estimated by the new nomogram developed in the seismology division [2]. When processing the earthquakes of the Anapskaya zone, the Jeffries-Bullen hodograph and the Rautian energy nomogram were used [3].

The year of 1974 is characterized by some revival of activity in the Yalta-Alushta center zone in which nine earthquakes were recorded with K=7 to 10. Two earthquakes with K=10 and 10.5 were noted in the vicinity of Anapa.

The basic parameters of the earthquakes are presented in the catalog, and the location of the epicenters is indicated on the map diagram (see the figure).

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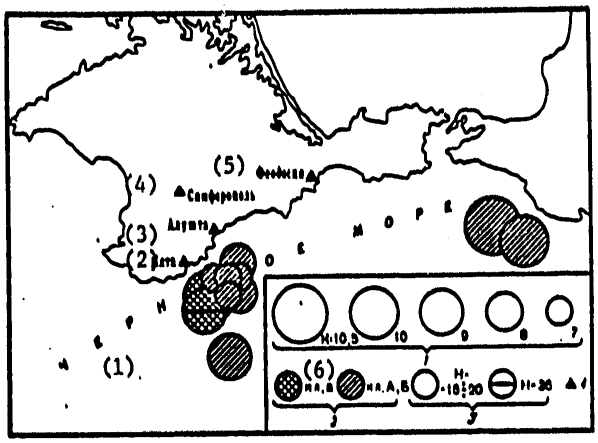
2. Kul'chitskiy, V. Ye.; Pustovitenko, B. G. "Energy Estimate of the Earthquakes of the Crimean-Black Sea Region," MAGNITUDA I ENERGETICHESKAYA KLASSIFIKATSIYA ZEMLETRYASENIY [Magnitude and Energy Classification of Earthquakes], Vol 2, Moscow, In-t Fiziki Zemli AN SSSR, 1974.




Map of the epicenters of Crimean earthquakes with K≥7
1 -- energy of the earthquake; 2 -- accuracy of determining the epicenter; 3 -- depth of center, km; 4 -- seismic stations

Key:

1. Black Sea
2. Yalta
3. Alushta
4. Simferopol'
5. Feodosia
6. kl.

3. INSTRUKTSIYA O PORYADKE PROIZVODSTVA I OBRABOTKI NABLYUDENIY NA SEYSMICHESKIKH STANTSIYAKH YEDINOY SISTEMY SEYSMICHESKIKH NABLYUDENIY SSSR [Instructions on the Procedures for Making and Processing Observations of the Seismic Stations of the Integrated Seismic Observation System of the USSR], Moscow, In-t Fiziki Zemli AN SSSR, 1966.

Catalog of Crimean Earthquakes in 1974

| Дата (1) | Момент возникновения, час мин сек (2) | Координаты эпицентра (3) $\varphi^\circ$N | $\lambda^\circ$E | Глубина очага, км (4) | Класс точности (5) | K | Район (6) | |
|---|---|---|---|---|---|---|---|---|
| 20.I | 11 24 03,6 | 43,9 | 34,5 | 25-30 | А | 9 | Черное море | (8) |
| 16.II | 17 21 09 | (44,3) | (34,5) | 15 | Б | 7 | Ялтинско-Алуштинская зона | (9) |
| 9.IV | 22 58 43,3 | 44,20 | 34,28 | 35 | в | 9 | То же | (10) |
| 3.VI | 03 04 28,5 | 44,6 | 37,4 | В земной коре (7) | А | 10 | Анапская зона | (11) |
| 13.VII | 02 05 42 | 44,5 | 34,6 | 15 | А | 8 | Ялтинско-Алуштинская зона | (12) |
| 13.VII | 04 27 14,3 | 44,29 | 34,34 | 20 | в | 10 | То же | (13) |
| 31.VII | 03 19 53 | 44,4 | 34,4 | 15 | Б | 7 | " | |
| 14.VIII | 13 01 46 | 44,7 | 37,1 | В земной коре (7) | А | 10,5 | Анапская зона | (14) |
| 22.VIII | 14 19 39 | 44,4 | 34,5 | 15 | Б | 7 | Ялтинско-Алуштинская зона | (15) |
| 24.VIII | 10 41 28 | 44,3 | 34,6 | 15 | Б | 8 | То же | (13) |
| 3.IX | 13 46 29 | 44,4 | 34,6 | 15 | Б | 7 | " | |

Key:

1. Date
2. Time of occurrence, hours, minutes, seconds
3. Coordinates of the epicenter
4. Depth of center, km
5. Accuracy class
6. Region
7. In the earth's crust
8. Black Sea
9. Yalta-Alushta zone
10. The same
11. Anapskaya zone
12. Yalta-Alushta zone
13. The Same
14. Anapskaya zone
15. Yalta-Alushta zone

EARTHQUAKES IN THE CAUCASUS

[Article by V. G. Papalashvili, A. Kh. Bagramyan, Z. Z. Sultanova, T. M. Lebedeva, L. K. Darakhvelidze, Ts. A. Tabutsadze, L. A. Kakhiani, L. B. Labadze, L. A. Bikashvili, N. I. Shalamberidze, S. G. Kaziyeva, V. V. Chikovani, E. G. Ceodakyan, M. D. Petrosyan, G. V. Sarkisyan]

In the territory of the Caucasian seismic zone bounded by the coordinates of 38 to 45° north latitude and 38 to 52° east longitude, observations were made in 1974 at 36 stationary seismic stations of which 28 were equipped with devices with increased sensitivity. The list of seismic stations of the Caucasian region with indication of the equipment and the basic constant characteristics of this equipment is presented in reference [1]. The amplitude-frequency characteristics of the recording equipment of the seismic stations in the Caucasus in 1973 are presented in reference [2].

The determination of the coordinates of the earthquake hypocenters in 1974 was basically made by the method of intersections using hodographs constructed for the Caucasus and the Dzhavakhetskoye Highland [3, 4]. The coordinates of the hypocenters of the Turkish and Iranian earthquakes located 100 km farther from the border of the country were found using the Jeffries-Bullen hodographs. In individual cases the epicentral, isocron and mean line methods were used. When preparing the summary bulletin, in addition to the observations of the Caucasus stations, the data from the Operative Seismology Bulletin of the Earth Physics Institute of the USSR Academy of Sciences were used.

In all, this year in the Caucasus epicenters were determined for 901 earthquakes. Their distribution with respect to energy classes for the entire Caucasus, its eastern part and the Dzhavakhetskoye Highland is presented below:

| No of earthquakes: | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|
| Caucasus | 6 | 70 | 261 | 319 | 165 | 60 | 16 | 1 | 3 |
| Eastern Caucasus | – | 1 | 20 | 62 | 46 | 18 | 4 | – | 3 |
| Dzhavakhetskoye Highland | 3 | 52 | 114 | 71 | 12 | 4 | 1 | – | – |

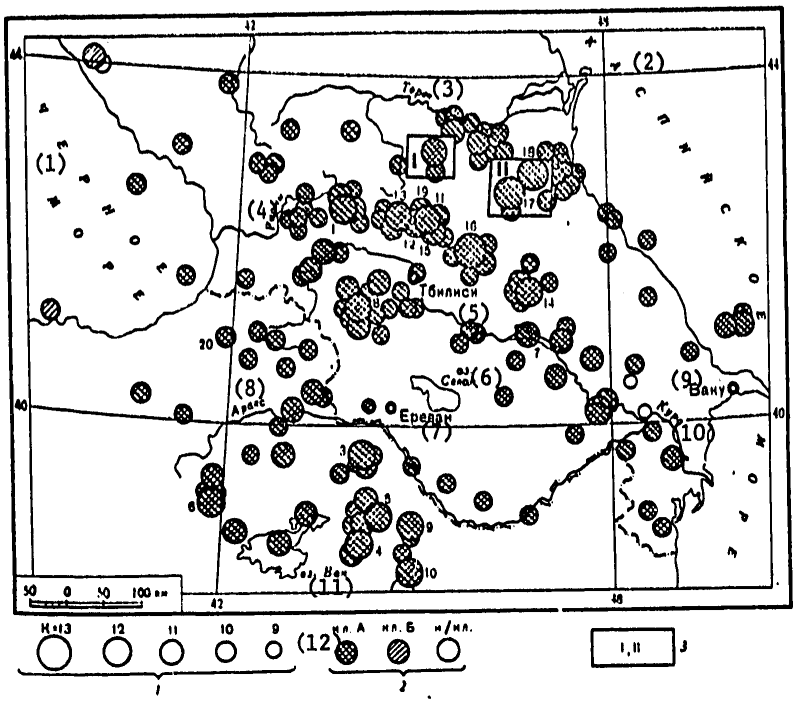



Figure 1. Map of the epicenters of the earthquakes in the Caucasus with K≥9

1 -- earthquake energy; 2 -- accuracy of determining the epicenter; 3 -- number of earthquakes in area I: 3 -- with K=10, 16 -- with K-9; in area II: 8 -- with K=10, 14 with K=9

Key:

1. Black Sea
2. Caspian Sea
3. Terek
4. Rioni
5. Tbilisi
6. Lake Sevan
7. Yerevan
8. Araks
9. Baku
10. Kura
11. Van Lake
12. kl.

The catalog contains basic data on earthquakes with K≥9. The numbers of the regions are indicated in accordance with the distribution of the territory of the Caucasus presented in reference [1].

In order to study the peculiarities of the location of the earthquake centers, two maps of the epicenters were constructed: the epicenters of the earthquakes with K≥9 were applied to the first (see Fig 1),

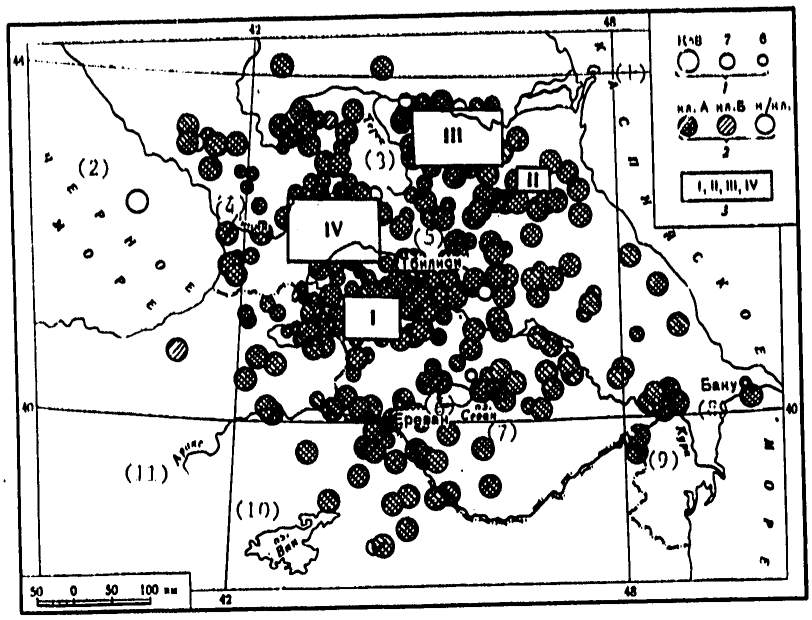



Figure 2. Map of the epicenters of the earthquakes of the Caucasus with K=6-8

1 -- earthquake energy; 2 -- accuracy of determining the epicenter; 3 -- number of earthquakes in area I: 50 -- with K=8, 95 with K=7, 45 with K=6; II: 17 with K=8; III: 36 with K=8, 15 with K=7; IV: 24 with K=8, 35 with K=7.

Key:

1. Caspian Sea
2. Black Sea
3. Terek
4. Rioni
5. Tbilisi
6. Yerevan
7. Lake Sevan
8. Baku
9. Kura
10. Van Lake
11. Araks

the epicenters with K=6 to 8 were applied to the second (see Fig 2). As is obvious from the maps, in 1974 great clustering of the epicenters was observed in the territory of the Dzhavakhetskoye Highland and the eastern Caucasus.

The most significant seismic events in 1974 were the earthquakes felt to force 7 in the epicentral region: the Shakhnazarskoye earthquake of 30 March at 0034 hours (No 8) in Kalinin Rayon, Armenian SSR, the Bezhtinskoye earthquake of 4 August at 1506 hours (No 16) in Bezhta, the Dagestan ASSR, the Kilyatlinskoye earthquake of 13 November at 0236 hours (No 17) in the Dagestan ASSR and the Salatauskoye earthquake of 23 December at 0522 hours (No 18) in the Dagestan ASSR.

In addition to these earthquakes, in the Caucasus a large number of earthquakes occurred this year (Nos 1, 3, 11, 15, 19, and so on) which were felt with force 4-5 at points somewhat closer to the epicenter. The information about their perceptibility was entered in the earthquake catalog.

Comparatively many earthquakes with K≥11 occurred this year in the territory of Georgia (Nos 3, 4, 6), bordering with Iran (Nos 9, 10), in the Caspian Sea (No 2), in the Kurinskaya depression (Nos 7, 20), in eastern and central Caucasus (Nos 11, 14 and No 1). However, the highest seismic activity characterized the eastern part of the greater Caucasus where three earthquakes felt with a force to 7 were recorded this year.

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| № (1) | Число (2) | Момент возникновения, час мин сек (3) | Координаты эпицентра (4) φ°N | λ°E | Глубина очага, км (5) | Класс точности (6) | M | K | № района (7) | Макросейсмические данные (8) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | January | | | | | | |
| 1 | | 05 07 21,0 | 43,4 | 43,8 | | A | | 9 | 13 | |
| 4 | | 16 55 22,6 | 39,0 | 46,7 | | – | | 9 | 17 | |
| 5 | | 04 03 41,4 | 39,3 | 41,9 | | – | | 9 | 16 | |
| 6 | | 21 37 23,6 | 38,7 | 42,9 | | A | 4 | 10 | 16 | |
| 10 | | 17 08 03,4 | 41,21 | 44,00 | 0–10 | 6 | | 10 | 6 | Dmanisi, force 4; Bogdanovka, force 3-4 |
| | | 22 12 41,9 | 39,7 | 44,3 | | A | | 9 | 16 | |
| 15 | | 02 54 15,0 | 39,1 | 51,2 | | A | | 10 | 11 | |
| 16 | | 12 12 53,8 | 40,7 | 48,4 | | A | | 9 | 3 | |
| 17 | | 04 38 20,7 | 41,8 | 44,9 | | A | | 9 | 3 | |
| 21 | | 02 25 09,0 | 41,5 | 48,6 | | A | | 9 | 3 | |
| 22 | | 19 35 30,8 | 44,1 | 39,5 | | Б | | 10 | 1 | Lazarevskoye, force 4-5; Sochi, force 4 |
| 23 | | 01 00 00,8 | 43,1 | 45,2 | | A | | 9 | 13 | |
| | | 19 27 08,1 | 39,0 | 43,3 | | A | | 10 | 16 | |
| 24 | | 09 03 07,4 | 44,0 | 39,6 | | A | | 9 | 1 | Lazarevskoye, force 4 |
| 26 | | 00 10 30,9 | 43,6 | 45,8 | | A | | 9 | 13 | |
| 27 | | 16 19 10,1 | 40,8 | 47,0 | | A | | 9 | 7 | |
| 28 | | 01 55 46,7 | 41,1 | 49,0 | | A | | 10 | 11 | |
| 29 | | 03 06 18,0 | 43,2 | 45,1 | | A | | 9 | 13 | |
| | | | | February | | | | | | |
| 4 | | 02 24 59,4 | 41,7 | 41,2 | | A | | 9 | 10 | |
| | | 20 44 33,4 | 42,47 | 43,78 | | 6 | | 10 | 2 | |
| | | 20 52 16,8 | 42,45 | 43,77 | | 6 | | 9 | 2 | |
| | | 21 34 43,4 | 42,47 | 43,77 | | 6 | | 10 | 2 | |
| 5 | | 08 33 44,6 | 40,0 | 42,8 | | A | | 9 | 16 | |
| | | 22 12 30,9 | 38,8 | 48,7 | | A | | 9 | 14 | |
| 6 | | 02 33 52,4 | 39,6 | 44,9 | | A | | 9 | 17 | |
| 9 | | 02 14 17,2 | 43,6 | 45,5 | | A | | 9 | 13 | |
| 10 | | 04 48 30,8 | 37,8 | 48,5 | | A | | 9 | 17 | |

Key:

1. No
2. Number
3. Time of occurrence, hours, minutes, seconds
4. Coordinates of the epicenter
5. Depth of center, km
6. Accuracy class
7. Region No
8. Macroseismic data

[Table, continued]

| № (1) | Число (2) | Момент возникновения, час мин сек (3) | Координаты эпицентра (4) φ°N | λ°E | Глубина очага, км (5) | Класс точности (6) | M | K | № района (7) | Макросейсмические данные (8) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12 | 10 58 32,9 | 42,50 | 43,75 | | 6 | | 11 | 2 | |
| | | 18 38 24,3 | 42,53 | 43,75 | | 6 | | 10 | 2 | |
| | 13 | 04 57 46,4 | 41,0 | 41,9 | | A | | 9 | 16 | |
| | 14 | 02 05 45,7 | 42,40 | 43,05 | 0–10 | 6 | | 9 | 2 | Tkibuli, force 3-4 |
| | | 02 06 23,3 | 42,5 | 43,8 | | A | | 9 | 2 | |
| 2 | 16 | 07 25 55,5 | 41,4 | 51,2 | 50 | A | | 11 | 11 | Off the map |
| | 19 | 16 26 07,7 | 41,9 | 45,7 | | A | | 9 | 3 | |
| | 21 | 01 12 08,5 | 38,0 | 43,2 | | A | 3,5 | 10 | 16 | |
| | 22 | 19 06 56,5 | 39,7 | 44,2 | | A | | 9 | 16 | |
| | 23 | 02 05 40,0 | 43,2 | 46,3 | | A | | 9 | 3 | |
| 3 | 24 | 05 35 11,4 | 39,7 | 44,1 | | A | 3,9 | 11 | 16 | |
| | | | March | | | | | | | |
| | 2 | 14 14 27,2 | 40,5 | 44,7 | 0–10 | A | | 9 | 9 | Chereptsevan, force 3-4 |
| | | 16 38 45,9 | 39,7 | 42,4 | | A | | 9 | 16 | |
| 4 | 8 | 08 48 11,9 | 38,7 | 44,1 | | A | 3,9 | 11 | 16 | |
| 5 | 12 | 06 53 52,0 | 39,0 | 44,4 | 45 | A | 4,4 | 11 | 17 | |
| | | 09 58 58,4 | 39,7 | 42,9 | | A | 3,3 | 10 | 16 | |
| | | 20 43 33,9 | 40,1 | 41,3 | | A | | 9 | 16 | |
| 6 | 15 | 17 05 30,6 | 39,1 | 41,8 | | A | 3,8 | 11 | 16 | |
| | | 22 45 03,5 | 43,1 | 45,3 | | A | | 9 | 13 | |
| | 18 | 13 12 26,7 | 39,1 | 44,1 | | A | | 9 | 16 | |
| | 19 | 20 42 46,2 | 42,1 | 48,6 | | A | | 9 | 11 | |
| | 22 | 23 46 37,1 | 43,3 | 45,9 | | A | | 9 | 13 | |
| | 24 | 01 36 30,0 | 43,2 | 46,1 | | A | | 9 | 13 | |
| 7 | | 07 36 30,1 | 41,1 | 46,7 | | A | 3,7 | 11 | 7 | |
| | 25 | 22 16 50,9 | 39,9 | 48,6 | | A | | 9 | 7 | |
| | 26 | 18 30 02,8 | 43,0 | 45,3 | | A | | 9 | 3 | |
| 8 | 30 | 00 34 58,4 | 41,40 | 43,97 | 0–10 | a | 3,9 | 11 | 6 | |
| | 31 | 11 26 12,5 | 41,32 | 44,07 | 0–10 | 6 | | 9 | 6 | |
| | | 18 43 40,8 | 42,3 | 45,4 | | A | | 9 | 3 | |
| | | | April | | | | | | | |
| | 2 | 23 20 30,5 | 38,6 | 44,0 | | A | 3,7 | 10 | 16 | |
| | 4 | 01 48 32,0 | 43,3 | 45,9 | | A | | 10 | 13 | |
| | 6 | 21 47 11,8 | 42,5 | 43,8 | 0–10 | A | | 9 | 2 | |
| | 9 | 00 28 58,4 | 38,35 | 44,21 | | A | | 10 | 16 | |
| | 10 | 03 25 34,2 | 39,2 | 46,0 | 0–10 | A | | 9 | 9 | Kadzharan, force 5; Goris, force 4 |
| | 12 | 19 26 56,0 | 42,4 | 48,1 | | A | | 9 | 11 | |
| | 13 | 13 56 18,1 | 40,4 | 43,3 | | A | | 10 | 16 | |
| | 14 | 04 56 08,0 | 41,61 | 44,70 | 0–10 | 6 | | 9 | 6 | |
| | | 12 14 52,6 | 41,28 | 43,97 | 0–10 | a | | 9 | 6 | |
| | 17 | 21 37 11,3 | 42,98 | 42,59 | 0–10 | 6 | | 9 | 2 | |
| | 19 | 02 20 39,3 | 41,9 | 46,0 | | A | | 10 | 3 | |
| | 20 | 16 05 04,8 | 38,6 | 44,8 | | A | | 9 | 17 | |
| 9 | | 19 53 46,8 | 38,9 | 44,9 | | A | | 11 | 17 | |
| | 22 | 10 53 42,2 | 38,8 | 44,9 | | A | | 9 | 16 | |
| | 24 | 02 43 06,3 | 39,5 | 43,8 | | A | | 9 | 16 | |
| 10 | 30 | 21 16 45,4 | 38,4 | 44,9 | | A | | 11 | 17 | |
| | | | May | | | | | | | |
| | 1 | 09 47 43,4 | 43,4 | 42,8 | | A | | 9 | 2 | |
| | 4 | 13 12 12,4 | 40,5 | 45,2 | | A | | 9 | 8 | |
| | | 13 58 47,7 | 42,03 | 43,70 | 0–10 | 6 | | 9 | 2 | Tskhinvali, Kareli, force 4-5 |
| | 6 | 20 54 19,3 | 41,0 | 45,6 | | A | | 9 | 7 | |
| | 8 | 03 44 04,3 | 41,42 | 43,97 | 0–10 | a | | 9 | 6 | |
| | | 04 34 45,3 | 42,4 | 48,0 | | A | | 9 | 11 | |
| | | 13 20 20,5 | 42,40 | 43,05 | 10 | 6 | 3,4 | 10 | 2 | Ambrolauri, force 4; Tkibuli, force 3-4 |

| № (1) | Число (2) | Момент возникновения, час мин сек (3) | Координаты эпицентра (4) φ°N | λ°E | (5) Глубина очага, км | (6) Класс точности | M | K | (7) № района | (8) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 13 | 18 04 30,9 | 40,8 | 46,5 | | А | | | 9 7 | |
| | 15 | 11 36 34,8 | 42,4 | 44,5 | | А | 3,5 | 10 2 | | Gudamakari, force 4-5 |
| | 25 | 08 08 32,4 | 43,4 | 46,0 | | А | | 9 13 | | |
| | | 22 28 36,0 | 42,40 | 43,03 | 0-10 | б | | 9 2 | | Tkibuli, force 3-4 |
| | 30 | 03 06 21,5 | 43,4 | 46,0 | | А | | 9 13 | | |
| | | 08 05 21,7 | 40,4 | 43,4 | | А | | 9 16 | | |
| | | 09 50 02,4 | 43,1 | 45,3 | | А | | 9 3 | | |
| | | | | June | | | | | | |
| | 1 | 02 39 57,5 | 42,7 | 47,2 | | А | | 9 3 | | |
| | 2 | 08 52 29,4 | 43,5 | 45,9 | | А | | 9 13 | | |
| | 3 | 02 27 15,1 | 45,0 | 42,3 | | А | | 9 12 | | |
| | | 03 04 27,7 | 44,2 | 37,3 | | Б | | 9 10 | | |
| | | 09 44 03,9 | 43,1 | 45,2 | | А | | 9 13 | | |
| | | 20 26 07,5 | 42,4 | 44,9 | | А | | 10 3 | | |
| | 4 | 08 44 34,9 | 43,2 | 45,1 | | А | | 9 13 | | |
| | | 13 10 59,6 | 40,8 | 42,3 | | А | | 9 16 | | |
| | 5 | 11 43 05,7 | 43,2 | 41,0 | | А | | 9 1 | | |
| 11 | 7 | 03 03 41,5 | 42,4 | 45,1 | | А | 3,8 | 11 3 | | Akhmeta, force 4-5<br>Kazbegi, force 4 |
| | | 03 10 52,2 | 42,4 | 45,1 | | А | 3,5 | 11 3 | | |
| 12 | | 03 33 28,9 | 42,5 | 45,1 | | А | | 9 3 | | |
| | | 17 34 47,1 | 43,1 | 45,3 | | А | | 9 3 | | |
| | | 19 31 34,4 | 41,78 | 43,18 | | б | | 10 5 | | |
| | 14 | 20 23 06,3 | 40,9 | 43,2 | 0-10 | А | | 9 16 | | |
| 13 | 15 | 00 52 00,0 | 43,2 | 45,2 | | А | 4,2 | 12 13 | | Ordzhonikidze, force 4-5 |
| | | 03 57 50,3 | 43,2 | 45,2 | | А | 3,5 | 10 13 | | |
| | | 10 27 45,1 | 43,1 | 45,3 | | А | | 9 3 | | |
| | 16 | 08 51 03,1 | 43,2 | 45,2 | | А | | 9 13 | | |
| | 19 | 07 24 38,7 | 41,1 | 43,9 | | А | | 9 8 | | |
| 14 | 22 | 06 11 38,8 | 41,6 | 46,7 | | А | 4 | 11 3 | | |
| | | 11 30 41,5 | 43,0 | 44,6 | | А | | 9 2 | | |
| | 23 | 15 04 04,3 | 43,1 | 45,3 | | А | | 9 3 | | |
| | 24 | 13 53 20,4 | 41,5 | 46,7 | | А | | 9 3 | | |
| | 28 | 06 13 53,4 | 43,4 | 46,0 | | А | | 9 13 | | |
| | | 08 33 55,0 | 41,6 | 46,7 | | А | | 10 3 | | |
| | | 12 08 44,0 | 41,4 | 44,8 | | А | | 9 7 | | |
| | 29 | 07 22 27,6 | 39,6 | 48,9 | | А | | 10 7 | | |
| | 30 | 13 19 16,8 | 41,6 | 46,7 | | А | | 10 3 | | |
| | | | | July | | | | | | |
| | 6 | 11 29 18,7 | 43,3 | 45,1 | | А | | 9 13 | | |
| | 8 | 04 20 25,1 | 43,2 | 45,2 | | А | | 9 13 | | |
| | 9 | 09 01 17,8 | 43,2 | 45,2 | | А | | 9 13 | | |
| | | 19 32 43,0 | 43,2 | 45,9 | | А | | 9 13 | | |
| | 11 | 13 10 36,4 | 41,31 | 44,00 | 0-10 | а | | 9 6 | | |
| | 12 | 17 42 19,2 | 41,35 | 44,00 | 0-10 | а | | 10 6 | | |
| | 15 | 08 43 36,7 | 41,27 | 43,83 | | а | | 10 6 | | |
| | 17 | 04 05 34,7 | 43,4 | 46,0 | | А | | 9 13 | | |
| | | 10 10 53,4 | 43,0 | 47,0 | | А | | 9 3 | | |
| | 18 | 18 48 47,9 | 39,9 | 47,4 | | А | | 9 7 | | |
| 15 | | 22 20 07,2 | 42,3 | 45,2 | | А | 3,9 | 11 3 | | Akhmeta, Tianeti, force 4-5 |
| | 22 | 21 16 53,5 | 42,7 | 40,3 | | А | | 9 10 | | |
| | 23 | 14 13 15,0 | 40,4 | 46,3 | 10 | А | | 9 8 | | |
| | 24 | 06 25 56,0 | 39,2 | 41,9 | | А | | 9 16 | | |
| | | 09 28 09,4 | 43,5 | 45,3 | | А | | 9 13 | | |
| | 25 | 06 29 56,7 | 38,3 | 44,8 | | — | 3,0 | 10 17 | | |
| | | 23 53 48,1 | 42,6 | 46,3 | | А | | 9 3 | | |

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) φ°N | λ°E | (5) Глубина очага, км | (6) Класс точности | M | K | (7) № района | (8) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 26 | 21 32 49,6 | 42,5 | 46,4 | | A | 3,0 | 10 | 3 | |
| | | 23 [illegible] 41,0 | 42,0 | 48,0 | | A | | 9 | 3 | |
| | 27 | 01 15 15,5 | 41,1 | 45,9 | | A | | 9 | 7 | |
| | | 01 31 54,9 | 39,2 | 44,2 | | A | 3,1 | 10 | 17 | |
| | | 03 04 54,4 | 41,08 | 44,00 | 0–10 | б | | 9 | 6 | |
| | | 05 50 53,5 | 42,7 | 46,4 | | A | 3,0 | 10 | 3 | Kilyatl', force 5-6 |
| | | 06 03 58,7 | 41,1 | 45,9 | | A | | 9 | 7 | |
| | | 13 33 01,2 | 42,7 | 46,3 | | A | | 9 | 3 | |
| | 29 | 00 09 02,1 | 43,01 | 42,33 | 10 | б | | 9 | 2 | |
| | 30 | 21 23 24,0 | 43,2 | 45,3 | | A | 3,0 | 10 | 13 | |
| | | | | August | | | | | | |
| | 1 | 04 20 42,7 | 42,47 | 43,75 | 0–10 | б | 3,0 | 10 | 2 | |
| | 3 | 22 15 03,2 | 42,47 | 43,71 | | б | | 9 | 2 | |
| | 4 | 07 00 00,8 | 43,4 | 42,7 | | A | | 9 | 2 | |
| 16 | | 15 06 13,4 | 42,1 | 45,9 | | A | 5,1 | 13 | 3 | |
| | | 16 09 50,5 | 42,1 | 45,8 | | A | | 9 | 3 | |
| | 5 | 17 00 38,9 | 42,4 | 43,7 | | A | | 10 | 2 | |
| | | 18 23 45,0 | 43,0 | 46,7 | | A | 3,3 | 10 | 3 | |
| | 13 | 05 43 12,9 | 41,2 | 47,3 | | A | | 9 | 3 | |
| | 23 | 10 07 25,8 | 42,0 | 45,8 | | A | | 9 | 3 | |
| | 25 | 13 27 58,1 | 42,4 | 45,2 | | A | | 10 | 3 | |
| | 27 | 16 03 44,6 | 42,95 | 47,00 | | A | | 9 | 3 | |
| | | 19 15 28,4 | 40,3 | 40,6 | | A | | 9 | 16 | |
| | 28 | 14 11 20,8 | 39,2 | 44,2 | | A | | 9 | 17 | |
| | | 22 14 47,3 | 42,9 | 42,5 | | A | | 9 | 2 | |
| | 31 | 05 43 48,0 | 43,35 | 46,00 | | A | | 9 | 13 | |
| | | | | September | | | | | | |
| | 1 | 13 47 06,9 | 39,0 | 48,5 | | A | | 9 | 14 | |
| | | 23 55 18,3 | 43,0 | 45,4 | | A | 3,0 | 10 | 3 | |
| | 4 | 20 40 06,1 | 42,3 | 43,0 | 0–10 | A | | 9 | 2 | |
| | 5 | 08 43 56,6 | 42,6 | 46,9 | | A | | 9 | 3 | |
| | 6 | 08 04 39,1 | 41,8 | 45,8 | | A | | 9 | 2 | |
| | | 08 23 56,5 | 41,1 | 50,2 | | A | | 9 | 11 | |
| | | 18 51 19,5 | 42,3 | 43,0 | | A | | 9 | 2 | |
| | 13 | 13 22 21,0 | 41,0 | 47,2 | | A | | 10 | 7 | |
| | 14 | 02 28 47,8 | 40,8 | 47,7 | | A | | 10 | 7 | |
| | | 11 15 18,8 | 38,8 | 42,4 | | A | | 10 | 16 | |
| | 15 | 09 05 47,4 | 41,9 | 45,8 | | A | | 9 | 3 | |
| | 17 | 11 53 37,3 | 41,75 | 43,07 | | б | | 9 | 5 | |
| | | 21 51 50,6 | 41,33 | 44,01 | 0–10 | a | | 9 | 6 | |
| | 18 | 21 40 13,0 | 42,0 | 45,8 | | A | | 10 | 3 | |
| | 23 | 07 58 22,7 | 39,4 | 41,8 | | A | | 10 | 16 | |
| | 26 | 07 59 32,5 | 41,27 | 44,05 | | б | | 9 | 6 | |
| | | | | October | | | | | | |
| | 2 | 00 06 01,0 | 41,9 | 46,7 | | A | | 9 | 3 | |
| | | 12 05 00,4 | 43,9 | 41,7 | | A | | 9 | 1 | |
| | | 20 32 17,7 | 41,7 | 47,0 | | A | | 9 | 3 | |
| | 3 | 20 43 15,0 | 39,4 | 45,4 | | A | | 9 | 8 | |
| | 5 | 03 34 50,3 | 42,9 | 45,2 | | | | | | |
| | 8 | 10 00 02,3 | 43,0 | 47,0 | | A | | 10 | 3 | |
| | | 16 27 18,5 | 41,20 | 44,03 | 0–10 | A | | 9 | 3 | |
| | 9 | [illegible] 42 52,8 | 41,37 | 44,50 | 0–10 | б | | 9 | 6 | |
| | 10 | 18 20 00,1 | 42,6 | 57,0 | | б | | 9 | 6 | |
| | | 18 40 11,0 | 42,6 | 47,0 | | A | | 9 | 3 | |
| | | 20 [illegible] 18,5 | 42,6 | [illegible]7,0 | | A | | 10 | 3 | |
| | 12 | 02 [illegible] 21,5 | 39,7 | 48,2 | | A | | 9 | 3 | |
| | 17 | 06 [illegible] 22,1 | 41,1 | 50,2 | | A | | 9 | 7 | |
| | | 11 16 06,9 | 42,40 | 43,81 | | A | | 10 | 11 | |
| | 18 | 04 05 15,4 | 38,9 | 44,1 | | б | | 9 | 2 | |
| | | 14 37 36,7 | 43,0 | 44,9 | | A | 3,5 | 10 | 16 | |
| | | | | | | A | | 9 | 2 | |

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) φ°N | λ°E | (5) Глубина очага, км | (6) Класс точности | M | K | (7) № района | (8) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 18 | 15 48 35,2 | 38,9 | 44,2 | | A | | 9 | 16 | |
| | | 16 16 12,6 | 38,9 | 44,1 | | A | | 9 | 16 | |
| | 22 | 06 42 54,0 | 42,7 | 46,5 | | A | | 9 | 3 | |
| | 24 | 03 04 57,9 | 42,67 | 43,10 | | б | | 9 | 2 | |
| | | 20 37 26,4 | 42,8 | 47,0 | | A | | 9 | 3 | |
| | 25 | 01 32 18,6 | 40,1 | 48,5 | | – | | 9 | 7 | |
| | 27 | 09 52 26,5 | 41,65 | 43,83 | | а | | 10 | 6 | |
| | | 11 30 27,8 | 41,63 | 43,71 | 0–10 | б | | 9 | 6 | |
| | | 20 11 19,8 | 41,2 | 39,0 | | Б | | 9 | 10 | |
| | 28 | 03 51 53,5 | 43,2 | 45,3 | | A | | 9 | 13 | |
| | 31 | 09 35 44,5 | 40,3 | 44,2 | | A | | 9 | 9 | |
| | | | | November | | | | | | |
| | 2 | 14 08 37,0 | 41,37 | 44,77 | | б | | 9 | 7 | |
| | 3 | 05 15 57,6 | 42,37 | 43,08 | | б | | 9 | 2 | |
| | 4 | 02 36 53,5 | 42,8 | 47,3 | | A | | 9 | 3 | |
| | 5 | 07 20 46,8 | 40,2 | 43,0 | | A | 3,5 | 10 | 16 | |
| | | 07 37 39,3 | 44,9 | 43,4 | | Б | | 9 | 12 | |
| | 6 | 04 41 08,5 | 43,4 | 45,5 | | A | 3,5 | 10 | 13 | |
| | | 05 52 25,6 | 39,7 | 44,2 | | A | 3,5 | 10 | 16 | |
| | | 19 14 45,2 | 39,6 | 51,7 | | A | | 10 | 11 | |
| | 7 | 08 47 54,9 | 41,7 | 42,2 | | A | | 9 | 5 | |
| 17 | 13 | 02 36 22,2 | 42,7 | 46,4 | 5–10 | A | 4,7 | 13 | 3 | |
| | | 02 43 24,3 | 42,7 | 46,4 | | A | 3,4 | 10 | 3 | |
| | | 04 01 13,0 | 42,7 | 46,4 | | A | 3,7 | 10 | 3 | |
| | | 04 09 31,0 | 42,7 | 46,5 | | A | | 9 | 3 | |
| | | 12 14 21,7 | 42,7 | 46,4 | | A | | 9 | 3 | |
| | 15 | 21 30 37,5 | 42,37 | 43,10 | | б | | 9 | 2 | |
| | 16 | 02 13 01,2 | 41,0 | 42,7 | | A | | 9 | 16 | |
| | 17 | 23 28 51,9 | 43,4 | 46,3 | | A | | 9 | 13 | |
| | 18 | 11 13 36,7 | 42,7 | 46,4 | | A | 3,5 | 10 | 3 | Gumbetovskoye, force 3-4 |
| | 20 | 02 42 22,0 | 42,7 | 46,4 | | A | | 9 | 3 | |
| | 21 | 14 41 42,6 | 43,1 | 46,1 | | A | | 9 | 3 | |
| | | | | December | | | | | | |
| | 1 | 13 54 49,3 | 41,71 | 44,31 | | а | | 10 | 5 | |
| | 5 | 01 41 57,7 | 40,6 | 47,1 | | A | | 10 | 7 | |
| | 6 | 12 00 39,1 | 40,3 | 47,9 | | A | 3,3 | 10 | 7 | |
| | | 18 20 10,4 | 42,9 | 46,3 | | A | 3,3 | 10 | 3 | |
| | 10 | 12 38 25,8 | 40,7 | 42,4 | | A | | 9 | 16 | |
| | 11 | 21 38 37,6 | 40,5 | 48,3 | | | | 9 | 7 | |
| | 14 | 05 40 01,0 | 42,6 | 46,2 | | A | | 9 | 3 | |
| | 15 | 18 27 35,2 | 42,4 | 43,9 | | A | | 9 | 2 | |
| | 17 | 11 37 54,8 | 42,0 | 43,4 | 5 | A | | 10 | 5 | |
| | 20 | 15 42 24,7 | 40,8 | 49,3 | | A | | 9 | 3 | |
| | 22 | 20 37 26,0 | 41,1 | 42,4 | | A | | 9 | 16 | |
| 18 | 23 | 05 22 05,2 | 42,9 | 46,8 | 5,5 | A | 5,0 | 13 | 3 | |
| | | 05 30 05,7 | 42,9 | 46,8 | 4 | A | | 9 | 3 | |
| | | 08 59 38,0 | 43,0 | 46,7 | 3 | A | | 9 | 3 | |
| | 24 | 18 39 40,0 | 43,0 | 46,8 | 3 | A | | 9 | 3 | |
| | | 19 44 33,9 | 42,9 | 46,8 | | A | | 9 | 3 | |
| | | 21 29 42,4 | 42,8 | 46,8 | 2 | A | | 9 | 3 | |
| | 25 | 20 40 31,6 | 41,23 | 44,01 | | а | | 9 | 6 | |
| | 28 | 01 36 28,3 | 42,7 | 46,3 | | A | 3,5 | 10 | 3 | |
| | | 06 01 10,8 | 43,0 | 46,8 | 3 | A | | 9 | 3 | |
| | 29 | 14 47 21,0 | 42,9 | 46,8 | 2 | A | | 9 | 3 | |
| | | 15 02 58,3 | 43,0 | 46,7 | 3 | A | | 10 | 3 | |
| | 30 | 13 40 57,4 | 43,0 | 46,7 | | A | | 9 | 3 | Gudamakari, force 4-5 |
| 19 | 31 | 15 52 41,6 | 42,4 | 44,6 | | A | 4,1 | 11 | 2 | |
| 20 | | 17 53 07,1 | 40,2 | 47,8 | | A | | 11 | 7 | |

EARTHQUAKES OF KOPETDAG AND ADJACENT REGIONS

[Article by G. L. Golinskiy, A. R. Rakhimov, T. N. Gorodkova, K. D. Lagutochkina]

The recording of the earthquakes of Kopetdag in 1974 was carried out by a network of seismic stations described in detail in 1973 [1]. It is made up of two reference stations (Ashkhabad, Kizyl-Arvat), six regional and three temporary (Bakharden, Bakhardok, Chagyl) observation stations. Three of the stations were equipped with highly sensitive instruments -- the Vetik seismographs which have maximum amplification of $V_{max}=2\cdot10^4$ to $3\cdot10^4$; the SK were installed at two of the stations with amplification of $V_{max}=10^3$. The remaining stations record the earthquakes with the SKM-3 instruments which operate with amplification of $V_{max}=2\cdot10^3$ to $9.5\cdot10^3$.

The location of the stations is shown in Figures, 1, 2. The list of equipment installed at them and the instrument parameters are presented in Table 1.

The reanalysis of the permanent instruments offered the possibility of more precise determination of the basic parameters of the station area equipment and variation of their maximum application to the better side.

The procedure for processing the data on the earthquakes of Kopetdag basically remained the same as in the preceding years. The coordinates of the epicenters were determined by intersection method with the application of the Ye. A. Rozova hodograph [2]. The classification with respect to accuracy was established in accordance with the procedure adopted in the Atlas of Earthquakes in the USSR.

The energy characteristic K of the earthquakes was estimated by the Rautian nomogram [3]. For individual earthquakes the magnitude determined by the surface waves according to [4] was included from reference [5].

It was considered up to the present time that the system for recording earthquakes in Kopetdag with the present arrangement of the seismic stations indicated in Fig 1, 2, offers the possibility of regular recording of earthquakes in all of the regions of the zone [1] except from the energy level K=11 and K=10 for Central Kopetdag.

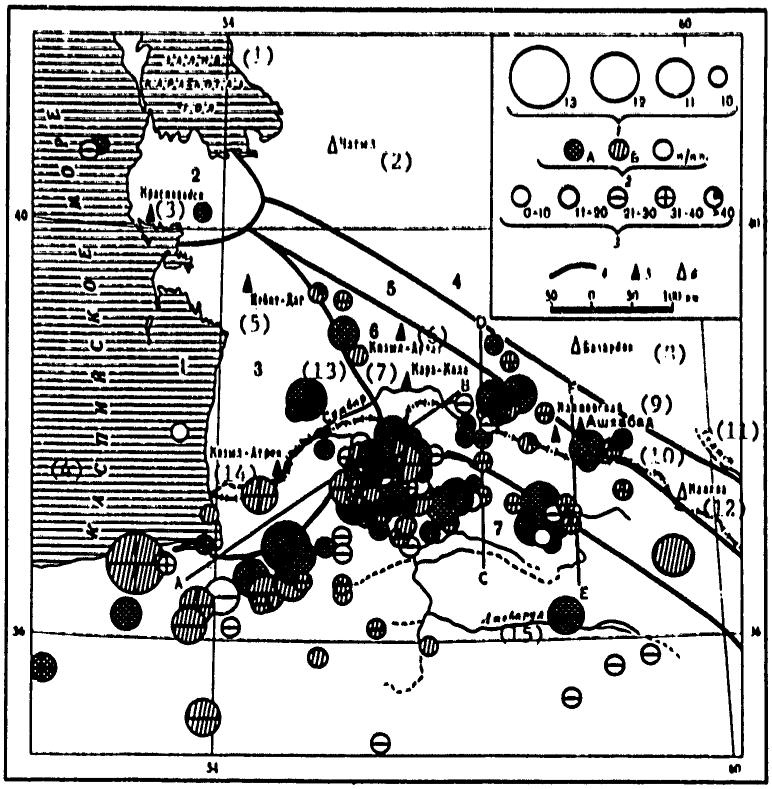

Figure 1. Map of the epicenters of the earthquakes of Kopetdag with K≥10

1 -- energy of the earthquakes (K); 2 -- accuracy class of determining the epicenters; 3 -- depth of center, km; 4 -- boundaries of the region; 5 -- permanently operating seismic station; 6 -- the same, temporary

Key:

1. Kara-Bogaz-Gol Bay
2. Chagyl
3. Krasnovodsk
4. Caspian Sea
5. Nebig-Dag
6. Kizyl-Arvat
7. Kara-Kala
8. Bakhardok
9. Vanovskaya
10. Ashkhabad
11. Tedzhen
12. Kaakhka
13. Sumbar
14. Kizyl-Atrek
15. Dzhebarud

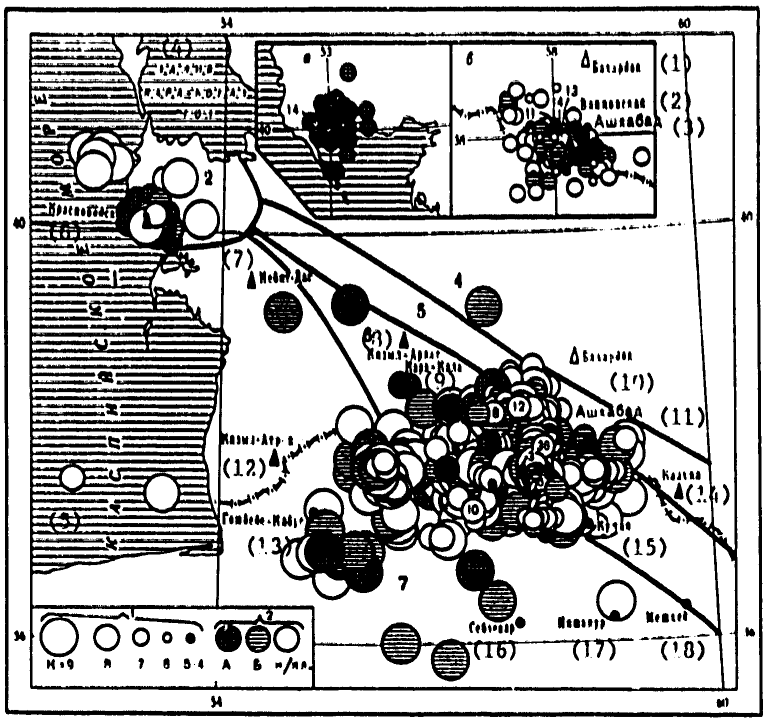

Figure 2. Map of the epicenters of the earthquakes of Kopetdag with K≤9

For the provisional notation see Fig 1. The numbers in the circles are the number of earthquakes at the given point. In the insert: a -- epicenters of the earthquakes with K≤7 for the Krasnovodsk zone; b -- for the Ashkhabad zone.

Key:

1. Bakhardok
2. Vannovskaya
3. Ashkhabad
4. Kara-Bogaz-Gol Bay
5. Caspian Sea
6. Krasnovodsk
7. Nebig-Dag
8. Kizyl-Arvat
9. Kara-Kala
10. Bakhardok
11. Ashkhabad
12. Kizyl-Atrek
13. Gombede-Kabus
14. Kaakhka
15. Kuchan
16. Sebzevar
17. Nishapur
18. Meshkhed

For a more detailed estimate, the representativeness of the recorded earthquakes and the possibilities of recording them by the seismic network of Kopetdag G. L. Golinskiy and A. R. Rakhimov performed a control processing of the national data.

Table 1

Basic Parameters of the Instruments of the Seismic Stations of Kopetdag

| Station | Type of equip-ment | Z | | E - W | | N - S | |
|---|---|---|---|---|---|---|---|
| | | $V_{max}$ | $T_{max}$ | $V_{max}$ | $T_{max}$ | $V_{max}$ | $T_{max}$ |
| Ashkhabad (Ashkh) | SKM-3 | 6 030 | 0,3-0,9 | 5 540 | 0,1-0,6 | 7 050 | 0,1-0,9 |
| | SK | 980 | 0,3-8,0 | 1 020 | 0,3-11,0 | 1 020 | 0,3-11,0 |
| | S-5-S | 130 | 0,2-3,0 | 110 | 0,3-3,0 | 100 | 0,3-3,0 |
| Vannovskaya (Vn) | VEGIK | 19 780 | 0,1-1,1 | 19 100 | 0,1-1,0 | 20 830 | 0,1-1,2 |
| Kaakhka (Kkhkh)* | VEGIK | 4 570 | 0,1-4,0 | 2 360 | 0,1-3,0 | 2 290 | 0,1-3,0 |
| Kara-Kala (Kkl) | SKM-3 | 2 150 | 0,2-2,0 | 2 380 | 0,2-2,0 | 2 300 | 0,2-1,5 |
| Kizyl-Arvat (Kza) | SK | 1 600 | 0,3-11,0 | 1 600 | 0,1-11,0 | 1 100 | 5,0-11,0 |
| Kizyl-Atrek (K-A) | SKM-3 | 7 440 | 0,1-3,0 | 5 890 | 0,1-2,0 | 6 170 | 0,1-3,0 |
| Krasnovodsk (Kr) | VEGIK | 32 000 | 0,3-0,9 | 30 000 | 0,3-0,8 | 33 000 | 0,4-0,9 |
| Nebit-Dag (N-D) | SKM-3 | 9 500 | 0,4-0,65 | 11 000 | 0,4-0,65 | 7 500 | 0,4-0,6 |

*Temporary station.

As is known, in order more precisely to determine the coordinates of the earthquake center, there are several methods available: Vadati, hyperbola, intersection, circles, and so on [6]. However, their application requires special conditions.

In Turkmenia the basic centers are concentrated in the Kopetdag geosynclinal region, the thickness of the sedimentary layer of which is quite large. In addition, the centers of the earthquakes of Kopetdag are located not only in the granite layer, but also in the basalt and partially even on the surface of the mantle. The application of the above-indicated methods for our conditions is unacceptable. Therefore at the present time the coordinates of the centers of the earthquakes of Kopetdag, with the exception of certain experimental ones [7] were determined only by the intersection method. Here frequently ambiguous results were obtained, for the epicentral arcs intersect at two opposite points.

With the opening of the Bakhardok seismic station located 100 km north of Ashkhabad and the Kara-Kala station 60 km south of Kizyl-Arvata, it became possible to record earthquakes by stations located in a triangle and,

consequently, for the first time it became possible to use the method of hyperbolas in Turkmenia to determine the earthquake coordinates.

An example of the effective use of the combined method of processing the initial data is presented in Figures 3, a illustrating the process of finding the coordinates of the epicenter for the earthquake of 25 May 1974. The intersection method forms two points of intersection of the arcs of the seismic stations of Ashkhabad, Vannovskaya and Kara-Kala. Their junctions are more than 100 km from each other, and they do not offer a unique solution to the problem. At the same time the method of hyperbolas clearly indicates the possible position of the center near the southern point of intersection of the populated arcs.

Fig 3, b clearly indicates the good convergence of the results obtained when processing the data of the earthquake of 6 August 1974; the coordinates of its epicenter determined by two methods almost coincide: 37.70 to 58.32° (with respect to intersections) and 37.75 to 58.22° (with respect to hyperbolas).

The analysis of the possibilities of the seismic network of the Kopetdag zone demonstrated that it has quite high information capacity. However, it is necessary to recognize that for the previously performed data processing the maximum seismic information from our stations was not used.

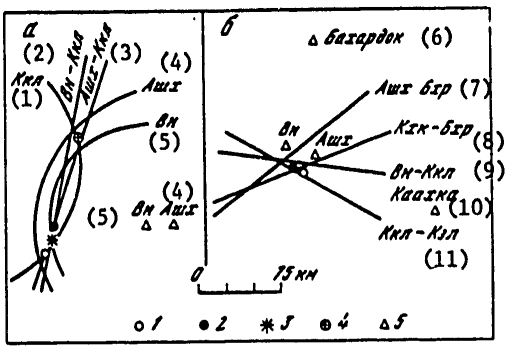


Figure 3. Determination of the coordinates of the epicenters for the earthquakes of Kopetdag.
a -- 25 May 1974; b -- 6 August 1974. 1 -- epicenter determined by the intersection method; 2 -- hyperbola method; 3 -- average position of the epicenter; 4 -- false epicenter; 5 -- seismic station

Key:
1. Kkl; 2. Vn-Kkl; 3. Ashkh-Kkl; 4. Ashkh; 5. Vn; 6. Bakhardok; 7. Ashkh Bkhr; 8.Kkhk-Bkhr; 9. Vn-Kkl; 10. Kaakhka; 11. Kkl-Kzl

The system for processing the initial materials was improved in 1974: the system for double monitoring of the processing to reduce the errors in interpreting the initial data was used; the estimate of the accuracy class determining the coordinates of the epicenters was increased, and the many years of trend toward a reduction in the average value of the energy level K of the earthquakes of Kopetdag determined earlier by the data from recording earthquakes on rocky ground was eliminated.

As a result of this work, it was possible to achieve a significant improvement in effectiveness of the instrument observations: for the first time almost complete interpretation of the seismic information was obtained, and the coordinates of the epicenters were determined for 617 earthquakes, which amounts to about 97% of the recorded shocks (Table 2). For comparison let us note that in 1973, out of 527 earthquakes recorded by the stations of the Kopetdag zone, the coordinates are defined only for 262, that is, for 49.7% [1].

The nature of processing the initial data changed not only in quantitative but also in qualitative respects: the proportion of epicenters determined with accuracy class A and B increased significantly -- from 10,3% in 1973 to 64.7% this year. The number of coordinates making up class A increased by 17 times (Table 3).

Considering the quantitative distribution of the earthquake of Kopetdag with respect to the energy level K (see Table 2), it is possible with sufficient certainty to say that for the territory of Turkmenia (without adjacent regions of Northern Iran) the earthquakes with $K \geq 8$ are representative, at the same time as for the Ashkhabad Rayon and Western Turkmenia, the earthquakes with $K \geq 10$ are representative.

For two seismically active zones: western Kopetdag (the northwestern parts of Iran west of meridion of 56°, S=400,000 $km^2$) and central Kopetdag (east of 56° encompassing the corresponding part of Northern Iran, S=250,000 $km^2$), graphs were constructed for the recurrence rate (Fig 4) constructed individual for the earthquakes of 1974 and the period of 1954-1973 with and without consideration of grouping.

Table 2

Distribution of Earthquakes of Kopetdag with Respect to Energy Classes

| Region | K | | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | |
| Ashkhabad | 4 | 11 | 28 | 48 | 71 | 30 | 6 | 4 | – | – | 202 |
| Western Turkmenia | – | 2 | 16 | 31 | 15 | 14 | 10 | 4 | 1 | – | 93 |
| Total throughout Tadzhik SSR | 4 | 13 | 44 | 79 | 86 | 44 | 16 | 8 | 1 | – | 295 |
| Iran | – | – | 4 | 11 | 79 | 128 | 71 | 23 | 4 | 2 | 322 |
| Total with respect to Kopetdag | 4 | 13 | 48 | 90 | 165 | 172 | 87 | 31 | 5 | 2 | 617 |

The increase in number of seismic stations in recent years was reflected in the level of representativeness of the earthquakes of the different energy classes: for Central Kopetdag in 1974 it is possible to consider the 9th energy class; for the western zone, only 11th energy class.

Table 3

Comparative Estimate of the Accuracy of Determining the Coordinates of the Earthquakes of Kopetdag in 1973 and 1974 (in %)

| K | (1) Класс точности | | | | | | (2) Всего | |
|---|---|---|---|---|---|---|---|---|
| | А | | Б | | н/кл. (3) | | | |
| | 1973 | 1974 | 1973 | 1974 | 1973 | 1974 | 1973 | 1974 |
| 4-5 | – | 16 | – | 1 | 18 | – | 18 | 17 |
| 6 | – | 30 | – | 7 | 22 | 11 | 22 | 48 |
| 7 | – | 48 | – | 21 | 41 | 21 | 41 | 90 |
| 8 | – | 19 | – | 53 | 56 | 95 | 56 | 167 |
| 9 | 1 | 31 | 1 | 71 | 58 | 70 | 60 | 172 |
| 10 | 1 | 30 | 9 | 35 | 31 | 22 | 41 | 87 |
| 11 | 2 | 19 | 7 | 11 | 6 | 1 | 15 | 31 |
| 12 | – | 4 | 3 | 1 | 1 | – | 4 | 5 |
| 13 | 1 | 2 | 2 | – | 2 | – | 5 | 2 |
| Итого | 5 | 199 | 22 | 200 | 235 | 220 | 262 | 619 |
| % (4) | 1,9 | 32,3 | 8,4 | 32,4 | 89,7 | 35,3 | 100 | 100 |

Key:
1. Accuracy class
2. Total
3. n/kl.
4. Total, %

The level of activity in 1974 for the western zone is the same as it was in the preceding 20 years ($A_{10}$=0.07 to 0.09). For Central Kopetdag the level increased from 0.05 to 0.12 (without group shocks and aftershocks). The slopes of the graph $\gamma$ remained as before (within the limits of error).

The energy characteristic of the earthquakes occurring in Kopetdag in 1974 is distinguished by intensified manifestation of the low-magnitude shocks of $3.5 \geq M \geq 3.1$. A total of 70 were recorded, and the main part of them was localized in the vicinity of the center of a strong earthquake on 30 July 1970. Thirty-seven earthquakes had a magnitude within the limits of $4.0 \geq M \geq 3.6$. The distribution of these earthquakes with respect to magnitude is illustrated below:

| M | to 3.0 | 3.1-3.5 | 3.6-4.0 | 4.1-4.5 | 4.6-5.0 | 5.1-5.5 | Total |
|---|---|---|---|---|---|---|---|
| No of earthquakes | 5 | 70 | 37 | 3 | 4 | 1 | 120 |

The spatial distribution of the epicenters of the earthquakes recorded in the territory of the Kopetdag zone in 1974 is presented on the maps of the epicenters (see Figures 1, 2).

On the map of the epicenters of strong earthquakes with K≥10 (Fig 1) several quite local zones of increased density of the centers are clearly isolated in the vicinity of the cities of Ashkhabad, Bakharden and Shirvan (Iran). All three groups of epicenters are located in the zones of deep fractures -- Peredovoy and Vnutrikopetdagskiy and the folded Aladag-Binaluda system. The greatest accumulations of epicenters correspond to the complications in the structure of the vicinity of the Peredovoy deep fracture -- this is the Gyaursdagskaya stage and the Archman-Nokhurskiy mountain junction. The side of the Aladag-Binaludskiy fractures protruding to the north is characterized by epicenters more distributed in space with noticeable decrease in the northerly direction.

Southeast of the Gyaurskaya stage, in the Kaakhkinskaya depression, an earthquake occurred on 21 January at 2208 hours Greenwich time which was felt with an intensity to force 4-5 in the villages located south of Kaakhka. The nature of the appearance of an earthquake in the area where it is felt has been investigated by G. L. Golinskiy, A. R. Rakhimov and the head of the Ashkhabad seismic station N. Annamukhamedov.

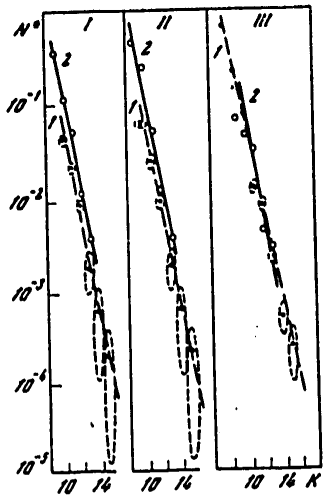


Figure 4. Graphs of the recurrence rate of the earthquakes of the seismically active zones of Turkmenia.
I -- Central Kopetdag (without groups and aftershocks): 1 -- $\gamma$=0.47, $A_{10}$=0.05; 2 -- $\gamma$=0.48, $A_{10}$=0.12; II -- Central Kopetdag (with groups and aftershocks): 1 -- $\gamma$=0.53, $A_{10}$=0.07; 2 -- $\gamma$=0.55, $A_{10}$=0.18; III -- western zone: 1 -- $\gamma$=0.5, $A_{10}$=0.07; 2 -- $\gamma$=0.53, $A_{10}$=0.09 (1 -- according to the data of 1954-1973; 2 -- according to the data of 1974).

An earthquake was felt by everyone in the village of Archin'yak located 20 km south of Kaakhka. Many of the people sleeping woke up and ran into the street. The residents of this village noticed an interesting phenomenon: an underground spring which previously had formed a stream on the surface and served as the basic source of drinking water disappeared. The next day, changing the path in the underground layers, the water began to stream through another place located 300 meters below the preceding one. This indicates significant amplitude of the displacement and deformation of the rock and the aquifers obviously occurring on the northern edge of the center zone.

In order to provide a clear explanation of the observed effect, it is necessary to introduce corrections into the position of the epicenter determined by the instrument data which is located in Iran 40 km south of Archin'yak ($\phi$=36.75°N, $\lambda$=59.45°E). In this case we are encountering a situation in which the center of the earthquake with magnitude M=4,6 has an enormous linear extent -- approximately 80 km. Beginning with the basic criterion -- the dependence of M on the linear dimensions of the center, we find that the greatest diameter $\ell_{max}$ of the center of this earthquake cannot exceed a value of 3 to 4 km. Consequently, the earthquake on 21 January accompanied by residual deformation, the signs of which were observed by witnesses should have a center near Archin'yak and the macroseismic center has coordinates: $\phi$=34.15°N, $\lambda$=59.60°E.

Considering that the instrument epicenter was determined by the network of stations running along a straight line from the center, and it has accuracy class B, the introduced correction does not go beyond the limits of error of the instrument epicenter, but it significantly more precisely determines its position.

The strength of the earthquake in Archin'yak is estimated at force 5, in Khivabad ($\Delta$=10 km), force 4, in Chil'gez (15 km), force 3-4, in Kaakhka (25 km), force 3. The calculated intensity in the epicenter $I_0$=force 5-6. Beginning with these data, we obtain an estimate of the depth of the center $h_I$=4 km.

Continuing the analysis of the maps of the epicenters, it must be noted that after the catastrophic Ashkhabad earthquake of 1948, a noticeable shift of seismic activity in the westerly direction, in the direction of Bakharden is observed. This year it also was quite high here. On 29 January a perceptible earthquake with M=3.3 occurred near Bakharden ($\Delta$=10 km). At Bakharden, the shock did not exceed force 2-3, and the intensity of the epicenter $I_0$=force 3. The epicenter of the earthquake is in the vicinity of the Pre-Kopetdag abyssal fracture separating the trough from the south slope of the Turanskaya platform. The depth of the center equal to 25 km indicates that the earthquake occurred in the granite layer occurring here, according to the geological data, at a depth of 20 km and more.

In the western zone, the activity in 1974 did not change by comparison with the mean activity for the last 20 years (see the value of $A_{10}$ in Fig 4). On 22 February an earthquake occurred here in the vicinity of Kazandzhik with M=3.9. Its epicenter is located in western Kopetdag, 28 km to the south of the city. Just as in the case of Bakhardenskiy, its center is associated with the granite layer at a depth of 18 km. From the materials collected from the investigation performed by G. L. Golinskiy and A. R. Rakhimov it was established that the earthquake manifested the maximum intensity of force 3-4 in Kazandzhik.

The earthquake occurred in the predawn hour. Therefore it was felt by only a few people who were awake. In the vicinity of the epicenter the intensity of the earthquake reached force 4-5.

In the same zone, but significantly farther to the south, on 7 March at 1136 hours Greenwich, the earthquake was felt in the rayon center of Kara-Kala, manifested here with the force of 2-3. Its epicenter is 90 km from Kara-Kala, and it is located in Northern Iran in the vicinity of the center of the July earthquake of 1970 (M=6.7). In the epicenter, according to the calculated data the force of the oscillations $I_0$=force 5-6 (M=5.3), the depth of the center according to the macrodata $h_I$=35 km, according to the instrument data $h_I$=33 km [5]. The seismic network was used to record more than 50 aftershocks accompanying the basic shock over the extent of 2 months. Here two shocks had an energy of K=11 (M=3.9), 3 -- K=10-11 (M=3.6 to 3.7) and 13 -- K=10 (M=3.3 to 3.5).

In the southern part of the Caspian, four earthquakes occurred with M=4. The earthquake on 15 January at 1126 hours (M=4.0, h=20 km) had a strength at the epicenter of $I_0$=force 5, and in Kizyl-Atrek ($\Delta$=80 km), force 3 ($I_0$=5). The earthquake was preceded by two foreshocks with M=3.6 and 3.1. The first occurred 4 hours before the basic shock, and the second 32 minutes before it. After 3 hours a quite strong repeated shock with M=4.0 was noted.

On 5 November at 2002 hours on the same parallel, but appreciably to the west, an earthquake was recorded with M=4.9 (K=13), and on 23 November, a shock took place with M=4.4 (K=12), the center of which was located in the territory of the Tadzhik SSR, 80 km northwest of Kizyl-Atrek, at a depth of 45 km. The weak earthquakes of the western zone are represented by an insignificant number of shocks for its entire area in view of the absence of a developed network of seismic stations. In the vicinity of Krasnovodsk, a high density of weak centers is noted with K$\leq$9 (see Fig 2).

By comparison with the past years, the activity in the vicinity of the cities of Ashkhabad and Shirvan increased. The earthquake occurring on 6 August at 2011 hours Greenwich is especially interesting (M=4.0, K=11). According to the data of G. L. Golinskiy, it was felt by individual residents of Ashkhabad ($\Delta$=15 km) who basically live in the southeastern and northwestern parts of the city. In the two and three story houses the windows and dishes rattled, the furniture squeaked, and the people

who were asleep woke up. Weak oscillation of the hanging lamps and light fixtures was observed. N. V. Niyazova said that in the second story of a three-story house, waking up before the earthquake, she felt the first and second shocks clearly.

O. N. Levkovskaya, who lived on the fourth floor, heard an underground rumble. It was similar to the noise of a heavily loaded vehicle passing at a distance. The earthquake in Ashkhabad was force 4.

In the settlements located near the city, the earthquake was not felt.

The earthquake was preceded by two small foreshocks (K=7-8), manifested several hours before the occurrence of the basic shock. The repeated shocks lasting up to the middle of September were also weak, having an energy of K=6-9.

The center of the earthquake was located in the epicentral zone of the Ashkhabad earthquake of 1948.

From the maps of the epicenters it is clearly obvious that if the predominant part of the earthquakes with K≥10 can be tied to the specific deep fractures, then the epicenters of the weak earthquakes with K≤9 are blurred in the entire space (see Fig 2). This means that the earthquakes with K≥10 (in any case, in the given year) can be described discretely as fractures in the medium, and the earthquakes with K≤9 will be expressed only in the deformation of this entire medium inasmuch as we are dealing not with one large fracture, but with the fracture zone [9].

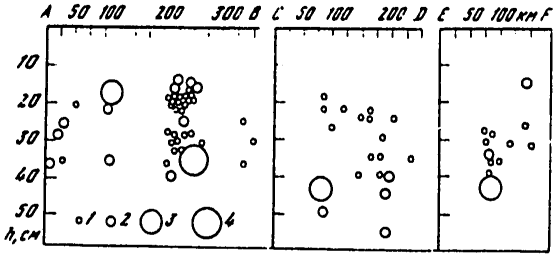


Figure 5. Deep distribution of the centers of the earthquakes of Kopetdag in 1974 according to the profiles AB, CD, EF.

The location of the profiles is indicated in Fig 1. The energy of the earthquakes is as follows: 1 -- K=10; 2 -- K=11; 3 -- K=12; 4 -- K=13.

For the characteristic of the deep distribution of the earthquake centers with K≥10, vertical sections were constructed with respect to the AB, CD, and the EF lines (see Fig 1). Here all of the centers located within the limits of the bands 60 km wide were projected on the vertical plane of the AB, CD, and EF lines (Fig 5).

Some of the peculiarities of the deep distribution of the earthquake centers were noted: all the centers with K≥12 are located at depths of 30-45 km with the exception of one center in the region south of Gasan-Kuli. The region of maximum activity in 1974 in the Kuchan-Ashkhabad section (the EF line) is located at a depth of 30 km with a large amount of traction in the direction of Kuchan.

In the vicinity of the earthquake of 7 March 1974 with M=5.3 (the AB line) a large number of aftershocks were noted, the centers of which were located at a depth between 15 and 40 km. This wide range of depths for the earthquake with M=5.3 probably is connected with the fact that the given earthquake occurred in the zone weakened by a strong earthquake on 30 July 1970 having an energy of M=6.7.

The region of maximum activity in the Bodzhnurd-Bakharden section (the line CD) is concentrated below the 20-km mark; no earthquake with K≥10 was noted at a depth of h<20 km in 1974.

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Catalog of Earthquakes of Kopetdag for 1974

| (1) Число | (2) Момент возникновения, час мин сек | (3) Координаты эпицентра $\varphi^{\circ}$ N | (3) $\lambda^{\circ}$ E | (4) Глубина очага, км | (5) Класс точности | $K$ | (6) № района | (7) Примечание |
|---|---|---|---|---|---|---|---|---|
| | | | January | | | | | |
| 1 | 16 06 48 | 36,0 | 56,2 | | Б | 9 | 7 | |
| | 18 23 13 | 35,5 | 52,0 | | Б | 8 | 7 | Foreshock of earthquake on 10 Jan at 1600 hours |
| | 18 49 46 | 35,6 | 52,0 | 25 | Б | 10 | 7 | The same |
| 2 | 21 16 01 | 37,85 | 56,40 | | | 9 | 7 | |
| 3 | 16 10 30 | 38,25 | 57,20 | 8 | А | 9 | 6 | |
| 5 | 08 26 22 | 37,2 | 53,9 | 20 | Б | 10 | 1 | |
| | 17 17 52 | 38,3 | 57,4 | | Б | 7 | 6 | |
| 6 | 00 12 54 | 35,80 | 55,23 | 10 | Б | 10 | 7 | |
| 7 | 15 12 20 | 36,9 | 55,3 | 16 | А | 10 | 7 | |
| 8 | 10 42 51 | 37,65 | 55,90 | | Б | 9 | 7 | |
| 9 | 00 16 18 | 37,65 | 55,90 | | А | 9 | 7 | |
| 10 | 12 15 36 | 37,9 | 58,4 | | А | 7 | 5 | |
| | 16 36 11 | 35,6 | 52,0 | 35 | А | 11 | 7 | |
| | | | | | | $M$ = 4,3 (2) | | |
| | 17 10 55 | 35,6 | 52,0 | 26 | Б | 10 | 7 | |
| | 18 20 24 | 37,2 | 58,2 | | Б | 9 | 6 | |
| 11 | 06 29 07 | 36,87 | 55,30 | | А | 9 | 7 | |
| | 12 06 52 | 40,1 | 53,1 | | А | 6 | 2 | |
| 12 | 07 02 56 | 37,9 | 58,1 | | А | 8 | 6 | |
| | 17 25 39 | 36,87 | 55,30 | | | 9 | 7 | |
| 13 | 04 58 50 | 38,2 | 57,2 | | Б | 8 | 6 | |
| 14 | 01 40 13 | 37,85 | 56,40 | | Б | 9 | 7 | |
| | 23 09 00 | 40,15 | 53,70 | | | 9 | 2 | |
| 15 | 02 54 07 | 40,15 | 53,70 | 5 | А | 10 | 2 | |
| | 11 26 14 | 36,55 | 54,95 | 20 | Б | 11 | 7 | |
| 17 | 07 32 37 | 38,20 | 57,95 | | Б | 8 | 6 | |
| 18 | 02 47 56 | 37,95 | 57,20 | 25 | А | 10 | 6 | |
| | 04 32 29 | 37,9 | 58,0 | | Б | 7 | 6 | |
| | 07 27 21 | 38,20 | 57,43 | 25 | Б | 9 | 6 | |
| | 07 39 58 | 40,2 | 53,1 | | А | 7 | 2 | |
| | 09 59 41 | 40,2 | 53,1 | | А | 7 | 2 | |
| 19 | 00 30 09 | 37,25 | 58,00 | 22 | Б | 9 | 6 | |
| 21 | 04 06 18 | 36,20 | 58,15 | 23 | А | 11 | 7 | |
| | 22 08 31 | 36,75 | 59,45 | 20 | Б | 12 | 6 | |
| | | | | | | $M$ = 4,7 (5) | | |
| | 23 38 02 | 36,1 | 55,9 | 26 | Б | 10–11 | 7 | |
| 22 | 18 41 10 | 40,0 | 53,0 | | Б | 9 | 2 | |
| 23 | 10 46 19 | 38,2 | 58,0 | | Б | 9 | 5 | |
| 24 | 08 16 25 | 38,15 | 57,95 | | Б | 8 | 6 | |
| | 08 36 11 | 37,6 | 58,3 | | Б | 8 | 6 | |
| 25 | 10 37 54 | 37,0 | 56,8 | | | 9 | 7 | |
| | 21 28 37 | 37,2 | 56,9 | | | 8–9 | 7 | |
| 26 | 15 30 19 | 37,3 | 57,1 | | | 8 | 7 | |
| 28 | 10 47 08 | 38,25 | 54,95 | 35 | А | 10 | 3 | |
| | 16 51 07 | 36,8 | 55,0 | | | 9 | 7 | |
| 29 | 06 01 51 | 38,48 | 57,40 | 25 | А | 10 | 6 | |
| | 08 15 36 | 37,9 | 58,0 | | А | 7–8 | 6 | |
| | 08 36 27 | 40,2 | 53,0 | | А | 6 | 2 | |
| | 19 31 13 | 38,3 | 56,8 | | Б | 8 | 6 | |
| 30 | 07 52 40 | 37,80 | 57,95 | | Б | 7–8 | 6 | |
| 31 | 01 33 57 | 38,0 | 58,2 | | | 8 | 5 | |
| | 22 16 45 | 37,85 | 58,15 | | | 7 | 6 | |
| | 23 22 24 | 37,85 | 58,15 | | А | 8 | 6 | |
| | 23 33 20 | 37,80 | 58,15 | | А | 7 | 6 | |
| | | | February | | | | | |
| 1 | 19 10 21 | 37,4 | 57,3 | | | 8 | 7 | |
| 2 | 13 35 58 | 38,0 | 57,9 | | Б | 6–7 | 6 | |
| 3 | 02 47 50 | 38,0 | 57,9 | | Б | 7 | 6 | |
| | 14 35 02 | 37,9 | 58,3 | | А | 5 | 5 | |
| 5 | 04 29 12 | 38,4 | 57,7 | | | 6 | 5 | |

[See key at end of table]

[Table, Contd]

| (1) Число | (2) Момент возникновения, час мин сек | (3) Координаты эпицентра φ° N | (3) λ° E | (4) Глубина очага, км | (5) Класс точности | K | (6) № района | (7) Примечание |
|---|---|---|---|---|---|---|---|---|
| 5 | 08 27 41 | 40,0 | 53,0 | | А | 6 | 2 | |
| | 23 08 32 | 37,10 | 56,25 | 20 | Б | 9–10 | 7 | |
| 7 | 09 05 20 | 37,75 | 57,90 | | Б | 8 | 6 | |
| | 10 31 49 | 36,25 | 52,85 | 20 | А | 10–11 | 7 | |
| | 13 28 57 | 37,4 | 57,3 | | Б | 8 | 7 | |
| 9 | 18 02 33 | 37,30 | 56,73 | 18 | А | 11 | 7 | |
| 11 | 17 39 10 | 38,0 | 58,1 | | | 8–9 | 6 | |
| 12 | 00 20 06 | 39,3 | 55,6 | 30 | А | 9 | 6 | Foreshock of the earthquake on 22 Feb at 002233 hours |
| 14 | 10 58 45 | 37,70 | 57,95 | | Б | 9 | 6 | |
| | 11 40 28 | 37,70 | 57,95 | | Б | 7 | 6 | |
| | 21 39 47 | 36,40 | 57,35 | | Б | 9 | 7 | |
| 15 | 03 35 08 | 36,80 | 54,98 | 25 | А | 10–11 | 7 | Foreshock of the earthquake on 15 Feb at 0732 hours |
| | 07 00 21 | 36,55 | 55,50 | 25 | Б | 9–10 | 7 | |
| | 07 32 26 | 36,8 | 54,9 | 18 | А | 11–12 | 7 | |
| | 10 16 39 | 36,8 | 54,9 | 20 | А | 11 | 7 | Aftershock of the earthquake on 15 Feb at 0732 hours |
| 16 | 19 20 41 | 38,0 | 58,1 | | А | 7 | 6 | |
| 17 | 20 15 23 | 38,0 | 58,1 | | Б | 7–8 | 6 | |
| 18 | 13 08 54 | 37,5 | 57,1 | 20 | А | 10 | 7 | |
| 19 | 08 10 47 | 38,35 | 58,05 | | Б | 9 | 5 | |
| | 10 11 07 | 40,1 | 53,1 | | А | 6–7 | 2 | |
| 20 | 05 17 28 | 37,40 | 53,30 | | | 9 | 7 | |
| | 08 35 51 | 40,1 | 53,1 | | А | 8 | 2 | |
| 21 | 03 51 52 | 37,40 | 57,30 | | | 8 | 7 | |
| | 21 23 03 | 37,25 | 57,70 | | Б | 9 | 7 | |
| | 23 52 52 | 38,3 | 56,5 | | Б | 9 | 6 | |
| 22 | 00 29 33 | 39,00 | 55,50 | 18 | А | 11 | 6 | |
| | 09 49 35 | 40,0 | 53,2 | | А | 7 | 2 | |
| | 11 32 42 | 37,95 | 57,85 | | Б | 7 | 6 | |
| | 11 52 59 | 37,8 | 57,7 | | | 8 | 6 | |
| | 12 20 20 | 37,97 | 57,00 | 25 | А | 10 | 6 | |
| 23 | 05 08 24 | 37,4 | 57,3 | | | 8 | 7 | |
| | 13 18 27 | 38,1 | 57,3 | 25 | Б | 10 | 6 | |
| | 15 34 41 | 37,60 | 57,95 | | Б | 8 | 6 | |
| | 22 55 52 | 38,25 | 57,40 | | | 9 | 6 | |
| | 23 20 49 | 38,35 | 57,40 | | | 8 | 6 | |
| 24 | 00 40 14 | 38,5 | 57,9 | | | 9 | 5 | |
| | 01 04 53 | 38,3 | 57,4 | | | 7 | 6 | |
| | 08 06 11 | 38,2 | 57,4 | | | 7–8 | 6 | |
| | 08 41 19 | 39,3 | 55,5 | 25 | Б | 9–10 | 6 | Aftershock of the earthquake on 22 Feb at 0029 hours |
| | 09 02 19 | 37,7 | 56,8 | | А | 8 | 7 | |
| | 15 30 40 | 38,25 | 57,40 | | | 8 | 6 | |
| | 16 38 28 | 37,70 | 57,25 | 22 | Б | 10 | 5 | |
| | 16 57 12 | 38,3 | 57,6 | | | 8 | 6 | |
| | 17 47 40 | 38,3 | 57,6 | | | 8 | 6 | |
| | 21 45 54 | 38,4 | 57,8 | | | 7 | 5 | |
| | 21 55 15 | 37,7 | 58,4 | | А | 8 | 6 | |
| 25 | 02 51 20 | 38,25 | 57,60 | | | 8 | 6 | |
| | 15 54 12 | 38,25 | 57,40 | 35 | А | 10 | 6 | Aftershock of the earthquake on 25 Feb at 1554 hours |
| | 16 22 53 | 38,25 | 57,40 | 40 | А | 9–10 | 6 | |
| | 17 11 38 | 38,25 | 57,40 | | | 9 | 6 | The same |
| | 17 16 33 | 38,25 | 57,40 | | Б | 9 | 6 | " |
| | 17 39 54 | 38,3 | 57,4 | | | 8 | 6 | " |
| | 17 59 55 | 38,2 | 57,3 | | | 9 | 6 | " |
| | 20 24 05 | 38,2 | 57,3 | | | 8 | 6 | " |
| | 21 24 16 | 38,2 | 57,4 | | | 7 | 6 | |

[Table, contd]

| (1) Чис-ло | (2) Момент возникновения, час мин сек | (3) Координаты эпицентра φ° N | λ° E | (4) Глубина очага, км | (5) Класс точности | K | (6) № района | (7) Примечание |
|---|---|---|---|---|---|---|---|---|
| 26 | 00 20 19 | 37,4 | 56,9 | | | 9 | 7 | |
| | 10 09 08 | 40,2 | 53,0 | | А | 7 | 2 | |
| 26 | 13 43 27 | 37,75 | 57,50 | | А | 9 | 6 | Aftershock of the earthquake on 25 Feb at 1554 hours |
| 27 | 07 31 01 | 37,9 | 57,9 | | А | 8 | 6 | |
| | 21 05 08 | 37,4 | 56,9 | 22 | А | 10 | 7 | |
| 28 | 02 13 41 | 37,7 | 58,1 | | А | 9 | 6 | |
| | | | March | | | | | |
| 1 | 19 57 40 | 37,6 | 57,0 | | | 9 | 7 | The same |
| 2 | 14 14 39 | 38,2 | 57,4 | | | 8 | 6 | |
| 3 | 04 00 21 | 38,2 | 57,4 | | | 8 | 6 | " |
| | 14 22 12 | 38,0 | 58,3 | | А | 7 | 5 | " |
| 4 | 10 38 42 | 38,2 | 57,4 | | | 8 | 6 | " |
| | 11 07 11 | 38,2 | 57,4 | | | 8 | 6 | " |
| 5 | 08 14 47 | 38,1 | 57,3 | 23 | | 10 | 6 | " |
| | 15 13 15 | 38,5 | 57,5 | | | 8 | 5 | " |
| 6 | 09 39 47 | 37,6 | 57,0 | 25 | Б | 9 | 7 | " |
| | 12 17 34 | 38,0 | 58,1 | | | 6 | 6 | |
| 7 | 11 36 03 | 37,7 | 56,1 | 35 | А | 12 | 7 | |
| | | | | | | M = 5,6 | | |
| | 11 53 21 | 37,7 | 56,1 | | Б | 9 | 7 | Afterschock of earthquake on 7 March at 1136 hours |
| | 12 15 42 | 37,7 | 56,1 | | А | 9 | 7 | The same |
| | 12 46 31 | 37,1 | 56,1 | | А | 9 | 7 | " |
| | 12 52 44 | 37,7 | 56,1 | | | 9 | 7 | " |
| | 13 55 41 | 37,7 | 56,1 | | А | 9 | 7 | " |
| | 14 26 19 | 37,7 | 56,1 | | А | 9 | 7 | " |
| | 16 40 45 | 37,6 | 56,0 | 20 | А | 10 | 7 | " |
| | 18 41 08 | 37,55 | 56,08 | 18 | А | 10 | 7 | " |
| 8 | 02 05 29 | 37,40 | 55,85 | 18 | Б | 9–10 | 7 | " |
| | 03 26 51 | 37,60 | 55,85 | 16 | Б | 11 | 7 | " |
| | 05 11 26 | 37,70 | 55,85 | 20 | А | 10 | 7 | " |
| | 06 27 37 | 37,35 | 57,50 | | | 9 | 7 | |
| | 06 30 04 | 38,25 | 57,20 | | | 9 | 6 | Aftershock of earthquake on 25 Feb at 1554 hours |
| | 06 40 03 | 38,0 | 58,1 | | А | 8 | 6 | |
| | 06 55 00 | 38,0 | 56,6 | | | 8 | 6 | |
| | 23 23 30 | 37,73 | 55,85 | 20 | А | 10 | 7 | Aftershock of earthquake on 7 March at 1136 hours |
| 9 | 00 40 26 | 37,65 | 55,80 | 15 | А | 10–11 | 7 | The same |
| | 10 26 41 | 37,6 | 55,8 | | | 9 | 7 | " |
| | 14 21 04 | 38,5 | 57,5 | | | 7 | 5 | |
| 10 | 00 20 51 | 37,4 | 57,1 | 20 | | 10 | 7 | " |
| | 03 35 12 | 37,6 | 56,0 | | Б | 9 | 7 | " |
| | 03 57 40 | 37,65 | 55,90 | | Б | 9 | 7 | |
| | 15 40 25 | 40,0 | 53,0 | | | 7 | 2 | |
| | 19 29 54 | 38,25 | 57,40 | | Б | 8 | 6 | Aftershock of earthquake on 25 Feb at 1136 hours |
| | 22 57 36 | 37,60 | 55,87 | 15 | А | 10–11 | 7 | Aftershock of earthquake on 7 March at 1554 hours |
| | 23 46 02 | 37,7 | 55,8 | 18 | А | 10 | 7 | |
| 11 | 12 45 45 | 37,5 | 55,9 | | Б | 9 | 7 | The same |
| | 16 15 21 | 37,60 | 55,85 | 18 | А | 10 | 7 | " |
| 12 | 14 53 04 | 37,7 | 56,1 | | Б | 9 | 7 | " |
| 13 | 11 17 15 | 37,85 | 58,80 | | Б | 9 | 5 | " |
| | 11 20 17 | 37,9 | 58,4 | | Б | 9 | 5 | |
| | 11 53 01 | 37,5 | 58,5 | | | 8 | 6 | |

Table contd]



| (1) Час. №№ | (2) Момент возникновения, час мин сек | (3) Координаты эпицентра | | (4) Глубина очага, км | (5) Класс точности | K | (6) № района | (7) Примечание |
|---|---|---|---|---|---|---|---|---|
| | | φ° N | λ° E | | | | | |
| 13 | 14 30 35 | 37,15 | 55,90 | 18 | А | 10 | 7 | Aftershock of the earthquake of 7 March at 1136 hours |
| 14 | 02 56 53 | 37,2 | 56,4 | | В | 9 | 7 | " |
| | 07 07 24 | 37,5 | 55,9 | 20 | Б | 10 | 7 | " |
| 15 | 01 51 19 | 37,5 | 56,0 | | Б | 9 | 7 | |
| | 12 19 48 | 40,2 | 53,1 | | А | 7 | 2 | |
| | 13 22 03 | 38,0 | 58,1 | | Б | 8 | 6 | |
| | 16 22 22 | 38,3 | 56,8 | | | 8 | 6 | |
| | 18 03 23 | 38,8 | 56,5 | | | 9 | 6 | |
| 16 | 00 56 40 | 37,50 | 55,82 | | Б | 9 | 7 | |
| | 15 05 29 | 37,7 | 56,1 | | | 9 | 7 | " |
| | 18 44 13 | 38,0 | 58,0 | | Б | 7 | 6 | |
| 19 | 10 45 57 | 37,6 | 55,9 | 18 | А | 10 | 7 | " |
| | 11 25 37 | 38,0 | 58,0 | | Б | 8 | 6 | |
| 20 | 06 17 55 | 40,0 | 53,0 | | А | 7 | 2 | |
| | 07 29 30 | 38,0 | 58,0 | | А | 7 | 6 | |
| | 18 23 25 | 37,55 | 56,00 | | А | 9 | 7 | " |
| 21 | 07 49 [illegible] | 38,1 | 57,6 | | | 8 | 6 | |
| 22 | 18 45 01 | 37,08 | 56,52 | 18 | А | 10 | 7 | " |
| 23 | 08 02 59 | 37,5 | 56,0 | 18 | Б | 10 | 7 | |
| | 08 48 33 | 37,5 | 56,0 | | Б | 9 | 7 | The same " |
| | 09 17 20 | 37,7 | 56,2 | | | 9 | 7 | " |
| | 10 20 46 | 37,09 | 55,38 | | | 9 | 7 | |
| | 14 57 35 | 37,55 | 56,00 | 18 | | 10 | 7 | " |
| 25 | 22 02 04 | 37,70 | 56,05 | 18 | А | 10 | 7 | " |
| 26 | 14 41 05 | 38,0 | 58,0 | | Б | 7 | 6 | |
| | 16 17 08 | 38,0 | 58,0 | | Б | 8 | 6 | |
| | 16 34 28 | 38,3 | 57,0 | 30 | | 10 | 6 | |
| 30 | 04 33 35 | 36,65 | 57,40 | | | 9 | 7 | " |
| | 21 06 15 | 37,65 | 56,15 | | А | 9 | 7 | |
| | | April | | | | | | |
| 2 | 01 37 28 | 37,20 | 57,80 | | А | 9 | 7 | |
| | 02 40 36 | 37,50 | 55,95 | | Б | 9 | 7 | Aftershock of the earthquake of 7 March at 1136 hours |
| | 09 14 15 | 37,9 | 58,4 | | А | 7 | 5 | |
| 3 | 05 19 10 | 37,65 | 56,00 | | А | 9 | 7 | The same |
| 4 | 09 24 45 | 37,9 | 57,8 | | А | 6 | 6 | |
| | 20 10 59 | 38,0 | 58,1 | | Б | 6 | 6 | |
| | 20 47 05 | 37,8 | 58,0 | | Б | 6 | 6 | |
| | 21 16 51 | 37,5 | 56,0 | 17 | Б | 9–10 | 7 | " |
| 9 | 01 53 25 | 37,5 | 56,1 | | | 9 | 7 | " |
| | 07 00 14 | 38,1 | 57,9 | | А | 7 | 5 | |
| | 08 11 50 | 40,1 | 53,1 | | А | 8 | 2 | |
| 10 | 01 22 00 | 37,5 | 56,1 | 18 | Б | 10 | 7 | " |
| | 03 56 26 | 38,20 | 57,15 | | А | 9 | 6 | " |
| | 04 04 00 | 37,70 | 56,08 | 16 | А | 11 | 7 | " |
| | 12 40 56 | 37,5 | 56,1 | | | 8 | 7 | |
| 11 | 10 42 18 | 40,2 | 53,1 | | А | 7 | 2 | |
| | 11 40 13 | 37,2 | 57,8 | | | 8 | 7 | |
| 12 | 07 00 14 | 35,81 | 56,78 | | Б | 9 | 7 | |
| 17 | 07 05 57 | 38,00 | 57,95 | | А | 6 | 6 | |
| 18 | 07 05 57 | 37,9 | 58,0 | | А | 6 | 6 | |
| | 11 04 16 | 37,9 | 57,9 | | Б | 8 | 6 | |
| 21 | 09 59 00 | 37,65 | 55,95 | | Б | 9 | 7 | |
| | 11 03 20 | 38,6 | 57,7 | | | 8 | 5 | |
| | 12 11 24 | 37,85 | 56,15 | | Б | 9 | 7 | " |
| | 13 06 42 | 37,05 | 55,35 | | Б | 9 | 7 | |
| 22 | 10 54 01 | 37,9 | 57,9 | | Б | 8 | 6 | |
| 23 | 00 56 32 | 37,9 | 57,9 | | Б | 6–7 | 6 | |
| | 08 04 08 | 38,0 | 58,1 | | А | 7 | 6 | |
| | 13 32 00 | 40,0 | 53,0 | | Б | 8 | 2 | |
| | 14 11 53 | 38,0 | 57,0 | | Б | 8 | 6 | |

[Table contd]

| (1) Число | (2) Момент возникновения, час мин сек | (3) Координаты эпицентра $\varphi^{\circ}$N | $\lambda^{\circ}$E | (4) Глубина очага, км | (5) Класс точности | $K$ | (6) № района | (7) Примечание |
|---|---|---|---|---|---|---|---|---|
| 23 | 15 25 49 | 40,0 | 53,1 | | Б | 8 | 2 | |
| 25 | 10 37 39 | 38,2 | 57,8 | | | 8 | 6 | " |
| | 10 53 42 | 37,7 | 56,2 | | Б | 8 | 7 | |
| 26 | 10 49 46 | 38,1 | 57,9 | | | 8 | 6 | |
| | 10 50 21 | 40,2 | 53,1 | | А | 7 | 2 | Aftershock of the earthquake of 7 March at 1136 hours |
| | 11 37 22 | 36,5 | 55,5 | 17 | Б | 9–10 | 7 | " |
| | 18 23 26 | 37,70 | 56,05 | | Б | 8 | 7 | |
| 27 | 11 13 00 | 38,0 | 58,0 | | | 8 | 6 | " |
| 28 | 12 40 57 | 37,7 | 56,4 | | А | 9 | 7 | " |
| | 12 59 20 | 37,65 | 55,95 | | А | 9 | 7 | |
| | 18 41 38 | 36,45 | 54,60 | 23 | Б | 11 | 7 | |
| 29 | 08 02 03 | 36,1 | 53,7 | 25 | Б | 11 | 7 | |
| | 11 08 11 | 35,2 | 53,9 | 26 | Б | 10–11 | 7 | " |
| | 17 55 32 | 37,7 | 56,1 | | Б | 8 | 7 | |
| | 19 08 29 | 38,0 | 58,0 | | | 7 | 6 | " |
| 30 | 01 25 23 | 37,7 | 56,1 | | | 8 | 7 | " |
| | 17 52 06 | 37,7 | 56,1 | | | 8 | 7 | |
| | | | | May | | | | |
| 2 | 23 39 42 | 36,55 | 55,00 | 25 | Б | 10 | 7 | |
| 3 | 14 58 29 | 37,2 | 57,2 | | | 8 | 7 | |
| 4 | 02 02 49 | 37,6 | 57,0 | | Б | 9 | 7 | |
| 5 | 06 26 15 | 37,55 | 56,00 | 20 | | 10 | 7 | Aftershock of earthquake of 7 March at 1136 hours |
| 7 | 02 36 55 | 38,0 | 58,0 | | Б | 5 | 6 | |
| | 08 05 24 | 40,0 | 53,1 | | А | 6 | 2 | |
| 8 | 19 27 17 | 38,0 | 53,5 | 27 | | 10 | 1 | |
| 9 | 07 51 33 | 38,0 | 58,0 | | Б | 7 | 6 | |
| | 12 13 26 | 37,2 | 57,3 | | Б | 9 | 7 | |
| 10 | 01 49 38 | 37,7 | 58,1 | | Б | 6 | 6 | |
| | 08 49 18 | 37,90 | 57,15 | | Б | 9 | 6 | |
| 11 | 19 22 58 | 38,05 | 55,75 | | | 9 | 3 | The same |
| 12 | 05 14 54 | 37,55 | 56,00 | | | 9 | 7 | |
| | 08 51 38 | 40,2 | 53,0 | | А | 7 | 2 | |
| | 08 53 41 | 37,8 | 58,1 | | Б | 6 | 6 | |
| | 20 44 56 | 35,9 | 56,5 | 26 | Б | 10 | 7 | |
| 14 | 06 40 35 | 40,1 | 53,1 | | А | 5 | 2 | |
| | 08 54 33 | 37,5 | 58,6 | | Б | 8 | 6 | |
| | 09 14 34 | 37,5 | 58,6 | | | 8 | 6 | |
| | 15 50 41 | 38,45 | 56,30 | | А | 8 | 6 | |
| 15 | 16 05 19 | 38,45 | 56,30 | | А | 8 | 6 | " |
| 16 | 00 47 44 | 37,50 | 56,05 | | | 9 | 7 | " |
| 18 | 08 24 28 | 37,65 | 56,10 | 15 | А | 10–11 | 7 | |
| | 15 43 16 | 40,0 | 53,0 | | | 9 | 2 | |
| 19 | 22 29 26 | 37,65 | 56,70 | | Б | 9 | 7 | |
| 20 | 11 43 04 | 37,5 | 58,4 | | Б | 9 | 6 | |
| | 21 06 46 | 38,0 | 58,0 | | Б | 6 | 6 | |
| 21 | 18 30 15 | 38,0 | 58,0 | | Б | 7 | 6 | |
| | 20 18 47 | 38,0 | 58,1 | | А | 5 | 6 | |
| | 23 28 41 | 38,15 | 57,25 | | А | 9 | 6 | |
| 22 | 07 21 08 | 37,8 | 57,9 | | Б | 9 | 6 | |
| 24 | 12 04 32 | 37,9 | 58,2 | | А | 5 | 6 | |
| | 16 49 24 | 37,7 | 58,3 | | Б | 7 | 6 | |
| 25 | 00 07 00 | 37,75 | 57,10 | | Б | 8 | 6 | " |
| | 10 17 35 | 37,7 | 56,3 | | | 9 | 7 | |
| 26 | 08 07 14 | 38,0 | 58,1 | | А | 6 | 6 | |
| | 12 53 51 | 38,0 | 58,1 | | А | 5 | 6 | |
| 27 | 07 53 24 | 40,0 | 53,1 | | А | 6 | 2 | |
| | 08 22 14 | 37,6 | 58,0 | | Б | 9 | 6 | |
| 29 | 07 42 49 | 37,9 | 58,2 | | А | 6 | 6 | |
| | 08 22 14 | 37,6 | 58,0 | | Б | 9 | 6 | |
| 30 | 10 42 12 | 37,6 | 58,6 | 54 | Б | 8–9 | 6 | |

| (1) Число | (2) Момент возникновения, час мин сек | (3) Координаты эпицентра $\varphi^0$ N | $\lambda^0$ E | (4) Глубина очага, км | (5) Класс точности | K | (6) № района | (7) Примечание |
|---|---|---|---|---|---|---|---|---|
| 31 | 01 04 43 | 38,05 | 57,20 | | Б | 9 | 6 | |
| | 09 37 05 | 37,9 | 58,3 | | А | 4 | 6 | |
| | 11 40 34 | 40,1 | 53,1 | | А | 7 | 2 | |
| | | | June | | | | | |
| 2 | 03 57 49 | 38,3 | 57,2 | | | 8 | 6 | |
| 4 | 06 40 22 | 39,8 | 53,0 | | А | 7 | 1 | |
| | 19 29 11 | 37,55 | 56,45 | 30 | А | 10 | 7 | Aftershock of earthquake of 7 March at 1136 hours |
| 6 | 01 45 16 | 37,10 | 55,95 | 30 | А | 10 | 7 | 1136 hours |
| | 03 00 08 | 36,90 | 53,85 | 35 | А | 10 | 7 | The same |
| | 08 49 43 | 39,8 | 53,0 | | А | 7 | 1 | |
| | 23 19 26 | 37,65 | 55,95 | 33 | А | 10 | 7 | " |
| 7 | 02 36 06 | 38,1 | 56,1 | | | 9 | 6 | |
| | 02 45 09 | 37,65 | 55,95 | | | 9 | 7 | " |
| | 03 15 40 | 37,65 | 55,95 | | | 9 | 7 | " |
| | 03 43 30 | 39,25 | 57,30 | | Б | 9 | 4 | |
| | 09 31 24 | 39,9 | 53,1 | | А | 7 | 1 | |
| 10 | 02 26 42 | 38,3 | 57,4 | | | 8 | 6 | |
| 11 | 04 07 19 | 36,70 | 57,15 | | А | 9 | 7 | |
| | 08 01 43 | 38,2 | 57,8 | | | 8 | 6 | |
| 12 | 12 32 02 | 39,2 | 54,8 | | Б | 8–9 | 3 | |
| 13 | 08 43 55 | 38,2 | 57,8 | | | 8 | 6 | |
| 14 | 17 26 52 | 37,9 | 58,0 | | А | 7 | 6 | |
| 16 | 02 42 10 | 38,20 | 57,45 | | А | 8 | 6 | |
| | 14 29 44 | 37,5 | 56,6 | | А | 9 | 7 | |
| 17 | 02 50 34 | 38,0 | 57,5 | | | 8 | 6 | |
| | 12 28 17 | 40,2 | 53,1 | | А | 7 | 2 | |
| | 22 35 06 | 38,0 | 58,0 | | Б | 7 | 6 | |
| 18 | 10 06 03 | 40,1 | 53,2 | | А | 7 | 2 | |
| 19 | 02 25 41 | 37,45 | 55,85 | 30 | А | 10 | 7 | " |
| | 02 37 52 | 37,40 | 55,85 | 28 | А | 10 | 7 | " |
| | 07 37 46 | 40,1 | 53,0 | | А | 7 | 2 | |
| | 18 22 53 | 36,45 | 54,45 | 22 | А | 11 | 7 | " |
| 20 | 00 16 43 | 37,60 | 55,95 | 28 | | 10 | 7 | |
| | 00 49 56 | 36,85 | 55,70 | | Б | 9 | 7 | |
| | 08 58 42 | 37,9 | 58,1 | | А | 8 | 6 | |
| | 16 16 24 | 36,7 | 55,8 | | А | 9 | 7 | |
| 21 | 21 32 49 | 37,8 | 55,7 | | Б | 9 | 7 | |
| 23 | 23 37 05 | 38,0 | 58,2 | | А | 5 | 5 | |
| 24 | 18 05 30 | 38,2 | 57,9 | | Б | 7–8 | 6 | |
| 25 | 06 38 05 | 36,9 | 55,5 | | Б | 9 | 7 | |
| 27 | 15 25 42 | 38,6 | 57,9 | | | 8 | 5 | |
| 28 | 11 49 56 | 38,0 | 58,0 | | А | 9 | 7 | |
| 29 | 14 11 47 | 37,25 | 58,15 | 40 | А | 12 $M=4,2$ | 6 | |
| | 15 44 07 | 37,3 | 58,1 | 28 | Б | 10 | 6 | Aftershock of earthquake of 29 June at 1411 hours |
| | 15 51 39 | 37,3 | 57,8 | | Б | 8–9 | 7 | The same |
| | 16 37 51 | 36,9 | 55,7 | | Б | 9 | 7 | |
| | 16 55 52 | 37,3 | 58,1 | | Б | 8 | 6 | " |
| | 19 06 56 | 37,25 | 58,05 | 33 | А | 11 | 6 | " |
| | 20 39 50 | 37,20 | 58,15 | 30 | А | 10 | 6 | " |
| 30 | 11 56 26 | 37,2 | 58,0 | | А | 9 | 6 | " |
| | 22 30 56 | 37,3 | 58,0 | | | 8 | 6 | |
| | | | July | | | | | |
| 1 | 06 18 29 | 37,7 | 58,5 | | | 6 | 6 | |
| | 21 52 29 | 37,95 | 56,50 | | | 8 | 6 | |
| 2 | 07 23 03 | 38,3 | 57,5 | 45 | Б | 10–11 | 6 | |
| | 10 51 53 | 37,5 | 57,2 | | | 8 | 7 | |
| | 11 12 02 | 37,5 | 55,9 | | | 8–9 | 7 | |

| (1) Число | (2) Момент возникновения, час мин сек | (3) Координаты эпицентра φ°N | (3) λ°E | (4) Глубина очага, км | (5) Класс точности | K | (6) № района | (7) Примечание |
|---|---|---|---|---|---|---|---|---|
| 2 | 11 19 11 | 37,5 | 56,7 | | | 8–9 | 7 | Foreshock of the earthquake of 7 July at 135527 hours |
| | 20 33 09 | 36,4 | 58,8 | | | 9 | 7 | |
| 4 | 06 36 03 | 37,6 | 56,0 | 32 | | 10 | 7 | |
| 5 | 01 58 23 | 37,5 | 57,2 | | Б | 9 | 7 | |
| | 02 03 38 | 37,5 | 52,2 | | | 8 | 1 | |
| | 08 51 54 | 37,5 | 57,2 | 28 | Б | 9–10 | 7 | |
| 7 | 13 55 27 | 37,4 | 56,9 | 50 | А | 11 | 7 | |
| 8 | 02 30 12 | 37,7 | 57,9 | | | 6 | 6 | |
| | 17 13 47 | 37,3 | 58,0 | | | 8 | 6 | |
| 9 | 03 30 52 | 37,6 | 58,6 | | | 7 | 6 | |
| | 07 19 03 | 40,0 | 53,0 | | А | 9 | 2 | |
| | 08 43 56 | 37,6 | 58,7 | | | 8 | 6 | The same |
| | 15 27 05 | 37,5 | 56,3 | 35 | Б | 10 | 7 | " |
| 10 | 10 47 33 | 37,5 | 57,2 | | | 8 | 7 | |
| 11 | 11 51 12 | 38,0 | 58,1 | | А | 8 | 6 | |
| 12 | 18 36 49 | 37,3 | 56,2 | | | 9 | 7 | |
| 13 | 03 36 02 | 37,2 | 57,6 | | | 8–9 | 7 | |
| 14 | 00 46 06 | 37,7 | 58,5 | | | 7 | 6 | |
| | 14 29 04 | 37,2 | 56,1 | | Б | 8–9 | 7 | |
| | 15 53 02 | 37,7 | 58,5 | | | 7 | 6 | |
| 15 | 06 45 53 | 40,0 | 53,0 | | А | 7 | 2 | " |
| | 16 27 37 | 37,4 | 57,60 | | | 8 | 7 | |
| 16 | 09 28 49 | 38,0 | 57,7 | | | 8 | 6 | |
| | 09 44 11 | 37,6 | 58,8 | | | 8 | 6 | |
| | 14 33 22 | 37,30 | 57,95 | 43 | А | 11–12 $M=4,2$ | 6 | |
| | 14 37 06 | 37,3 | 58,2 | 35 | Б | 10 | 6 | Aftershock of earthquake on 16 July at 1433 hours |
| | 14 39 56 | 37,3 | 58,2 | | Б | 8–9 | 6 | The same |
| | 15 09 20 | 37,2 | 58,2 | | Б | 9 | 6 | " |
| 16 | 19 11 25 | 37,6 | 58,5 | | | 6 | 6 | " |
| | 23 09 34 | 37,2 | 56,1 | | | 9 | 7 | |
| 17 | 00 46 31 | 37,5 | 57,9 | | | 8 | 6 | |
| | 10 07 54 | 37,3 | 58,3 | | Б | 9 | 6 | |
| 18 | 00 20 52 | 38,0 | 58,1 | | А | 5 | 6 | |
| 19 | 06 42 41 | 40,0 | 53,0 | | А | 7 | 2 | |
| | 07 13 43 | 38,1 | 57,7 | | Б | 9 | 6 | |
| | 11 28 22 | 40,0 | 53,0 | | А | 8 | 2 | |
| | 12 12 03 | 37,5 | 55,57 | 36 | Б | 10 | 7 | |
| 20 | 13 21 52 | 37,4 | 58,9 | 35 | Б | 10 | 6 | " |
| | 13 49 46 | 37,3 | 58,0 | | Б | 9 | 6 | " |
| | 15 20 47 | 37,5 | 57,9 | | Б | 8 | 6 | |
| | 17 55 04 | 37,5 | 57,9 | | | 8 | 6 | Aftershock of earthquake on 16 July at 1433 hours |
| | 23 42 48 | 36,7 | 53,3 | 35 | | 10 | 7 | The same |
| 21 | 02 47 26 | 37,2 | 58,1 | 26 | | 9–10 | 6 | |
| | 03 32 01 | 37,9 | 57,8 | | Б | 8 | 6 | " |
| | 03 43 14 | 37,2 | 58,0 | | | 8 | 6 | |
| | 08 53 44 | 37,7 | 56,1 | | | 9 | 7 | |
| | 16 07 42 | 38,3 | 57,4 | 55 | А | 11 | 6 | |
| 22 | 02 41 44 | 38,3 | 57,4 | | Б | 7 | 6 | Aftershock of earthquake on 21 July at 1607 hours |
| | 06 46 16 | 38,3 | 57,4 | | | 8 | 6 | The same |
| 23 | 10 33 31 | 38,1 | 58,1 | | А | 6 | 6 | |
| 24 | 10 01 04 | 38,1 | 58,1 | | А | 6 | 6 | |
| 25 | 07 25 30 | 37,9 | 57,8 | | Б | 8 | 6 | |
| | 07 34 54 | 37,5 | 58,2 | | Б | 8 | 6 | |

| (1) Чис-ло | (2) Момент возникновения, час мин сек | (3) Координаты эпицентра φ° N | λ° E | (4) Глубина очага, км | (5) Класс точности | K | (6) № района | (7) Примечание |
|---|---|---|---|---|---|---|---|---|
| 25 | 11 05 43 | 40,0 | 53,0 | | А | 7 | 2 | |
| | 14 40 30 | 37,7 | 57,1 | | | 9 | 6 | |
| | 16 02 12 | 37,5 | 58,2 | | | 7 | 6 | Aftershock of earthquake on 16 July at 1433 hours |
| | 19 23 33 | 37,7 | 56,1 | 27 | | 9–10 | 7 | |
| 26 | 11 27 13 | 40,0 | 53,0 | | А | 8 | 2 | |
| | 15 14 53 | 37,6 | 58,8 | 30 | Б | 10 | 6 | |
| 27 | 02 38 38 | 38,3 | 56,9 | | | 8–9 | 6 | |
| | 03 20 41 | 38,3 | 56,9 | | Б | 8 | 6 | |
| 28 | 02 25 30 | 38,1 | 57,4 | | А | 9 | 6 | Aftershock of earthquake on 21 July at 1607 hours |
| | 13 58 18 | 38,1 | 57,4 | | Б | 8 | 6 | The same |
| 29 | 19 51 32 | 38,1 | 57,4 | | Б | 8 | 6 | " |
| 30 | 09 49 55 | 38,0 | 57,4 | | Б | 7 | 6 | Aftershock of earthquake on21 July at at 1607 hours |
| | 10 52 58 | 37,9 | 57,8 | | Б | 8–9 | 6 | The same |
| 31 | 07 02 47 | 40,0 | 53,0 | | А | 7 | 2 | " |
| | 08 15 12 | 37,7 | 57,6 | | | 8 | 6 | |
| | | | | August | | | | |
| 1 | 23 39 05 | 38,0 | 58,1 | | А | 5 | 6 | |
| 2 | 07 32 48 | 37,8 | 58,5 | | Б | 6–7 | 6 | |
| | 10 20 08 | 40,0 | 53,0 | | А | 5 | 2 | |
| 3 | 11 53 18 | 37,3 | 58,1 | 38 | Б | 10 | 6 | Aftershock of earthquake on 16 July at 1433 hours |
| | 19 18 10 | 38,0 | 58,1 | | А | 4 | 6 | |
| 4 | 20 53 11 | 37,8 | 58,5 | | Б | 6 | 6 | |
| 5 | 10 36 09 | 40,1 | 53,1 | | А | 6 | 2 | |
| 6 | 01 10 53 | 38,1 | 57,8 | | А | 9 | 6 | Aftershock of earthquake on 21 July at at 1607 hours |
| | 10 46 37 | 37,9 | 58,4 | | Б | 8 | 5 | Foreshock of earthquake on 6 August at at 2011 hours |
| | 11 54 33 | 37,9 | 58,4 | | | 7 | 5 | The same |
| | 20 11 08 | 37,8 | 58,3 | 13 | А | 11 | 5 | " |
| | 20 23 18 | 37,8 | 58,5 | | Б | 9 | 5 | " |
| | 20 44 21 | 37,8 | 58,5 | 25 | А | 10 | 5 | " |
| | 20 45 19 | 37,8 | 58,5 | | А | 8–9 | 5 | " |
| 7 | 09 46 11 | 38,0 | 58,1 | | А | 7 | 6 | |
| | 09 48 48 | 40,0 | 53,0 | | А | 6 | 2 | " |
| | 10 14 05 | 37,9 | 58,4 | | А | 7 | 5 | " |
| | 10 18 28 | 37,9 | 58,4 | | А | 6 | 5 | " |
| 8 | 04 38 56 | 38,0 | 58,1 | | А | 7 | 6 | " |
| | 08 51 30 | 37,6 | 58,8 | | Б | 8–9 | 6 | |
| 9 | 07 34 01 | 37,7 | 57,8 | | Б | 8–9 | 6 | |
| 11 | 08 52 12 | 35,7 | 58,7 | 27 | | 10 | 7 | " |
| | 10 38 37 | 38,0 | 58,1 | | А | 6 | 6 | " |
| 12 | 09 53 35 | 37,8 | 58,0 | | Б | 7 | 6 | |
| 13 | 21 07 45 | 37,4 | 56,1 | 28 | Б | 10 | 7 | |
| 15 | 05 14 35 | 37,6 | 56,8 | | | 9 | 7 | " |
| | 09 17 37 | 37,5 | 58,4 | | Б | 8–9 | 6 | |
| | 22 08 06 | 37,4 | 57,2 | | | 9 | 7 | |
| 16 | 07 30 26 | 38,1 | 57,8 | | | 8 | 6 | |
| 17 | 12 16 41 | 37,3 | 57,6 | | | 9 | 7 | |
| | 22 54 29 | 37,6 | 56,0 | | | 9 | 7 | |
| 18 | 07 38 02 | 37,5 | 57,5 | | | 8 | 7 | |
| | 16 52 35 | 37,5 | 57,5 | | | 7 | 7 | " |
| | 17 49 46 | 38,0 | 58,1 | | А | 4 | 6 | |
| 19 | 05 43 58 | 37,4 | 57,6 | | | 8 | 7 | |

| (1) Чис-ло | (2) Момент возникновения, час мин сек | (3) Координаты эпицентра φ° N | λ° E | (4) Глубина очага, км | (5) Класс точности | K | № района (6) | (7) Примечание |
|---|---|---|---|---|---|---|---|---|
| 19 | 20 51 58 | 37,5 | 58,1 | | | 8 | 6 | " |
| | 21 36 39 | 38,0 | 58,1 | | | 8 | 6 | " |
| 20 | 02 02 14 | 38,5 | 58,0 | | | 8 | 5 | |
| 22 | 07 46 37 | 38,5 | 58,0 | | | 6 | 5 | |
| 23 | 01 38 13 | 37,4 | 56,3 | 30 | Б | 11 | 7 | |
| | 07 57 03 | 37,7 | 57,9 | | Б | 8 | 6 | |
| 24 | 02 58 52 | 37,8 | 58,5 | | Б | 7 | 5 | " |
| | 03 22 31 | 37,8 | 58,2 | | Б | 8 | 6 | " |
| 27 | 09 56 36 | 37,5 | 58,6 | | | 9 | 6 | |
| 28 | 07 32 36 | 38,0 | 58,1 | | Б | 8 | 6 | " |
| | 08 01 54 | 37,8 | 59,0 | | | 7 | 5 | |
| 29 | 10 01 53 | 40,0 | 53,0 | | А | 6 | 2 | |
| | 13 06 00 | 37,2 | 57,8 | | | 8 | 7 | |
| 30 | 07 24 37 | 37,8 | 57,9 | | | 7 | 6 | " |
| | | | September | | | | | |
| 2 | 09 30 24 | 40,0 | 53,0 | | А | 7 | 2 | |
| | 11 54 22 | 37,9 | 57,6 | | | 8 | 6 | |
| | 13 10 50 | 37,90 | 58,95 | | | 8 | 5 | Aftershock of earthquake on 6 August at 2011 hours |
| 3 | 06 21 18 | 37,90 | 58,95 | 30 | А | 9–10 | 5 | The same |
| | 09 04 58 | 37,9 | 58,9 | | Б | 9 | 5 | |
| | 12 44 27 | 38,0 | 57,7 | | | 6 | 6 | |
| 4 | 15 41 27 | 37,5 | 57,3 | | | 8 | 7 | |
| | 20 44 32 | 37,0 | 55,5 | 28 | | 10 | 7 | |
| 5 | 16 25 00 | 37,0 | 55,5 | | А | 9 | 7 | |
| 6 | 07 27 15 | 37,5 | 57,3 | | | 8 | 7 | |
| | 18 15 20 | 38,0 | 57,7 | | | 7 | 6 | |
| | 18 25 01 | 37,0 | 55,5 | 26 | | 9–10 | 7 | |
| | 19 47 18 | 37,4 | 56,9 | | | 8 | 7 | |
| | 20 15 30 | 37,4 | 56,9 | | | 8 | 7 | |
| | 20 26 52 | 37,4 | 56,9 | | | 8 | 7 | |
| 7 | 12 33 16 | 37,4 | 57,0 | | | 8 | 7 | |
| | 18 16 04 | 36,8 | 55,5 | | А | 9 | 7 | |
| | 19 37 31 | 37,9 | 57,6 | | | 7 | 6 | |
| 8 | 23 39 30 | 38,0 | 58,1 | | А | 6 | 6 | " |
| 9 | 06 57 54 | 38,2 | 57,4 | | А | 9 | 6 | |
| 10 | 02 59 12 | 38,0 | 58,1 | | А | 6 | 6 | |
| | 20 42 40 | 38,0 | 58,1 | | А | 6 | 6 | " |
| 11 | 05 37 43 | 40,5 | 53,4 | | | 9 | 2 | |
| | 08 06 49 | 38,0 | 57,7 | | | 8 | 6 | " |
| 12 | 22 28 59 | 37,2 | 58,7 | | | 9 | 6 | |
| 13 | 09 11 22 | 40,0 | 53,0 | | А | 6 | 2 | |
| | 17 42 05 | 40,5 | 52,3 | | | 9 | 1 | |
| 15 | 03 40 27 | 37,3 | 57,6 | | Б | 9 | 7 | |
| 16 | 09 27 15 | 40,5 | 53,3 | | | 9 | 1 | |
| | 10 46 29 | 40,0 | 53,0 | | А | 7 | 2 | |
| 17 | 09 27 32 | 37,5 | 57,3 | | | 8 | 7 | |
| | 11 56 13 | 38,0 | 57,7 | | | 6 | 6 | |
| | 20 26 58 | 37,4 | 56,7 | | | 8 | 7 | |
| | 23 10 03 | 37,6 | 57,7 | | | 8 | 6 | |
| 18 | 05 15 13 | 40,5 | 53,2 | | | 8 | 2 | |
| | 10 55 35 | 37,5 | 57,9 | | Б | 9 | 6 | |
| | 13 54 50 | 37,0 | 57,6 | | | 8 | 6 | |
| | 14 54 42 | 38,0 | 57,7 | | Б | 6 | 6 | |
| | 16 49 31 | 38,0 | 57,7 | | Б | 8 | 6 | |
| 19 | 02 30 55 | 38,0 | 57,7 | | Б | 8 | 6 | |
| | 10 58 00 | 38,0 | 57,7 | | Б | 9 | 6 | |
| 20 | 08 12 12 | 37,60 | 57,95 | | Б | 8–9 | 6 | |
| | 11 05 04 | 40,0 | 53,0 | | А | 7 | 2 | |
| 21 | 02 04 33 | 37,6 | 57,9 | | Б | 7 | 6 | |
| | 02 06 49 | 38,0 | 58,1 | | А | 5 | 6 | |
| | 20 20 25 | 40,7 | 52,2 | | | 9 | 1 | |
| 22 | 02 02 50 | 40,7 | 52,2 | | | 9 | 1 | |

| (1) Число | (2) Момент возникновения, час мин сек | (3) Координаты эпицентра φ° N | (3) λ° E | (4) Глубина очага, км | (5) Класс точности | K | (6) № района | (7) Примечание |
|---|---|---|---|---|---|---|---|---|
| 22 | 17 15 21 | 37,0 | 56,7 | | | 8 | 7 | |
| | 22 04 13 | 38,1 | 57,3 | | | 8 | 6 | |
| 23 | 05 05 49 | 37,30 | 57,25 | | | 8 | 7 | |
| | 11 17 05 | 40,0 | 53,0 | | А | 7 | 2 | |
| 24 | 06 21 09 | 38,0 | 57,7 | | | 6 | 6 | |
| | 09 08 26 | 37,50 | 58,65 | | Б | 8–9 | 6 | |
| 25 | 07 59 44 | 38,0 | 57,8 | | Б | 8 | 6 | |
| | 10 28 07 | 40,0 | 53,0 | | А | 6 | 2 | |
| | 18 50 51 | 35,4 | 58,2 | 30 | | 10 | 7 | |
| 26 | 10 40 30 | 38,0 | 58,1 | | А | 5 | 6 | |
| 27 | 00 40 29 | 38,0 | 57,1 | | Б | 9 | 6 | |
| | 01 23 33 | 38,0 | 57,1 | | А | 9 | 6 | |
| | 05 05 54 | 36,6 | 55,4 | | | 9 | 7 | |
| | 10 43 16 | 37,7 | 58,8 | | | 8 | 5 | |
| | 12 08 05 | 37,6 | 56,0 | 28 | | 10 | 7 | |
| 29 | 01 21 15 | 37,1 | 58,6 | | | 8 | 6 | |
| 30 | 07 42 08 | 38,0 | 57,7 | | | 6 | 6 | |
| | 19 59 17 | 38,0 | 57,6 | | | 7 | 6 | |
| | | | October | | | | | |
| 3 | 00 02 59 | 36,4 | 54,6 | 25 | Б | 10 | 7 | |
| 7 | 08 13 13 | 40,0 | 53,0 | | А | 7 | 2 | |
| 8 | 11 02 49 | 38,2 | 57,7 | | | 8–9 | 6 | |
| 10 | 02 44 12 | 37,4 | 57,6 | | | 8 | 7 | |
| | 03 35 39 | 36,8 | 55,9 | | | 9 | 7 | |
| | 13 59 02 | 34,9 | 55,95 | 25 | | 10 | 7 | |
| 11 | 07 34 56 | 37,9 | 57,8 | | Б | 7–8 | 6 | |
| | 12 09 03 | 40,0 | 53,0 | | А | 7 | 2 | |
| 14 | 07 36 09 | 37,8 | 57,8 | | Б | 8 | 6 | |
| 16 | 03 13 57 | 36,1 | 54,2 | 25 | | 10 | 7 | |
| | 05 29 08 | 38,0 | 57,8 | | Б | 8 | 6 | |
| 17 | 06 01 36 | 40,7 | 52,2 | 22 | | 9–10 | 1 | |
| | 06 03 17 | 40,7 | 52,2 | 35 | А | 10–11 | 1 | |
| | 23 59 49 | 38,1 | 58,2 | | А | 6 | 5 | |
| 18 | 00 52 42 | 38,2 | 58,2 | | А | 7 | 5 | |
| | 04 13 03 | 38,8 | 55,6 | | Б | 10 | 6 | |
| | 07 31 20 | 37,9 | 57,9 | | Б | 8 | 6 | |
| 22 | 05 44 14 | 37,9 | 57,9 | | | 6 | 6 | |
| | 08 33 10 | 40,0 | 53,0 | | А | 7 | 2 | |
| | 10 12 19 | 39,4 | 55,2 | 45 | Б | 10 | 6 | |
| | 13 56 25 | 37,5 | 58,5 | | Б | 8 | 6 | |
| 24 | 10 50 39 | 38,1 | 57,8 | | | 9 | 6 | |
| 25 | 03 45 58 | 37,5 | 57,7 | | | 9 | 6 | |
| | 06 46 43 | 37,5 | 57,7 | | | 7 | 6 | |
| | 08 54 04 | 38,0 | 58,1 | | А | 6 | 6 | |
| | 09 21 13 | 38,1 | 57,8 | | Б | 7 | 6 | |
| | 21 52 45 | 37,9 | 57,8 | 40 | Б | 10 | 6 | |
| | 22 43 33 | 37,7 | 55,7 | | Б | 9 | 7 | |
| 26 | 02 41 41 | 37,6 | 57,7 | | Б | 7 | 6 | |
| 27 | 01 53 52 | 38,0 | 58,1 | | А | 7 | 6 | |
| 29 | 03 59 17 | 37,3 | 58,1 | | | 8 | 6 | |
| | 11 13 16 | 37,6 | 58,1 | | Б | 8 | 6 | |
| 30 | 02 39 53 | 38,0 | 58,1 | | А | 4 | 6 | |
| | 06 49 28 | 38,1 | 57,8 | | | 7 | 6 | |
| 31 | 02 45 12 | 38,3 | 57,1 | | | 9 | 6 | |
| | | | November | | | | | |
| 4 | 10 25 17 | 40,0 | 53,0 | | А | 7 | 2 | |
| | 10 55 57 | 38,2 | 58,0 | | Б | 8 | 5 | |
| 5 | 20 02 18 | 36,6 | 53,2 | 35 | А | 13 | 7 | |
| | | | | | | $M = 5,0^{\circ}$ | | |
| 6 | 12 33 20 | 36,3 | 53,8 | 36 | Б | 10–11 | 7 | |
| 9 | 09 42 11 | 37,85 | 55,30 | 26 | А | 10 | 3 | |
| 10 | 03 05 32 | 36,9 | 56,2 | 30 | | 10 | 7 | |
| 11 | 10 52 50 | 38,2 | 57,9 | | | 9 | 6 | |

| (1) Число | (2) Момент возникновения, час мин сек | (3) Координаты эпицентра | | (4) Глубина очага, км | (5) Класс точности | $K$ | (6) № района | (7) Примечание |
|---|---|---|---|---|---|---|---|---|
| | | $\varphi^\circ$ N | $\lambda^\circ$ E | | | | | |
| 13 | 08 11 21 | 40,0 | 53,0 | | А | 6 | 2 | |
| 14 | 07 37 52 | 40,0 | 53,0 | | А | 6 | 2 | |
| 18 | 07 37 18 | 38,1 | 57,9 | | Б | 8 | 6 | |
| | 22 44 40 | 36,4 | 54,1 | 28 | | 10–11 | 7 | |
| 19 | 07 28 38 | 38,0 | 57,9 | | Б | 8 | 6 | |
| | 10 21 19 | 37,4 | 59,0 | | | 9 | 6 | |
| | 14 12 56 | 37,9 | 56,0 | | | 9 | 7 | |
| | 18 13 27 | 37,3 | 55,3 | | | 9 | 7 | |
| 20 | 10 43 35 | 38,0 | 58,1 | | А | 6 | 6 | |
| | 11 54 26 | 37,8 | 56,6 | 30 | | 10 | 7 | |
| | 12 12 55 | 40,0 | 53,0 | | А | 7 | 2 | |
| | 13 35 01 | 37,8 | 56,0 | | Б | 9 | 7 | |
| 21 | 01 35 56 | 35,8 | 59,1 | 23 | | 9–10 | 7 | |
| | 10 41 56 | 38,0 | 57,9 | | | 8 | 6 | |
| 23 | 03 31 59 | 38,3 | 55,0 | 45 | А | 12 | 6 | |
| | 04 12 28 | 37,9 | 57,3 | | | 8–9 | 6 | |
| | 21 29 01 | 37,3 | 57,6 | 30 | Б | 10 | 7 | |
| | 23 21 08 | 37,3 | 57,6 | | | 8 | 7 | |
| 26 | 00 59 33 | 37,4 | 54,5 | 35 | Б | 11 | 7 | |
| | | | | | | $M = 4,1$ | | |
| 27 | 07 32 38 | 38,2 | 58,0 | | | 8 | 5 | |
| | 09 03 34 | 38,0 | 58,1 | | А | 7 | 6 | |
| | 13 11 32 | 37,4 | 56,9 | | | 9 | 7 | |
| 28 | 09 04 12 | 37,4 | 58,6 | | | 8 | 6 | |
| | 14 29 42 | 38,0 | 58,1 | | А | 7 | 6 | |
| 29 | 05 02 54 | 37,1 | 56,2 | | | 8–9 | 7 | |
| | 10 56 18 | 37,5 | 58,2 | | | 7–8 | 6 | |
| 30 | 06 53 20 | 37,7 | 57,7 | | | 8 | 6 | |
| | | | December | | | | | |
| 1 | 23 49 37 | 37,7 | 57,7 | | | 7 | 6 | |
| 3 | 09 11 09 | 38,3 | 57,7 | 40 | А | 11 | 6 | |
| | 18 56 06 | 38,1 | 57,1 | | | 9 | 6 | |
| 4 | 07 19 07 | 40,0 | 53,0 | | А | 8 | 2 | |
| | 07 49 44 | 37,7 | 57,7 | | | 8 | 6 | |
| | 08 06 47 | 38,0 | 58,1 | | А | 7 | 6 | |
| 5 | 00 16 31 | 37,6 | 57,7 | | | 7 | 6 | |
| 8 | 16 18 48 | 38,0 | 56,7 | | | 9 | 6 | |
| | 16 43 55 | 37,2 | 56,7 | 23 | Б | 9–10 | 7 | |
| 9 | 04 17 41 | 38,1 | 58,0 | | Б | 8 | 6 | |
| | 07 53 15 | 40,0 | 53,0 | | А | 8 | 2 | |
| 10 | 08 35 12 | 37,2 | 58,0 | | | 8 | 7 | |
| 11 | 00 28 03 | 37,5 | 57,2 | | | 8 | 7 | |
| | 07 08 22 | 37,8 | 57,9 | | Б | 9 | 6 | |
| | 21 15 18 | 37,5 | 57,2 | | | 8 | 7 | |
| 13 | 09 31 32 | 40,0 | 53,0 | | А | 6 | 2 | |
| 14 | 05 19 43 | 37,7 | 55,9 | 25 | Б | 10–11 | 7 | |
| | 13 01 57 | 37,3 | 58,4 | | | 9 | 6 | |
| 15 | 15 29 11 | 37,9 | 55,5 | 40 | А | 11 | 3 | |
| | | | | | | $M = 3,7$ (2) | | |
| 16 | 08 26 17 | 37,9 | 57,9 | | Б | 9 | 6 | |
| | 10 05 48 | 37,6 | 58,6 | | | 7–8 | 6 | |
| 17 | 04 56 00 | 38,1 | 57,0 | 35 | А | 10 | 5 | |
| | | | | | | $M = 3,3$ (2) | | |
| | 07 51 05 | 38,7 | 57,6 | 35 | Б | 10 | 5 | |
| 19 | 07 17 22 | 37,8 | 57,8 | | | 8 | 6 | |
| 20 | 08 29 15 | 40,0 | 53,0 | | А | 6 | 2 | |
| 21 | 12 39 11 | 37,0 | 56,2 | 28 | Б | 10 | 7 | |
| 23 | 07 48 52 | 40,0 | 53,0 | | А | 6 | 2 | |
| 26 | 11 03 44 | 38,0 | 58,0 | | А | 5 | 6 | |
| 27 | 07 36 22 | 37,7 | 58,1 | | Б | 8 | 6 | |
| | 10 20 41 | 37,8 | 59,0 | | | 9 | 5 | |
| 28 | 13 49 04 | 40,0 | 53,0 | | А | 8 | 2 | |
| 29 | 05 23 11 | 37,8 | 59,0 | | | 9 | 5 | |

Key:

1. No; 2. time of occurrence, hours, minutes, seconds; 3. coordinates of the epicenter; 4. depth of center, km; 5. accuracy class; 6. No of region; 7. remark

EARTHQUAKES OF CENTRAL ASIA

[Article by V. I. Ulomov, R. P. Fadina, A. P. Katak, Ye. G. Actaf'yeva, G. N. Shakirzhanova, K. D. Dzhanuzakov, L. M. Matasova, A. B. Osmanov, T. A. Kilyapina, V. K. Iodko, A Dzhurayev, V. I. Yakovlev, A. A. Kon'kov, R. K. Kurmanaliyev, N. N. N. Mikhaylova, A. V. Zav'yalova, T. R. Ulubeyeva, A. F. Krasnova, S. M. Kasymov, A. Nurmagambetov, A. Dosymov, A. Sadykov]

In 1974 the earthquakes in Central Asia and Kazakhstan were recorded by 55 seismic stations, that is, one more than in 1973. Small changes occurred in their composition.

Thus, the Ragun station[1] belonging to the Institute of Earthquakeproof Construction and Seismology of the Tadzhik SSR Academy of Sciences did not participate in the recording of the earthquake, and the Kalaydashge station again was put into operation after the annual break. The temporary station of Pachkamir which belongs to the Institute of Seismology of the Uzbek SSR Academy of Sciences was equipped with SKM-3 devices with a maximum amplification of $V_{max}$=20,000.

The procedure for determining the coordinates of the earthquake epicenters remained as before.

Peculiarities of the Seismicity of Central Asia in 1974

In 1974, 2636 earthquakes were recorded in the territory of Central Asia; of them, 1763 were within the limits of the earth's crust and 863 below its foot.

The number of earthquakes was significantly more in this year than in 1973; as many deep earthquakes were recorded in 1973 and twice as many crustal earthquakes. This occurred basically as a result of the aftershocks of the earthquake of 11 August with energy class K=16. This also explains a significant increase in number of intracrustal earthquakes with K≥12. Thus, whereas in 1973 only one earthquake was recorded with K=14, in 1974 there were eight of them; in addition there were two earthquakes with K=15 and one mentioned above with K=16.

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[1] Temporary station

Figures 1 and 2 show the maps of the epicenters of earthquakes with K≥10 and K=9 on which the high concentration of epicenters in the Pamiro-Gindukush and also at the border of Sarykol'skiy and Zaalayskiy Ridges is noted where it is caused by the aftershock activity of the earthquake on 11 August. Table 1 shows the distribution of the earthquake by region in accordance with [1].

Table 2 shows the distribution of the earthquakes with K≥9 with respect to the following seismically active zones: Northern Tyan'-Shan' (I), Central Tyan'-Shan' (II), SouthernTyan'-Shan' (III), Pamiro-Gindukush (IV) and Pamiro-Gindukush (deep earthquakes) (V).

In the last column of Table 2 the total energy released in each zone in 1974 is presented. From the table it is obvious that the amount of seismic energy released in the zones in 1974 decreases on advancing to the north successively from zone V to zone I.

When comparing the data in the table with the graph of the total energy released in these zones for the period of 1967-1973 presented in [2] it is obvious that in zones III, IV and V and on the whole throughout Central Asia an increase in seismicity level by 1 to 2 orders is observed by comparison with 1973. However, in contrast to the past years, the maximum of this year is almost an order higher. Considering the total energy distribution for the period of 1962-1974, it is possible to see the law with an interval of 2 years previously noted by us.

In Pamiro-Gindukush in 1974 the amount of energy released in the earth's crust was of the same order as the total energy of the subcrustal earthquakes and two orders higher than in the preceding year.

Almost the same amount of energy was released in 1966. The greatest peak in the period of 1962-1974 was observed in 1965 when an earthquake of 17th energy class occurred.

In the territory of Central and Northern Tyan'-Shan' in 1974 the amount of energy released remained on the level of the past year.

As was pointed out above, the greatest amount of seismic energy was released in Pamir (Zone IV). Here on 11 August the strongest earthquake in all 13 years with M=7.3 (No 53) occurred accompanied by numerous secondary shocks, among which there were two earthquakes with K=15, 8 -- with K=14, 22 -- with K=13, and 56 -- with K=12. The aftershocks of this earthquake with K=9 to 11 with coordinates of $\pm 0.5^\circ$ with respect to latitude and longitude relative to the coordinates of the basic shock were not included in the catalog. Their distribution by energy classes and months is given in Table 3. They all occurred at the boundary of Northern Pamir and Western Kun'lun' in the vicinity of the articulation of the Sarykol'skiy and the Zaalayskiy Ridges. As a result of the one-sided arrangement of the stations with respect to this area and the absence of a local hodograph with respect to the regional data, the depth

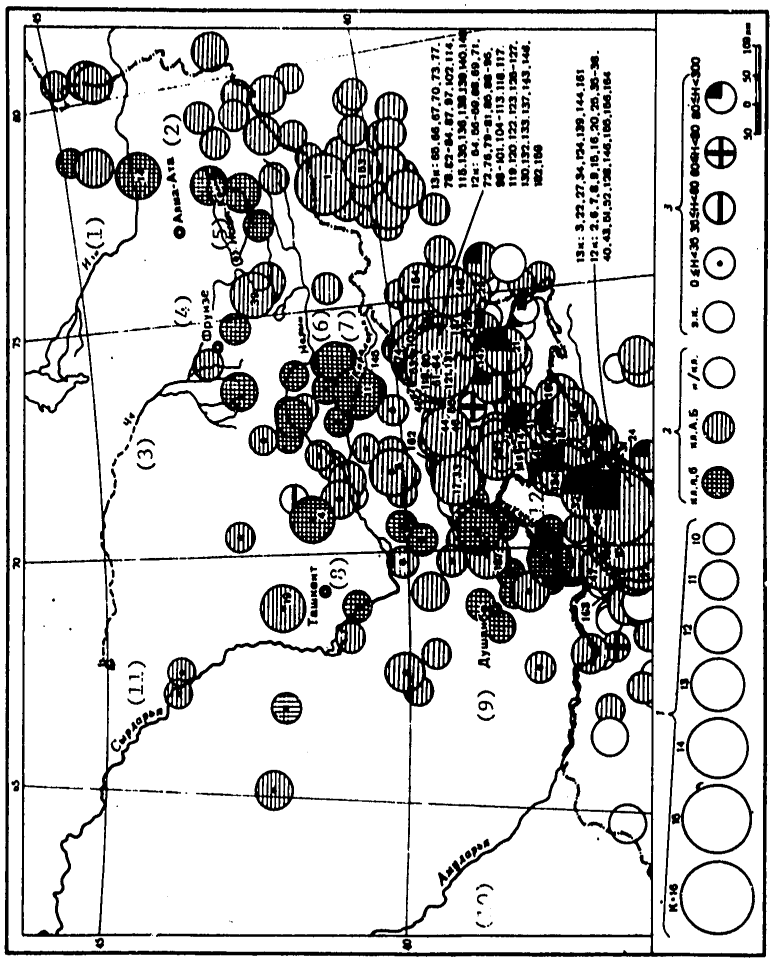

Figure 1. Map of the epicenters of the earthquakes in Central Asia with K≥10
1 -- earthquake energy; 2 -- accuracy of determining the epicenters; 3 -- depth of center, km

Key:
1. Ili; 2. Alma-Ata; 3. Chu; 4. Frunze; 5. Issyk-Kul' Lake; 6. Naryn; 7. Karadar'ya; 8. Tashkent; 9. Dushanbe; 10. Amudar'ya; 11. Syrdar'ya; 12. Pyandzh; 13. Murgab.

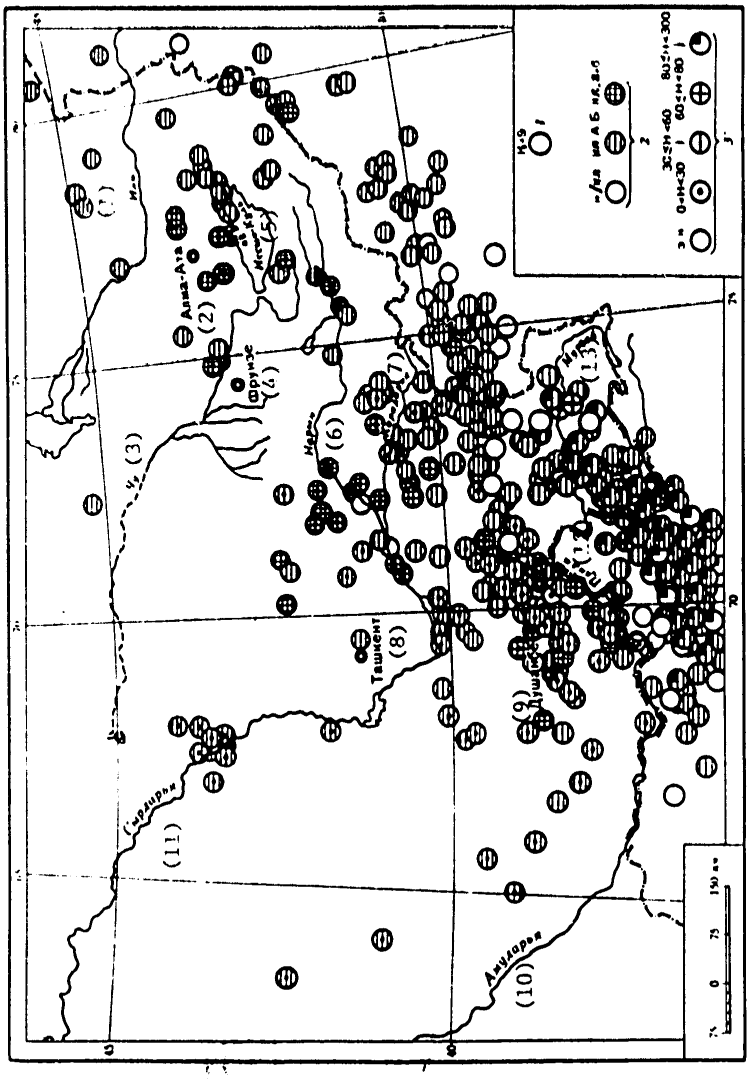


Figure 2. Map of the epicenters of the earthquakes of Central Asia with K=9
1 -- energy of the earthquakes; 2 -- accuracy of determining the epicenters;
3 -- depth of center, km

Key:
1. Ili; 2. Alma-Ata; 3. Chu; 4. Frunze; 5. Issyk-Kul' Lake; 6. Naryn; 7. Karadar'ya; 8. Tashkent; 9. Dushanbe; 10. Amudar'ya; 11. Syrdar'ya; 12. Pyandzh; 13. Murgab.

Table 1

Distribution of the Crystal and Deep Earthquakes by Regions

| (1) Номер района | (2) Число землетрясений | | Номер района | (2) Число землетрясений | |
|---|---|---|---|---|---|
| | (3) всего | в том числе с $K \geq 12$ (4) | (1) | (3) всего | в том числе с $K \geq 12$ (4) |
| 1 | 120/630* | 8/30* | 12 | 17 | – |
| 2 | 110/233* | 4/12* | 13 | 10 | – |
| 3 | 618/3* | 43 | 14 | 2 | – |
| 4 | 28 | – | 15 | 1 | – |
| 5 | 111/2* | 2 | 16 | 3 | – |
| 6 | 37 | – | 17 | – | – |
| 7 | 24 | 2 | 18 | 2 | – |
| 8 | 38 | 2 | 19 | 5 | – |
| 9 | 13 | 1 | 20 | 13 | – |
| 10 | 3 | 1 | 21 | 1 | – |
| 11 | 601/5* | 59 | 22 | 4 | – |
| | | | 23 | 2 | – |

Key:
1. Region No
2. No of earthquakes
3. Total
4. Including with K≥12

*Deep earthquakes

Table 2

Earthquake Distribution with Respect to Large Seismically Active Zones and Total Seismic Energy

| (1) Номер зоны | (2) Энергетический класс | | | | | | | | Σ | ΣE |
|---|---|---|---|---|---|---|---|---|---|---|
| | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | | |
| I | 34 | 7 | 4 | 2 | – | – | – | – | 47 | $2{,}50 \cdot 10^{12}$ |
| II | 65 | 30 | 10 | 3 | 1 | – | – | – | 109 | $1{,}31 \cdot 10^{13}$ |
| III | 87 | 39 | 15 | 1 | – | 1 | – | – | 143 | $2{,}97 \cdot 10^{14}$ |
| IV | 610 | 552 | 188 | 76 | 27 | 8 | 2 | 1 | 1464 | $1{,}32 \cdot 10^{16}$ |
| V | 376 | 346 | 109 | 27 | 11 | 1 | 1 | 2 | 873 | $2{,}12 \cdot 10^{16}$ |
| (3) Всего | 1172 | 974 | 326 | 109 | 39 | 10 | 3 | 3 | 2636 | $3{,}44 \cdot 10^{16}$ |

Key:
1. Zone No
2. Energy class
3. Total

Table 3

Aftershock Distribution by Energy Classes and by Month

| K | Январь-июль (1) | Август (2) | Сентябрь (3) | Октябрь (4) | Ноябрь (5) | Декабрь (6) | Всего (7) |
|---|---|---|---|---|---|---|---|
| 9 | 10 | 259 | 58 | 23 | 16 | 11 | 377 |
| 10 | - | 307 | 55 | 21 | 13 | 8 | 404 |
| 11 | - | 120 | 16 | 5 | 2 | 1 | 144 |

Key:
1. January-July
2. August
3. September
4. October
5. November
6. December
7. Total

of the basic shock could not be determined. According to the data of the Seismological Bulletin of the network of reference seismic stations of the USSR, it is equal to 5 km; the depth of the aftershock varies within the limits of 5 to 45 km. The aftershock region has sublatitudinal strikes and extends approximately 50 km. The earthquake with K=12 preceded the basic one and occurred 40 km west of it. The largest number of strong earthquakes was noted in the basic shock region where three earthquakes were recorded with K=14, 5 -- with K=13 and 12 -- with K=12. The basic shock was felt at a distance of 570 km (Fig 3, Table 4).

On the isoseism diagram it was possible to separate the force 6, 5 and 4 zones.

In the force 6 zone the earthquake was accompanied by a loud underground rumble. In Irkeshtam the loud rumble and shaking of the earth resembled a cannon volley. A bright glow was observed in the mountains, the intensity of which alternately increased and decreased "like electric arc welding." The shepherds told about a glow of this nature (No 1). The yurta [tent-like dwellings] rocked sharply. All of the dishes fell out a two-level shelf. Avalanches which shifted the firn cover about 1 meter thick downward over a great area and rock slides occurred in the mountains. The dogs and sheep were greatly distressed.

Thin cracks appeared in buildings made of rock laid with cement mortar, small pieces of plaster fell. The watch tower rocked sharply. The slate covering of the roof rattled. All of the residents ran outside in panic.

The tourists on the Korzhenevskiy glacier noted movement of the soil in the direction close to latitudinal, and they saw powerful avalanches caused by the earthquake. S. V. Bogdanov, who awoke, observed the shuddering of the outline of the mountains against the background of the blue sky and stationary stars for about 1 minute caused by the effect of the atmospheric phenomena during the earthquake.

Everyone who was asleep woke up in the force 5 zone of the earthquake. Some were seriously frightened. The doors and wooden parts of the house squeaked, the glass rattled in the windows, and the dishes rattled on the shelves. In the majority of houses in Kyzyl-Kurgan (No 8) made of raw brick, fine cracks were formed in the wall plaster, and in individual cases, cracks in the walls. Pieces of plaster collapsed in places. In other populated areas of the zone, thin cracks appeared in the walls of some of the old houses. Unstably standing objects fell down, water splashed out of the basins, and hanging objects oscillated severely. In many of the investigated areas the local residents noted anxiety (barking and baying) on the part of the dogs before and during the earthquake.

We have information about the perceptibility of only two repeated shocks: on 11 August at 2005 hours (No 74) with energy class K=14 and at 2121 hours with K=15 (No 75). The macroseismic effect of the first of them in the settlements of Sary-Tash (45 km), Sufi-Kishlak (175) and Uychi (235) was evaluated at force 4-5, in the cities of Osh (130), Andizhan (175), Fergana (150) and Namangan (240) at force 4, in Tashkent (425) at force 2-3.

The latter was perceived in Sufi-Kurgan (70 km), Osh (140), Sufi-Kishlak (155), Andizhan (180) and Namangan (240) with force 4, in Tashkent (415), force 2-3.

Another group of strong earthquakes in Northern Pamir was located along the Zaalayskiy Ridge from its articulation with the Turkestan and the Zeravshanskiy Ridges in the west and to the Sarykol'skiy Ridge in the east. In the west, these were three earthquakes with K=12 (Nos 23, 30, 157): 4 May at 1907 hours, 29 May at 0147 hours and 8 December at 0651 hours; in the east one earthquake with K=13 (No 48) on 28 July at 0410 hours, another with K=12 (No 29) on 23 May at 0211 hours. The earthquake of 29 May at 0147 hours (No 30) was felt in Khorog (175 km) with force 4, in Kulyab (110) force 3, Dushanbe (137) force 2. The earthquake of 8 December was estimated at Komsomolabad (26 km) at force 3, in Obigarm (25), Garm (52) and Dushanbe (100), at force 2.

Other strong earthquakes include two with K=13 (Nos 17, 44) of 4 April at 0420 hours and 23 July at 0711 hours and two with K=12 (Nos 33, 46), 3 June at 2335 hours and 23 June at 1021 hours which occurred in the central part of the ridge. Here on 3 January 1973 an earthquake was recorded with K=14. All of the strong earthquakes of this zone, just as before, clearly fix the boundary of Pamir with Southern Tyan'-Shan'.

Only four strong earthquakes occurred in the territory of Southern Pamir: 6 April at 2019 hours (No 18) with K=13, 5 July at 0717 hours (No 41) with K=12 and 18 December at 0326 hours (No 160) with K=12 on the Southern Alichurskiy Ridge; 19 February at 2130 hours (No 10) with K=12 near Kulyab. There are macroseismic data on the last of them.

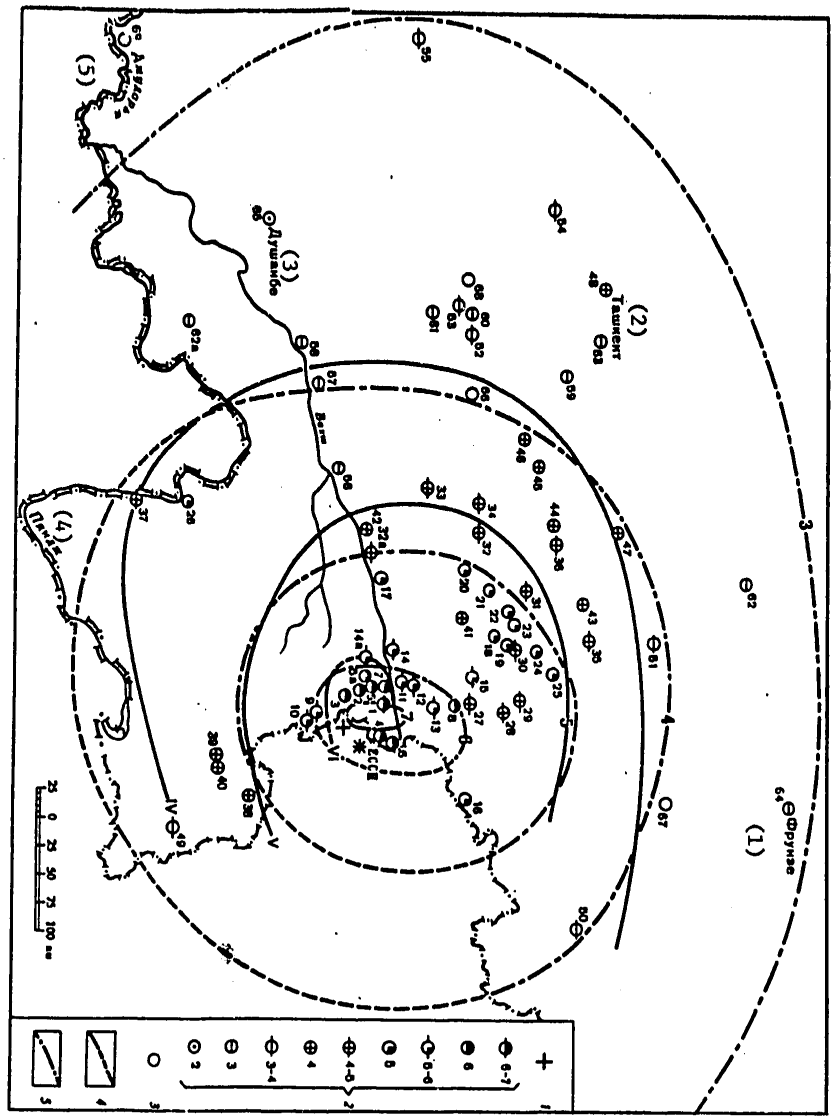

Figure 3. Diagram of the isoseisms of the earthquake of 11 August.
1 -- epicenter according to instrument data; 2 -- force; 3 -- not noted; 4 -- force isoseisms drawn by V. K. Iodko, T. A. Kinyapa, A. Dzhurayev, A. F. Krasnova, S. M. Kasymov; 5 -- isoseims according to T. K. Amankulov and N. V. Shebalin

Key: 1. Frunze; 2. Tashkent; 3. Dushanbe; 4. Pyandzh; 5. Amudar'ya.

Table 4

Macroseismic Data on the Earthquake of February/August

| Item No | Station | Δ, km |
|---|---|---|
| | Force 6-7 | |
| 1 | Pastbishche [pasture] | 40 |
| | Force 6 | |
| 2 | Odinokiy dom 2 | 20 |
| 3 | Markansu | 30 |
| 4 | Nura | 38 |
| 5 | Bordebe | 42 |
| 5a | Tributary of the Korzhenevskiy glacier | 55 |
| 6 | Irkesham | 45 |
| 7 | Odinokiy dom 1 | 50 |
| 8 | Kyzyl-Kurgan | 98 |
| | Force 5-6 | |
| 9 | Lyakhsh | 35 |
| 10 | Karakul' | 35 |
| 11 | Sary-Tash | 55 |
| 12 | Ak-Bosaga | 65 |
| 13 | Sufi-Kurgan | 78 |
| 14 | Sary-Mogal | 80 |
| 14a | Severnyy Oshutor Glacier | 80 |
| 15 | Taldyk | 117 |
| | Force 5 | |
| 16 | Kyzyl-Dzhar | 120 |
| 17 | Daraut-Kurgan | 127 |
| 18 | Osh | 150 |
| 19 | Sarylar | 165 |
| 20 | Kyzyl-Kiya | 167 |
| 21 | Markhamat | 170 |
| 22 | Khodzhiabad | 175 |
| 23 | Sufi-Kishlak | 175 |
| 24 | Suzak | 185 |
| | Force 4-5 | |
| 27 | Gul'cha | 110 |
| 28 | Kara-Kul'dzha | 140 |
| 29 | Mirza-Aki | 160 |
| 30 | Kara-Su | 170 |
| 30a | Middle course of the Kyzylsu River | 195 |
| 31 | Andizhan | 195 |
| 32 | Fergana | 200 |
| 33 | Khaydarkan | 210 |
| 34 | Alty-Aryk | 220 |
| 35 | Ak-gerek-gavn | 230 |
| 36 | Uychi | 240 |
| 37 | Khorog | 265 |
| | Force 4 | |
| 38 | Rangkul' | 97 |
| 39 | Murgab | 115 |
| 40 | Suboshi | 115 |
| 41 | Eski-Naukat | 137 |
| 42 | Kara-Teit | 165 |
| 43 | Mayli-Say | 235 |
| 44 | Namangan | 250 |
| 45 | Pap | 275 |
| 46 | Pungan | 285 |
| 47 | Karavan | 290 |
| 48 | Tashkent | 425 |
| | Force 3-4 | |
| 49 | Tokhtam'sh | 170 |
| 50 | At-Bashi | 265 |
| 51 | Toktogul | 290 |
| 52 | Kayrakkum | 345 |
| 53 | Proletarsk | 365 |
| 54 | Il'ich | 460 |
| 55 | Samarkand | 570 |
| | Force 3 | |
| 56 | Dzhirgatal' | 210 |
| 57 | Garm | 280 |
| 58 | Komsomolabad | 320 |
| 59 | Angren | 350 |
| 60 | Leninabad | 355 |
| 61 | Sulyukta | 355 |
| 62 | Talas | 370 |
| 62a | Kulyab | 370 |
| 63 | Sukok | 390 |
| 64 | Frunze | 395 |
| | Force 2 | |
| 65 | Dushanbe | 420 |
| | Not noted | |
| 66 | Kanibadam | 290 |
| 67 | Chayek | 292 |
| 68 | Bekabad | 385 |
| 69 | Termez | 590 |

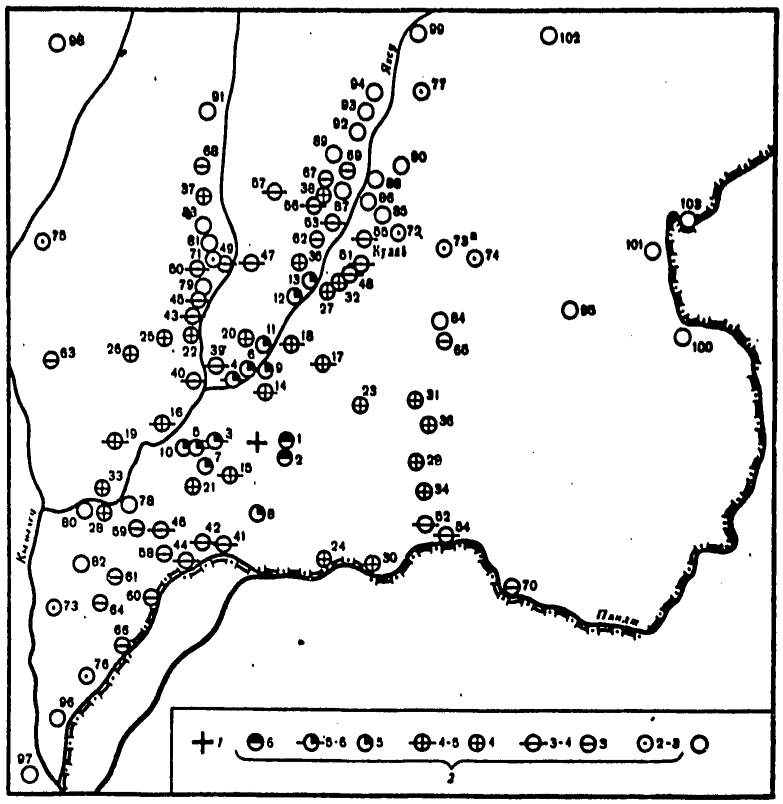

Figure 4. Earthquake on 19 February. Compiled by A. A. Kon'kov.
1 -- epicenter according to estimate data; 2 -- force;
3 -- not noted

An earthquake was felt with force 6 in the kishlaks [Central Asian villages] of Northern Karagach (No 1) and Southern Karagach (No 2) (Fig 4, Table 5). Here the earthquake manifested itself suddenly by a strong, sharp vertical shock which was accompanied by a rumble and roar. The residents of these kishlaks awakened and ran out of the house. The doors of the rooms opened and shut from the oscillations. The rumble was audible in the direction with azimuth 240-260°. The electric lights swung in the same direction. In both villages there were only type A structures (pisé). The wall coverings fell off in chunks in some of the commercial buildings as a result of the tremor. In the walls of the residential buildings, especially under the roof and floor beams and in the corners of the walls through cracks were observed. Subsidences (1-3 $m^3$) of the dehydrated loess-like loams occurred in the road cuts. In addition, in the Druzhba kishlak (No 5) (force 5-6) exfoliation of the walls and collapse of the plaster in chunks of 2x2 meters occurred from the tremor.

There are macroseismic data on the weak earthquake with K=10 on 28 December at 0807 hours. It was felt in Dagan (8 km) force 5, Chubek (15) and Badarak (15) force 3-4, Khirmandzha (45), force 2-3.

Six more earthquakes occurred in this zone with K=12 (Nos 8, 9, 20, 43, 47, 164) and one with K=13 (No 163) at the points of occurrence of the deep Pamir-Gindukush earthquakes. With the exception of No 16, 10 and 47 all of them had hypocenters at an intermediate depth of 70 km, and obviously they must be considered together with the deep earthquakes.

In Southern Tyan'-Shan' (zone III) only two strong earthquakes were recorded in 1974: 4 January at 0927 hours with K=14 (No 1) and 26 November at 1250 hours with K=12 (No 153). They both occurred in the central part of the Kokshaal-Tau Ridge. South of them in 1973 increased seismic activity also was observed, but the largest earthquakes at that time had an energy class of only K=12. In the rest of Southern Tyan'-Shan' 140 weaker earthquakes were recorded.

In Central Tyan'-Shan' (zone II) in 1974 more than 100 earthquakes were noted. The strongest of them with K=13 (No 11) occurred on 20 February at 1143 hours in the eastern part of the Fergana Valley near Osh at a depth of 15 km (Fig 5, Table 6). It was felt at a distance of up to 337 km. The strongest tremors at force 6-7 were observed in a radius of 13 km. Five zones were isolated on the isoseism map: force 6-7, 6, 5, 4 and 3.

In the force 6-7 zone the earthquake was accompanied by a dull rumble resembling the sound of a rock slide in the mountains. The large poplars along the road rocked sharply from the shock, as a result of which snow fell off them. The electric power line poles shook. The chimney on the roof of the food store collapsed and fell on the sidewalk. In individual buildings made of baked brick cracks formed in the walls, and several pieces of plaster collapsed.

In Kurshab in the three-story building of the preparatory school thin cracks appeared in the walls. Sloping, intersecting through cracks were formed between the windows of the stairwell. A crack was noted in the earthquake control strip between the first and second stories. Structures made of raw brick were damaged severely. Many of the houses rattled, and in some of them through cracks appeared and large chunks of plaster fell out. The hospital building was seriously damaged. The patients were evacuated. A partition fell down in the tea house. For example, 20% of the chimneys were completely or partially destroyed.

In the force 6 zone the earthquake began with horizontal oscillations with a loud rumble. Then a sharp vertical shock occurred (Kara-Su). The two-story school building rattled. The bulletin boards fell off the walls in the hall. The seams split at the points where parts of the building were joined together.

Table 5

Macroseism Data on the Earthquake of 19 February

| Item No | Station | Δ, km |
|---|---|---|
| | Force 6 | |
| 1 | Northern Karagach | 4 |
| 2 | Southern Karagach | 4 |
| | Force 5-6 | |
| 3 | Salt Plant No 2 | 5 |
| 4 | Arpatogul'dy | 6 |
| 5 | Kolkhoz Druzhba | 6 |
| | Force 5 | |
| 6 | Komsomolabad | 7 |
| 7 | Novabad | 7 |
| 8 | Moskovskiy | 7 |
| 9 | Ibrat | 8 |
| 10 | Gulabad | 8 |
| 11 | Im. Vose | 10 |
| 12 | Southern Koshar | 16 |
| 13 | Northern Koshar | 18 |
| | Force 4-5 | |
| 14 | Salt Plant No 1 | 5 |
| 15 | Kolkhoz Pravda, section Guliston | 6 |
| 16 | Guliston | 10 |
| 17 | Kokabad | 11 |
| 18 | Tugarak | 11 |
| 19 | Razvilka (Olimtay) | 15 |
| | Force 4 | |
| 20 | Uchastok Andreyeva [Andreyev's section] | 11 |
| 21 | Kolkhoz im. Lenin | 11 |
| 22 | Fayzabad | 13 |
| 23 | Chordara | 13 |
| 24 | Chubek | 15 |
| 25 | Novabad (farm) | 15 |
| 26 | Novabad | 17 |
| 27 | Beshtegerman-Poyen | 17 |
| 28 | Samonchi-Bolo | 18 |
| 29 | Mishkaron | 19 |
| 30 | Dagana | 19 |
| 31 | Sary-Chashma | 19 |
| 32 | Beshtegerman-Bolo | 19 |
| 33 | Parom | 19 |
| 34 | Dzhilga | 20 |
| 35 | Sadvinsovkhoz | 20 |
| 36 | Odinabon | 20 |
| 37 | Gurdora | 25 |
| 38 | Northern Gilot | 29 |
| 39 | Otchanor | 8 |
| 40 | Kurban-Sheit | 9 |
| 41 | Ferma | 13 |
| 42 | Sovkhoz Turdyyeva | 14 |
| 43 | Kolkhoz im. Lenin | 15 |
| 44 | Sayat | 16 |
| 45 | Uchastok im. Krulskoy | 16 |
| 46 | Chor-Kul' | 17 |
| 47 | Kaduchi | 19 |
| 48 | Dilikutal | 20 |
| 49 | Zorkamar | 20 |
| 50 | Shurak-Chashma | 20 |
| 51 | Sovkhoz Nazarova | 22 |
| 52 | Novyy Bagarak | 22 |
| 53 | Leskhoz | 24 |
| 54 | Bagarak | 24 |
| 55 | Kulyab | 25 |
| 56 | Gilotyuzhnyy | 27 |
| 57 | Chol-Sartis | 27 |
| | Force 3 | |
| 58 | Buston | 18 |
| 59 | Archa | 18 |
| 60 | Kalay-Pushtak | 21 |
| 61 | Novabad (Urta-Boz) | 21 |
| 62 | Kaptarkhana | 22 |
| 63 | Olimtay | 23 |
| 64 | Urtaboz | 24 |
| 65 | Chagan-Poyen | 24 |
| 66 | Dzharayly | 26 |
| 67 | Darnaychi | 30 |
| 68 | Tanabchi | 30 |
| 69 | Pakhtakor | 32 |
| 70 | Bakh | 34 |
| | Force 2-3 | |
| 71 | Aral | 21 |
| 72 | Bogi-Khabib | 28 |
| 73 | Kolkhoz im. Lenin | 31 |
| 73a | Tu-To | 31 |
| 74 | Mumirak | 32 |
| 75 | Kuybul'yen | 32 |
| 76 | Parkhar | 33 |
| 77 | Dagana | 42 |

[continued]

[Table 5, continued]

| Item No | Station | Δ, km |
|---|---|---|
| | Not noted | |
| 78 | Gidroizmeritel'nyy punkt | 17 |
| 79 | Khirman-Shur | 19 |
| 80 | Samanchi-Poyen | 30 |
| 81 | Zardolyubag | 22 |
| 82 | Kolkhoz Moskva | 23 |
| 83 | Taskala | 24 |
| 84 | Chagam-Miyena | 25 |
| 85 | Aktoluk | 28 |
| 86 | Chorbok | 30 |
| 87 | Khodzha-Ishan | 31 |
| 88 | Korez | 32 |
| 89 | Osmanbika | 33 |
| 90 | Ziraki | 34 |
| 91 | Sovetskiy | 36 |
| 92 | Pushion-Poyen | 37 |
| 93 | Pushion-Miona | 38 |
| 94 | Pushion-Bolo | 39 |
| 95 | Iuroabad | 39 |
| 96 | Sovkhoz Gissar | 40 |
| 97 | Kyzylsu | 46 |
| 98 | Dangara | 48 |
| 99 | Khanabad | 49 |
| 100 | Mol | 51 |
| 101 | Khirmandzhoy | 51 |
| 102 | Muminabad | 55 |
| 102 | Shagon | 56 |

Fine cracks were formed in the walls and also at the points where the stoves joined the walls in individual buildings made of raw brick.

In the force 5 zone the earthquake was noticed by everyone inside buildings and many in the open areas. The underground rumble of moderate strength was heard basically inside buildings. The earthquake caused some of the people to panic. Cases of tipping of unstably standing objects and the appearance of fine cracks in the houses made of raw brick were observed.

Another earthquake in the Fergana Valley with K=12 (No 5) was noted on 22 January at 0608 hours near the city of Fergana (Fig 6, Table 7). It occurred in the vicinity of the Frunzenskoye village where it was observed with a force of 6. Its center was located at a depth of 25 km. Four zones were isolated on the isoseism map: force 6-7, 6, 5, and 4.

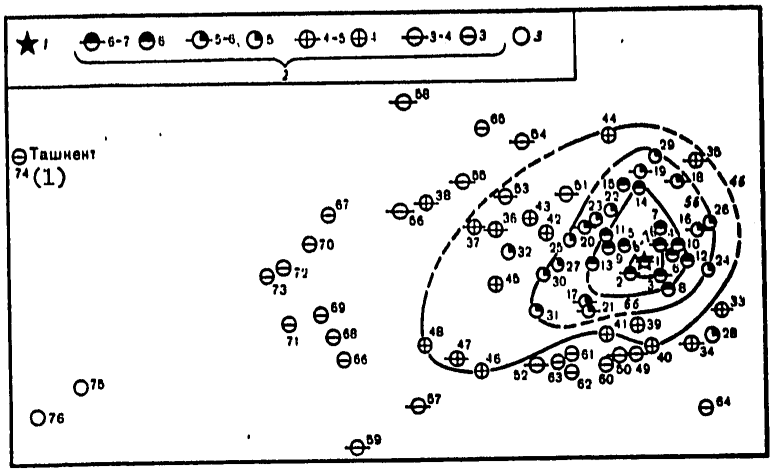


Figure 5. Diagram of the isoseisms of the earthquakes of 20 February. Compiled by V. K. Iodko, A. Dzhurayev, S. M. Kasymov, A. F. Krasnova

1 -- epicenter according to the macroseismic and instrument data; 2 -- force; 3 -- not noted

Key:
1. Tashkent

In the force 6-7 zone in the rayon center the Frunze earthquake appeared in the form of three underground shocks of a vertical nature accompanied by a dull rumble. The buildings made of raw brick were damaged most severely. Thus, in the club which was built in 1957, through, basically inclined cracks occurred in the wall and also at the corners of the walls. In many individual buildings through cracks appeared in the walls. The pipes were destroyed in some of the houses. In many of the buildings made of baked brick fine cracks appeared primarily on the southern and eastern walls (the dining room building). Fine cracks appeared in the wall plaster and also between the ceiling blocks in reinforced concrete buildings.

In the three-story Frunze Rayispolkom building which was put into operation in 1972, fine cracks were formed between the ceiling blocks, in the walls of the rooms and halls -- horizontal fine cracks 20 to 30 m below the ceiling. In a one-story store building a crack occurred throughout the entire west wall. As a result of deformation of the metal and glass part of the building, the glass was broken.

In the force 6 zone the window glass was broken in the hospital and school buildings. Trees swayed, the wooden awning of the tea house shook, and packages of tea and pastries fell off the shelves of the produce market. Several empty boxes stacked on top of each other fell down in the warehouse.

Table 6

Macroseismic Data on the Earthquakes of 20 February

| Item No | Station | Δ, km | Item No | Station | Δ, km |
|---|---|---|---|---|---|
| | Force 6-7 | | | Force 4 | |
| 1 | Kurshab | 0 | 39 | Lyangar | 33 |
| 2 | Dzhangy-Aryk | 9 | 40 | Taldyk | 42 |
| 3 | Kara-Taryk | 11 | 41 | Katar | 42 |
| 4 | Uzgen | 13 | 42 | Teshiktash | 55 |
| | Force 6 | | 43 | Kokan-Kishlak | 65 |
| 5 | Kampyrravat | 14 | 44 | Arslanbob | 66 |
| 6 | Chyn | 16 | 45 | Leninsk | 81 |
| 7 | Dzhylandy | 18 | 46 | Kyzyl-Kiya | 103 |
| 8 | Tuzbel' | 19 | 47 | Kuvasay | 114 |
| 9 | Sultanabad | 20 | 48 | Fergana | 125 |
| 10 | Mirza-Aki | 21 | | Force 3-4 | |
| 11 | Khanabad | 24 | 49 | Lyaglan | 45 |
| 12 | Oktyabr' | 24 | 50 | Dzharbashi | 48 |
| 13 | Karasu | 27 | 51 | Bazar-Kurgan | 54 |
| 14 | Kok-Yangak | 37 | 52 | Beluryuk | 77 |
| 15 | Oktyabr'skoye | 40 | 53 | Izbaskent | 82 |
| | Force 5-6 | | 54 | Mayli-Say | 88 |
| 16 | Kyzyl-Chorba | 34 | 55 | Uchkurgan | 106 |
| 17 | Osh | 37 | 56 | Namangan | 133 |
| 18 | Yrysu | 44 | 57 | Kadamdzhay | 142 |
| 19 | Mikhaylovka | 45 | 58 | Karavan | 152 |
| 20 | Changyr-Tash | 36 | 59 | Khaydarkan | 180 |
| 21 | Tuleyken | 39 | | Force 3 | |
| | Force 5 | | 60 | Kekbel' | 53 |
| 22 | Dzhalalabad | 31 | 61 | Uchbay | 61 |
| 23 | Suzak | 33 | 62 | Keterme | 68 |
| 24 | Kara-Kul'dzha | 34 | 63 | Eski-Naukat | 68 |
| 25 | Aim | 41 | 64 | Sufi-Kurgan | 80 |
| 26 | Salamalik | 41 | 65 | Tashkumyr | 110 |
| 27 | Sufi-Kishlak | 47 | 66 | Rishtan | 168 |
| 28 | Uryukty | 52 | 67 | Chust | 171 |
| 29 | Arkhangel'sk | 53 | 68 | Serovo | 172 |
| 30 | Khodzhiabad | 53 | 69 | Yangi-Kurgan | 176 |
| 31 | Aravan | 63 | 70 | Pap | 180 |
| 32 | Andizhan | 72 | 71 | Kokand | 193 |
| | Force 4-5 | | 72 | Tepakurgan | 195 |
| 33 | Klozin | 45 | 73 | Pungan | 202 |
| 34 | Gul'cha | 47 | 74 | Tashkent | 337 |
| 35 | Kugart | 59 | | Not noted | |
| 36 | Paytuk | 84 | 75 | Leninabad | 309 |
| 37 | Khakulabad | 94 | 76 | Nau | 332 |
| 38 | Chychi | 121 | | | |

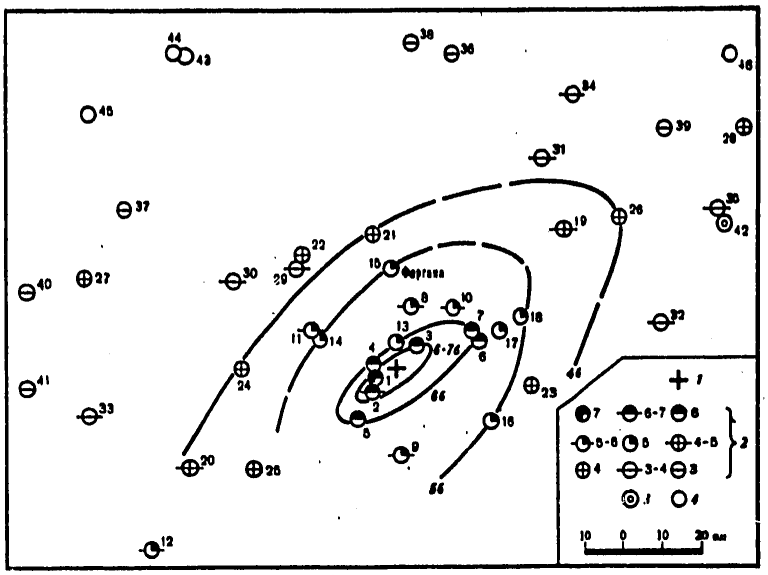

Figure 6. Diagram of the isoseisms of the earthquake on 22 January. Compiled by S. M. Kasymov, V. K. Iodko, A. F. Krasnova, A. Dzhurayev

1 -- epicenter according to macroseismic data; 2 -- force; 3 -- felt; 4 -- not noted

Cracks appeared in individual houses made of raw brick. A loud rumble was heard.

Many people felt the earthquake in the force 5 zone. A loud underground rumble was heard which started before the earthquake. Many objects swayed. The dogs were upset. The dishes rattled in the cupboard.

The next earthquake with K=12 was reported on 11 January at 2244 hours (No 4) in the central part of the Chatkal'skiy Ridge (Fig 7, Table 8). The tremors from it were perceptible to a distance of 218 km. They reached the greatest force, equal to 5-6, in the village of Chapchama 12 km away.

In Tereksay (force 5) the earthquake was accompanied by an underground rumble. Everyone that was asleep awakened, and many panicked. Fine cracks were formed in the wall plaster of some of the old pisé houses.

Another earthquake with K=12 (No 19) occurred on 13 April at 0859 hours in the transition zone from the orogenic to the platform in the Tashkent region 45 km southwest of Chimkent (Fig 8, Table 9). The depth of the center estimated by the isoseism map is 20 km. Here, perceptible earthquakes have been known previously. For example, in Arys' a local

Table 7

Macroseismic Data on the Earthquake of 22 January

| Item No | Station | Δ, km | Item No | Station | Δ, km |
|---|---|---|---|---|---|
| | Force 7 | | 23 | Chauvay | 38 |
| 1 | Frunza | 5 | 24 | Sovetskoye | 40 |
| | Force 6-7 | | 25 | Khaydarkan | 45 |
| 2 | Frunze | 8 | 26 | Aravan | 72 |
| 3 | Markaz | 9 | 27 | Yaypan | 86 |
| | Force 6 | | 28 | Karasu | 111 |
| 4 | Vuadyl | 5 | | Force 3-4 | |
| 5 | Okhna | 15 | 29 | Alty-Aryk | 37 |
| 6 | Uchkurgan | 25 | 30 | Rishtan | 48 |
| 7 | Pal'man | 25 | 31 | Leninsk | 67 |
| | Force 5-6 | | 32 | Eski-Naukat | 73 |
| 8 | Auval | 16 | 33 | Batken | 82 |
| 9 | Shakhimardan | 21 | 34 | Andizhan | 84 |
| 10 | Kuvasay | 22 | 35 | Osh | 96 |
| 11 | Chimion | 25 | | Force 3 | |
| 12 | Kan | 79 | 36 | Chinabad | 81 |
| | Force 5 | | 37 | Kokand | 82 |
| 13 | Kaptarkhana | 7 | 38 | Balikchi | 82 |
| 14 | Minddan | 22 | 39 | Sufi-Kishlak | 95 |
| 15 | Fergana | 26 | 40 | Tangi-Vorukh | 95 |
| 16 | Maydan | 30 | 41 | Isfara | 98 |
| 17 | Kyzyl-Kiya | 31 | | Felt | |
| 18 | Karavan | 37 | 42 | Tuleyken | 95 |
| | Force 4-5 | | | Not noted | |
| 19 | Markhamat | 58 | 43 | Khalkabad | 95 |
| 20 | Sokh | 60 | 44 | Pap | 98 |
| | Force 4 | | 45 | Pungan | 104 |
| 21 | Margelan | 34 | 46 | Changyr-Tash | 120 |
| 22 | Khamza-Khakimzade | 38 | | | |

force 5-6 earthquake was felt on 18 June 1917. Cracks were noted in the walls, collapse of the plaster, and so on. There is information that the shocks lasted all summer and fall. Most of them occurred on 12-14, 15 and 18 August with an intensity of force 5, 6 and 5, respectively. During the earthquake of 15 August "the walls again cracked, and the doors banged" [4].

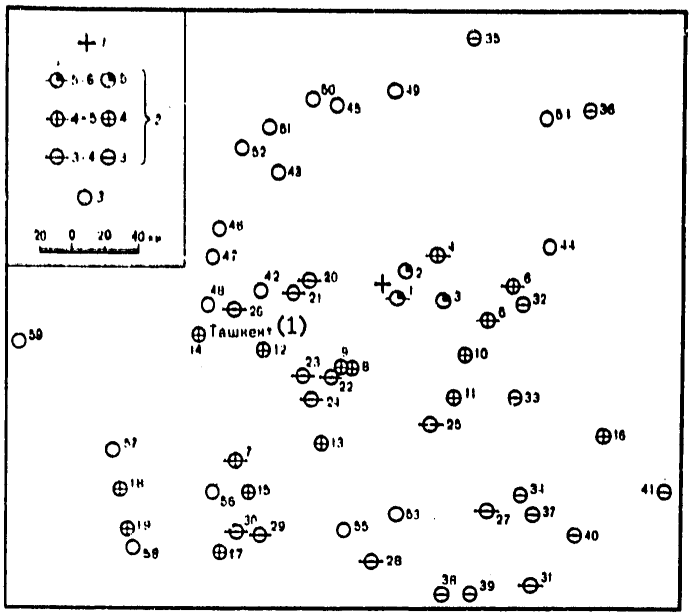


Figure 7. Earthquake of 11 January. Compiled by V. K. Iodko, A. F. Krasnova, S. M. Kasymov, A. Dzhurayev.
1 -- epicenter according to instrument data; 2 -- force;
3 -- not noted.

Key:
1. Tashkent

The isoseisms of the earthquake of 13 April 1974 have an elliptic shape elongated in the northwesterly direction. The force damping coefficient was 3.7.

The earthquake was noted with greatest force 5 in the villages of Fogelevka, Abay, Uchkuduk, Yenbekshi and Karatas, on the farm of the Kuyuk sovkhoz. The area occupied by the force 5 zone amounts to about 1800 km$^2$. In the given region the earthquake was felt in the form of short shocks accompanied by an underground rumble similar to the rumble created by a passing motor transport.

A weaker earthquake with K=11 was recorded on 24 February at 0621 hours in the southeastern spurs of the Nuratau Ridge. Since it occurred in a thickly populated area near the rayon center of Gallyaaral, there are quite complete macroseismic data on it collected by V. K. Iodko (Fig 9, Table 10). It was felt at a distance up to 133 km. Four zones were isolated on the isoseism map: force 6, 5, 4 and 3.

In the force 6 zone the earthquake was accompanied by a strong underground rumble and vertical shocks. The residents ran out of the buildings, and people walking on the street lost their balance momentarily.

Fine cracks were formed in the plaster in many of the buildings made of raw brick. Individual cases of destruction of chimneys at the contacts with the veneered ceilings were observed. The groundwater level rose in a well 3 meters deep.

In the force 5 zone the earthquake was accompanied by a rumble which was similar to the roar of a jet plane. The residents ran out of buildings (Sanzar). In some of the pise buildings, thin cracks were formed in the plaster. Objects placed on shelves rattled, and some tipped over and fell. Water splashed out of basins. Some of the people left the houses in panic.

Northern Tyan'-Shan' (zone I), just as in all the preceding years, is characterized by the lowest level of seismic activity by comparison with the remaining parts of Central Asia. Only two earthquakes with K=12 and about 40 mild shocks took place here.

The first powerful earthquake with K=12 was recorded on 4 March at 1430 hours (No 14) 40 km north of Chilik, within the boundaries of the southwestern end of the Altynemel' Ridge (Fig 10, Table 11). As a result of inaccessibility at that time of year the location of the epicenter was not investigated. In the populated places located closest to the epicenter the earthquake was felt with force 4-5; therefore the maximum intensity of the epicenter was supposedly estimated at 5.

The earthquake was felt in the form of several short shocks accompanied by a strong underground roar resembling the movement of a heavy motor transport. Its isoseisms were elongated in the northeasterly direction parallel to the strike of the basic geological structures of the Dzhungarskiy Alatau.

The earthquake on 2 July at 1641 hours (No 39) was recorded in the southeastern spurs of the Kirgiz Ridge. It was felt in the populated areas of Minkush, Chayek and Chu located at a distance of 85-170 km from the epicenter with a force equal to force 4, and in Fergana (90 km) with a force of 3-4.

Two earthquakes with K=16 and 40 earthquakes with K=12-15 occurred in Gindukush (zone V). The strongest earthquakes, just as before, were located in the central part of Gindukush. The first of them with m=7.3 occurred on 30 July at 0512 hours at a depth of 200 km (No 49) (Fig 11, Table 12). It was felt over a large area. The force 6 oscillations were noted at a distance from 130 to 200 km, and force 3 to 700 km. Force 6, 5, 4 and 3 zones were isolated on the isoseism map.



Table 8

Macroseismic Data on the Earthquake of 11 January

| Item No | Station | Δ, km |
|---|---|---|
| | Force 5-6 | |
| 1 | Chapchama | 12 |
| | Force 5-6 | |
| 2 | Yangibazar | 16 |
| 3 | Tereksay | 38 |
| | Force 4-5 | |
| 4 | Kanyshkiya | 37 |
| 5 | Ala-Buka | 69 |
| 6 | Patsha-Ata | 81 |
| 7 | Altyn-Topkan | 139 |
| | Force 4 | |
| 8 | Beshkul | 56 |
| 9 | Yertash | 57 |
| 10 | Sumsar | 66 |
| 11 | Chust | 80 |
| 12 | Sukok | 84 |
| 13 | Pangaz | 101 |
| 14 | Tashkent | 120 |
| 15 | Kansay | 148 |
| 16 | Andizhan | 166 |
| 17 | Proletarsk | 187 |
| 18 | Gulistan | 203 |
| 19 | Yangiyer | 215 |
| | Force 3-4 | |
| 20 | Brichmulla | 50 |
| 21 | Chimgan | 56 |
| 22 | Kuksaray | 63 |
| 23 | Yangiabad | 73 |
| 24 | Angren | 80 |
| 25 | Uygursay | 88 |
| 26 | Chirchik | 95 |
| 27 | Alty-Aryk | 149 |
| 28 | Isfara | 165 |
| 29 | Kayrakkum | 166 |
| 30 | Lsninabad | 172 |
| 31 | Shakhimardan | 202 |
| | Force 3 | |
| 32 | Karavan | 88 |
| 33 | Namangan | 106 |
| 34 | Margilan | 152 |
| 35 | Dzhambul | 154 |
| 36 | Talas | 163 |
| 37 | Fergana | 161 |
| 38 | Sokh | 187 |
| 39 | Khaydarkan | 192 |
| 40 | Kyzyl-Kiya | 192 |
| 41 | Tuleyken | 218 |
| | No noted | |
| 42 | Gazalkent | 77 |
| 43 | Lenger | 93 |
| 44 | Arkit | 106 |
| 45 | Vannovka | 107 |
| 46 | Sharapkhana | 108 |
| 47 | Leninskoye | 109 |
| 48 | Chernyayevka | 111 |
| 49 | Burnoye | 113 |
| 50 | Kornilovka | 114 |
| 51 | Belyye Vody | 116 |
| 52 | Chimkent | 119 |
| 53 | Yaypan | 136 |
| 54 | Leninpol' | 140 |
| 55 | Kanibadam | 147 |
| 56 | Takeli | 162 |
| 57 | Bakht | 195 |
| 58 | Khavast | 218 |
| 59 | Chardara | 230 |

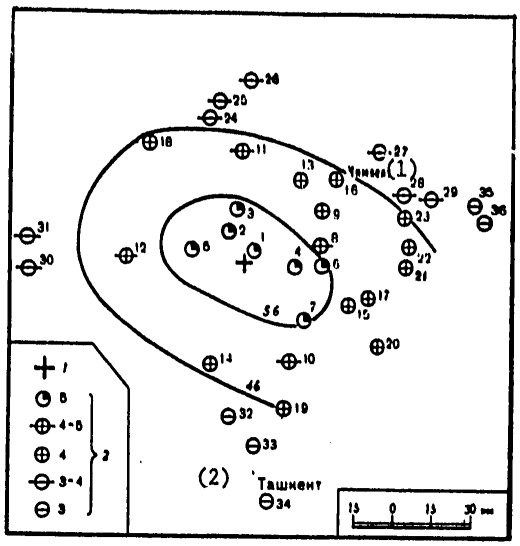


Figure 8. Diagram of the isoseisms of the earthquake on 13 April. Compiled by A. Nurmagambetov, A. Dosymov, A. Sadykov, A. B. Ospanov.
1 -- epicenter according to the macroseismic data;
2 -- force

Key:
1. Chinkent
2. Tashkent

In the populated places of the force 6 zone, strong, prolonged horizontal oscillations were felt which were accompanied by a rumble. Cracks were formed in the walls of the buildings, the plaster fell off in some of the old buildings, and some of the old fences fell down. Rock slides, collapse of the loess slopes and damage to communications and electric power lines were observed in the mountains.

In the force 5 zone the oscillations caused panic among the residents. Many ran out of the houses. Unstably standing objects fell, and hanging objects swayed. Water splashed out of the basins. An underground rumble was heard.

Table 9

Macroseismic Data on the Earthquake of 13 April

| Item No | Station | Δ, km | Item No | Station | Δ, km |
|---|---|---|---|---|---|
| | Force 5 | | 23 | Lenger | 62 |
| 1 | Poselok Abay [Abay Village2 | 5 | | Brichmulla* | 110 |
| 2 | Ferma Sovkhoza Kuyuk | 11 | | Chimgan* | 110 |
| 3 | Uchkuduk | 18 | | Tyul'kubas* | 120 |
| 4 | Yenbekshi | 19 | | Force 3-4 | |
| 5 | Montaytash | 20 | 24 | Obruchevka | 53 |
| 6 | Fogelevka | 29 | 25 | Mamayevka | 57 |
| 7 | Karatas | 31 | 26 | Tamirlanovka | 64 |
| | Force 4-5 | | 27 | Chernovodsk | 64 |
| 8 | Division of the Pobeda Kolkhoz | 28 | 28 | Galkino | 64 |
| | | | 29 | Georgiyevka | 74 |
| 9 | Aktas | 34 | 30 | Division I of Khodzhatogay | 83 |
| 10 | Leninskoye | 39 | | | |
| 11 | Badam | 39 | 31 | Khodzhatogay | 83 |
| 12 | Bakyrsha | 45 | | Kel'ts-Matash* | 100 |
| | Force 4 | | | Sukok* | 120 |
| 13 | Akzhar | 36 | | Turkestan* | 140 |
| 14 | Dzhil'ga | 39 | | Force 3 | |
| 15 | Yangibazar | 42 | 32 | Darbaza | 56 |
| 16 | Chimkent | 44 | 33 | Sary-Agach | 67 |
| 17 | Dzhana-Talap | 48 | 34 | Tashkent | 87 |
| 18 | Arys' | 55 | 35 | Blinovka | 89 |
| 19 | Stepnoye | 55 | 36 | Dikhankol' | 92 |
| 20 | Bazarkarzhan | 58 | | Vannovka* | 130 |
| 21 | Algabas | 61 | | Achusay* | 160 |
| 22 | Pervomayskoye | 62 | | Kirovskoye* | 225 |

*Stations not included in Fig 8 as a result of their distance (data of V. K. Iodko).

Another, weaker earthquake with m=5.7 was recorded on 10 December at 0141 hours at a depth of 205 km (No 158). There is less macroseismic information about it than about the preceding one. The greatest tremors of force 4 were noted in Kulyab at a distance of 170 km. In Vakhsh (188 km) they reached force 3-4, and in Pyandzh (135), the Golovnaya Hydroelectric Power Plant (200), Shaartuz (205), Nurek (235), Mirak (270), Dzhirgatal (325). Leninabad (435), Samarkand (460) and Tashkent (555) it was force 3. In the central part of Gindukush, an earthquake with K=15 at a shallower depth equal to 180 km occurred somewhat earlier on 13 May at 1740 hours (No 24). It also was felt over a significant area in a radius of 545 km. The macroseismic effect in the closest populated place -- Khorog (125 km) -- was estimated at force 4-5, in Ushar (345), force 4, in Iol (153), Kulyab (180), Khirmandzha (218), force 3-4. In Pyandzh (215 km),

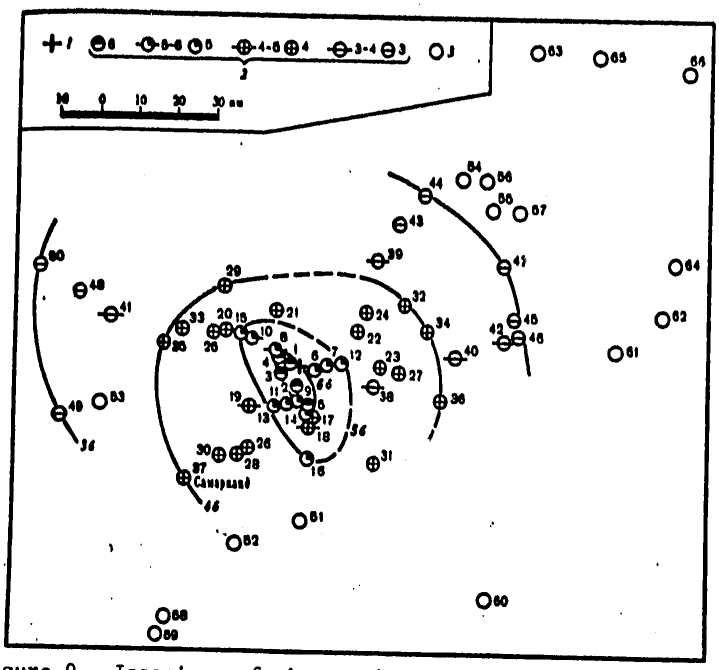

Figure 9. Isoseisms of the earthquake of 24 February. Compiled by V. K. Iodko, S. M. Kasymov, A. F. Krasnova, A. Dzhurayev

1 -- epicenter according to instrument data; 2 -- force; 3 -- not noted.

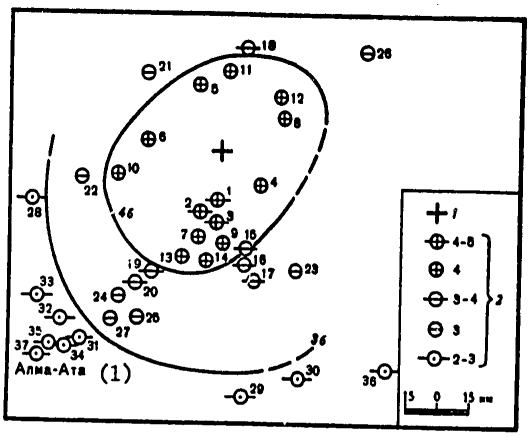


Figure 10. Isoseisms of the earthquake of 4 March. Compiled by A. Nurmagambetov, A. Dosymov, A. Sadykov, A. B. Ospanov

1 -- epicenter according to macroseismic data; 2 -- force

Key: 1. Alma-Ata

Table 10

Macroseismic Data on Earthquake of 24 February

| Item No | Station | Δ, km | Item No | Station | Δ, km |
|---|---|---|---|---|---|
| | Force 6 | | 35 | Kultusin | 65 |
| 1 | Karapchi | 5 | 36 | Zamin | 69 |
| 2 | Gallyaral | 8 | 37 | Samarkand | 73 |
| 3 | Alyamly | 9 | | Force 3-4 | |
| 4 | Sayfin | 11 | 38 | Ravat | 36 |
| 5 | Abuz | 17 | 39 | Dustlik | 60 |
| | Force 5-6 | | 40 | Obruchevo | 75 |
| 6 | Sanzar | 8 | 41 | Kushrabad | 93 |
| 7 | Sovkhoz Uzbekistan | 13 | 42 | Keramicheskaya | 100 |
| 8 | Kyzyttut | 13 | | Force 3 | |
| 9 | Kashkabulak | 14 | 43 | Yerzhar | 79 |
| 10 | Koygash | 26 | 44 | Dzhetysay | 98 |
| | Force 5 | | 45 | Yangiyer | 106 |
| 11 | Mullabulak | 17 | 46 | Khavast | 107 |
| 12 | Dzhzak | 20 | 47 | Gulistan | 108 |
| 13 | Kuropatyunno | 22 | 48 | Dzhun | 111 |
| 14 | Chulak | 22 | 49 | Katta-Kurgan | 117 |
| 15 | Ugat | 32 | 50 | Saykechar | 133 |
| 16 | Usmat | 41 | | Not noted | |
| | Force 4-5 | | 51 | Pendzhikent | 69 |
| 17 | Aule | 23 | 52 | Urgut | 85 |
| 18 | Saray | 27 | 53 | Ishtykhan | 97 |
| 19 | Gabdun | 29 | 54 | Il'ich | 114 |
| 20 | Narvan | 38 | 55 | Velikiy-Alekseyevsk | 115 |
| | Force 4 | | 56 | Syrdar'ya | 121 |
| 21 | Sovkhoz im. Kirova | 27 | 57 | Verkhnevolynsk | 125 |
| 22 | Sovkhoz No 26 | 32 | 58 | Kitab | 127 |
| 23 | Raz"yezd | 38 | 59 | Shakhrisabz | 137 |
| 24 | Pakhtakor | 40 | 60 | Zarafshan | 137 |
| 25 | Sovkhoz im. K. Marksa | 42 | 61 | Nau | 151 |
| 26 | Mikhaylovka | 44 | 62 | Leninabad | 174 |
| 27 | Zarbdor | 47 | 63 | Abay | 179 |
| 28 | Krasnogvardeysk | 48 | 64 | Kansay | 184 |
| 29 | Yangikishlak | 50 | 65 | Tashkent | 197 |
| 30 | Tunkatar | 53 | 66 | Sukok | 225 |
| 31 | Bakhmal | 55 | | | |
| 32 | Pakhtaabad | 57 | | | |
| 33 | Tusinsay | 58 | | | |
| 34 | Sovkhoz No 4 | 63 | | | |

Table 11

Macroseismic Data on the Earthquake of 4 March

| Item No | Station | Δ, km | Item No | Station | Δ, km |
|---|---|---|---|---|---|
| | Force 4-5 | | 19 | Malovodnyy | 65 |
| 1 | Mouth of the Kurchilik River | 25 | 20 | Yevgsn'yevka | 70 |
| | | | | Force 3 | |
| 2 | Mouth of the Chilik River | 30 | 21 | Sarypzek | 56 |
| | | | 22 | Chengel'dy | 69 |
| 3 | Kulikovka | 32 | 23 | Sovkhoz Syugatinskiy | 76 |
| | Force 4 | | 24 | Baltabay | 81 |
| 4 | Ayakkalkan | 26 | 25 | Turgen' | 88 |
| 5 | Shankanay | 34 | 26 | Konyrolen | 93 |
| 6 | Novyy Karashoky | 35 | 27 | Issyk | 95 |
| 7 | Karazhoga | 37 | | Force 2-3 | |
| 8 | Kalmakkara | 41 | 28 | Kapchagay | 100 |
| 9 | Chilik | 41 | 29 | Kurmenty | 106 |
| 10 | Karashoky | 45 | 30 | Zhalanash | 110 |
| 11 | Altynemel' | 45 | 31 | Talgar | 113 |
| 12 | Baschi | 47 | 32 | Panfilov | 116 |
| 13 | Kuram | 48 | 33 | Dmitriyevka | 116 |
| 14 | Karaturuk | 50 | 34 | Kzyl-Gayrat | 120 |
| | Force 3-4 | | 35 | Veselyy | 123 |
| 15 | Baysent | 45 | 36 | Kegen' | 136 |
| 16 | Sovkhoz Oktyabryskiy | 49 | 37 | Alma-Ata | 137 |
| 17 | Malybay | 55 | | | |
| 18 | Golubinovka | 58 | | | |

Shaartuz (260), Fayzabad (265), Nurek (290), Dushanbe (290), Termez (334), Kayrakkum (420), Mirak (430), Samarkand (485) and Tashkent (542) the tremors reached force 3.

Another earthquake with K=14 occurring on 22 February at 0333 hours (No 12) somewhat east of the ones described above was felt in the populated places of Samanchi (185 km) with force 3-4, Khorog (11), Sary-Chashma (168), Gulabad (178), Muminabad (193), Tanapchi (205), Golovnaya Hydroelectric Power Plant (237), force 3, Dushanbe (297), Samarkand (495), force 2.

Here on 3 June at 1145 hours and 24 December at 1955 hours, two earthquakes occurred with K=13 (No 32, 161). The tremors caused by the first earthquake were estimated at force 4 in Khorog (75 km), force 3 at Kulyab (147), and the Golovnaya Hydroelectric Power Plant (250), and force 2 at Dushanbe (260.

The second was felt in Shaartuz (217 km) with force 3, Parkhar (142) and Dushanbe (270, with force 2.

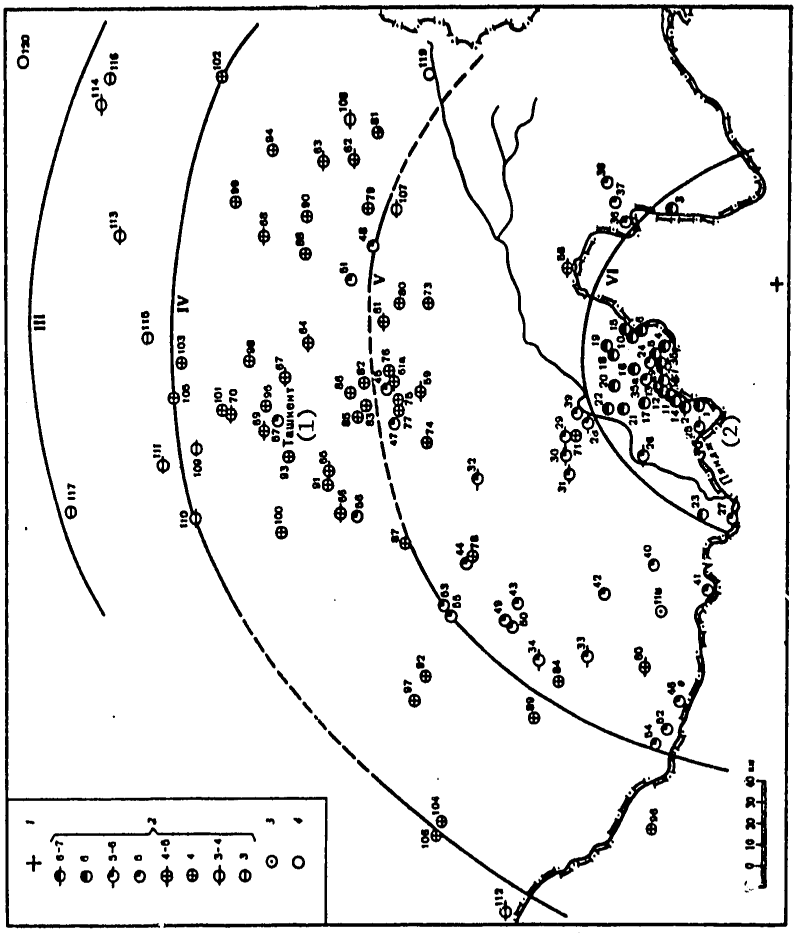


Figure 11. Isoseisms of the earthquake on 30 July. Compiled by V. K. Iodko, T. A. Kinyapina, A. A. Kon'kov, A. F, Krasnova.

1 -- epicenter according to the instrument data; 2 -- force; 3 -- felt; 4 -- not noted.

Key:

1. Tashkent; 2. Pyandzh

Table 12

Macroseismic Data on the Earthquake of 30 July

| Item No | Station | Δ, km | Item No | Station | Δ, km |
|---|---|---|---|---|---|
| | Force 6-7 | | 39 | Nurek | 243 |
| 1 | Kokul' | 143 | 40 | Surkhan | 305 |
| 2 | Kyzyl-Su | 156 | 41 | Termez | 308 |
| | Force 6 | | 42 | Baysun | 350 |
| 3 | Khorog | 132 | 43 | Miraki | 410 |
| 4 | Bakh | 136 | 44 | Pendzhikent | 418 |
| 5 | Bagarak | 145 | 45 | Leninabad | 420 |
| 6 | Iol | 151 | 46 | Charshanga | 420 |
| 7 | Chubek | 152 | 47 | Bekabad | 422 |
| 8 | Ak-Mazar | 155 | 48 | Rishtan | 422 |
| 9 | Moskovskiy | 157 | 49 | Kitab | 432 |
| 10 | Khirmandzhoy | 160 | 50 | Namangan | 434 |
| 11 | Dzharayly | 160 | 51 | Dangara | 443 |
| 12 | Kalay-Pushtak | 160 | 52 | Mukry | 448 |
| 13 | Sayat | 160 | 53 | Khoshdala | 465 |
| 14 | Parkhar | 160 | 54 | Khatab | 468 |
| 15 | Shagon | 165 | 55 | Samarkand | 468 |
| 16 | Kulyab | 173 | 56 | Dustlik | 490 |
| 17 | Alimtay | 181 | 57 | Tashkent | 535 |
| 18 | Sovkhoz No 3 | 187 | | Force 4-5 | |
| 19 | Muminabad | 188 | 58 | Kalay-Khumb | 220 |
| 20 | Sovstskiy | 198 | 59 | Sumokta | 385 |
| 21 | Tairsu | 202 | 60 | Svintsovyy rudnik | 398 |
| 22 | Dangara | 214 | 61 | Kanibadam | 410 |
| 23 | Shaartuz | 240 | 62 | Russkoye selo | 457 |
| | Force 5-6 | | 63 | Andizhan | 486 |
| 24 | Sary-Chashma | 150 | 64 | Angren | 492 |
| 25 | Pyandzh | 160 | 65 | Syrdar'ya | 500 |
| 26 | Kurgan-Tyube | 218 | 66 | Sovkhoz Zarya kommunizma | 505 |
| 27 | Ayvadzh | 235 | | | |
| 28 | Sanglok | 240 | 67 | Sukok | 520 |
| 29 | Ordzhonikidzeabad | 265 | 68 | Alabuka | 537 |
| 30 | Dushanbe | 275 | 69 | Sary-Agach | 552 |
| 31 | Gissar | 285 | 70 | Leninskoye | 585 |
| 32 | Ayni | 365 | | Force 4 | |
| 33 | Dekhkanabad | 413 | 71 | Geshi | 260 |
| 34 | Kamashi | 443 | 72 | Murgab | 320 |
| | Force 5 | | 73 | Vorukh | 362 |
| 35 | Dagana | 145 | 74 | Ura-Tyube | 395 |
| 35a | Im. Vose | 167 | 75 | Proletarsk | 410 |
| 36 | Bakhrushon | 170 | 76 | Kayrakkum | 412 |
| 37 | Yemts | 185 | 77 | Nau | 412 |
| 38 | Bartang | 200 | 78 | Katta-Kishlak | 413 |

[Table 12, contd]

| Item No | Station | Δ, km | Item No | Station | Δ, km |
|---|---|---|---|---|---|
| 79 | Isfara | 432 | 108 | Osh | 475 |
| 80 | Fergana | 435 | 109 | Montaykhash | 627 |
| 81 | Eski-Naukat | 440 | 110 | Bairkum | 647 |
| 82 | Kansay | 442 | 111 | Arys' | 622 |
| 83 | Taksli | 445 | 112 | Chardzhou | 675 |
| 84 | Guzar | 450 | 113 | Pokrovka | 685 |
| 85 | Buston | 453 | 114 | Merke | 723 |
| 86 | Altyn-Topkan | 455 | | Force 3 | |
| 87 | Dzhizak | 460 | 115 | Vannovka | 657 |
| 88 | Chust | 490 | 116 | Granitogorsk | 720 |
| 89 | Karshi | 492 | 117 | Turkestan | 768 |
| 90 | Namangan | 495 | | Felt | |
| 91 | Il'ich | 505 | 118 | Sherabad | 340 |
| 92 | Katta-Kurgan | 528 | | Not noted | |
| 93 | Birlesu | 535 | 119 | Sary-Tash | 415 |
| 94 | Maylisay | 540 | 120 | Chu | 810 |
| 95 | Chirchik | 545 | 121 | Chiili | 895 |
| 96 | Karamet-Biyaz | 548 | | | |
| 97 | Yangirabat | 555 | | | |
| 98 | Chimgan | 555 | | | |
| 99 | Aflatun | 570 | | | |
| 100 | Chardara | 570 | | | |
| 101 | Karatas (Sharapkhona) | 592 | | | |
| 102 | Nichke | 610 | | | |
| 103 | Georgiyevka | 630 | | | |
| 104 | Kagan | 630 | | | |
| 105 | Chimkent | 637 | | | |
| 106 | Bukhara | 645 | | | |
| | Force 3-4 | | | | |
| 107 | Kamadzhay | 405 | | | |

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Catalog of Earthquakes of Central Asia with K≥9 for 1974

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) φ°N | λ°E | Глубина (5) очага, км | (6) Класс точности | (7) Магнитуда | K | (8) № района | (9) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | January | | | | | | | |
| | 1 | 01 15 30 | 40,6 | 77,7 | | Б | | 9 | 5 | |
| | | 03 37 24 | 36,1 | 69,3 | 100 | Б | | 10 | 1 | |
| | | 04 29 45 | 36,8 | 69,5 | | Б | | 10 | 1 | |
| | 2 | 09 33 53 | 41,7 | 79,5 | | А | | 9 | 5 | |
| | | 12 37 20 | 36,7 | 70,8 | 250 | Б | | 10 | 1 | |
| | | 13 52 46 | 36,4 | 70,9 | 80 | Б | | 9 | 1 | |
| | | 19 15 42 | 37,6 | 71,8 | | Б | | 11 | 2 | |
| | | 21 46 56,0 | 38,68 | 70,32 | 15 | 6 | | 10 | 3 | |
| | 3 | 15 20 31 | 40,5 | 76,9 | | А | | 9 | 5 | |
| | | 15 45 04 | 42,0 | 79,6 | | А | | 10 | 5 | |
| | 4 | 02 19 42 | 36,5 | 70,8 | 100 | Б | | 11 | 1 | |
| | | 02 57 29 | 37,4 | 71,8 | 160 | Б | | 10 | 2 | |
| 1 | | 09 27 56 | 40,9 | 77,5 | 33 | А | 5,1 | 14 | 5 | Alt-Bashi, force 4; Alma-Ata, force 3; |
| | | 12 20 16 | 36,0 | 69,0 | | Б | | 10 | 1 | |
| | | 17 16 03 | 36,9 | 68,0 | 70 | Б | | 10 | 1 | |
| | 5 | 11 36 02 | 38,5 | 66,6 | | Б | | 9 | 23 | |
| | 6 | 05 58 14 | 37,6 | 71,8 | 140 | Б | | 9 | 2 | |
| | | 08 02 45 | 38,8 | 72,8 | 70 | | | 10 | 3 | |
| | | 08 30 43 | 37,1 | 71,6 | 120 | Б | | 10 | 2 | |
| | 6 | 10 57 55 | 36,0 | 70,3 | 80 | Б | | 10 | 1 | |
| | | 17 13 52 | 38,0 | 72,5 | 210 | Б | | 10 | 2 | |
| | 7 | 11 19 07 | 41,3 | 72,0 | | Б | | 9 | 8 | |
| | | 14 38 52 | 36,6 | 70,6 | 250 | Б | | 11 | 1 | |
| | 8 | 01 03 22 | 40,9 | 68,9 | 15 | А | | 10 | 10 | Syrdar'ya, force 4 |
| | | 12 50 00 | 36,5 | 70,9 | 140 | Б | | 10 | 1 | |
| | | 14 08 20 | 36,6 | 71,0 | 150 | Б | | 9 | 1 | |

Key:

1. No
2. Number
3. Time of occurrence, hours, minutes, seconds
4. Coordinates of the epicenter
5. Depth of center, km
6. Accuracy class
7. Magnitude
8. No of the region
9. Macroseismic data

[Table contd]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | (4) Координаты эпицентра φ°N | (4) λ°E | (5) Глубина очага, км | (6) Класс точности | (7) Магнитуда | K | (8) № района | (9) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 8 | 16 29 37 | 38,2 | 72,8 | 140 | | | 10 | 2 | |
| 2 | | 21 56 29 | 36,6 | 71,2 | 180 | Б | | 12 | 1 | |
| | 9 | 14 35 30 | 38,4 | 75,2 | | Б | | 11 | 11 | |
| | 10 | 06 12 16 | 36,5 | 70,4 | 200 | Б | | 10 | 1 | |
| | | 07 21 14,0 | 39,07 | 71,11 | 15 | б | | 9 | 3 | |
| | | 13 58 44 | 39,0 | 72,0 | | Б | | 9 | 3 | |
| | | 18 05 55 | 36,8 | 71,1 | 70 | Б | | 10 | 1 | |
| | | 22 23 16,9 | 42,3 | 65,1 | 5 | А | | 11 | 20 | |
| | | 22 31 17 | 36,8 | 71,0 | 220 | Б | | 10 | 1 | |
| 3 | 11 | 02 03 48 | 36,4 | 70,8 | 130 | Б | 5,2° | 13 | 1 | Dushanbe, force 2; Kulyab, force 2-3 |
| | | 06 48 18 | 37,0 | 71,7 | 270 | Б | | 10 | 2 | |
| | | 15 30 10,0 | 38,59 | 69,80 | 2 | б | | 10 | 3 | Golovnaya Hydroelectric Powerplant; Obigarm., f 3 |
| | | 17 31 08 | 39,9 | 73,7 | 5 | А | | 9 | 5 | |
| | | 18 43 44 | 37,3 | 71,5 | 130 | Б | | 10 | 2 | |
| 4 | | 22 44 56,8 | 41,60 | 70,70 | 5 | а | 4,6 | 12 | 9 | see text, Fig 7 |
| | | 23 21 10 | 41,3 | 71,1 | 0 | А | | 9 | 9 | |
| | 12 | 11 54 18 | 37,6 | 72,2 | 150 | Б | | 11 | 2 | |
| | 13 | 04 53 50 | 39,1 | 75,9 | | Б | | 10 | 11 | |
| | | 05 38 40 | 38,5 | 72,2 | | Б | | 10 | 3 | |
| | | 21 11 06 | 38,5 | 73,0 | 110 | Б | | 9 | 2 | |
| | | 21 14 12 | 38,4 | 70,3 | | Б | | 9 | 3 | |
| | 14 | 07 50 53,8 | 42,80 | 77,90 | 10–15 | б | | 9 | 7 | |
| | | 12 45 22 | 36,5 | 70,7 | 130 | | | 9 | 1 | |
| | | 19 50 06 | 36,0 | 70,4 | 80 | | | 9 | 1 | |
| | 15 | 04 31 17 | 36,1 | 69,3 | 80 | Б | | 11 | 1 | |
| | | 14 35 24,0 | 38,58 | 69,80 | 2 | б | | 10 | 3 | |
| | | 16 48 36,0 | 38,91 | 70,56 | 3 | б | | 9 | 3 | |
| | | 17 53 52 | 37,4 | 71,9 | 230 | Б | | 10 | 2 | |
| | 16 | 00 56 26 | 36,9 | 71,1 | 80 | Б | | 9 | 1 | |
| | | 01 07 59 | 37,7 | 72,1 | 140 | Б | | 9 | 2 | |
| | | 03 28 01 | 40,9 | 73,9 | 5 | Б | | 9 | 6 | |
| | | 03 30 45 | 37,0 | 71,2 | 180 | Б | | 9 | 2 | |
| | | 06 48 20,4 | 41,20 | 73,40 | 10 | а | | 10 | 8 | |
| | | 06 58 47 | 36,6 | 71,2 | 130 | Б | | 10 | 1 | |
| | | 07 37 33 | 37,4 | 71,6 | 130 | Б | | 10 | 2 | |
| | | 14 26 37 | 36,5 | 70,9 | 130 | Б | | 11 | 1 | |
| | 17 | 06 14 30 | 36,2 | 69,5 | 140 | Б | | 10 | 1 | |
| | | 12 48 55 | 36,1 | 69,8 | 80 | Б | | 10 | 1 | |
| | 18 | 04 31 51 | 36,5 | 70,4 | 200 | Б | | 11 | 1 | |
| | | 07 27 05 | 36,7 | 71,0 | 210 | Б | | 10 | 1 | |
| | 19 | 12 15 59 | 39,8 | 75,2 | | А | | 11 | 5 | |
| | | 13 20 23 | 36,3 | 71,0 | 70 | Б | | 10 | 1 | |
| | | 13 38 41 | 36,4 | 70,8 | 100 | Б | | 10 | 1 | |
| | | 17 12 29,0 | 38,96 | 70,57 | 3 | б | | 9 | 3 | |
| | 20 | 01 05 07 | 37,6 | 71,9 | 100 | Б | | 9 | 2 | |
| | | 03 03 23,4 | 40,1 | 70,5 | 15 | А | | 10 | 5 | Tangi-Vorukh, force 3-4 |
| | | 05 08 06 | 36,9 | 71,0 | 220 | Б | | 10 | 1 | |
| | 21 | 09 51 49,5 | 42,00 | 76,90 | 0–5 | а | | 10 | 6 | |
| | | 10 39 42 | 39,6 | 77,2 | | Б | | 10 | 12 | |
| 5 | 22 | 06 08 08 | 40,2 | 71,9 | 35 | А | ~3,7 | 12 | 8 | See text, Fig 6 |
| 6 | | 07 29 56 | 36,2 | 70,5 | 150 | А | | 12 | 1 | |
| | | 09 45 44 | 36,3 | 70,9 | 80 | Б | | 9 | 1 | |
| | | 10 45 09,0 | 38,58 | 69,77 | 1–2 | б | | 9 | 3 | |
| | | 15 20 34 | 37,4 | 71,9 | 200 | Б | | 9 | 2 | |
| | | 15 39 01 | 36,4 | 70,7 | 200 | Б | | 10 | 1 | |
| | | 15 56 07,2 | 40,90 | 73,50 | 10 | а | | 10 | 8 | |
| | | 18 51 21 | 36,1 | 71,4 | 80 | Б | | 9 | 1 | |
| | 23 | 20 32 12 | 38,6 | 72,0 | | Б | | 9 | 3 | |
| | | 21 50 26 | 38,5 | 72,0 | | Б | | 9 | 3 | |

[Table, contd]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) φ°N | λ°E | Глубина (5) очага, км | (6) Класс точности | (7) Магнитуда | K | (8) № района | (9) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 24 | 04 48 22 | 37,5 | 72,0 | | Б | | 9 | 2 | |
| | | 08 45 36 | 38,5 | 72,4 | | Б | | 9 | 3 | |
| | | 18 50 39 | 36,5 | 70,8 | 100 | Б | | 9 | 1 | |
| | 25 | 02 49 19 | 36,3 | 70,4 | 80 | Б | | 9 | 1 | |
| | | 04 07 27 | 36,5 | 71,1 | 120 | Б | | 10 | 1 | |
| | | 10 28 12 | 36,8 | 71,0 | 80 | Б | | 9 | 1 | |
| | | 14 16 12 | 36,4 | 70,4 | 220 | Б | | 10 | 1 | |
| | | 15 16 14 | 36,6 | 71,0 | 230 | А | | 10 | 1 | |
| | | 20 10 03 | 36,5 | 70,6 | 200 | Б | | 9 | 1 | |
| | | 22 03 57 | 37,6 | 72,0 | 140 | Б | | 10 | 2 | |
| | | 22 28 37 | 37,5 | 71,6 | 160 | Б | | 9 | 2 | |
| | 26 | 05 34 29 | 36,1 | 68,3 | | Б | | 10 | 1 | |
| | 27 | 03 52 45 | 38,5 | 72,2 | | Б | | 9 | 3 | |
| | | 15 51 14 | 37,8 | 72,1 | 100 | Б | | 10 | 2 | |
| | | 21 22 35 | 36,1 | 71,1 | 100 | Б | | 9 | 1 | |
| | 28 | 08 53 53 | 38,3 | 73,6 | 150 | Б | | 10 | 2 | |
| | | 09 34 12 | 39,6 | 76,0 | | | | 9 | 12 | |
| | | 14 05 24 | 37,0 | 71,0 | 70 | Б | | 9 | 1 | |
| | | 14 24 40 | 36,9 | 71,0 | 200 | Б | | 9 | 1 | |
| | | 16 48 35 | 39,8 | 75,4 | | Б | | 9 | 5 | |
| | | 19 30 21 | 38,8 | 65,9 | 0–5 | А | | 9 | 22 | |
| | | 20 24 49 | 36,2 | 70,4 | 80 | Б | | 10 | 1 | |
| | | 23 07 23 | 41,6 | 70,7 | 5 | А | | 9 | 9 | |
| | 29 | 01 13 02 | 39,7 | 75,7 | | Б | | 9 | 5 | |
| | | 02 37 36 | 39,5 | 78,0 | | Б | | 9 | 12 | |
| | | 19 43 10,4 | 40,2 | 70,2 | 5 | А | | 9 | 5 | |
| | 30 | 00 45 18 | 42,5 | 78,7 | | А | | 10 | 6 | |
| | | 15 48 08 | 36,4 | 70,7 | 150 | Б | | 9 | 1 | |
| | 31 | 09 41 49 | 37,5 | 71,9 | | Б | | 11 | 2 | Khorog, force 3 |
| | | 11 00 15 | 37,1 | 71,7 | 150 | Б | | 10 | 2 | |
| | | 12 32 05 | 36,8 | 70,8 | 250 | Б | | 10 | 1 | |
| | | 18 11 15 | 36,6 | 70,9 | | Б | | 9 | 1 | |
| | | | | February | | | | | | |
| | 1 | 05 50 51 | 39,5 | 78,8 | | А | | 10 | 12 | |
| | | 14 09 18 | 37,3 | 71,8 | 130 | Б | | 10 | 2 | |
| | | 16 47 26 | 37,5 | 71,9 | 200 | Б | | 10 | 2 | |
| | | 21 47 49 | 39,2 | 74,4 | | Б | | 9 | 11 | |
| | 2 | 15 01 35 | 37,2 | 71,2 | 100 | Б | | 9 | 2 | |
| | 3 | 07 54 23 | 39,4 | 73,0 | | Б | | 10 | 3 | |
| | | 14 13 55,2 | 43,52 | 77,57 | | б | | 9 | 13 | |
| | | 23 37 32,0 | 39,79 | 70,20 | 15 | б | | 10 | 5 | |
| | 4 | 01 03 40 | 36,5 | 70,9 | 210 | Б | | 10 | 1 | |
| | | 10 02 16 | 36,8 | 71,2 | 200 | Б | | 10 | 1 | |
| | 5 | 14 36 09 | 39,2 | 71,8 | | Б | | 10 | 1 | |
| | 6 | 03 03 43 | 36,7 | 70,1 | 200 | Б | | 10 | 1 | |
| | | 13 08 11 | 36,8 | 71,0 | 230 | Б | | 9 | 1 | |
| | | 15 36 05 | 39,8 | 75,2 | | А | | 9 | 5 | |
| 7 | | 17 26 17 | 36,6 | 71,3 | 180 | Б | | 12 | 1 | |
| | | 20 10 53,0 | 39,10 | 70,92 | 12 | б | | 9 | 3 | |
| | | 22 37 00 | 39,2 | 71,8 | | | | 11 | 3 | |
| | 7 | 00 07 20 | 44,9 | 80,5 | | А | | 10 | 13 | |
| | | 00 30 10 | 38,9 | 67,8 | 0–5 | А | | 9 | 5 | |
| | | 01 10 53 | 36,3 | 71,2 | 70 | Б | | 11 | 1 | |
| | | 02 18 05 | 36,2 | 70,0 | 100 | Б | | 10 | 1 | |
| | | 05 37 31,0 | 38,46 | 69,62 | 10 | б | | 9 | 3 | |
| | | 20 11 01 | 37,9 | 72,5 | 100 | Б | | 11 | 2 | |
| | 8 | 00 30 12,0 | 38,72 | 68,03 | 2 | б | | 9 | 4 | |
| | | 05 50 12 | 38,7 | 73,9 | 110 | Б | | 10 | 11 | |
| | | 13 04 22 | 37,6 | 72,0 | | Б | | 9 | 2 | |
| 8 | | 21 54 44 | 36,4 | 71,2 | 90 | Б | | 9 | 1 | |

[Table, contd]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) φ°N | λ°E | Глубина (5) очага, км | (6) Класс точности | (7) Магнитуда | K | (8) № района | (9) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 9 | 15 07 37 | 36,6 | 70,6 | 80 | Б | | 9 | 1 | |
| | | 20 54 02 | 36,6 | 71,2 | 240 | Б | | 9 | 1 | |
| | | 23 17 24 | 37,3 | 71,9 | 160 | Б | | 9 | 2 | |
| | 10 | 01 48 55 | 36,8 | 71,9 | 80 | Б | | 9 | 2 | |
| | | 10 22 35 | 36,3 | 71,0 | 70 | А | | 10 | 1 | |
| | | 13 44 08 | 39,6 | 78,3 | | А | | 10 | 12 | |
| | | 13 55 42 | 36,2 | 69,8 | 100 | Б | | 9 | 1 | |
| | | 16 30 23 | 37,5 | 72,2 | 200 | Б | | 11 | 2 | |
| | 11 | 08 31 44 | 37,8 | 75,1 | | Б | | 10 | 11 | |
| | | 17 39 59 | 36,1 | 69,9 | 100 | Б | | 11 | 1 | |
| | | 18 42 08 | 36,4 | 71,4 | 70 | Б | | 11 | 1 | |
| | | 20 05 57 | 39,3 | 74,4 | | Б | | 9 | 11 | |
| | | 23 14 49 | 36,5 | 71,1 | 90 | Б | | 10 | 1 | |
| | 12 | 14 06 55 | 36,4 | 71,3 | 80 | Б | | 10 | 1 | |
| | | 17 26 43 | 39,3 | 71,6 | | Б | | 9 | 3 | |
| | | 21 49 50 | 36,3 | 70,0 | 200 | Б | | 11 | 1 | |
| | 13 | 16 39 35 | 36,4 | 70,6 | 150 | Б | | 9 | 1 | |
| | | 19 20 22 | 37,6 | 71,9 | | Б | | 10 | 2 | |
| | | 19 29 10 | 37,7 | 71,9 | | Б | | 9 | 2 | |
| | 14 | 06 30 13 | 36,4 | 70,9 | 100 | Б | | 9 | 1 | |
| | | 10 23 53 | 37,5 | 72,0 | 150 | Б | | 10 | 2 | |
| | | 17 58 13,1 | 42,50 | 74,80 | 10 | а | | 10 | 7 | |
| | | 20 54 40,0 | 38,40 | 70,42 | 2 | б | | 10 | 3 | |
| | | 21 06 34 | 37,6 | 72,0 | 110 | Б | | 9 | 2 | |
| | | 21 12 55 | 36,6 | 70,8 | 230 | Б | | 9 | 1 | |
| | | 21 54 00 | 37,4 | 71,7 | 200 | Б | | 10 | 2 | |
| | 15 | 02 16 30 | 36,3 | 70,4 | 120 | А | | 10 | 1 | |
| | | 08 52 30 | 36,4 | 71,0 | 150 | Б | | 10 | 1 | |
| | | 13 18 42 | 36,2 | 70,2 | 100 | Б | | 10 | 1 | |
| | | 20 3. 58,4 | 39,60 | 73,01 | | а | | 9 | 3 | |
| | 16 | 18 01 21 | 37,5 | 71,9 | | Б | | 9 | 2 | |
| | 17 | 02 37 29 | 37,2 | 71,6 | 130 | Б | | 10 | 2 | |
| | | 03 34 59 | 42,4 | 80,0 | | Б | | 9 | 6 | |
| | | 07 27 06 | 36,5 | 70,8 | 150 | Б | | 9 | 1 | |
| | | 20 58 26 | 36,3 | 67,2 | | Б | | 9 | 1 | |
| | 18 | 00 51 45 | 36,5 | 70,8 | 200 | А | | 10 | 11 | |
| | | 01 55 43 | 41,1 | 73,7 | 15 | А | 3,5 | 11 | 6 | |
| | | 10 29 08 | 37,6 | 71,9 | 110 | Б | | 9 | 2 | |
| | | 10 58 59 | 46,0 | 78,7 | | А | | 10 | 13 | |
| | | 12 25 08 | 36,6 | 72,0 | 190 | Б | | 9 | 1 | |
| | | 21 30 28 | 36,4 | 71,0 | 70 | Б | | 9 | 1 | |
| 8 | 19 | 04 09 05 | 36,1 | 70,6 | 70 | А | 4,9* | 12 | 1 | Khorog, force 2 |
| 9 | | 07 51 04 | 36,7 | 71,1 | 70 | Б | | 12 | 1 | Dushanbe, Khorog, force 2 |
| | | 12 57 41,6 | 40,02 | 73,20 | | б | | 9 | 5 | |
| | | 15 45 56 | 41,1 | 73,7 | 10 | А | | 10 | 6 | |
| 10 | | 21 30 03,0 | 37,68 | 69,64 | 10 | б | ~3,5 | 12 | 2 | See text, Fig 4 |
| | 20 | 04 49 38 | 36,6 | 71,3 | 110 | Б | | 10 | 1 | |
| | | 06 10 03 | 36,4 | 70,4 | 150 | Б | | 10 | 1 | |
| | | 07 02 58 | 36,7 | 70,9 | 220 | Б | | 9 | 1 | |
| | | 08 15 44 | 38,7 | 70,5 | | Б | | 9 | 3 | |
| 11 | | 11 43 47 | 40,70 | 73,20 | 15 | а | 4,9 | 13 | 8 | See text, Fig 5 |
| | | 15 12 35 | 41,0 | 74,0 | 5 | А | | 9 | 6 | |
| | | 22 47 54 | 36,6 | 71,2 | 200 | Б | | 10 | 1 | |
| | 21 | 00 17 28 | 37,2 | 71,7 | 160 | Б | | 10 | 2 | |
| | | 00 51 36 | 37,2 | 71,3 | 120 | Б | | 10 | 2 | |
| | | 09 49 08 | 37,5 | 72,0 | 190 | Б | | 9 | 2 | |
| | | 15 01 41 | 39,5 | 72,8 | | Б | | 9 | 3 | |
| | | 19 55 38 | 36,6 | 70,9 | 200 | А | | 10 | 1 | |
| 12 | 22 | 03 33 26 | 36,6 | 71,1 | 80 | Б | 5,5* | 14 | 1 | See text |
| | | 09 27 27 | 36,7 | 71,1 | 240 | Б | | 11 | 1 | |
| | | 18 04 31 | 37,7 | 72,0 | 210 | Б | | 9 | 2 | |

[Table contd]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) φ°N | λ°E | Глубина (5) очага, км | (6) Класс точности | (7) Магнитуда | K | (8) № района | (9) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| 13 | 22 | 22 27 42 | 36,5 | 69,8 | 150 | Б | | 12 | 1 | |
| | 23 | 10 16 30,7 | 40,70 | 73,40 | 20 | 6 | | 10 | 8 | |
| | | 15 47 27 | 38,20 | 70,28 | 1–2 | 6 | | 9 | 3 | |
| | 24 | 01 47 50 | 36,3 | 70,0 | 100 | | | 9 | 1 | |
| | | 03 47 56 | 39,4 | 75,0 | | А | | 9 | 11 | |
| | | 06 21 34 | 40,2 | 67,6 | 15 | А | | 11 | 5 | See text, Fig 9 |
| | | 09 37 51 | 37,7 | 66,9 | | Б | | 10 | 4 | |
| | | 20 00 10 | 40,7 | 73,3 | 30 | А | | 10 | 8 | |
| | | 20 20 12 | 40,8 | 73,1 | 10 | А | | 10 | 8 | |
| | 25 | 02 00 25 | 39,3 | 72,2 | | | | 9 | 3 | |
| | | 04 50 33 | 37,4 | 71,9 | 180 | Б | | 10 | 2 | |
| | | 19 52 21 | 41,6 | 79,4 | | Б | | 9 | 5 | |
| | 26 | 01 36 53 | 40,0 | 75,6 | | | | 9 | 5 | |
| | | 02 39 23 | 37,3 | 72,1 | 240 | Б | | 10 | 2 | |
| | | 13 07 07 | 36,7 | 70,8 | 250 | Б | | 10 | 1 | |
| | | 18 30 52 | 37,2 | 71,7 | 210 | Б | | 9 | 2 | |
| | 28 | 01 44 25 | 39,5 | 73,0 | | Б | | 11 | 3 | |
| | | 02 35 00 | 36,1 | 70,9 | 80 | Б | | 9 | 1 | |
| | | 14 19 02 | 36,5 | 69,9 | 250 | Б | | 11 | 1 | |
| | | 17 59 56 | 36,5 | 70,9 | 150 | Б | | 11 | 1 | |
| | | 22 33 27 | 36,7 | 70,8 | 230 | Б | | 10 | 1. | |
| | | | | March | | | | | | |
| | 1 | 01 19 31 | 36,6 | 70,2 | 210 | Б | | 9 | 1 | |
| | | 05 12 09,8 | 42,01 | 75,50 | 10 | а | | 10 | 6 | |
| | | 14 20 50 | 36,5 | 70,6 | 210 | Б | | 10 | 1 | |
| | | 15 21 00 | 42,50 | 70,20 | | 6 | | 9 | 19 | |
| | | 22 04 34 | 36,6 | 70,9 | 210 | Б | | 11 | 1 | |
| | 2 | 20 50 58 | 42,8 | 78,0 | | А | | 9 | 7 | |
| | | 21 58 31 | 36,1 | 70,5 | 140 | Б | | 10 | 1 | |
| | | 23 39 46,8 | 40,70 | 73,20 | 15 | 6 | | 9 | 8 | |
| | 3 | 00 38 25 | 36,9 | 71,2 | 80 | | | 9 | 1 | |
| | | 10 47 33 | 38,4 | 72,9 | 120 | Б | | 10 | 2 | |
| | | 13 10 34 | 37,2 | 68,0 | 0 | Б | | 9 | 4 | |
| | | 13 15 39 | 36,2 | 70,5 | 80 | Б | | 10 | 1 | |
| | 4 | 05 21 41 | 38,0 | 72,4 | 130 | Б | | 10 | 2 | |
| 14 | | 14 03 55 | 44,2 | 78,6 | | 6 | ~3,7 | 12 | 7 | See text, Fig 10 |
| | | 14 [illegible] 23 | 36,4 | 71,0 | 80 | А | | 11 | 1 | |
| 15 | 5 | 00 20 14 | 36,5 | 70,0 | 220 | Б | | 12 | 1 | |
| | | 02 01 07 | 36,5 | 70,5 | 160 | Б | | 9 | 1 | |
| | | 07 28 03 | 37,4 | 71,9 | | А | | 10 | 2 | |
| | | 12 30 40 | 36,6 | 70,9 | 230 | А | | 11 | 1 | |
| | 6 | 00 52 42 | 45,2 | 77,3 | | А | | 9 | 14 | |
| | | 04 [illegible] 35 | 43,6 | 75,4 | 5–10 | А | | 9 | 16 | |
| | | 06 5[illegible] 15 | 39,7 | 71,1 | 0 | А | | 9 | 5 | |
| | | 17 40 39,8 | 41,60 | 71,70 | 15 | 6 | | 9 | 9 | Kashka-Su, f 5 |
| | | 17 58 21 | 40,1 | 71,4 | 5 | А | | 10 | 5 | |
| | | 19 05 55 | 40,1 | 71,2 | 10 | А | | 10 | 5 | |
| | | 19 18 34 | 37,1 | 71,3 | 100 | Б | | 9 | 2 | |
| | 7 | 01 52 00 | 37,0 | 71,5 | 150 | Б | | 11 | 2 | |
| | | 06 34 06 | 36,0 | 71,7 | 250 | Б | | 10 | 1 | |
| | | 07 07 13 | 36,6 | 70,8 | 200 | Б | | 10 | 1 | |
| | | 12 56 28,0 | 38,75 | 70,81 | 7 | а | | 9 | 3 | |
| | | 20 47 50,9 | 43,52 | 77,78 | | 6 | | 9 | 7 | |
| | | 21 59 54 | 36,4 | 70,9 | 150 | Б | | 10 | 1 | |
| | 8 | 07 11 11 | 36,0 | 69,0 | | Б | | 9 | 1 | |
| | | 08 31 16 | 40,2 | 73,4 | 5 | А | | 9 | 5 | |
| | | 17 58 40 | 39,0 | 70,9 | | А | | 9 | 3 | |
| | | 18 42 50 | 36,2 | 69,1 | | | | 9 | 1 | |
| | 9 | 15 16 05 | 39,9 | 67,2 | 5 | А | | 10 | 5 | |
| | 10 | 13 30 18 | 36,4 | 70,6 | 160 | Б | | 10 | 1 | |
| | | 22 30 33 | 37,5 | 71,8 | 190 | Б | | 9 | 2 | |

[Table, contd]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) φ°N | λ°E | Глубина (5) очага, км | (6) Класс точности | (7) Магнитуда | K | (8) № района | (9) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 11 | 12 54 42 | 36,5 | 70,1 | 210 | А | | 11 | 1 | |
| | | 13 36 13 | 37,0 | 71,2 | 80 | Б | | 10 | 2 | |
| | | 14 59 23 | 36,0 | 67,2 | | | | 10 | 1 | |
| | 13 | 02 12 47 | 36,6 | 70,9 | 220 | Б | | 10 | 1 | |
| | | 13 08 30 | 37,2 | 71,4 | 100 | Б | | 9 | 2 | |
| | | 19 25 09 | 36,9 | 71,3 | 110 | Б | | 9 | 1 | |
| | 14 | 09 40 43 | 36,9 | 71,1 | 100 | А | | 11 | 1 | |
| | | 18 10 32 | 37,0 | 71,1 | 70 | А | | 11 | 1 | |
| | 15 | 00 15 24 | 37,0 | 71,6 | 150 | Б | | 10 | 2 | |
| | | 05 36 30 | 36,8 | 71,2 | 180 | Б | | 9 | 2 | |
| | | 10 22 44 | 43,8 | 80,0 | | А | | 9 | 7 | |
| | | 13 56 13 | 37,1 | 71,2 | 90 | А | | 10 | 2 | |
| | | 22 29 37 | 36,5 | 70,0 | 250 | Б | | 10 | 1 | |
| | 16 | 01 14 32,0 | 37,79 | 69,47 | 2–5 | а | | 9 | 2 | |
| | | 04 24 02 | 41,4 | 69,5 | 5 | А | | 9 | 9 | Tashkent, force 2 |
| | | 07 48 30 | 36,5 | 70,9 | 190 | Б | | 10 | 1 | |
| | | 10 40 22,0 | 38,70 | 70,37 | 25 | б | | 10 | 3 | |
| | 17 | 08 34 03 | 36,6 | 70,8 | 210 | Б | | 10 | 1 | |
| | | 09 52 34 | 38,5 | 73,2 | 90 | А | | 11 | 2 | |
| | | 10 19 30,0 | 38,83 | 70,02 | 20 | а | | 9 | 3 | |
| | 18 | 12 13 53 | 39,0 | 70,7 | | А | | 9 | 3 | |
| | | 13 27 38,0 | 39,0 | 70,66 | 7 | б | | 9 | 3 | |
| | | 17 51 33 | 36,4 | 69,5 | | Б | | 10 | 1 | |
| | 19 | 08 51 01 | 37,0 | 72,4 | | Б | | 10 | 1 | |
| | | 11 23 05 | 40,0 | 71,5 | | Б | | 10 | 5 | |
| | 20 | 10 25 17 | 39,7 | 69,5 | | А | | 9 | 5 | |
| | | 14 44 12 | 38,2 | 72,1 | | Б | | 9 | 2 | |
| 16 | | 15 30 31 | 36,7 | 70,6 | | Б | | 12 | 1 | |
| | | 22 04 45 | 36,2 | 70,2 | 100 | Б | | 10 | 1 | |
| | 21 | 03 15 14 | 36,5 | 70,1 | 200 | А | | 10 | 1 | |
| | | 03 42 22 | 36,9 | 72,0 | 240 | | | 9 | 2 | |
| | | 12 29 33,8 | 43,20 | 74,90 | 5 | б | | 9 | 16 | |
| | | 14 53 23 | 36,6 | 70,9 | 210 | А | | 11 | 1 | |
| | | 19 39 03 | 37,1 | 71,2 | 90 | Б | | 9 | 2 | |
| | 22 | 05 07 05,7 | 41,0 | 73,70 | | а | | 10 | 6 | |
| | | 09 49 21 | 42,8 | 78,2 | | А | | 9 | 6 | |
| | | 14 06 07 | 43,4 | 67,3 | 0 | А | | 9 | 20 | |
| | | 23 33 40,0 | 41,80 | 72,80 | 10 | б | | 11 | 9 | Kara-Kul', force 5; Toktogul, force 4 |
| | | 23 37 14,5 | 42,28 | 76,32 | | б | | 10 | 6 | |
| | 23 | 04 55 49 | 37,1 | 69,3 | | | | 9 | 1 | |
| | | 05 37 28 | 36,7 | 70,5 | 220 | Б | | 10 | 1 | |
| | | 05 49 36 | 36,7 | 69,3 | | Б | | 10 | 1 | |
| | 24 | 00 27 28,0 | 38,77 | 70,71 | 1–2 | б | | 10 | 3 | |
| | | 36 11 08 | 39,9 | 76,6 | | Б | | 9 | 5 | |
| | | 10 43 24 | 36,8 | 71,5 | 120 | Б | | 10 | 1 | |
| | | 18 42 58 | 36,4 | 70,9 | 140 | Б | | 10 | 1 | |
| | 25 | 02 25 06 | 37,5 | 72,2 | 210 | Б | | 10 | 2 | |
| | | 08 27 01 | 36,5 | 70,9 | 180 | Б | | 10 | 1 | |
| | | 20 37 36 | 37,6 | 71,9 | 140 | Б | | 9 | 2 | |
| | 26 | 10 47 05,6 | 43,20 | 74,90 | 10 | б | | 9 | 16 | |
| | | 10 52 32,0 | 37,67 | 69,75 | 2 | б | | 11 | 2 | Sary-Chasma, im. Vose, force 3–4; Kulyab, force 3 |
| | | 11 34 38 | 36,8 | 71,1 | 70 | | | 10 | 1 | |
| | | 12 26 56 | 36,6 | 68,5 | | Б | | 9 | 1 | |
| | | 13 11 41 | 38,3 | 73,3 | 100 | А | | 10 | 2 | |
| | | 16 05 57 | 37,7 | 73,3 | 80 | | | 9 | 2 | |
| | | 19 51 13 | 37,6 | 70,2 | | А | | 9 | 2 | |
| | | 20 39 50 | 36,6 | 68,5 | | Б | | 9 | 1 | |
| | 27 | 00 15 40 | 36,6 | 70,6 | 210 | | | 10 | 1 | |

[Table, contd]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) φ°N | λ°E | Глубина (5) очага, км | (6) Класс точности | (7) Магнитуда | K | (8) № района | (9) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 27 | 04 20 00 | 39,6 | 68,0 | | A | | 10 | 5 | |
| | | 09 29 32 | 43,0 | 81,0 | | | | 9 | 6 | |
| | 28 | 18 59 18 | 37,0 | 71,7 | 200 | Б | | 10 | 2 | |
| | 29 | 01 43 39 | 37,6 | 71,8 | 110 | | | 9 | 2 | |
| | | 03 50 02 | 37,2 | 71,3 | 100 | Б | | 11 | 2 | |
| | | 18 09 36,6 | 41,60 | 76,20 | | в | | 9 | 6 | |
| | 30 | 04 17 03 | 36,4 | 70,9 | 100 | A | | 11 | 1 | |
| | | 11 38 30 | 36,7 | 71,1 | 130 | Б | | 10 | 1 | |
| | | 12 01 13 | 36,4 | 69,6 | | | | 9 | 1 | |
| | 31 | 15 59 02 | 41,1 | 71,1 | 10 | A | | 11 | 8 | Chust, force 4-5; Uygursay, f 3 |
| | | 18 18 17 | 36,6 | 70,7 | 180 | A | | 10 | 1 | |
| | | 21 26 38 | 36,7 | 71,2 | 80 | Б | | 10 | 1 | |
| | | 23 06 29 | 36,4 | 70,8 | 200 | Б | | 9 | 1 | |
| | | | | April | | | | | | |
| | 1 | 06 19 07 | 37,4 | 71,5 | 110 | Б | | 9 | 2 | |
| | | 11 06 08 | 37,2 | 72,4 | | Б | | 10 | 2 | |
| | | 13 32 38 | 36,7 | 71,1 | 160 | Б | | 9 | 1 | |
| | | 15 41 58 | 39,7 | 77,7 | | A | 3,7 | 11 | 5 | |
| | 2 | 15 55 48 | 39,4 | 74,5 | | A | | 9 | 11 | |
| | | 17 13 26 | 36,4 | 71,1 | 180 | Б | | 10 | 1 | |
| | | 22 11 00 | 40,0 | 77,5 | | Б | | 9 | 5 | |
| | 3 | 00 10 07 | 36,8 | 70,9 | 220 | Б | | 9 | 1 | |
| | | 08 11 13 | 38,6 | 73,7 | 120 | Б | | 10 | 2 | |
| | | 11 10 30 | 36,5 | 70,0 | 200 | Б | | 9 | 1 | |
| | 4 | 03 12 26 | 36,6 | 70,9 | 220 | A | | 11 | 1 | |
| 17 | | 04 20 01 | 39,2 | 71,6 | 0-5 | A | 4,5 | 13 | 3 | Dzhnrgatal', force 5 |
| | | 06 50 10 | 42,4 | 72,3 | 5 | A | | 9 | 7 | |
| | 5 | 03 17 30 | 36,0 | 68,3 | | Б | | 10 | 1 | |
| | | 07 49 52 | 39,3 | 71,4 | | A | | 9 | 3 | |
| | | 10 24 44 | 36,8 | 69,5 | | A | | 9 | 1 | |
| | | 10 26 14 | 36,8 | 69,5 | | A | | 9 | 1 | |
| | | 10 56 27 | 43,6 | 66,9 | 0 | A | | 9 | 20 | |
| | 6 | 07 42 55 | 36,5 | 70,4 | 200 | Б | | 10 | 1 | |
| 18 | | 20 19 29 | 37,2 | 72,5 | | A | 4,8 | 13 | 2 | |
| | | 20 [illegible]0 59 | 37,2 | 72,5 | | A | | 9 | 2 | |
| | | 20 [illegible]8 14 | 37,2 | 72,5 | | A | | 10 | 2 | |
| | | 21 0[illegible] 01 | 37,2 | 72,5 | | A | | 10 | 2 | |
| | | 21 25 [illegible]0 | 37,2 | 72,5 | | A | | 10 | 2 | |
| | | 21 35 3[illegible] | 39,7 | 69,2 | | A | | 11 | 5 | |
| | | 22 01 23 | 37,2 | 72,5 | | A | | 9 | 2 | |
| | | 22 13 09 | 37,2 | 72,5 | | A | | 9 | 2 | |
| | 7 | 01 04 06 | 36,6 | 70,9 | 230 | Б | | 10 | 1 | |
| | | 03 47 48 | 37,5 | 71,9 | 150 | Б | | 9 | 2 | |
| | | 09 33 10 | 37,2 | 72,5 | | A | | 9 | 2 | |
| | | 17 49 37 | 37,2 | 72,5 | | A | | 9 | 2 | |
| | | 18 05 15 | 37,3 | 71,8 | 180 | A | | 10 | 2 | |
| | | 21 32 57 | 36,3 | 71,4 | 90 | Б | | 9 | 1 | |
| | | 21 58 51,9 | 40,70 | 72,90 | 10 | в | | 9 | 8 | |
| | | 22 36 41 | 39,9 | 78,5 | | Б | | 9 | 12 | |
| | 8 | 07 51 10 | 37,2 | 72,5 | | A | | 9 | 2 | |
| | | 08 34 40 | 37,2 | 72,5 | | A | | 9 | 2 | |
| | | 10 44 08,0 | 38,28 | 69,18 | 1-2 | б | | 10 | 4 | |
| | | 15 53 20 | 36,5 | 70,7 | 150 | Б | | 10 | 1 | |
| | | 20 17 07 | 37,5 | 72,2 | 180 | A | | 11 | 2 | |
| | | 22 44 19 | 38,6 | 74,1 | 110 | A | | 10 | 2 | |
| | 9 | 22 30 29,0 | 41,40 | 76,0 | 10 | в | | 9 | 6 | Naryn, force 4-5 |
| | 10 | 10 31 09 | 37,3 | 71,2 | 80 | Б | | 9 | 2 | |
| | | 12 55 33,8 | 41,9 | 67,8 | 5 | A | | 9 | 20 | Bairkum, force 4 |

[Table, contd]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентров (4) $\varphi^{\circ}$N | $\lambda^{\circ}$E | (5) Глубина очага, км | (6) Класс точности | (7) Магнитуда | K | (8) № района | (9) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 10 | 14 28 17 | 37,1 | 71,1 | 90 | Б | | 9 | 2 | |
| | | 22 19 34 | 36,5 | 70,8 | 130 | А | | 10 | 1 | See the text |
| | 11 | 00 44 42 | 36,4 | 69,7 | 140 | Б | | 9 | 1 | |
| | | 17 05 25 | 36,7 | 70,3 | 210 | Б | | 10 | 1 | |
| | | 21 59 52 | 37,4 | 71,8 | 160 | А | | 10 | 2 | |
| | 12 | 08 09 55 | 38,0 | 73,7 | | Б | | 10 | 2 | |
| | | 08 51 31 | 37,2 | 71,5 | 100 | Б | | 9 | 2 | |
| | | 09 38 10 | 38,0 | 73,6 | 160 | Б | | 10 | 2 | |
| | | 11 32 37,0 | 37,8 | 69,86 | 5 | б | | 9 | 3 | |
| | | 18 46 51 | 37,6 | 72,0 | 150 | Б | | 9 | 2 | |
| | 13 | 00 32 36 | 36,6 | 69,9 | 170 | А | | 11 | 1 | |
| 19 | | 08 59 11 | 42,1 | 68,9 | 10 | А | 4,6 | 12 | 10 | See text, Fig 5 |
| | | 13 13 22 | 39,1 | 71,5 | | Б | | 9 | 3 | |
| | | 16 21 12 | 37,5 | 69,1 | | Б | | 9 | 2 | |
| | 14 | 01 41 17 | 36,7 | 70,9 | 220 | Б | | 10 | 1 | |
| | | 14 27 38 | 37,2 | 71,7 | 180 | Б | | 10 | 2 | |
| | | 18 26 26 | 36,2 | 69,6 | 100 | Б | | 11 | 1 | |
| | | 22 37 06 | 37,8 | 72,0 | 140 | Б | | 9 | 2 | |
| | 15 | 02 08 15 | 37,1 | 71,3 | 100 | Б | | 10 | 2 | |
| | | 08 37 01 | 36,7 | 71,1 | 230 | А | | 10 | 1 | |
| | | 09 43 58 | 39,0 | 71,5 | | Б | | 9 | 3 | |
| | | 09 46 42,0 | 38,92 | 71,33 | 3 | в | | 10 | 3 | |
| | | 14 04 41 | 36,4 | 73,3 | | | | 10 | 1 | |
| | | 22 29 57,2 | 41,0 | 73,80 | 15 | б | | 10 | 6 | |
| | 16 | 11 42 23 | 38,5 | 73,8 | 100 | Б | | 11 | 2 | |
| | | 22 20 32 | 37,2 | 72,5 | | А | | 10 | 2 | |
| | | 22 20 54 | 37,2 | 72,5 | | Б | | 11 | 2 | |
| | 17 | 02 30 20 | 38,4 | 70,4 | | А | | 9 | 3 | |
| | 18 | 17 44 46 | 36,5 | 71,2 | 70 | Б | | 10 | 1 | |
| | 19 | 11 11 38 | 36,4 | 71,1 | 80 | А | | 11 | 1 | |
| | 20 | 03 58 34 | 36,2 | 69,6 | 80 | А | | 10 | 1 | |
| | | 15 09 19,2 | 39,7 | 74,70 | | б | | 9 | 11 | |
| | | 16 58 20 | 37,4 | 72,0 | 210 | Б | | 9 | 2 | |
| | | 23 35 55 | 36,5 | 71,2 | 100 | Б | | 9 | 1 | |
| | 21 | 07 06 01 | 37,2 | 72,5 | | Б | | 9 | 2 | |
| | | 12 39 32 | 37,2 | 72,5 | | Б | | 10 | 2 | |
| | | 17 36 22 | 36,0 | 69,8 | | Б | | 10 | 1 | |
| | 22 | 04 18 15 | 37,5 | 71,0 | 130 | Б | | 9 | 2 | |
| | | 11 45 42 | 37,6 | 72,2 | 200 | Б | | 9 | 2 | |
| | | 20 21 11 | 36,6 | 70,0 | 200 | Б | | 9 | 1 | |
| | | 20 48 45 | 36,0 | 70,1 | 80 | Б | | 9 | 1 | |
| | 23 | 10 42 10 | 36,2 | 68,8 | | Б | | 10 | 1 | |
| | | 10 50 47,8 | 41,6 | 72,30 | 35 | б | | 9 | 8 | |
| | | 15 09 01 | 36,5 | 69,7 | 100 | Б | | 9 | 1 | |
| | | 20 37 23 | 36,4 | 68,8 | | Б | | 10 | 1 | |
| | | 20 55 51 | 36,3 | 68,9 | | Б | | 9 | 1 | |
| | | 21 23 25 | 39,4 | 72,8 | | Б | | 10 | 3 | Nau, Force 3 |
| | | 22 48 42 | 36,2 | 71,0 | 80 | Б | | 9 | 1 | |
| | | 23 18 55,0 | 41,7 | 73,0 | 15 | Б | | 10 | 6 | |
| | 24 | 05 45 34,0 | 38,5 | 69,72 | 12 | б | | 9 | 3 | |
| | | 13 52 46 | 36,8 | 70,9 | 240 | Б | | 10 | 1 | |
| | | 17 15 43,5 | 41,0 | 72,01 | 30 | в | | 9 | 8 | |
| | 25 | 02 34 55 | 37,0 | 71,0 | 250 | | | 10 | 1 | |
| | | 03 38 19 | 37,3 | 72,0 | 190 | Б | | 9 | 2 | |
| | | 09 14 11 | 36,8 | 71,6 | 120 | Б | | 10 | 2 | |
| | | 09 30 27 | 36,4 | 69,9 | 250 | Б | | 10 | 1 | |
| 20 | 26 | 23 00 11 | 36,0 | 69,9 | 70 | Б | 5,0* | 12 | 1 | |
| 21 | 27 | 09 20 15 | 38,2 | 73,8 | 160 | Б | 4,7* | 12 | 2 | |
| | | 10 56 40,1 | 42,90 | 77,20 | 10 | б | | 9 | 7 | |
| | | 11 58 32 | 40,0 | 75,0 | | А | | 9 | 5 | |
| | | 22 31 05 | 36,6 | 71,2 | 170 | Б | | 9 | 1 | |
| | 28 | 01 58 13 | 36,5 | 70,6 | 150 | Б | | 9 | 1 | |
| | | 03 18 37 | 36,3 | 71,0 | 70 | Б | | 10 | 1 | |

[Table, contd]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | (4) Координаты эпицентра φ°N | (4) λ°E | (5) Глубина очага, км | (6) Класс точности | (7) Магнитуда | K | (8) № района | (9) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 28 | 21 28 58 | 38,4 | 73,6 | 130 | Б | | 10 | 2 | |
| | 29 | 09 37 14 | 43,4 | 67,7 | 5 | А | | 9 | 20 | |
| | 30 | 21 35 33 | 37,2 | 72,5 | | Б | | 11 | 2 | |
| | | | | | May | | | | | |
| | 1 | 12 13 57 | 36,6 | 71,1 | 80 | Б | | 10 | 1 | |
| | 2 | 10 21 51 | 36,4 | 71,1 | 80 | Б | | 10 | 1 | |
| | | 13 24 02 | 36,8 | 71,0 | 220 | Б | | 10 | 1 | |
| | | 14 58 36 | 38,4 | 73,7 | 130 | Б | | 11 | 2 | |
| | | 16 00 31 | 39,6 | 74,8 | | Б | | 11 | 11 | |
| | | 18 10 57 | 36,8 | 70,8 | | Б | | 9 | 1 | |
| | | 19 53 49 | 38,2 | 74,0 | 200 | Б | | 10 | 2 | |
| | 3 | 03 01 20 | 39,2 | 72,6 | | Б | | 9 | 3 | |
| | | 05 32 57 | 36,6 | 71,1 | 130 | Б | | 9 | 1 | |
| | | 06 31 03 | 36,4 | 70,4 | 210 | А | | 10 | 1 | |
| | | 08 47 34,3 | 41,0 | 72,10 | 5 | б | | 9 | 8 | |
| | | 10 15 39,4 | 41,90 | 71,90 | | б | | 9 | 9 | |
| | | 11 58 04 | 36,2 | 70,2 | 130 | Б | | 9 | 1 | |
| 22 | | 14 01 56 | 36,2 | 69,8 | 130 | А | | 13 | 1 | Khorog, force 3 |
| | | 20 02 18 | 37,4 | 72,0 | 160 | Б | | 9 | 2 | |
| | | 22 06 51,0 | 38,55 | 69,72 | 10 | а | | 10 | 3 | |
| | 4 | 02 10 02 | 36,6 | 70,7 | 240 | Б | | 9 | 1 | |
| | | 02 38 11 | 36,7 | 70,8 | 80 | Б | | 9 | 1 | |
| | | 03 47 48 | 36,8 | 70,9 | 80 | Б | | 10 | 1 | |
| | | 07 41 29,0 | 38,82 | 68,90 | 17 | б | | 10 | 4 | |
| | | 08 55 13 | 36,6 | 70,3 | 210 | Б | | 9 | 1 | |
| | | 16 34 44 | 36,6 | 71,2 | 230 | Б | | 9 | 1 | |
| 23 | | 19 07 23,0 | 38,94 | 70,49 | 5 | б | | 12 | 3 | See text |
| | 5 | 00 08 08 | 36,4 | 71,0 | 100 | А | | 11 | 1 | |
| | | 01 14 54 | 38,0 | 72,5 | 100 | А | | 9 | 2 | |
| | | 03 50 53 | 36,8 | 71,2 | 200 | А | | 10 | 1 | |
| | | 05 10 01 | 37,4 | 69,7 | | Б | | 9 | 2 | |
| | | 20 23 22 | 37,5 | 71,8 | 130 | А | | 10 | 2 | |
| | 6 | 05 17 46 | 37,2 | 72,5 | | Б | | 10 | 2 | |
| | | 08 47 36 | 36,6 | 71,1 | 130 | Б | | 10 | 1 | |
| | | 13 46 02 | 41,7 | 78,7 | | А | | 11 | 5 | |
| | | 15 21 31 | 36,7 | 70,9 | 210 | Б | | 9 | 1 | |
| | | 16 20 07,7 | 41,90 | 72,30 | 15 | а | | 9 | 9 | |
| | | 21 51 28,5 | 42,0 | 76,60 | 0 | а | | 9 | 6 | |
| | | 22 56 09 | 39,1 | 74,8 | | Б | | 9 | 11 | |
| | | 23 25 22 | 36,5 | 71,2 | 210 | Б | | 9 | 1 | |
| | 7 | 09 08 10 | 39,4 | 74,4 | | А | | 9 | 11 | |
| | | 18 54 44 | 39,2 | 71,5 | | А | | 9 | 3 | |
| | 8 | 02 47 21 | 36,6 | 70,8 | 220 | Б | | 9 | 1 | |
| | | 04 57 02 | 38,0 | 72,8 | | Б | | 10 | 2 | |
| | | 21 11 32 | 39,9 | 75,2 | | А | | 10 | 5 | |
| | | 22 10 09 | 36,6 | 71,0 | 230 | А | | 11 | 1 | |
| | | 22 28 19 | 40,0 | 76,6 | | А | | 9 | 5 | |
| | 9 | 02 56 28 | 39,1 | 70,8 | | А | 4,7° | 11 | 3 | |
| | | 05 20 51 | 39,4 | 71,7 | | А | | 11 | 3 | |
| | | 07 26 14 | 36,4 | 70,5 | 210 | Б | | 11 | 1 | |
| | | 20 47 53,0 | 38,47 | 69,13 | 5 | б | | 9 | 4 | |
| | | 23 24 59 | 36,4 | 71,2 | 100 | Б | | 10 | 1 | |
| | 10 | 01 45 29 | 36,4 | 71,1 | 100 | Б | | 10 | 1 | |
| | | 03 50 47 | 38,0 | 75,5 | | | | 11 | 11 | |
| | | 07 27 37 | 37,4 | 72,5 | | Б | | 9 | 2 | |
| | | 13 08 37 | 37,9 | 73,3 | | Б | | 9 | 2 | |
| | | 20 41 01 | 40,1 | 79,2 | | Б | | 10 | 12 | |
| | 11 | 11 20 16 | 36,3 | 70,4 | 160 | Б | | 9 | 1 | |
| | 12 | 00 43 55 | 36,8 | 71,2 | 180 | Б | | 9 | 1 | |
| | | 05 00 40 | 37,5 | 72,5 | | Б | | 9 | 2 | |
| | | 05 54 33,0 | 38,55 | 68,88 | 10 | а | | 9 | 4 | |
| | | 18 57 19 | 44,3 | 80,4 | 1 | А | | 11 | 13 | |

[Table, contd]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) φ°N | λ°E | (5) Глубина очага, км | (6) Класс точности | (7) Магнитуда | K | (8) № района | (9) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 12 | 20 25 39 | 41,8 | 80,5 | | А | | 9 | 5 | |
| | | 22 04 32 | 38,4 | 75,6 | 120 | Б | | 11 | 11 | |
| | | 22 14 17 | 36,7 | 70,9 | 220 | Б | | 9 | 1 | |
| | 13 | 01 04 20 | 36,4 | 70,2 | 210 | Б | | 10 | 1 | |
| | | 04 00 57 | 38,2 | 73,4 | | Б | | 9 | 2 | |
| | | 05 30 42 | 36,4 | 69,7 | 130 | Б | | 10 | 1 | |
| | | 06 14 26 | 38,5 | 70,6 | | Б | | 10 | 3 | |
| | | 07 29 57 | 36,0 | 69,7 | 120 | Б | | 10 | 1 | |
| | | 08 21 44,0 | 38,99 | 70,70 | 8 | а | | 9 | 3 | |
| 24 | | 17 40 30 | 36,5 | 70,9 | 180 | А | 6,0 | 15 | 1 | see. text |
| | | 19 41 30 | 36,6 | 71,2 | | Б | | 11 | 1 | |
| 25 | | 21 22 16 | 36,5 | 70,1 | 200 | Б | | 12 | 1 | |
| | | 21 58 19,0 | 37,67 | 69,80 | 10 | а | | 10 | 2 | |
| | 14 | 00 19 56 | 36,4 | 71,1 | 70 | | | 9 | 1 | |
| | | 01 30 17 | 38,1 | 73,3 | | Б | | 10 | 2 | |
| | | 03 00 22 | 36,0 | 70,0 | 100 | Б | | 10 | 1 | |
| | | 03 10 31 | 37,1 | 71,0 | 80 | Б | | 10 | 2 | |
| | | 05 53 44 | 36,8 | 66,7 | | | | 9 | 1 | |
| | | 14 16 06 | 36,4 | 70,4 | 150 | Б | | 9 | 1 | |
| | | 15 26 15,9 | 42,0 | 71,70 | 0 | б | | 9 | 9 | |
| | | 16 56 47 | 36,6 | 71,0 | 230 | | | 9 | 1 | |
| | | 17 58 31 | 36,7 | 71,2 | 170 | Б | | 9 | 1 | |
| | | 18 54 46 | 36,4 | 70,3 | 210 | Б | | 9 | 1 | |
| | 15 | 00 12 44 | 36,4 | 76,8 | 40 | А | 4,2 | | | |
| | | 02 38 49 | 38,0 | 67,5 | 0 | А | | 9 | 4 | |
| | | 08 03 42 | 37,3 | 69,6 | | Б | | 11 | 2 | |
| | | 10 22 39 | 36,0 | 70,4 | | Б | | 10 | 1 | |
| | | 12 24 19 | 40,7 | 77,9 | | А | | 10 | 5 | |
| | | 12 29 42 | 37,2 | 69,8 | | | | 9 | 2 | |
| 26 | 16 | 08 04 04 | 37,5 | 72,3 | 190 | Б | | 12 | 2 | |
| | | 10 58 05 | 36,4 | 71,0 | 100 | Б | | 10 | 1 | |
| | | 16 07 54 | 36,6 | 71,0 | 220 | Б | | 11 | 1 | |
| | | 22 17 40 | 36,7 | 71,3 | 190 | А | | 11 | 1 | |
| | | 23 08 58 | 38,1 | 73,4 | | Б | | 10 | 2 | |
| | | 23 58 11 | 37,0 | 70,6 | | | | 9 | 1 | |
| | 17 | 07 17 53 | 44,2 | 81,0 | | А | | 9 | 13 | |
| | | 08 24 46 | 36,6 | 70,6 | 140 | Б | | 9 | 1 | |
| | | 10 59 34 | 36,1 | 70,3 | 80 | | | 9 | 1 | |
| 27 | | 13 45 15 | 36,5 | 70,8 | 200 | А | 5,5 | 13 | 1 | Khorog, force 3; Tashkent, force 2-3 |
| | 18 | 03 30 40 | 37,2 | 71,7 | 150 | Б | | 11 | 2 | |
| | | 12 46 24 | 36,6 | 71,0 | 270 | | | 10 | 1 | |
| 28 | | 19 58 43 | 38,5 | 71,8 | | Б | 4,5* | 12 | 3 | |
| | | 23 43 56 | 36,1 | 69,9 | 150 | А | | 11 | 1 | |
| | 19 | 00 23 50 | 40,6 | 77,8 | | Б | | 9 | 5 | |
| | | 08 08 26 | 39,9 | 69,0 | | Б | | 9 | 5 | |
| | | 09 15 03 | 38,6 | 71,8 | | Б | | 10 | 3 | |
| | | 14 23 24,0 | 38,83 | 69,79 | 12 | а | | 9 | 4 | |
| | | 14 34 35 | 36,5 | 71,0 | 210 | Б | | 10 | 1 | |
| | | 18 23 11 | 37,5 | 70,0 | | | | 9 | 2 | |
| | | 19 01 05,6 | 43,10 | 73,10 | 10 | б | | 9 | 18 | |
| | 20 | 01 26 37 | 36,7 | 71,1 | 190 | Б | | 9 | 1 | |
| | | 13 45 15 | 40,1 | 69,8 | 5 | А | | 10 | 5 | Kayrakkum, Kansay, force 3 |
| | | 20 15 07 | 36,6 | 71,1 | 220 | Б | | 11 | 1 | |
| | 21 | 07 47 09 | 40,2 | 78,5 | | Б | | 10 | 5 | |
| | | 11 06 53 | 43,8 | 67,6 | 5 | А | | 10 | 19 | |
| | | 11 53 09,6 | 40,85 | 73,70 | 15 | б | | 10 | 6 | Donguz-Too, force 3 |
| | | 12 50 46 | 37,3 | 72,3 | 140 | | | 9 | 2 | |
| | | 17 08 49 | 36,4 | 69,9 | 140 | | | 9 | 1 | |
| | | 21 19 49 | 36,5 | 69,9 | 270 | Б | | 10 | 1 | |
| | 22 | 02 13 06 | 36,7 | 70,8 | 220 | Б | | 9 | 1 | |

[Table, contd]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) φ°N | λ°E | (5) Глубина очага, км | (6) Класс точности | (7) Магнитуда | K | (8) № района | (9) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 22 | 06 45 40,0 | 38,67 | 70,03 | 15 | а | | 9 | 3 | |
| | | 11 38 31 | 36,4 | 69,6 | | А | | 9 | 1 | |
| | | 20 51 48 | 36,6 | 71,3 | 80 | | | 9 | 1 | |
| | | 22 12 55 | 37,5 | 70,2 | | А | | 9 | 2 | |
| 29 | 23 | 02 11 09 | 38,7 | 75,0 | | Б | | 12 | 11 | see text |
| | | 02 14 06 | 38,7 | 75,0 | | | | 11 | 11 | |
| | | 11 14 50 | 37,2 | 72,2 | 220 | Б | | 10 | 2 | |
| | | 11 41 14 | 36,6 | 70,0 | 230 | Б | | 11 | 1 | |
| | | 12 56 22,0 | 38,62 | 70,54 | 12 | а | | 9 | 3 | |
| | 24 | 08 23 52 | 37,1 | 71,9 | 180 | Б | | 9 | 2 | |
| | | 11 50 37 | 37,6 | 71,9 | 140 | Б | | 10 | 2 | |
| | | 13 14 00 | 39,3 | 71,3 | | А | | 10 | 3 | |
| | | 18 32 44 | 38,5 | 73,8 | 130 | | | 10 | 2 | |
| | 25 | 04 55 11 | 36,4 | 71,0 | 90 | А | | 10 | 1 | |
| | | 07 28 04,0 | 37,92 | 69,97 | 5 | а | | 9 | 3 | |
| | | 10 33 50,0 | 38,51 | 70,55 | | а | | 10 | 3 | |
| | | 13 39 04 | 37,5 | 72,5 | | Б | | 10 | 2 | |
| | | 10 33 58 | 42,7 | 79,3 | | А | | 10 | 5 | |
| | | 23 28 44 | 37,7 | 72,2 | 210 | Б | | 9 | 2 | |
| | 26 | 06 59 04 | 36,4 | 70,1 | 220 | Б | | 10 | 1 | |
| | 27 | 03 26 47 | 38,5 | 73,5 | 120 | Б | | 11 | 2 | |
| | | 06 01 16 | 36,7 | 71,3 | 180 | Б | | 9 | 1 | |
| | | 08 08 37 | 36,7 | 70,1 | 240 | Б | | 10 | 1 | |
| | | 10 08 02 | 37,2 | 72,0 | 100 | Б | | 10 | 2 | |
| | | 18 04 34 | 37,1 | 71,2 | 90 | Б | | 10 | 2 | |
| | | 19 10 | 39,1 | 76,7 | | А | | 10 | 12 | |
| | | 19 27 39 | 36,4 | 70,2 | 180 | | | 9 | 1 | |
| | | 19 37 20 | 37,9 | 72,1 | 130 | А | | 10 | 2 | |
| | | 20 01 42 | 36,6 | 70,2 | 210 | Б | | 9 | 1 | |
| | | 20 28 50 | 36,6 | 71,1 | 100 | Б | | 9 | 1 | |
| | 28 | 08 19 40 | 39,6 | 74,3 | | А | | 9 | 11 | |
| | | 11 10 03 | 43,6 | 67,7 | 5 | Б | | 9 | 20 | |
| | | 12 23 58 | 38,6 | 73,1 | 90 | Б | | 11 | 2 | |
| | 29 | 01 40 05 | 36,6 | 70,6 | 150 | Б | | 10 | 2 | |
| 30 | | 01 47 06,0 | 38,81 | 70,38 | 2 | б | | 12 | 3 | see text |
| | | 02 23 26,0 | 38,81 | 70,38 | 2 | а | | 10 | 3 | |
| | | 05 56 16 | 38,8 | 72,1 | | Б | | 10 | 3 | |
| | | 12 00 41 | 39,5 | 73,1 | | Б | | 11 | 3 | |
| | | 14 12 51,3 | 39,6 | 70,8 | 0 | А | | 9 | 5 | |
| | | 17 58 34 | 37,4 | 71,6 | 100 | | | 9 | 2 | |
| | | 21 04 46,0 | 41,70 | 72,70 | 5 | б | | 9 | 9 | |
| | 30 | 12 59 17 | 37,1 | 68,6 | | Б | | 9 | 1 | |
| | | 18 30 41 | 38,8 | 72,9 | | Б | | 9 | 3 | |
| | | 20 18 25,2 | 42,87 | 77,25 | | б | | 9 | 7 | |
| | | 22 06 50 | 37,1 | 71,2 | 90 | Б | | 9 | 2 | |
| | 31 | 07 00 31 | 43,8 | 67,4 | 0 | А | | 9 | 20 | |
| 31 | | 14 06 26 | 36,7 | 71,0 | 240 | А | | 12 | 1 | |
| | | 15 40 48,5 | 42,50 | 71,0 | | б | | 9 | 7 | |
| | | 18 09 20 | 36,5 | 70,4 | 200 | А | | 10 | 1 | |
| | | | | June | | | | | | |
| | 1 | 02 03 53 | 36,7 | 71,2 | | Б | | 9 | 1 | |
| | | 05 01 05 | 43,7 | 67,4 | 5 | А | | 9 | 20 | |
| | | 06 24 23 | 43,7 | 67,1 | 5 | А | | 10 | 20 | |
| | | 18 44 10 | 39,5 | 75,1 | | Б | | 9 | 11 | |
| | | 20 21 19 | 36,4 | 68,1 | | Б | | 9 | 1 | |
| | 2 | 05 03 42 | 39,1 | 75,4 | | А | | 9 | 11 | |
| | | 09 16 26,0 | 39,0 | 69,32 | 10 | б | | 9 | 1 | |
| | | 11 16 26 | 36,6 | 71,0 | 140 | Б | | 9 | 1 | |
| | | 13 29 34 | 45,3 | 80,6 | | А | | 9 | 13 | |
| | 3 | 00 50 35 | 38,9 | 71,1 | | Б | | 9 | 3 | |
| | | 01 16 40 | 36,6 | 70,9 | 240 | Б | | 9 | 1 | |
| | | 09 24 45,0 | 39,0 | 70,96 | 12 | б | | 9 | 3 | |
| 32 | | 11 45 39 | 37,0 | 71,0 | 80 | Б | 5,6 | 13 | 1 | see text |

[Table, contd]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) φ°N | λ°E | (5) Глубина очага, км | (6) Класс точности | (7) Магнитуда | K | (8) № района | (9) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 3 | 12 17 36 | 36,6 | 70,7 | 170 | Б | | 9 | 1 | |
| | | 15 07 35 | 44,1 | 67,9 | 5 | А | | 9 | 19 | |
| 33 | | 23 35 18 | 39,2 | 71,6 | 10 | Б | 5,1° | 12 | 3 | Dzhirgatal', force 3 |
| | 4 | 02 22 29 | 39,7 | 72,1 | 5 | | | 9 | 5 | |
| | | 23 16 51 | 36,6 | 70,9 | 200 | Б | | 9 | 1 | |
| | 5 | 00 19 28 | 36,0 | 72,5 | 80 | Б | | 11 | 1 | |
| | | 05 29 36 | 36,7 | 71,0 | 240 | Б | | 11 | 1 | |
| | | 12 36 34 | 36,4 | 69,3 | 150 | Б | | 10 | 1 | |
| | | 17 59 05,0 | 37,79 | 69,79 | 1–2 | б | | 9 | 2 | |
| | | 18 02 06,0 | 37,79 | 69,79 | 1–2 | б | | 11 | 2 | Kulyab, Shuroabad, force 3–4 |
| | | 18 12 35,0 | 37,79 | 69,79 | 1–2 | б | | 9 | 2 | |
| | | 18 13 33,0 | 37,79 | 69,79 | 1–2 | б | | 9 | 2 | |
| | | 18 51 25 | 36,9 | 71,4 | 110 | Б | | 10 | 1 | |
| | | 19 11 35 | 38,3 | 73,6 | 150 | Б | | 9 | 2 | |
| | | 23 01 26 | 36,1 | 69,9 | 70 | Б | | 10 | 1 | |
| | 6 | 02 30 09 | 37,7 | 72,2 | 190 | Б | | 10 | 2 | |
| | | 05 44 59,0 | 38,83 | 70,39 | 5 | б | | 10 | 3 | |
| | | 07 01 08 | 41,2 | 71,3 | 10 | А | | 10 | 8 | |
| | | 15 20 15,4 | 40,30 | 73,60 | 15 | б | | 9 | 5 | |
| 34 | | 19 03 26 | 36,6 | 70,6 | 220 | А | | 13 | 1 | Khorog, force 3; Dushanbe, force 2 |
| | 7 | 00 25 45 | 36,7 | 71,2 | 100 | Б | | 9 | 1 | |
| | | 03 32 03 | 36,5 | 70,3 | 200 | Б | | 9 | 1 | |
| | | 06 31 50 | 36,4 | 70,0 | 130 | Б | | 9 | 1 | |
| | | 08 54 00 | 36,3 | 70,2 | 150 | Б | | 9 | 1 | |
| | | 11 52 49 | 36,6 | 69,7 | 250 | | | 10 | 1 | |
| | | 13 36 23 | 37,6 | 69,9 | | Б | | 9 | 2 | |
| | | 19 21 45 | 37,6 | 69,5 | | Б | | 9 | 2 | |
| | 8 | 08 49 29 | 40,2 | 73,3 | | А | | 10 | 5 | |
| | | 09 49 51 | 36,5 | 71,1 | 120 | Б | | 9 | 1 | |
| | | 16 14 10 | 36,4 | 71,1 | 80 | Б | | 9 | 1 | |
| | | 23 02 19 | 39,6 | 74,4 | | А | | 9 | 11 | |
| | | 23 50 42 | 36,7 | 71,0 | | Б | | 9 | 1 | |
| | 9 | 00 52 04 | 37,0 | 71,3 | 80 | Б | | 9 | 2 | |
| | | 04 17 14 | 36,4 | 70,0 | 150 | Б | | 10 | 1 | |
| | | 06 56 55 | 37,1 | 71,7 | 120 | Б | | 9 | 2 | |
| | | 10 58 58 | 39,5 | 72,4 | | Б | | 9 | 3 | |
| | | 14 16 42 | 37,4 | 71,5 | | Б | | 9 | 2 | |
| | | 17 35 13 | 36,5 | 70,9 | 200 | Б | | 11 | 1 | |
| | | 21 58 10 | 36,6 | 70,2 | 200 | Б | | 10 | 1 | |
| | 10 | 03 11 16 | 37,2 | 71,1 | 140 | Б | | 10 | 2 | |
| | | 04 00 20 | 37,1 | 71,3 | 100 | Б | | 10 | 2 | |
| | | 17 37 10 | 36,7 | 70,1 | 230 | Б | | 10 | 1 | |
| | | 18 29 13 | 36,6 | 70,3 | 200 | Б | | 11 | 1 | |
| | 11 | 23 16 59 | 36,6 | 70,3 | 200 | Б | | 10 | 1 | |
| | 12 | 06 31 00 | 37,0 | 71,3 | 110 | Б | | 9 | 2 | |
| | | 10 04 58 | 36,5 | 70,2 | 220 | Б | | 11 | 1 | |
| | | 16 20 46 | 36,7 | 71,6 | 110 | Б | | 10 | 2 | |
| | | 18 40 48 | 36,8 | 71,1 | 80 | Б | | 11 | 1 | |
| | | 23 18 21 | 36,2 | 70,3 | 80 | Б | | 10 | 1 | |
| 35 | 13 | 00 15 34 | 36,5 | 70,2 | 230 | Б | | 12 | 1 | |
| | | 12 54 30 | 37,2 | 70,8 | | Б | | 9 | 2 | |
| | | 21 42 45,5 | 38,2 | 66,9 | 5 | А | | 9 | 23 | |
| | 14 | 01 21 35 | 36,2 | 72,3 | 110 | Б | | 10 | 1 | |
| | | 10 56 33 | 36,4 | 70,7 | 90 | Б | | 10 | 1 | |
| | | 12 52 43 | 36,8 | 70,7 | 220 | Б | | 9 | 1 | |
| | | 12 53 08 | 37,4 | 71,7 | 130 | Б | | 11 | 2 | |
| | | 15 11 11 | 36,7 | 70,5 | 230 | Б | | 11 | 1 | |
| 36 | | 17 53 10 | 37,4 | 71,6 | 120 | Б | 4,7° | 12 | 2 | |
| | | 21 05 04 | 36,8 | 70,3 | 230 | Б | | 9 | 1 | |
| | 15 | 02 27 15 | 38,0 | 72,4 | 140 | Б | | 9 | 2 | |
| | | 04 50 19 | 39,7 | 75,6 | | А | | 9 | 5 | |

[Table, contd]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) φ°N | λ°E | (5) Глубина очага, км | (6) Класс точности | (7) Магнитуда | K | (8) № района | (9) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 15 | 11 14 15 | 40,1 | 68,1 | 5 | Б | | 9 | 5 | |
| | | 15 32 01 | 36,8 | 71,3 | 70 | Б | | 9 | 1 | |
| | | 15 47 35 | 36,5 | 70,8 | 110 | Б | | 9 | 1 | |
| | | 22 07 13 | 39,8 | 76,4 | | А | | 9 | 5 | |
| | | 23 02 02,0 | 37,77 | 69,75 | 10 | б | | 10 | 2 | |
| | | 23 41 29 | 36,5 | 70,3 | 200 | Б | | 9 | 1 | |
| | 16 | 02 23 37 | 36,6 | 70,5 | 210 | Б | | 10 | 1 | |
| | | 02 47 15 | 37,9 | 67,7 | 5 | А | | 10 | 4 | |
| | | 17 20 37 | 36,7 | 70,6 | 220 | Б | | 9 | 1 | |
| | | 19 33 00 | 39,8 | 69,6 | | Б | | 9 | 5 | |
| | 17 | 11 29 52 | 38,5 | 73,4 | 110 | Б | | 10 | 2 | |
| | | 12 15 31 | 36,8 | 69,9 | | Б | | 11 | 1 | |
| | | 16 20 09 | 36,4 | 71,0 | 80 | Б | | 9 | 1 | |
| | | 17 09 05 | 36,7 | 70,9 | 130 | Б | | 9 | 1 | |
| | | 23 10 35 | 36,3 | 69,5 | 80 | Б | | 9 | 1 | |
| | 18 | 10 07 00 | 36,6 | 70,7 | 210 | Б | | 10 | 1 | |
| | | 19 36 26 | 36,7 | 71,4 | 70 | Б | | 10 | 1 | |
| | | 19 59 26,0 | 40,27 | 72,57 | 5 | б | | 9 | 8 | |
| | | 20 31 45 | 36,4 | 71,0 | 70 | Б | | 9 | 1 | |
| | 19 | 00 27 06,0 | 42,97 | 76,50 | 0 | а | | 9 | 7 | |
| | | 04 07 29 | 36,5 | 71,1 | 230 | Б | | 11 | 1 | |
| | | 07 17 17 | 41,4 | 72,0 | 5 | А | | 10 | 8 | |
| | | 07 34 22 | 36,6 | 70,7 | 200 | Б | | 11 | 1 | |
| | | 09 31 53 | 39,1 | 64,9 | 0 | А | | 9 | 22 | |
| | | 18 56 16 | 36,5 | 70,7 | 190 | Б | | 11 | 1 | |
| | | 21 15 24,0 | 38,88 | 69,65 | 27 | а | | 9 | 4 | |
| | | 21 55 50 | 37,4 | 71,8 | 200 | Б | | 9 | 2 | |
| | 20 | 01 45 57 | 38,5 | 72,3 | | Б | | 10 | 3 | |
| | | 02 17 45 | 36,7 | 70,2 | 210 | Б | | 10 | 1 | |
| | | 07 05 13 | 37,1 | 71,6 | 140 | Б | | 10 | 2 | |
| | | 10 27 15 | 43,6 | 67,6 | 5 | А | | 9 | 20 | |
| | | 10 47 20 | 37,5 | 71,8 | 200 | Б | | 10 | 2 | |
| | | 14 33 39 | 39,3 | 71,5 | | Б | | 9 | 3 | |
| | | 17 40 14,0 | 38,82 | 70,94 | 17 | Б | | 10 | 3 | |
| | | 20 41 28,0 | 39,29 | 71,05 | 12 | б | | 10 | 3 | |
| | 21 | 08 07 20 | 39,7 | 78,3 | | Б | | 10 | 12 | |
| | | 08 23 39,0 | 39,24 | 70,98 | 14 | а | | 10 | 3 | |
| | | 10 42 50 | 43,8 | 67,9 | 0 | Б | | 9 | 19 | |
| | | 11 22 31,0 | 38,68 | 70,29 | 12 | а | | 9 | 3 | |
| | | 21 41 28,0 | 70,20 | 38,68 | 12 | а | | 9 | 3 | |
| | | 22 01 05 | 44,9 | 78,5 | | А | | 9 | 13 | |
| | 22 | 04 44 59 | 36,3 | 69,8 | 150 | Б | | 10 | 1 | |
| | | 04 59 21 | 36,6 | 71,0 | 100 | Б | | 10 | 1 | |
| | | 05 59 37 | 37,9 | 72,2 | 130 | Б | | 10 | 2 | |
| | | 14 30 12 | 36,8 | 71,3 | 230 | Б | | 9 | 1 | |
| | 23 | 00 21 36 | 36,3 | 71,3 | 100 | | | 9 | 1 | |
| | | 02 55 40 | 36,7 | 71,1 | 80 | Б | | 9 | 1 | |
| | | 06 34 20 | 41,0 | 71,5 | 10 | А | | 11 | 8 | |
| | | 10 00 03 | 39,80 | 67,7 | 5 | А | | 9 | 5 | |
| | | 18 17 30 | 36,3 | 70,5 | 150 | Б | | 9 | 1 | |
| | | 21 02 30 | 36,8 | 70,8 | 210 | Б | | 10 | 1 | |
| | 24 | 05 58 03 | 36,5 | 70,4 | 220 | Б | | 10 | 1 | |
| | | 08 16 00 | 37,5 | 71,9 | 140 | | | 9 | 2 | |
| | | 21 10 07 | 36,4 | 70,4 | 160 | Б | | 9 | 1 | |
| 37 | | 22 49 42 | 37,2 | 71,3 | 100 | А | | 12 | 2 | |
| | 25 | 05 56 25 | 37,2 | 70,3 | | А | | 10 | 2 | |
| | | 10 55 47 | 40,2 | 69,6 | 0 | А | | 9 | 5 | |
| | | 17 11 54 | 36,1 | 69,0 | | Б | | 10 | 1 | |
| | | 19 49 29 | 37,2 | 71,9 | 180 | Б | | 10 | 2 | |
| | 26 | 01 37 21 | 37,5 | 71,9 | 170 | | | 9 | 2 | |
| | | 02 02 25 | 36,5 | 70,8 | 220 | Б | | 10 | 1 | |
| | | 02 31 59 | 36,9 | 70,9 | 230 | Б | | 9 | 1 | |
| | | 02 49 56 | 36,4 | 70,2 | 150 | | | 10 | 1 | |
| | | 06 26 07 | 36,2 | 70,0 | 140 | Б | | 11 | 1 | |

[Table, contd]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) φ°N | λ°E | (5) Глубина очага, км | (6) Класс точности | (7) Магнитуда | K | (8) № района | (9) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 26 | 23 09 36 | 37,0 | 70,5 | 230 | | | 9 | 1 | |
| | 27 | 05 16 30 | 37,2 | 71,9 | 190 | Б | | 10 | 2 | |
| | | 09 04 06 | 40,2 | 69,4 | 1 | Б | | 9 | 5 | |
| | | 15 41 38,0 | 38,65 | 70,48 | 7 | а | | 10 | 3 | |
| | 28 | 00 41 20 | 36,8 | 70,2 | 220 | | | 9 | 1 | |
| 38 | | 01 25 31 | 36,5 | 70,8 | 180 | Б | | 12 | 1 | |
| | | 01 54 04,0 | 38,72 | 70,33 | 5 | б | | 9 | 3 | |
| | | 08 44 07 | 36,6 | 70,2 | 230 | Б | | 10 | 1 | |
| | 29 | 09 33 21 | 37,6 | 72,2 | 220 | Б | | 10 | 2 | |
| | | 13 10 09,0 | 38,98 | 70,68 | 7 | а | | 9 | 3 | |
| | | 20 14 37 | 36,7 | 69,3 | 240 | Б | | 10 | 1 | |
| | 30 | 01 43 16 | 36,9 | 71,2 | 220 | Б | | 9 | 1 | |
| | | 07 24 18 | 38,1 | 73,4 | | Б | | 9 | 2 | |
| | | | | | July | | | | | |
| | 1 | 00 21 27 | 38,9 | 70,5 | 10 | Б | | 9 | 3 | |
| | | 09 02 00 | 36,6 | 69,9 | 230 | Б | | 10 | 1 | |
| | | 09 38 53 | 36,8 | 70,7 | 230 | Б | | 9 | 1 | |
| | | 15 54 02 | 36,4 | 70,8 | 150 | Б | | 9 | 1 | |
| | | 17 32 21 | 36,6 | 71,3 | 120 | Б | | 9 | 1 | |
| | 2 | 03 44 34 | 36,5 | 70,9 | | Б | | 9 | 1 | |
| | | 09 34 38 | 36,0 | 70,5 | 100 | Б | | 9 | 1 | |
| | | 13 36 14 | 36,5 | 70,9 | 110 | Б | | 10 | 1 | |
| 39 | | 16 41 06 | 42,3 | 75,4 | 24 | А | 4,9 | 12 | 7 | see text |
| | | 19 33 12 | 38,7 | 69,9 | 1–1 | Б | | 9 | 3 | |
| | 3 | 02 19 58 | 36,7 | 68,7 | 80 | Б | | 9 | 1 | |
| | 4 | 01 39 42 | 37,7 | 69,5 | 5 | Б | | 11 | 2 | |
| | | 04 32 52,0 | 39,51 | 71,27 | 10 | б | | 9 | 5 | |
| | | 07 30 30 | 36,5 | 70,8 | 180 | Б | | 10 | 1 | |
| | | 07 47 12 | 39,2 | 71,8 | | Б | | 10 | 3 | |
| | | 07 50 10 | 39,2 | 71,8 | | Б | | 9 | 3 | |
| | | 10 41 58 | 39,2 | 71,9 | | Б | | 9 | 3 | |
| | | 15 50 30 | 37,5 | 70,6 | | Б | | 9 | 2 | |
| | | 18 04 56 | 39,7 | 74,4 | | А | 3,6 | 10 | 11 | |
| | | 21 09 40 | 36,7 | 70,9 | 230 | Б | | 9 | 1 | |
| 40 | | 21 27 34 | 36,7 | 70,7 | 200 | Б | | 12 | 1 | |
| | | 22 26 37 | 36,5 | 71,2 | 100 | Б | | 9 | 1 | |
| | | 23 12 10 | 36,6 | 70,2 | 210 | Б | | 9 | 1 | |
| | 5 | 04 21 13 | 38,0 | 72,8 | 140 | Б | | 9 | 2 | |
| | | 06 31 08 | 37,3 | 71,7 | 170 | Б | | 10 | 2 | |
| 41 | | 07 17 49 | 37,2 | 72,8 | 20 | Б | 5,0* | 12 | 2 | |
| | | 10 04 05 | 37,5 | 72,4 | | Б | | 9 | 2 | |
| | | 14 11 22 | 36,6 | 70,1 | 240 | Б | | 9 | 1 | |
| | | 18 00 53 | 37,5 | 72,5 | | Б | | 10 | 2 | |
| | 6 | 01 15 31 | 40,1 | 76,4 | | А | 2,7 | 9 | 5 | |
| | | 04 28 01 | 39,3 | 70,0 | 17 | Б | | 9 | 5 | |
| | | 09 39 58 | 37,5 | 72,4 | | Б | | 10 | 2 | |
| | | 10 25 49 | 37,5 | 72,4 | | Б | | 9 | 2 | |
| | | 10 48 59 | 40,2 | 79,1 | | А | 3,6 | 10 | 12 | |
| | | 11 07 50 | 37,5 | 72,4 | | Б | | 9 | 2 | |
| | | 11 09 35 | 37,5 | 72,4 | | Б | | 9 | 2 | |
| | | 13 10 34 | 36,6 | 70,2 | 220 | Б | | 10 | 1 | |
| | 7 | 00 53 50 | 39,6 | 76,9 | | Б | 3 | 9 | 12 | |
| | | 01 32 12 | 36,5 | 69,9 | 230 | Б | | 9 | 1 | |
| | | 06 46 45 | 44,5 | 78,6 | | А | | 11 | 13 | |
| | | 10 03 55 | 37,5 | 72,4 | | Б | | 10 | 2 | |
| | | 11 53 02 | 36,7 | 70,8 | 220 | Б | | 9 | 1 | |
| | | 12 26 36 | 39,9 | 77,2 | | Б | 3,3 | 10 | 5 | |
| | | 13 01 23 | 37,9 | 72,4 | 150 | Б | | 10 | 2 | |
| | | 21 48 08 | 36,5 | 71,1 | | Б | | 9 | 1 | |
| | | 22 01 22 | 38,2 | 69,2 | 1–2 | Б | | 9 | 4 | |
| | 8 | 16 10 31 | 36,7 | 71,1 | 220 | Б | | 11 | 1 | |
| | | 18 25 24 | 37,5 | 72,0 | 190 | Б | | 9 | 2 | |
| | 9 | 02 29 48 | 36,9 | 71,4 | 110 | Б | | 9 | 1 | |

[Table, contd]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) φ°N | λ°E | (5) Глубина очага, км | (6) Класс точности | (7) Магнитуда | K | (8) № района | (9) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 9 | 04 48 48 | 37,9 | 72,4 | 170 | Б | | 9 | 2 | |
| | | 09 53 12 | 38,4 | 73,2 | 120 | Б | | 10 | 2 | |
| | | 15 01 50 | 36,2 | 70,2 | 130 | Б | | 9 | 1 | |
| | | 16 15 33 | 36,5 | 70,1 | 210 | Б | | 10 | 1 | |
| | 10 | 03 21 14 | 41,1 | 71,6 | 10 | А | | 11 | 8 | |
| | 11 | 03 59 57 | 43,21 | 76,41 | | б | 3,2 | 9 | 7 | |
| | | 07 19 25 | 37,1 | 71,6 | 160 | Б | | 10 | 2 | |
| | | 07 39 25 | 38,3 | 69,5 | 5 | А | | 10 | 3 | |
| 42 | | 14 43 00 | 36,3 | 69,5 | 180 | Б | | 12 | 1 | |
| | | 16 34 33 | 36,7 | 71,1 | | | | 9 | 1 | |
| | 12 | 06 49 04 | 36,2 | 68,9 | | | | 11 | 1 | |
| | | 07 54 03 | 36,0 | 68,9 | | Б | | 10 | 1 | |
| | | 15 08 46,2 | 41,06 | 72,63 | 10 | а | 3,5 | 10 | 8 | |
| | | 17 01 28 | 36,2 | 68,9 | | Б | | 10 | 1 | |
| | | 18 44 16 | 37,0 | 71,9 | 210 | Б | | 9 | 2 | |
| | | 19 59 03 | 36,5 | 70,3 | 220 | Б | | 9 | 1 | |
| | | 21 13 59 | 40,7 | 70,7 | 0 | А | | 9 | 8 | |
| | | 21 31 21 | 37,1 | 71,6 | 110 | Б | | 9 | 2 | |
| | | 21 43 45 | 42,4 | 70,8 | | А | 3 | 9 | 7 | |
| | 13 | 13 34 46 | 43,4 | 67,5 | 0 | А | | 9 | 20 | |
| | | 15 04 21 | 38,8 | 70,1 | 1–2 | Б | | 9 | 3 | |
| | | 18 38 56 | 36,7 | 71,1 | 140 | Б | | 9 | 1 | |
| | 14 | 03 29 59 | 36,8 | 71,0 | 70 | Б | | 9 | 1 | |
| | | 03 42 02 | 36,4 | 71,7 | | Б | | 9 | 1 | |
| 43 | | 04 01 48 | 36,4 | 71,2 | 70 | Б | | 12 | 1 | |
| | | 10 15 39 | 36,7 | 70,8 | 230 | Б | | 10 | 1 | |
| | | 12 03 57 | 39,1 | 70,9 | | Б | | 10 | 3 | |
| | | 17 10 06 | 36,1 | 70,7 | 80 | Б | | 9 | 1 | |
| | | 22 30 36 | 36,5 | 71,7 | 160 | Б | | 11 | 1 | |
| | 15 | 01 24 03 | 36,6 | 71,3 | 80 | А | | 11 | 1 | |
| | | 06 42 03 | 39,5 | 72,2 | | А | 3,5 | 10 | 3 | |
| | | 16 44 08 | 39,9 | 77,8 | | Б | 4 | 11 | 5 | |
| | | 23 34 10 | 36,7 | 70,9 | 200 | Б | | 9 | 1 | |
| | 16 | 06 06 24 | 42,0 | 79,0 | | А | 3 | 9 | 5 | |
| | | 11 17 39 | 36,4 | 70,9 | 100 | | | 9 | 1 | |
| | | 14 34 17 | 36,4 | 64,7 | | | | 11 | 22 | |
| | 18 | 01 06 02 | 36,5 | 68,9 | | Б | | 9 | 1 | |
| | | 10 17 08 | 39,9 | 69,9 | 0 | А | | 9 | 5 | |
| | | 11 19 09 | 44,6 | 79,1 | | А | | 9 | 13 | |
| | | 11 32 15 | 36,5 | 71,0 | 140 | Б | | 11 | 1 | |
| | | 18 20 11 | 36,8 | 70,9 | | Б | | 10 | 1 | |
| | 19 | 21 23 45 | 37,3 | 72,2 | 170 | Б | | 11 | 2 | |
| | 20 | 13 52 41 | 36,5 | 70,9 | 80 | Б | | 9 | 1 | |
| | | 20 50 49 | 36,6 | 70,7 | 200 | Б | | 11 | 1 | |
| | 21 | 03 58 30 | 36,0 | 69,9 | 140 | | | 11 | 1 | |
| | | 11 23 27 | 37,8 | 70,0 | | Б | | 10 | 2 | Kulyab, force 3 |
| | | 16 01 02 | 39,2 | 70,3 | 5 | А | | 9 | 5 | |
| | | 22 37 01 | 36,7 | 71,5 | 90 | Б | | 10 | 1 | |
| | 22 | 06 49 44 | 40,8 | 70,8 | 5 | А | | 9 | 8 | |
| | | 07 59 35 | 36,8 | 71,3 | 100 | Б | | 10 | 1 | |
| | | 10 00 24 | 36,4 | 69,6 | 130 | Б | | 9 | 1 | |
| | | 16 12 34 | 39,2 | 74,8 | | Б | | 11 | 11 | |
| | | 20 05 43 | 37,4 | 71,6 | 130 | Б | | 10 | 2 | |
| | 23 | 05 49 21 | 36,5 | 71,0 | 130 | Б | | 9 | 1 | |
| 44 | | 07 11 02 | 39,3 | 72,3 | 15 | Б | 4,7 | 13 | 3 | Tashkent, f 2-3 |
| 45 | | 07 36 46 | 39,5 | 73,2 | 20 | Б | 4,6 | 12 | 3 | |
| 46 | | 10 21 42 | 39,2 | 72,3 | | Б | | 12 | 3 | |
| | | 12 37 12 | 39,3 | 72,3 | | Б | | 9 | 3 | |
| | | 13 15 03 | 37,7 | 70,0 | 10 | Б | | 9 | 2 | |
| | | 14 12 30,9 | 41,26 | 75,66 | 10 | б | 3 | 9 | 6 | |
| | | 22 01 19 | 36,6 | 70,8 | 190 | Б | | 9 | 1 | |
| | 24 | 01 24 12 | 42,8 | 70,4 | 5 | А | | 10 | 19 | |
| | | 11 27 33,0 | 42,30 | 75,40 | | б | 3 | 10 | 7 | |
| | | 12 18 10 | 36,6 | 68,1 | 70 | | | 10 | 1 | |

[Table, contd]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) φ°N | λ°E | (5) Глубина очага, км | (6) Класс точности | (7) Магнитуда | K | (8) № района | (9) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 24 | 13 19 21 | 36,6 | 68,3 | | Б | | 9 | 1 | |
| | 25 | 05 48 08 | 39,5 | 77,2 | | Б | 4 | 11 | 12 | |
| | | 13 46 43 | 36,4 | 71,1 | 90 | Б | | 10 | 1 | |
| | 26 | 04 19 28 | 37,4 | 72,0 | 210 | Б | | 10 | 2 | |
| | | 04 45 23 | 39,8 | 77,4 | | Б | 2,9 | 9 | 5 | |
| | | 05 11 51,0 | 40,66 | 72,77 | 20 | б | 2,9 | 9 | 8 | |
| 47 | | 20 45 35 | 36,8 | 69,6 | | Б | | 12 | 1 | |
| | | 21 50 30 | 37,0 | 69,6 | | Б | | 11 | 1 | |
| | | 22 09 03 | 36,8 | 69,5 | | Б | | 11 | 1 | |
| | 27 | 02 52 33 | 36,7 | 71,1 | 100 | Б | | 10 | 1 | |
| | | 09 37 48 | 36,7 | 69,5 | 80 | Б | | 10 | 1 | |
| | | 13 35 01 | 37,3 | 71,7 | 150 | Б | | 9 | 1 | |
| 48 | 28 | 04 10 05 | 39,0 | 75,1 | 50 | Б | 4,8 | 13 | 11 | See text |
| | | 08 55 37 | 36,8 | 69,3 | 80 | Б | | 10 | 1 | |
| | | 10 54 00 | 37,9 | 74,3 | 200 | | | 10 | 2 | |
| | 29 | 03 36 44 | 36,6 | 70,2 | 240 | Б | | 10 | 1 | |
| | | 16 25 44 | 36,6 | 70,3 | 230 | Б | | 9 | 1 | |
| | | 17 28 55 | 39,6 | 77,4 | | Б | 4,6* | 11 | 12 | |
| | 30 | 02 51 54 | 40,2 | 72,0 | 10 | А | | 10 | 5 | |
| | | 04 33 02 | 36,8 | 69,5 | 80 | Б | | 9 | 1 | |
| 49 | | 05 12 40 | 36,5 | 70,7 | 200 | Б | 7,3 | 16 | 1 | See text, Fig 11 |
| | | 07 14 13 | 36,6 | 70,2 | 200 | Б | | 10 | 1 | |
| | | 07 44 16 | 36,6 | 70,2 | 210 | Б | | 11 | 1 | |
| | | 09 00 30 | 36,6 | 70,2 | 210 | Б | | 10 | 1 | |
| | | 09 25 46 | 36,5 | 70,3 | 210 | Б | | 10 | 1 | |
| | | 10 04 10 | 36,5 | 70,3 | 230 | Б | | 9 | 1 | |
| | | 12 50 23 | 36,6 | 70,3 | 200 | Б | | 9 | 1 | |
| | | 13 42 50 | 36,7 | 70,9 | 200 | Б | | 11 | 1 | |
| | | 22 46 32 | 36,8 | 70,2 | 230 | Б | | 9 | 1 | |
| | | 23 35 12 | 36,6 | 70,2 | 210 | Б | | 10 | 1 | |
| | 31 | 00 18 02 | 36,6 | 70,3 | 210 | Б | | 9 | 1 | |
| | | 00 29 40 | 36,7 | 70,3 | 200 | Б | | 9 | 1 | |
| | | 04 04 28 | 36,5 | 70,3 | 200 | Б | | 11 | 1 | |
| | | 04 20 18 | 36,7 | 70,3 | 210 | Б | | 9 | 1 | |
| | | 08 33 18 | 36,1 | 71,2 | 70 | Б | | 9 | 1 | |
| | | 09 57 16 | 36,7 | 70,3 | 220 | Б | | 9 | 1 | |
| | | 11 54 15 | 39,7 | 72,2 | 10 | А | 2,9 | 9 | 5 | |
| | | 15 11 04 | 37,4 | 71,6 | 140 | Б | | 9 | 2 | |
| | | 18 35 41 | 36,6 | 70,3 | 200 | Б | | 10 | 1 | |
| | | | | August | | | | | | |
| | 1 | 03 55 21 | 36,4 | 70,3 | 230 | Б | | 11 | 1 | |
| | | 04 51 58 | 36,6 | 70,2 | 210 | Б | | 11 | 1 | |
| | | 09 12 26 | 36,5 | 70,6 | 220 | Б | | 10 | 1 | |
| | | 11 24 15 | 36,4 | 70,3 | 190 | Б | | 10 | 1 | |
| | | 14 53 52 | 36,5 | 70,6 | 210 | Б | | 11 | 1 | |
| | | 19 16 10 | 36,5 | 70,2 | 230 | Б | | 10 | 1 | |
| | 2 | 00 21 17 | 39,1 | 70,8 | | А | | 10 | 3 | |
| | | 03 56 51 | 36,5 | 70,5 | 180 | Б | | 10 | 1 | |
| | | 09 29 40 | 36,9 | 69,6 | | | | 9 | 1 | |
| | | 17 24 22 | 36,7 | 71,3 | 220 | Б | | 10 | 1 | |
| | | 17 27 30 | 36,5 | 69,5 | | Б | | 9 | 1 | |
| | 3 | 06 54 15 | 37,2 | 71,8 | 170 | Б | | 9 | 2 | |
| | | 07 18 44,3 | 41,71 | 73,65 | | б | 3,3 | 10 | 6 | |
| | | 11 14 11 | 37,7 | 72,4 | | А | | 10 | 2 | |
| | | 13 47 45 | 36,4 | 70,5 | 160 | Б | | 11 | 1 | |
| | | 16 25 23 | 38,3 | 72,5 | | Б | | 9 | 2 | |
| | 4 | 06 46 32 | 37,3 | 71,4 | 100 | А | | 10 | 2 | |
| 50 | | 17 26 01 | 37,3 | 72,1 | 220 | А | | 12 | 2 | |
| | | 20 32 26 | 36,9 | 70,9 | | Б | | 9 | 1 | |
| | 5 | 05 48 31 | 36,7 | 70,7 | 170 | Б | | 10 | 1 | |
| | | 08 07 40 | 36,5 | 70,6 | 210 | Б | | 9 | 1 | |
| | | 08 39 30 | 37,1 | 71,7 | 230 | Б | | 9 | 2 | |
| | | 20 04 33 | 37,5 | 72,1 | 200 | А | | 10 | 2 | |

[Table, contd]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) φ°N | λ°E | (5) Глубина очага, км | (6) Класс точности | (7) Магнитуда | K | (8) № района | (9) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 5 | 20 21 28 | 40,8 | 74,2 | | А | 2,6 | 9 | 6 | |
| | | 23 47 21 | 40,8 | 74,1 | | А | 2,7 | 9 | 6 | |
| | 6 | 04 19 00 | 36,4 | 69,6 | 150 | | | 9 | 1 | |
| | | 04 40 44 | 36,5 | 70,7 | 130 | Б | | 10 | 1 | |
| | | 11 18 10 | 36,6 | 70,2 | 220 | Б | | 9 | 1 | |
| | | 12 19 30 | 39,8 | 72,6 | | А | 2,7 | 9 | 5 | |
| | | 19 45 26 | 36,5 | 70,9 | 140 | Б | | 10 | 1 | |
| | | 22 21 57 | 44,8 | 78,2 | | А | | 9 | 13 | |
| | 7 | 08 02 46 | 40,1 | 77,3 | | А | 3,3 | 11 | 5 | |
| | | 14 13 52 | 36,8 | 70,7 | | Б | | 10 | 1 | |
| 51 | | 21 08 43 | 36,4 | 70,9 | 100 | А | | 12 | 1 | |
| | 8 | 00 59 53 | 36,7 | 70,3 | 210 | Б | | 9 | 1 | |
| | | 01 34 45 | 36,6 | 70,3 | 200 | Б | | 10 | 1 | |
| | | 02 27 28 | 36,3 | 70,4 | 140 | | | 9 | 1 | |
| | | 09 12 07 | 37,3 | 71,2 | 80 | Б | | 9 | 2 | |
| | | 14 50 06,7 | 44,85 | 78,80 | | б | | 10 | 13 | |
| | | 15 25 58 | 37,8 | 72,6 | 200 | Б | | 10 | 2 | |
| | 9 | 01 00 38 | 40,1 | 77,2 | | А | 2,7 | 9 | 5 | |
| | | 01 19 38 | 36,6 | 70,1 | 220 | Б | | 10 | 1 | |
| | | 14 08 47 | 36,6 | 71,2 | 180 | А | | 10 | 1 | |
| | | 15 06 27 | 36,6 | 70,3 | 220 | Б | | 9 | 1 | |
| 52 | | 18 04 07 | 36,1 | 70,2 | 100 | Б | | 12 | 1 | |
| | | 21 19 24 | 36,6 | 70,3 | 210 | Б | | 10 | 1 | |
| | | 21 57 50 | 36,5 | 70,5 | 150 | Б | | 9 | 1 | |
| | 10 | 03 21 22 | 36,5 | 70,5 | 160 | Б | | 9 | 1 | |
| | | 04 05 23,0 | 41,21 | 72,0 | | а | 2,9 | 9 | 8 | |
| | | 07 47 51 | 36,5 | 71,1 | 130 | Б | | 9 | 1 | |
| | | 12 09 30 | 36,0 | 67,6 | | | | 10 | 1 | |
| | | 12 26 14 | 36,5 | 70,7 | 140 | Б | | 9 | 1 | |
| | | 13 05 06 | 36,1 | 68,7 | | | | 9 | 1 | |
| | 11 | 00 23 45 | 42,1 | 76,4 | | А | | 9 | 6 | |
| 53 | | 01 13 55 | 39,4 | 73,9 | 5 | Б | 7,3 | 16 | 11 | See text, Fig 3 |
| 54 | | 02 29 49 | 39,3 | 73,5 | | Б | 4,7* | 12 | 3 | |
| 55 | | 02 37 11 | 39,3 | 73,4 | | Б | 4,9* | 13 | 3 | |
| 56 | | 02 44 52 | 39,3 | 73,5 | | Б | | 12 | 3 | |
| 57 | | 03 05 10 | 39,3 | 73,5 | | Б | 4,6* | 12 | 3 | Sufi-Kurgan, force 4-5 |
| 58 | | 04 28 45 | 39,3 | 73,7 | | Б | 4,9 | 12 | 11 | |
| 59 | | 04 40 34 | 39,3 | 73,7 | | Б | | 12 | 11 | |
| 60 | | 05 12 31 | 39,3 | 73,7 | | Б | 5,2 | 14 | 11 | Fergana, force 3; Tashkent, force 2-3 |
| 61 | | 05 19 30 | 39,2 | 73,7 | | Б | 5,2 | 14 | 11 | See text |
| 62 | | 05 23 50 | 39,3 | 73,7 | | Б | 5,5 | 14 | 11 | Andizhan, force 4; Tashkent, force 3 |
| 63 | | 05 33 45 | 39,3 | 73,6 | | Б | | 13 | 3 | |
| 64 | | 07 02 06 | 39,3 | 73,7 | | А | 5,3 | 14 | 11 | Andizhan, force 3-4 Namangan, force 3 |
| 65 | | 08 02 55 | 39,3 | 73,7 | | А | 4,5 | 13 | 11 | |
| 66 | | 09 08 57 | 39,3 | 73,7 | | А | 5,0 | 13 | 11 | Andizhan, force 2-3 Namangan, force 2 |
| 67 | | 12 06 21 | 39,3 | 73,6 | | А | | 13 | 3 | |
| 68 | | 12 20 28 | 39,3 | 73,7 | 15 | А | 4,6* | 12 | 11 | |
| 69 | | 12 45 02 | 39,3 | 73,7 | | А | | 12 | 11 | |
| 70 | | 13 21 15 | 39,3 | 73,7 | 0-5 | А | 4,4 | 13 | 11 | |
| 71 | | 13 38 22 | 39,3 | 73,7 | | Б | 4,7* | 12 | 11 | |
| 72 | | 13 59 21 | 39,3 | 73,8 | | Б | 4,7* | 12 | 11 | |
| 73 | | 19 30 35 | 39,3 | 73,6 | | А | 4,5* | 13 | 3 | Fergana, force 3-4 |
| 74 | | 20 05 25 | 39,6 | 73,8 | | А | 5,8 | 14 | 3 | See text |
| 75 | | 21 21 35 | 39,4 | 73,6 | | А | 6,6 | 15 | 3 | " " |
| 76 | | 21 51 04 | 39,5 | 73,6 | | Б | | 12 | 3 | |
| 77 | | 21 56 29 | 39,4 | 73,5 | | Б | 4,5* | 13 | 3 | |
| 78 | | 23 18 55 | 39,4 | 73,6 | | Б | 4,7 | 13 | 3 | Sufi-Kishlak, force 4 |
| | 12 | 00 02 37 | 39,3 | 73,7 | | Б | | 9 | 11 | |
| 79 | | 01 48 54 | 39,2 | 73,9 | | А | | 12 | 11 | |

[Table, contd]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) φ°N | λ°E | (5) Глубина очага, км | (6) Класс точности | (7) Магнитуда | K | (8) № района | (9) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| 80 | 12 | 13 40 02 | 39,6 | 73,8 | | Б | 4,4 | 12 | 3 | |
| 81 | | 13 48 56 | 39,4 | 73,7 | | Б | 4,5 | 12 | 11 | |
| 82 | | 14 14 49 | 39,6 | 73,8 | | Б | 4,9 | 13 | 3 | |
| | | 18 59 06 | 37,6 | 71,8 | 110 | А | | 11 | 3 | |
| | | 19 27 48 | 36,5 | 70,0 | 230 | Б | | 10 | 1 | |
| 83 | | 21 17 47 | 39,3 | 73,8 | | Б | 5,0 | 13 | 1 | |
| 84 | | 21 57 17 | 39,3 | 73,6 | | А | 4,7 | 13 | 3 | |
| 85 | | 22 02 30 | 39,3 | 73,9 | | Б | | 12 | 11 | |
| 86 | | 22 44 30 | 39,4 | 74,2 | | Б | | 12 | 11 | |
| | | 23 38 35 | 36,5 | 70,2 | 200 | Б | | 10 | 1 | |
| | 13 | 03 05 24 | 36,7 | 71,2 | 180 | Б | | 9 | 1 | |
| 87 | | 04 27 12 | 36,3 | 69,7 | 110 | А | | 13 | 1 | |
| | | 09 32 44 | 42,3 | 72,4 | 5 | А | | 10 | 7 | |
| 88 | | 11 14 38 | 39,4 | 73,5 | | А | 4,8* | 12 | 3 | |
| | | 12 33 46 | 38,5 | 70,2 | 20 | Б | | 9 | 3 | |
| | | 12 59 24 | 36,6 | 70,2 | 210 | Б | | 10 | 1 | |
| 89 | | 14 16 03 | 39,5 | 73,8 | | Б | | 12 | 3 | |
| 90 | | 14 48 09 | 39,4 | 73,5 | | А | | 12 | 3 | |
| | | 15 35 18 | 36,7 | 70,8 | 230 | | | 9 | 1 | |
| 91 | | 16 38 12 | 39,5 | 73,8 | | А | | 12 | 3 | |
| 92 | | 21 19 16 | 39,3 | 73,7 | | А | 4,7* | 12 | 11 | |
| 93 | 14 | 02 18 49 | 39,3 | 73,7 | | А | | 12 | 11 | |
| 94 | | 05 02 29 | 39,3 | 73,7 | | А | | 12 | 11 | |
| 95 | | 06 18 14 | 39,4 | 73,8 | | А | | 12 | 11 | |
| 96 | | 07 50 53 | 39,4 | 73,7 | | А | | 12 | 11 | |
| | | 09 22 06 | 37,8 | 72,1 | 140 | А | | 10 | 2 | |
| | | 19 44 00 | 38,1 | 72,7 | | Б | | 9 | 3 | |
| 97 | | 22 06 52 | 39,3 | 73,7 | | А | 4,6 | 13 | 11 | |
| | | 23 51 51 | 36,6 | 70,2 | 220 | Б | | 11 | 1 | |
| 98 | 15 | 04 38 36 | 39,4 | 73,7 | | А | | 12 | 11 | |
| | | 05 41 19 | 36,7 | 71,4 | 210 | Б | | 10 | 1 | |
| | | 06 35 27 | 36,6 | 70,2 | 220 | Б | | 9 | 1 | |
| 99 | | 08 26 30 | 39,3 | 73,7 | | А | | 12 | 11 | |
| 100 | | 11 22 47 | 39,2 | 73,8 | | А | | 12 | 11 | |
| | | 22 14 09 | 38,3 | 69,4 | 2–3 | Б | | 9 | 4 | |
| 101 | | 23 43 42 | 39,3 | 73,9 | | А | | 12 | 11 | |
| 102 | 16 | 00 11 04 | 39,5 | 73,7 | | А | 4,6 | 13 | 11 | |
| | | 04 47 11 | 36,4 | 69,7 | 150 | Б | | 10 | 11 | |
| | | 16 10 41 | 37,4 | 72,4 | | Б | | 9 | 2 | |
| | | 22 02 28 | 36,3 | 70,6 | 100 | Б | | 10 | 1 | |
| | | 23 13 46 | 36,6 | 70,9 | 220 | Б | | 10 | 1 | |
| | 17 | 04 51 14 | 36,6 | 70,8 | 200 | А | | 11 | 1 | |
| | | 13 57 57 | 36,3 | 69,3 | 150 | Б | | 10 | 1 | |
| | | 14 41 25 | 36,6 | 70,2 | 220 | Б | | 9 | 1 | |
| | | 14 52 10 | 36,4 | 71,2 | 240 | Б | | 10 | 1 | |
| | | 15 41 29 | 36,5 | 71,1 | 140 | Б | | 10 | 1 | |
| | | 17 41 50 | 36,7 | 71,7 | 240 | Б | | 10 | 1 | |
| | | 21 13 58 | 39,6 | 71,1 | 90 | Б | | 9 | 5 | |
| | | 21 19 35 | 38,9 | 70,4 | 10 | Б | | 9 | 3 | |
| | | 22 12 52 | 37,6 | 71,9 | | Б | | 9 | 2 | |
| | | 23 12 31 | 37,6 | 72,0 | 150 | Б | | 9 | 2 | |
| 103 | | 23 50 56 | 39,4 | 73,9 | | А | 4,9 | 14 | 11 | |
| 104 | 18 | 16 03 14 | 39,6 | 73,7 | | Б | 4,8* | 12 | 3 | |
| | | 16 35 25 | 36,4 | 70,6 | 160 | Б | | 10 | 1 | |
| | | 20 21 51 | 38,9 | 70,2 | 1–2 | Б | | 9 | 3 | |
| | | 22 28 41 | 38,2 | 72,2 | 100 | А | | 10 | 2 | |
| | 19 | 00 51 00 | 36,6 | 70,2 | 200 | Б | | 10 | 1 | |
| | | 05 02 30 | 39,1 | 72,6 | | Б | | 11 | 3 | |
| | | 05 05 39 | 39,1 | 72,6 | | Б | | 10 | 3 | |
| | | 06 30 59 | 38,9 | 70,2 | 10 | Б | | 10 | 3 | |
| | | 09 48 40 | 38,8 | 75,0 | | | | 10 | 11 | |
| | | 10 50 34 | 37,3 | 71,5 | 110 | А | | 10 | 2 | |
| | | 14 37 52 | 38,8 | 75,0 | | | | 10 | 11 | |
| | | 15 40 25 | 38,5 | 69,7 | 2–3 | Б | | 9 | 3 | |

[Table, contd]

| № | Число | Момент возникновения, час мин сек | Координаты эпицентра φ°N | Координаты эпицентра λ°E | Глубина очага, км | Класс точности | Магнитуда | K | № района | Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 19 | 16 33 01 | 37,0 | 72,8 | | | | 9 | 1 | |
| 105 | | 23 36 56 | 39,4 | 73,6 | | Б | | 12 | 3 | |
| | 20 | 02 30 26 | 38,8 | 75,0 | | | | 9 | 11 | |
| | | 03 19 33 | 38,8 | 75,0 | | | | 9 | 11 | |
| | | 04 35 39 | 36,6 | 70,1 | 210 | Б | | 9 | 1 | |
| | | 05 47 54 | 37,3 | 71,9 | 190 | Б | | 9 | 2 | |
| 106 | | 10 18 39 | 39,3 | 73,6 | | А | | 12 | 3 | |
| 107 | | 15 14 32 | 39,3 | 73,7 | | А | | 12 | 11 | |
| 108 | | 16 42 20 | 39,4 | 73,6 | | А | 4,6* | 12 | 3 | |
| | | 21 35 13 | 38,9 | 75,0 | | | | 10 | 11 | |
| | 21 | 06 19 20 | 36,6 | 70,2 | 220 | Б | | 9 | 1 | |
| | | 09 25 41 | 37,1 | 71,6 | 150 | Б | | 9 | 2 | |
| 109 | | 18 08 27 | 39,4 | 73,8 | | А | 4,7* | 12 | 11 | |
| 110 | | 18 45 14 | 39,4 | 73,9 | | А | 4,5 | 12 | 11 | |
| | | 22 41 31 | 37,0 | 71,3 | 110 | Б | | 9 | 2 | |
| | 22 | 02 40 23 | 36,2 | 69,9 | 140 | Б | | 10 | 1 | |
| 111 | | 07 05 36 | 39,4 | 73,7 | | А | | 12 | 11 | |
| | | 15 26 34 | 36,3 | 71,1 | 100 | Б | | 11 | 1 | |
| | | 16 58 00 | 36,2 | 70,4 | 130 | Б | | 9 | 1 | |
| | | 18 13 21 | 36,8 | 71,1 | 210 | Б | | 9 | 1 | |
| | 23 | 00 04 41 | 36,4 | 70,0 | 220 | А | | 11 | 1 | |
| | | 01 14 50 | 36,6 | 70,0 | 220 | Б | | 10 | 1 | |
| | | 05 55 51 | 36,2 | 70,5 | 160 | | | 10 | 1 | |
| | | 09 35 06 | 36,6 | 70,4 | 210 | Б | | 9 | 1 | |
| | | 10 45 18 | 36,8 | 71,2 | 150 | Б | | 10 | 1 | |
| 112 | | 16 26 28 | 39,4 | 73,7 | | А | 4,1 | 12 | 11 | |
| | | 20 48 37 | 37,5 | 72,0 | 150 | Б | | 9 | 2 | |
| | | 22 41 18 | 36,9 | 69,6 | | Б | | 9 | 1 | |
| | 24 | 00 55 21 | 36,6 | 70,6 | 220 | Б | | 11 | 1 | |
| 113 | | 06 00 38 | 39,5 | 73,7 | | А | | 12 | 3 | |
| | | 11 12 10 | 36,7 | 71,3 | 160 | Б | | 10 | 1 | |
| 114 | | 11 21 42 | 39,4 | 73,7 | | Б | 4,7* | 13 | 11 | |
| | | 12 00 04 | 36,5 | 70,3 | 210 | Б | | 10 | 1 | |
| 115 | | 12 14 36 | 39,4 | 73,7 | | Б | 4,8 | 13 | 11 | |
| | | 18 03 53 | 36,6 | 70,2 | 220 | Б | | 9 | 1 | |
| | | 18 43 20 | 36,7 | 70,7 | 220 | Б | | 9 | 1 | |
| | | 20 05 23 | 39,0 | 75,2 | | | | 10 | 11 | |
| | 25 | 02 54 44 | 42,0 | 79,6 | | А | | 9 | 5 | |
| | | 12 32 38 | 36,7 | 71,0 | 200 | Б | | 9 | 1 | |
| 116 | | 17 41 18 | 39,3 | 73,7 | | А | | 12 | 11 | |
| | | 17 46 32 | 37,7 | 72,1 | 180 | А | | 10 | 3 | |
| | | 21 31 16 | 36,4 | 70,3 | 160 | Б | | 9 | 1 | |
| | | 23 29 38 | 38,8 | 70,7 | 6 | Б | | 11 | 3 | |
| | 26 | 02 18 26 | 38,6 | 70,6 | 5 | Б | | 9 | 3 | |
| | | 05 27 43 | 36,7 | 70,2 | 230 | Б | | 10 | 1 | |
| 117 | 27 | 05 43 31 | 39,3 | 73,8 | | А | 4,7* | 12 | 11 | |
| | | 09 25 50 | 36,7 | 70,3 | 230 | | | 9 | 1 | |
| 118 | | 12 56 00 | 39,3 | 73,7 | | А | 6,0 | 15 | 11 | Andizhan, force 3-4 |
| 119 | | 13 37 08 | 39,4 | 73,7 | | А | | 12 | 11 | |
| 120 | | 14 24 44 | 39,4 | 73,7 | | А | | 12 | 11 | |
| 121 | | 17 33 56 | 39,4 | 73,7 | | А | 5,0 | 14 | 11 | |
| 122 | | 18 04 52 | 39,3 | 73,6 | | А | | 12 | 3 | |
| | 28 | 02 44 30 | 36,2 | 70,2 | 80 | Б | | 9 | 1 | |
| 123 | | 09 22 04 | 39,3 | 73,7 | | А | | 12 | 11 | |
| | | 11 08 25 | 43,2 | 78,4 | | А | | 9 | 7 | |
| 124 | 29 | 01 02 29 | 36,5 | 71,1 | 230 | А | 5,0* | 13 | 1 | |
| | | 01 27 21 | 36,3 | 70,1 | 90 | Б | | 10 | 1 | |
| 125 | | 07 45 44 | 39,7 | 73,8 | | А | | 12 | 3 | |
| 126 | | 08 25 20 | 39,5 | 73,8 | | Б | | 12 | 3 | |
| | | 16 30 47 | 36,4 | 71,3 | 100 | | | 9 | 1 | |
| | | 16 49 45 | 37,3 | 72,1 | 240 | Б | | 10 | 2 | |
| | 30 | 05 22 51 | 36,5 | 71,1 | 80 | | | 9 | 1 | |
| | | 13 03 25 | 38,3 | 72,8 | | А | | 10 | 2 | |
| | | 14 43 51 | 39,3 | 69,8 | 5 | Б | | 10 | 5 | |

[Table, contd]

| № | Число | Момент возникновения, час мин сек | Координаты эпицентра φ°N | Координаты эпицентра λ°E | Глубина очага, км | Класс точности | Магнитуда | K | № района | Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 31 | 01 08 52 | 39,5 | 73,7 | | Б | | 10 | 12 | |
| | | 04 11 23 | 39,0 | 74,7 | | Б | | 11 | 11 | |
| | | 05 49 14 | 36,5 | 70,8 | 190 | Б | | 11 | 1 | |
| | | 07 08 45 | 41,6 | 73,0 | 5 | А | | 10 | 6 | |
| | | 14 25 04 | 36,2 | 67,3 | | Б | | 10 | 1 | |
| | | 17 07 24 | 38,5 | 69,1 | 12 | А | | 9 | 4 | |
| 127 | | 17 13 54 | 39,4 | 73,7 | | А | | 12 | 11 | |
| | | 22 05 47 | 39,5 | 65,5 | 0 | А | | 9 | 22 | |
| 128 | | 23 08 38 | 36,5 | 70,5 | 180 | Б | | 12 | 1 | |
| | | | | September | | | | | | |
| | 1 | 04 21 26 | 36,5 | 69,6 | 140 | Б | | 9 | 1 | |
| | | 06 34 57 | 36,5 | 70,2 | 210 | Б | | 10 | 1 | |
| | | 09 59 31 | 39,1 | 74,5 | | Б | | 11 | 11 | |
| | | 20 19 29 | 36,6 | 70,8 | 220 | Б | | 9 | 1 | |
| | 2 | 03 14 28 | 36,0 | 68,8 | 80 | | | 10 | 1 | |
| | | 07 37 39 | 37,0 | 71,7 | 240 | Б | | 9 | 2 | |
| | | 08 28 23 | 39,0 | 74,6 | | | | 9 | 11 | |
| | | 11 41 25 | 36,5 | 70,6 | 210 | Б | | 10 | 1 | |
| | | 16 36 47 | 39,1 | 71,9 | | Б | | 9 | 3 | |
| | | 17 43 02 | 36,1 | 69,7 | 140 | | | 9 | 1 | |
| 129 | | 18 54 15 | 39,0 | 74,5 | | Б | | 12 | 11 | |
| | 3 | 04 35 06 | 37,9 | 69,6 | 5-7 | А | | 9 | 3 | |
| 130 | | 08 59 40 | 39,3 | 73,7 | | А | | 12 | 11 | |
| | | 17 41 53 | 37,8 | 73,0 | | Б | | 9 | 2 | |
| 131 | | 19 41 16 | 39,5 | 73,7 | | А | 5,0 | 14 | 3 | Andizhan, force 3-4 |
| | | 19 53 28 | 36,5 | 70,8 | 210 | Б | | 10 | 1 | |
| | | 22 27 13 | 40,3 | 77,1 | | Б | 3,5 | 10 | 5 | |
| | | 23 02 07 | 36,5 | 71,2 | 100 | Б | | 10 | 1 | |
| | 4 | 01 31 52 | 37,5 | 72,2 | 210 | Б | | 10 | 2 | |
| | | 01 41 03 | 39,6 | 73,8 | 33 | | 4,7* | | | |
| | | 03 46 49 | 38,8 | 70,8 | | Б | | 9 | 3 | |
| | | 07 07 24 | 36,6 | 70,7 | 210 | Б | | 10 | 1 | |
| | | 08 49 46 | 38,9 | 74,7 | | | | 11 | 11 | |
| 132 | | 15 30 28 | 39,4 | 73,7 | | Б | | 12 | 11 | |
| 133 | 5 | 12 14 13 | 39,5 | 73,6 | | А | | 12 | 3 | |
| 134 | | 14 33 00 | 37,4 | 71,5 | 100 | Б | 4,7* | 13 | 2 | |
| | | 18 21 05 | 36,4 | 71,3 | 80 | | | 9 | 1 | |
| | | 18 33 25 | 36,4 | 70,7 | 180 | Б | | 11 | 1 | |
| | 6 | 13 53 53 | 37,4 | 72,8 | | Б | | 10 | 11 | |
| 135 | | 15 23 53 | 39,5 | 73,8 | | Б | 5,0 | 13 | 3 | |
| | | 16 11 40 | 38,6 | 69,7 | 20 | А | | 9 | 3 | |
| | | 23 32 10 | 36,6 | 70,3 | 200 | | | 9 | 1 | |
| | 7 | 01 42 33 | 36,1 | 71,0 | 140 | | | 9 | 1 | |
| | | 02 25 36 | 37,6 | 72,1 | 200 | Б | | 10 | 2 | |
| | | 02 52 08 | 36,4 | 71,0 | 100 | Б | | 11 | 1 | |
| | | 06 24 02 | 36,6 | 70,1 | 220 | | | 9 | 1 | |
| | | 09 55 02 | 37,5 | 71,9 | 190 | Б | | 10 | 2 | |
| | | 12 17 59 | 37,8 | 72,3 | 170 | Б | | 11 | 2 | |
| 136 | | 15 46 29 | 39,4 | 73,8 | | А | 4,8 | 13 | 11 | |
| | | 20 10 05 | 36,7 | 68,6 | | | | 10 | 1 | |
| | | 20 31 10 | 36,7 | 68,7 | | | | 10 | 1 | |
| | 8 | 05 47 13 | 39,7 | 67,8 | 5 | А | | 9 | 5 | |
| | | 16 58 43 | 38,4 | 69,9 | 20 | А | | 9 | 3 | |
| | 9 | 08 36 18 | 37,2 | 71,5 | 130 | Б | | 11 | 2 | |
| | | 12 19 40 | 36,0 | 73,5 | | Б | | 11 | 2 | |
| | | 17 41 44 | 36,7 | 71,7 | 80 | | | 9 | 1 | |
| | | 17 44 22 | 39,4 | 72,8 | | А | 3,5 | 10 | 3 | |
| | 11 | 19 43 11 | 36,7 | 71,0 | 110 | Б | | 9 | 1 | |
| | | 20 02 38 | 36,5 | 70,3 | 200 | Б | | 10 | 1 | |
| | 12 | 04 28 49 | 36,2 | 69,4 | 120 | Б | | 10 | 1 | |
| 137 | | 06 02 57 | 39,3 | 74,1 | | Б | 4,6 | 13 | 11 | |
| 138 | | 06 27 46 | 39,4 | 73,9 | | Б | 4,5 | 13 | 11 | |
| | | 07 45 56 | 36,4 | 71,1 | 100 | Б | | 11 | 1 | |

[Table, contd]

| № | Число | Момент возникновения, час | мин | сек | Координаты эпицентра φ°N | λ°E | Глубина очага, км | Класс точности | Магнитуда | K | № района | Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 12 | 10 | 24 | 32 | 41,4 | 79,7 | | Б | 3,5 | 10 | 5 | |
| | | 12 | 32 | 02 | 36,4 | 68,9 | | Б | | 11 | 1 | |
| | | 13 | 35 | 13 | 36,4 | 68,9 | | Б | | 10 | 1 | |
| | | 13 | 54 | 51 | 36,4 | 68,8 | | Б | | 9 | 1 | |
| | | 16 | 56 | 07 | 36,4 | 68,8 | | Б | | 9 | 1 | |
| | | 17 | 17 | 36 | 36,6 | 70,8 | 210 | Б | | 9 | 1 | |
| | | 17 | 53 | 43 | 36,6 | 70,4 | 210 | Б | | 11 | 1 | |
| | 13 | 01 | 59 | 26 | 38,8 | 69,0 | 112 | Б | | 9 | 4 | |
| 139 | | 02 | 08 | 10 | 36,4 | 70,6 | 170 | Б | 4,8° | 13 | 1 | |
| | | 13 | 17 | 22 | 36,5 | 70,2 | 200 | Б | | 11 | 1 | |
| | | 18 | 42 | 43 | 36,8 | 71,9 | 140 | Б | | 9 | 2 | |
| | | 20 | 06 | 09 | 36,8 | 71,0 | 200 | Б | | 10 | 1 | |
| | | 23 | 55 | 53 | 36,4 | 70,6 | 140 | Б | | 9 | 1 | |
| | 14 | 02 | 26 | 23 | 38,4 | 69,4 | 1–2 | Б | | 9 | 4 | |
| | | 06 | 15 | 08 | 36,5 | 70,2 | 210 | Б | | 11 | 1 | |
| | | 07 | 25 | 01 | 36,7 | 68,3 | 70 | | | 9 | 1 | |
| | | 13 | 12 | 08 | 36,6 | 70,5 | 210 | Б | | 9 | 1 | |
| | | 19 | 48 | 05 | 36,7 | 69,7 | 250 | Б | | 9 | 1 | |
| | 15 | 11 | 18 | 05 | 36,4 | 69,3 | 150 | Б | | 9 | 1 | |
| | | 14 | 52 | 36 | 36,5 | 70,2 | 190 | Б | | 11 | 1 | |
| | | 17 | 49 | 44 | 36,7 | 71,3 | 180 | Б | | 10 | 1 | |
| | | 20 | 31 | 11 | 36,5 | 70,3 | 220 | Б | | 10 | 1 | |
| | 16 | 01 | 56 | 28 | 37,2 | 71,4 | 110 | Б | | 9 | 2 | |
| | | 10 | 48 | 12 | 37,1 | 71,1 | 80 | Б | | 10 | 2 | |
| | | 13 | 22 | 32 | 36,4 | 69,4 | 110 | Б | | 9 | 1 | |
| 140 | | 16 | 45 | 48 | 39,6 | 73,8 | | Б | 4,7 | 13 | 3 | |
| | 17 | 09 | 20 | 40 | 39,3 | 70,9 | | Б | | 10 | 5 | |
| | 18 | 02 | 18 | 49 | 36,4 | 70,9 | 180 | Б | | 9 | 1 | |
| | | 10 | 34 | 17 | 36,7 | 70,8 | 70 | Б | | 10 | 1 | |
| | | 19 | 03 | 00 | 40,5 | 77,1 | | А | 4 | 11 | 5 | |
| | | 21 | 58 | 10 | 36,5 | 70,2 | 200 | Б | | 10 | 1 | |
| | 19 | 02 | 36 | 01 | 37,7 | 72,0 | 130 | Б | | 10 | 2 | |
| | | 03 | 39 | 19 | 36,6 | 70,8 | 150 | Б | | 9 | 1 | |
| | | 04 | 32 | 38 | 36,4 | 70,1 | 80 | Б | | 9 | 1 | |
| | | 07 | 45 | 27 | 36,0 | 69,5 | 80 | Б | | 9 | 1 | |
| | | 13 | 16 | 25 | 36,4 | 70,4 | 200 | Б | | 11 | 1 | |
| | | 14 | 23 | 54 | 36,5 | 70,0 | 230 | Б | | 11 | 1 | |
| | | 17 | 20 | 42 | 36,6 | 70,8 | 200 | Б | | 9 | 1 | |
| | | 19 | 34 | 38 | 42,3 | 80,6 | | А | | 11 | 5 | |
| | 20 | 12 | 30 | 15 | 37,9 | 69,7 | 1–2 | Б | | 10 | 3 | |
| | | 13 | 01 | 11 | 36,7 | 70,9 | 140 | Б | | 9 | 1 | |
| | | 15 | 28 | 24 | 41,1 | 73,8 | | А | 2,7 | 9 | 6 | |
| | | 16 | 32 | 48 | 36,5 | 70,8 | 220 | Б | | 10 | 1 | |
| 141 | 21 | 01 | 07 | 11 | 37,6 | 71,8 | 130 | Б | 4,6° | 12 | 2 | |
| | | 02 | 43 | 11 | 37,3 | 71,8 | 210 | Б | | 11 | 2 | |
| | | 03 | 50 | 29 | 39,0 | 71,6 | | А | | 10 | 3 | |
| | | 14 | 10 | 48 | 39,8 | 76,8 | | А | 3,6 | 11 | 5 | |
| | | 18 | 51 | 06 | 36,7 | 71,1 | 240 | Б | | 10 | 1 | |
| | 22 | 00 | 01 | 06 | 37,5 | 71,8 | 130 | Б | | 10 | 2 | |
| | | 04 | 33 | 25,3 | 41,67 | 71,67 | 10 | Б | 3 | 9 | 9 | |
| | | 08 | 27 | 27 | 38,6 | 72,2 | | Б | | 9 | 3 | |
| | | 09 | 09 | 40 | 39,0 | 74,9 | | | | 10 | 11 | |
| | | 14 | 33 | 08 | 36,6 | 70,5 | 200 | Б | | 10 | 1 | |
| | | 16 | 32 | 18 | 40,5 | 73,1 | | А | 2,9 | 9 | 8 | |
| | 23 | 03 | 17 | 03 | 39,8 | 75,1 | | А | 3,3 | 10 | 5 | |
| | | 04 | 13 | 00 | 36,7 | 71,1 | 180 | Б | | 9 | 1 | |
| | | 07 | 53 | 38 | 39,6 | 77,0 | | | | 9 | 12 | |
| | | 10 | 36 | 55 | 36,5 | 70,8 | 190 | Б | | 10 | 1 | |
| | 24 | 02 | 00 | 04 | 41,0 | 68,3 | 5 | А | | 10 | 10 | |
| | | 09 | 48 | 21 | 37,1 | 71,4 | 100 | | | 9 | 2 | |
| | | 14 | 08 | 32 | 37,0 | 71,1 | 230 | | | 9 | 1 | |
| | | 16 | 50 | 04 | 36,7 | 70,9 | 160 | | | 9 | 1 | |
| | | 22 | 50 | 56 | 36,9 | 71,1 | 80 | | | 9 | 1 | |
| | 25 | 04 | 36 | 45 | 36,2 | 70,9 | 80 | | | 9 | 1 | |

[Table, contd]

| № | Число | Момент возникновения, час мин сек | Координаты эпицентра φ°N | λ°E | Глубина очага, км | Класс точности | Магнитуда | K | № района | Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 26 | 02 19 27 | 38,9 | 70,1 | 10 | Б | | 10 | 3 | |
| | | 16 09 09 | 36,5 | 70,2 | 210 | Б | | 10 | 1 | |
| | | 16 24 20 | 36,9 | 69,8 | 200 | Б | | 9 | 1 | |
| | | 18 38 10 | 43,0 | 78,6 | | А | 3 | 9 | 7 | |
| | | 21 18 10 | 36,3 | 70,0 | 230 | | | 9 | 1 | |
| | 27 | 00 26 32 | 36,4 | 69,3 | 150 | Б | | 10 | 1 | |
| | | 01 58 43,6 | 42,62 | 73,45 | | б | 3,6 | 11 | 7 | |
| | | 03 06 44 | 39,6 | 77,6 | | Б | 2,8 | 9 | 12 | |
| | | 06 44 50 | 37,4 | 72,1 | 230 | Б | | 11 | 2 | |
| | | 09 31 12 | 41,5 | 79,5 | | А | 3,6 | 11 | 5 | |
| | | 11 36 15 | 38,1 | 72,5 | 130 | Б | | 9 | 2 | |
| | | 17 13 12 | 38,3 | 72,9 | | Б | | 10 | 2 | |
| | 28 | 04 44 05 | 38,7 | 70,2 | 10 | Б | | 10 | 3 | |
| | | 05 27 07 | 36,6 | 70,9 | 210 | Б | | 9 | 1 | |
| | | 12 57 58 | 36,6 | 71,1 | 230 | | | 10 | 1 | |
| | | 23 12 46 | 37,4 | 71,8 | 200 | Б | | 10 | 2 | |
| | | 23 22 24 | 38,5 | 71,9 | | | | 10 | 3 | |
| | 29 | 01 12 33 | 38,6 | 72,1 | | Б | | 9 | 3 | |
| | | 04 37 52 | 36,6 | 70,8 | 130 | | | 10 | 1 | |
| | | 08 32 22 | 36,2 | 70,0 | 200 | | | 9 | 1 | |
| | | 11 10 07 | 40,1 | 70,6 | 5 | А | | 10 | 5 | |
| | | 14 34 00 | 38,1 | 72,1 | 130 | Б | | 10 | 2 | |
| | | 15 51 51 | 40,3 | 78,0 | 30 | | 5,5 | | | |
| | 30 | 01 38 44 | 38,6 | 72,0 | | Б | | 11 | 3 | |
| 142 | | 09 55 43 | 38,0 | 72,3 | 140 | Б | 4,6* | 12 | 2 | |
| | | 15 15 20 | 39,8 | 75,0 | | А | 3 | 9 | 5 | |
| | | | | | October | | | | | |
| | 1 | 02 37 25 | 41,6 | 77,8 | | А | 3,5 | 10 | 5 | |
| | | 02 53 52 | 36,2 | 70,1 | 130 | | | 9 | 1 | |
| | | 03 24 37 | 36,4 | 71,0 | 240 | Б | | 10 | 1 | |
| | | 05 28 26 | 40,5 | 77,7 | | А | 3,1 | 9 | 5 | |
| | | 05 58 54 | 36,6 | 70,8 | 200 | Б | | 10 | 1 | |
| | | 06 14 40 | 36,6 | 70,9 | 160 | Б | | 11 | 1 | |
| | | 10 55 21 | 40,5 | 78,1 | | Б | 3,5 | 10 | 5 | |
| | | 11 19 09 | 36,4 | 70,7 | 130 | Б | | 10 | 1 | |
| 143 | | 13 10 47 | 39,4 | 74,1 | | А | 4,3 | 12 | 11 | |
| | 2 | 09 44 16 | 36,4 | 70,7 | 230 | Б | | 10 | 1 | |
| | 3 | 04 59 51 | 36,8 | 71,2 | 220 | Б | | 11 | 1 | |
| 144 | | 11 11 57 | 36,5 | 70,8 | 200 | Б | 5,0* | 13 | 1 | |
| | | 18 39 11 | 38,4 | 70,4 | 2 | А | | 9 | 3 | |
| | 4 | 00 43 09 | 39,0 | 71,0 | 10 | А | | 10 | 3 | |
| | | 06 53 13 | 36,6 | 71,1 | 140 | Б | | 10 | 1 | |
| | | 11 37 07 | 36,7 | 71,0 | | Б | | 10 | 1 | |
| | | 19 31 58 | 37,2 | 71,6 | 130 | Б | | 10 | 2 | |
| | 5 | 00 25 06 | 36,4 | 70,9 | 70 | Б | | 9 | 1 | |
| | | 05 39 05 | 42,0 | 75,7 | | А | | 11 | 6 | |
| | | 16 24 33 | 41,2 | 73,7 | | А | 3,5 | 10 | 6 | |
| | | 16 39 39 | 36,3 | 70,3 | 190 | | | 9 | 1 | |
| | | 22 13 45 | 38,5 | 74,3 | 140 | Б | | 10 | 2 | |
| | 6 | 00 21 35 | 36,6 | 70,3 | 220 | | | 9 | 1 | |
| | | 02 24 46 | 36,3 | 70,9 | 100 | | | 9 | 1 | |
| | | 04 24 02,2 | 41,83 | 72,95 | 5 | б | 3,6 | 10 | 6 | |
| | | 04 42 33 | 36,1 | 70,5 | 100 | Б | | 10 | 1 | |
| | | 14 00 42 | 38,8 | 71,2 | 18 | А | | 9 | 3 | |
| | | 15 43 32 | 38,5 | 70,5 | 1–2 | А | | 9 | 3 | |
| | | 18 15 11 | 36,7 | 70,8 | 220 | Б | | 10 | 1 | |
| | | 18 38 47 | 36,6 | 70,6 | | | | 10 | 1 | |
| | 8 | 12 56 01 | 36,4 | 71,2 | 80 | | | 9 | 1 | |
| | | 16 11 17 | 41,0 | 75,4 | | А | 3,5 | 10 | 6 | |
| 145 | | 22 23 41 | 39,7 | 74,0 | | Б | 4,5* | 12 | 11 | |
| | 9 | 04 20 20 | 44,4 | 80,5 | | А | | 11 | 15 | |
| | | 12 43 05 | 40,1 | 73,3 | | Б | | 9 | 5 | |
| | | 22 52 22 | 36,3 | 69,3 | 160 | Б | | 10 | 1 | |
| | | 23 24 29 | 36,4 | 70,8 | 120 | Б | | 10 | 1 | |

[Table, contd]

| № | Число | Момент возникновения, час мин сек | Координаты эпицентра φ°N | λ°E | Глубина очага, км | Класс точности | Магнитуда | A | № района | Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 9 | 23 40 35 | 36,6 | 71,1 | | Б | | 10 | 1 | |
| | 10 | 01 54 05 | 36,4 | 71,4 | 100 | Б | | 10 | 1 | |
| 146 | | 16 09 35 | 37,5 | 71,6 | 100 | Б | | 12 | 2 | |
| 147 | | 21 14 20 | 38,4 | 73,8 | 150 | Б | | 12 | 2 | |
| 148 | | 21 54 22 | 39,6 | 73,7 | | Б | | 12 | 3 | |
| | | 23 53 06 | 40,3 | 78,1 | | Б | 3,2 | 10 | 5 | |
| | 11 | 15 19 41 | 36,5 | 70,7 | 210 | Б | | 9 | 1 | |
| | 12 | 02 31 21 | 43,4 | 79,6 | | А | 3,1 | 9 | 7 | |
| | | 05 51 14 | 36,2 | 69,8 | 100 | Б | | 10 | 1 | |
| | | 10 44 45 | 37,7 | 69,5 | 1–2 | Б | | 9 | 2 | |
| | | 15 36 29 | 37,0 | 71,3 | 100 | Б | | 9 | 2 | |
| | 13 | 18 47 32 | 38,7 | 70,7 | 1–2 | Б | | 9 | 3 | |
| | 14 | 02 30 50 | 36,6 | 70,9 | 160 | Б | | 10 | 1 | |
| | | 05 24 26 | 36,6 | 70,2 | 210 | Б | | 9 | 1 | |
| | | 09 28 13 | 36,6 | 70,3 | 210 | Б | | 10 | 1 | |
| | | 17 56 17 | 39,1 | 74,7 | | | 2,6 | 9 | 11 | |
| | | 18 04 05 | 40,3 | 78,0 | | Б | 3,5 | 10 | 5 | |
| | 15 | 05 39 38 | 37,1 | 71,1 | 100 | Б | | 11 | 2 | |
| | | 11 02 59 | 37,4 | 71,7 | 190 | Б | | 9 | 2 | |
| 149 | 16 | 05 01 13 | 39,4 | 74,1 | 20 | | 5,0* | | | |
| | | 11 45 10,9 | 41,37 | 72,33 | 15 | 6 | 9 | 9 | 8 | |
| | | 12 34 43 | 38,2 | 68,4 | 5 | Б | | 9 | 4 | |
| | | 13 59 03 | 37,3 | 71,8 | 190 | Б | | 9 | 2 | |
| | | 14 37 32 | 38,7 | 69,9 | 20 | А | | 10 | 3 | |
| | | 14 40 48 | 38,7 | 69,9 | 20 | А | | 9 | 3 | |
| | | 18 34 09 | 36,7 | 70,8 | 220 | Б | | 9 | 1 | |
| | | 18 35 43 | 40,2 | 77,4 | | Б | 2,9 | 9 | 5 | |
| | | 22 05 21 | 36,5 | 71,1 | 100 | Б | | 9 | 1 | |
| | 17 | 02 29 34 | 39,3 | 72,5 | | Б | | 9 | 3 | |
| | | 02 47 48 | 36,4 | 71,0 | 70 | Б | | 10 | 1 | |
| | | 05 35 57 | 38,7 | 69,9 | 20 | А | | 9 | 3 | |
| | | 02 12 18 | 37,9 | 69,0 | 5 | Б | | 9 | 4 | |
| | | 13 49 20 | 38,6 | 69,6 | 1–2 | Б | | 9 | 4 | |
| | | 16 31 11 | 39,9 | 73,7 | 15 | А | 2,7 | 9 | 5 | |
| | | 18 56 24 | 41,0 | 78,1 | | Б | 3,2 | 10 | 5 | |
| | | 22 09 10 | 36,8 | 71,2 | 200 | Б | | 11 | 1 | |
| | 18 | 02 11 24 | 36,6 | 70,7 | 160 | Б | | 11 | 1 | |
| | | 07 09 22 | 37,5 | 72,4 | | Б | | 9 | 2 | |
| | | 13 56 44 | 36,3 | 71,1 | 100 | Б | | 9 | 1 | |
| | | 21 14 41 | 41,5 | 74,8 | | А | 2,7 | 9 | 6 | |
| | | 21 39 35 | 37,9 | 69,7 | 2–5 | Б | | 9 | 3 | |
| | | 22 09 21 | 40,3 | 78,0 | | Б | 2,9 | 9 | 5 | |
| | 19 | 02 37 03 | 36,9 | 71,2 | 80 | Б | | 11 | 1 | |
| | | 03 24 37 | 36,4 | 71,0 | 80 | Б | | 9 | 1 | |
| | | 05 24 59 | 36,7 | 70,8 | 220 | Б | | 9 | 1 | |
| | | 07 24 44 | 36,7 | 70,9 | 170 | Б | | 9 | 1 | |
| | | 10 36 04 | 40,1 | 72,1 | | А | 3,1 | 9 | 5 | |
| | | 22 21 47 | 42,1 | 78,2 | | А | 3,1 | 9 | 6 | |
| | | 23 02 53 | 36,8 | 71,3 | 190 | Б | | 9 | 1 | |
| | 20 | 03 06 19 | 36,6 | 70,2 | 210 | Б | | 9 | 1 | |
| | | 03 57 01 | 39,2 | 75,1 | | А | 3,2 | 9 | 11 | |
| | | 03 58 32 | 36,7 | 71,1 | 190 | Б | | 9 | 1 | |
| | | 19 19 26 | 36,6 | 67,8 | | Б | | 9 | 1 | |
| | | 20 02 00 | 36,6 | 71,0 | 170 | Б | | 9 | 1 | |
| | | 23 43 05 | 36,7 | 71,0 | 240 | Б | | 9 | 1 | |
| | 21 | 02 22 58 | 36,7 | 71,2 | 190 | Б | | 9 | 1 | |
| | | 07 51 54 | 36,6 | 70,1 | 210 | Б | | 9 | 1 | |
| | | 21 06 45 | 36,6 | 70,1 | 230 | Б | | 9 | 1 | |
| | | 21 23 21 | 36,5 | 70,1 | 230 | Б | | 10 | 1 | |
| | | 23 31 16 | 38,0 | 72,4 | | Б | | 9 | 2 | |
| | 22 | 00 44 50 | 36,6 | 70,2 | 230 | Б | | 9 | 1 | |
| | | 02 42 59 | 37,5 | 69,8 | | Б | | 9 | 2 | |
| 150 | | 17 49 17 | 37,6 | 72,0 | 140 | Б | 4,7* | 12 | 2 | Dushanbe, force 2 |
| | | 22 18 51 | 37,4 | 75,3 | 130 | Б | | 11 | 11 | |

[Table, contd]

| № | Число | Момент возникновения, час мин сек | Координаты эпицентра φ°N | Координаты эпицентра λ°E | Глубина очага, км | Класс точности | Магнитуда | K | № района | Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 22 | 22 59 18 | 36,0 | 70,4 | 80 | Б | | 10 | 1 | |
| | 23 | 04 48 31 | 37,1 | 71,6 | 130 | Б | | 9 | 2 | |
| | | 08 03 12 | 37,5 | 72,0 | 210 | Б | | 9 | 2 | |
| | | 11 07 31 | 37,4 | 71,6 | 120 | Б | | 9 | 2 | |
| | | 15 24 27 | 41,2 | 75,5 | | А | 2,6 | 9 | 6 | |
| | | 23 36 32 | 36,6 | 71,0 | | Б | | 9 | 1 | |
| | 24 | 07 36 33,3 | 42,83 | 77,93 | | а | 2,7 | 9 | 7 | |
| | | 22 33 47 | 38,0 | 69,2 | 1-2 | Б | | 11 | 4 | Dangara, force 4 |
| | 25 | 01 19 57 | 38,3 | 73,0 | | Б | | 10 | 2 | |
| | | 08 53 49 | 42,5 | 63,1 | | А | | 9 | 20 | |
| | | 20 54 46 | 36,6 | 70,8 | 200 | Б | | 9 | 1 | |
| | 26 | 07 04 52 | 37,0 | 71,5 | 120 | Б | | 10 | 2 | |
| | | 11 09 04 | 36,8 | 71,1 | 220 | Б | | 10 | 1 | |
| | | 23 30 02 | 38,7 | 72,8 | | Б | | 9 | 3 | |
| 151 | 27 | 03 44 22 | 37,7 | 72,0 | 130 | Б | | 12 | 2 | |
| | | 14 43 25 | 36,7 | 69,9 | 130 | Б | | 9 | 1 | |
| | | 15 09 48 | 36,8 | 70,1 | 220 | Б | | 9 | 1 | |
| | | 17 04 04 | 40,1 | 71,0 | 5 | А | | 9 | 5 | |
| | | 18 26 57 | 36,6 | 69,9 | 250 | Б | | 10 | 1 | |
| | | 21 19 49 | 36,3 | 70,9 | 100 | Б | | 10 | 1 | |
| | | 23 45 37 | 36,5 | 71,0 | 110 | Б | | 11 | 1 | |
| | 28 | 01 17 22 | 36,4 | 70,6 | 210 | Б | | 9 | 1 | |
| | | 05 28 13 | 39,1 | 71,2 | | | 3 | 9 | 3 | |
| | | 16 45 36 | 36,1 | 71,0 | 80 | Б | | 9 | 1 | |
| | 29 | 06 30 23 | 36,7 | 70,2 | 210 | Б | | 9 | 1 | |
| | | 06 36 11 | 37,2 | 71,2 | 100 | Б | | 9 | 2 | |
| | | 17 46 52 | 36,5 | 70,7 | 130 | Б | | 10 | 1 | |
| | | 19 13 00 | 38,2 | 73,3 | 160 | Б | | 10 | 2 | |
| | | 21 11 01 | 39,5 | 71,2 | 16 | Б | | 9 | 3 | |
| | | 23 28 26 | 39,4 | 72,5 | | Б | | 9 | 3 | |
| | 30 | 04 40 47 | 36,6 | 71,0 | 210 | Б | | 9 | 1 | |
| | | 16 56 54 | 37,6 | 72,0 | 200 | Б | | 9 | 2 | |
| | 31 | 01 41 29 | 37,3 | 71,3 | 140 | Б | | 9 | 2 | |
| | | 07 08 09 | 36,7 | 70,1 | 220 | Б | | 10 | 1 | |
| | | 14 30 30 | 36,7 | 70,9 | 230 | Б | | 9 | 1 | |
| | | 18 03 33 | 41,6 | 79,5 | | А | 3,2 | 9 | 5 | |
| | | 20 10 56 | 36,4 | 70,8 | 160 | Б | | 10 | 1 | |
| | | 23 26 24 | 36,4 | 69,8 | 100 | | | 10 | 1 | |
| | | | | November | | | | | | |
| | 1 | 06 11 02 | 36,5 | 70,9 | 210 | Б | | 10 | 1 | |
| | | 10 22 43 | 40,7 | 79,7 | | Б | 3,3 | 9 | 5 | |
| | | 20 26 48 | 37,5 | 72,4 | | Б | | 9 | 2 | |
| | | 20 27 04 | 37,5 | 72,4 | | | | 9 | 2 | |
| | 2 | 11 05 49 | 36,5 | 71,0 | 80 | Б | | 10 | 1 | |
| | 3 | 01 46 52 | 38,4 | 67,8 | 5 | А | | 9 | 4 | |
| | | 14 18 18 | 37,3 | 71,8 | 160 | Б | | 10 | 2 | |
| | 4 | 19 00 49 | 42,7 | 77,7 | | А | | 9 | 6 | |
| | 5 | 05 14 44 | 39,0 | 71,3 | 8 | А | | 9 | 3 | |
| | | 07 17 53 | 38,0 | 72,4 | 130 | | | 9 | 2 | |
| | | 10 27 07 | 36,5 | 70,7 | 130 | | | 10 | 1 | |
| | | 22 13 24 | 36,6 | 69,9 | 210 | Б | | 10 | 1 | |
| | | 23 07 46 | 36,6 | 70,9 | 220 | Б | | 9 | 1 | |
| | 6 | 15 04 53 | 36,7 | 69,9 | 250 | | | 9 | 1 | |
| | | 16 57 12 | 36,7 | 71,5 | 250 | Б | | 10 | 1 | |
| | | 19 39 30 | 36,4 | 69,3 | | Б | | 10 | 1 | |
| | | 19 47 15 | 36,5 | 69,3 | | | | 9 | 1 | |
| | | 20 54 27 | 36,7 | 71,0 | 250 | Б | | 11 | 1 | |
| | 7 | 09 11 16 | 36,8 | 71,3 | 190 | Б | | 10 | 1 | |
| | | 14 44 10 | 36,6 | 70,0 | 240 | | | 9 | 1 | |
| | 8 | 02 28 17 | 36,5 | 71,2 | 230 | Б | | 10 | 1 | |
| | | 18 11 24 | 39,1 | 71,3 | 12 | А | | 9 | 3 | |
| | | 23 37 33 | 36,5 | 70,3 | 190 | Б | | 10 | 1 | |
| | 9 | 14 25 40,8 | 40,52 | 72,12 | | б | 3 | 9 | 8 | Andizhan, force 3 |

[Table, contd]

| № | Число | Момент возникновения, час мин сек | Координаты эпицентра φ°N | Координаты эпицентра λ°E | Глубина очага, км | Класс точности | Магнитуда | K | № района | Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 9 | 20 57 13 | 36,5 | 71,0 | 100 | | | 9 | 1 | |
| 152 | 10 | 04 31 42 | 39,3 | 73,5 | | Б | 4,8* | 12 | 3 | |
| | 11 | 00 40 34 | 38,3 | 74,0 | 180 | Б | | 9 | 2 | |
| | | 04 06 18 | 36,7 | 70,1 | 220 | Б | | 9 | 1 | |
| | | 10 22 43 | 40,7 | 79,7 | | Б | 3,3 | 9 | 12 | |
| | | 12 22 39 | 40,8 | 79,9 | | Б | 3,3 | 9 | 12 | |
| | | 13 13 58 | 37,2 | 71,4 | 120 | Б | | 11 | 2 | |
| | | 17 24 07 | 36,6 | 70,2 | 200 | Б | | 10 | 1 | |
| | 12 | 02 26 39 | 38,6 | 74,8 | | Б | | 10 | 11 | |
| | | 09 13 18 | 36,6 | 70,2 | 220 | Б | | 10 | 1 | |
| | | 10 51 30 | 42,3 | 80,2 | | А | | 9 | 5 | |
| | | 17 54 25 | 38,5 | 73,6 | 110 | Б | | 10 | 2 | |
| | | 18 23 51 | 37,6 | 71,6 | 120 | Б | | 9 | 2 | |
| | | 21 05 13,4 | 41,43 | 72,20 | 5 | а | 2,9 | 9 | 8 | |
| | | 21 31 58 | 36,4 | 70,2 | 150 | Б | | 9 | 1 | |
| | 13 | 10 09 40 | 37,8 | 72,3 | 150 | Б | | 10 | 2 | |
| | | 11 49 35,3 | 40,20 | 73,13 | 15 | б | 3 | 9 | 5 | |
| | | 12 28 56 | 36,7 | 66,4 | | | | 11 | 1 | |
| | | 16 01 27 | 37,6 | 69,6 | 1–2 | | | 9 | 2 | |
| | | 16 09 01 | 38,9 | 70,3 | 10 | Б | | 9 | 3 | |
| | | 17 25 18 | 36,8 | 68,4 | | Б | | 9 | 1 | |
| | | 23 21 20 | 36,0 | 73,3 | | Б | | 11 | 2 | |
| | 14 | 00 13 19 | 37,0 | 68,0 | | Б | | 11 | 4 | |
| | | 04 28 36 | 36,4 | 69,2 | | Б | | 9 | 1 | |
| | | 07 55 20 | 37,4 | 71,7 | 200 | Б | | 10 | 2 | |
| | | 08 40 23 | 36,6 | 70,8 | 210 | Б | | 10 | 1 | |
| | | 18 10 38 | 39,5 | 70,3 | | А | 3,1 | 9 | 5 | |
| | | 20 49 12 | 36,9 | 68,0 | | Б | | 11 | 4 | |
| | 15 | 03 09 33 | 36,7 | 69,6 | 230 | Б | | 10 | 1 | |
| | | 03 21 44 | 36,5 | 70,6 | 200 | Б | | 10 | 1 | |
| | | 05 12 26 | 36,4 | 70,6 | 150 | Б | | 10 | 1 | |
| | | 07 02 53 | 36,3 | 69,6 | 110 | Б | | 9 | 1 | |
| | | 11 22 34 | 38,5 | 68,5 | 5 | Б | | 10 | 4 | |
| | | 18 32 56 | 41,0 | 71,3 | 5 | А | | 9 | 8 | |
| | | 20 13 43 | 40,9 | 71,2 | 5 | А | | 9 | 8 | |
| | | 21 31 40 | 37,1 | 71,3 | 90 | Б | | 10 | 2 | |
| | | 22 03 51 | 40,9 | 71,2 | 5 | А | | 10 | 8 | Uygursay, force 4 |
| | | 22 31 25 | 37,6 | 76,9 | | | 4,8 | | | |
| | 16 | 03 01 41 | 36,6 | 70,1 | 230 | Б | | 10 | 1 | |
| | | 13 34 32 | 40,8 | 77,5 | | А | 3,6 | 11 | 5 | |
| | 17 | 00 40 13 | 36,8 | 71,3 | 190 | Б | | 9 | 1 | |
| | | 07 05 07 | 36,7 | 70,8 | 200 | Б | | 10 | 1 | |
| | | 07 54 06 | 36,3 | 69,3 | | Б | | 10 | 1 | |
| | | 13 23 18 | 36,4 | 71,0 | 110 | Б | | 10 | 1 | |
| | | 19 55 36 | 38,6 | 73,3 | 120 | Б | | 10 | 2 | |
| | | 21 21 58 | 37,9 | 70,3 | 7–10 | Б | | 10 | 3 | |
| | | 22 32 31 | 36,7 | 71,3 | 180 | Б | | 10 | 1 | |
| | 18 | 02 46 51 | 36,6 | 70,7 | 210 | Б | | 9 | 1 | |
| | | 03 15 37 | 36,7 | 70,8 | 210 | Б | | 9 | 1 | |
| | | 05 37 25 | 36,8 | 70,0 | 240 | Б | | 10 | 1 | |
| | | 15 54 03 | 38,8 | 74,9 | | Б | | 10 | 11 | |
| | | 23 37 29 | 36,9 | 71,2 | 190 | Б | | 9 | 1 | |
| | 19 | 00 32 07 | 37,0 | 71,8 | 240 | Б | | 9 | 2 | |
| | | 05 49 05 | 39,6 | 69,9 | 5 | А | | 9 | 5 | |
| | | 07 10 03 | 36,6 | 70,0 | 220 | Б | | 10 | 1 | |
| | | 13 10 28 | 36,1 | 69,4 | 90 | Б | | 9 | 1 | |
| | | 13 10 28 | 36,1 | 69,4 | 90 | Б | | 9 | 1 | |
| | | 15 03 38 | 37,3 | 71,9 | 170 | Б | | 9 | 2 | |
| | | 15 57 02 | 36,5 | 71,0 | 130 | Б | | 9 | 1 | |
| | | 17 32 33 | 38,0 | 72,3 | 130 | Б | | 9 | 2 | |
| | | 21 03 07 | 36,7 | 71,0 | 250 | Б | | 9 | 1 | |
| | 20 | 03 15 04 | 36,6 | 69,4 | 240 | Б | | 9 | 1 | |
| | | 03 22 57 | 36,4 | 71,0 | | Б | | 10 | 1 | |
| | | 06 09 03 | 40,1 | 69,9 | | Б | | 9 | 5 | |

[Table, contd]

| № | Число | Момент возникновения, час мин сек | Координаты эпицентра φ°N | Координаты эпицентра λ°E | Глубина очага, км | Класс точности | Магнитуда | K | № района | Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 20 | 07 03 09 | 38,3 | 69,4 | 1–2 | Б | | 9 | 4 | |
| | | 15 01 12 | 36,4 | 69,5 | 160 | Б | | 10 | 1 | |
| | | 15 09 43 | 37,4 | 71,7 | 190 | Б | | 9 | 2 | |
| | | 17 38 39 | 40,1 | 72,8 | 10 | А | | 10 | 5 | |
| | | 19 47 57 | 36,7 | 70,1 | 220 | Б | | 9 | 1 | |
| | | 20 06 27 | 38,5 | 68,7 | 12 | Б | | 9 | 4 | Dushanbe, force 2–3 |
| | 21 | 00 06 14 | 37,2 | 72,0 | 240 | Б | | 9 | 2 | |
| | | 05 27 52 | 37,2 | 71,5 | 110 | Б | | 11 | 2 | |
| | | 15 06 19,5 | 40,43 | 73,23 | 16 | б | 3,8 | 11 | 5 | see text |
| | | 15 12 07 | 36,6 | 70,8 | 100 | Б | | 10 | 1 | |
| | | 21 36 36 | 36,4 | 71,0 | 80 | Б | | 9 | 1 | |
| | 22 | 09 23 10 | 36,3 | 71,1 | 240 | Б | | 10 | 1 | |
| | | 10 53 22 | 43,1 | 75,0 | | А | | 9 | 7 | |
| | | 14 12 14 | 37,6 | 72,1 | 120 | | | 9 | 2 | |
| | 23 | 05 49 15 | 36,6 | 70,8 | 210 | Б | | 9 | 1 | |
| | | 13 21 13 | 37,1 | 71,4 | 110 | | | 9 | 2 | |
| | | 14 22 20 | 38,9 | 70,6 | | Б | | 9 | 5 | |
| | | 17 40 05 | 36,7 | 71,0 | 270 | Б | | 10 | 1 | |
| | 24 | 03 16 57 | 37,3 | 71,6 | 160 | | | 9 | 2 | |
| | | 07 38 37,5 | 41,2 | 78,6 | | А | 3,4 | 10 | 5 | |
| | 25 | 02 38 00 | 36,1 | 70,6 | 80 | | | 10 | 1 | |
| | | 17 50 19 | 36,4 | 71,2 | 100 | | | 9 | 1 | |
| | | 21 57 09 | 36,6 | 70,9 | | Б | | 10 | 1 | |
| | | 22 03 29 | 39,6 | 75,3 | | А | 3,8 | 11 | 11 | |
| | 26 | 01 40 31 | 36,5 | 70,2 | 180 | Б | | 10 | 1 | |
| 153 | | 12 50 55 | 40,2 | 77,8 | | Б | 4 | 12 | 5 | |
| | | 14 04 58 | 36,5 | 70,1 | 200 | | | 9 | 1 | |
| | | 15 10 31 | 39,4 | 75,4 | | А | 3,3 | 9 | 11 | |
| | | 23 03 42 | 39,4 | 75,2 | | А | 3,5 | 10 | 11 | |
| | 27 | 02 11 30 | 36,5 | 71,0 | 220 | Б | | 10 | 1 | |
| | | 10 32 45 | 40,7 | 73,2 | | А | 2,7 | 9 | 8 | |
| | | 15 43 57 | 37,4 | 71,6 | 130 | Б | | 10 | 2 | |
| | | 16 59 58 | 38,8 | 70,9 | | Б | | 9 | 3 | |
| | 28 | 03 20 26 | 40,6 | 72,1 | 10 | А | | 10 | 8 | Andizhan, force 2 |
| | | 07 46 16,0 | 40,57 | 72,35 | 35 | б | 2,7 | 9 | 8 | |
| | | 07 56 13 | 37,2 | 71,6 | 150 | Б | | 10 | 2 | |
| 154 | | 14 57 41 | 39,5 | 75,3 | | Б | 4,2 | 12 | 11 | |
| | | 19 52 10 | 37,5 | 72,0 | 160 | Б | | 9 | 2 | |
| | | 21 59 02 | 37,4 | 69,6 | | Б | | 10 | 2 | |
| | 29 | 06 53 26 | 37,3 | 69,4 | | | | 9 | 2 | |
| | | 07 05 59 | 37,7 | 71,9 | 210 | | | 9 | 2 | |
| | | 07 33 25,8 | 44,45 | 76,97 | | б | | 9 | 14 | |
| | | 12 08 34 | 40,5 | 71,1 | | А | 3 | 9 | 8 | |
| | | 13 00 41 | 38,8 | 70,6 | 8 | А | | 10 | 3 | |
| | | 13 09 16 | 36,3 | 69,9 | 110 | Б | | 11 | 1 | |
| | | 18 27 23 | 37,0 | 69,4 | | | | 9 | 1 | |
| | | 19 39 55 | 36,8 | 70,8 | | Б | | 11 | 1 | |
| | 30 | 03 23 16 | 36,6 | 70,9 | 90 | Б | | 10 | 1 | |
| | | 06 28 38 | 36,5 | 69,3 | | | | 9 | 1 | |
| | | 09 34 23 | 37,7 | 69,6 | 5 | А | | 9 | 2 | |
| | | 13 11 48,4 | 42,10 | 66,80 | 5 | б | | 10 | 20 | |
| 155 | | 17 35 34 | 36,5 | 70,8 | 210 | Б | | 12 | 1 | |
| | | 19 57 24,0 | 42,20 | 77,60 | 20 | б | 3,6 | 11 | 6 | |
| | | 20 57 24 | 37,5 | 71,1 | 70 | | | 9 | 2 | |
| | | | | December | | | | | | |
| 156 | 1 | 00 09 54 | 36,5 | 70,3 | 20 | Б | | 12 | 1 | |
| | | 04 32 41 | 40,2 | 74,1 | | А | 3,2 | 9 | 5 | |
| | | 05 19 36 | 37,8 | 74,6 | | | | 10 | 2 | |
| | | 07 46 27 | 37,0 | 71,1 | 80 | Б | | 10 | 2 | |
| | | 12 28 13 | 36,8 | 71,4 | 130 | Б | | 9 | 1 | |
| | | 15 41 53 | 36,0 | 70,2 | 100 | Б | | 10 | 1 | |
| | | 17 10 24 | 38,8 | 70,6 | 4 | Б | | 11 | 3 | |
| | | 20 39 59 | 36,9 | 70,8 | 220 | | | 9 | 1 | |

[Table, contd]

| № | Число | Момент возникновения, час мин сек | Координаты эпицентра φ°N | λ°E | Глубина очага, км | Класс точности | Магнитуда | K | № района | Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 22 16 02 | 39,0 | 70,7 | | Б | | 9 | 3 | |
| | 2 | 05 29 08 | 40,6 | 72,5 | 10 | А | | 9 | 8 | |
| | | 13 23 50 | 36,6 | 70,2 | 210 | Б | | 10 | 1 | |
| | | 21 26 19 | 37,4 | 72,7 | | | | 10 | 2 | |
| | 4 | 09 51 12 | 38,9 | 69,9 | 5 | Б | | 9 | 3 | |
| | | 11 33 51 | 39,3 | 75,4 | | Б | 3,2 | 10 | 11 | |
| | 5 | 00 58 35 | 38,7 | 70,7 | 6 | А | | 9 | 3 | |
| | 6 | 13 41 59 | 36,7 | 72,0 | 130 | Б | | 10 | 1 | |
| | | 17 11 19 | 36,9 | 72,1 | | | | 10 | 2 | |
| | 7 | 08 50 47 | 37,0 | 70,7 | | Б | | 10 | 1 | |
| | | 16 48 59 | 36,6 | 71,2 | 170 | Б | | 9 | 1 | |
| | | 23 50 08 | 36,7 | 70,9 | 240 | | | 9 | 1 | |
| | 8 | 00 47 45 | 39,5 | 72,1 | | Б | | 9 | 3 | |
| | | 03 45 46 | 38,7 | 69,9 | 10 | Б | | 10 | 3 | |
| | | 03 56 11 | 36,5 | 71,1 | 220 | Б | | 11 | 1 | |
| | | 06 16 00 | 36,7 | 70,9 | 180 | | | 9 | 1 | |
| 157 | | 06 51 47 | 38,7 | 69,9 | 2 | Б | 4,2 | 12 | 3 | see text |
| | | 08 54 11 | 42,1 | 79,2 | | А | 3,6 | 10 | 6 | |
| | | 21 43 39 | 36,3 | 70,4 | 130 | Б | | 10 | 1 | |
| | 9 | 13 28 36 | 36,3 | 71,1 | 80 | | | 9 | 1 | |
| | | 22 49 52 | 40,3 | 78,1 | | Б | 3,1 | 9 | 5 | |
| | 10 | 01 37 16 | 36,5 | 69,8 | 240 | | | 10 | 1 | |
| 158 | | 01 41 07 | 36,4 | 70,2 | 220 | Б | 5,7 | 16 | 1 | " " |
| | | 04 02 26 | 36,4 | 70,9 | | | | 10 | 1 | |
| | | 05 07 25 | 36,7 | 70,1 | 200 | | | 10 | 1 | |
| | | 05 28 05 | 40,5 | 78,1 | | Б | 2,9 | 9 | 5 | |
| | | 06 13 42 | 37,8 | 69,8 | 10 | Б | | 10 | 3 | |
| | | 06 28 03 | 43,0 | 78,4 | | А | | 9 | 7 | |
| | | 06 41 51 | 37,8 | 69,8 | 10 | Б | | 9 | 3 | |
| | | 09 21 31 | 38,4 | 74,5 | 140 | | | 10 | 2 | |
| | | 09 35 11 | 37,4 | 72,8 | | Б | | 10 | 2 | |
| | | 13 00 48 | 38,6 | 73,4 | 100 | Б | | 10 | 2 | |
| | | 14 38 48 | 37,4 | 72,8 | | | | 10 | 2 | |
| | | 22 51 07 | 37,2 | 71,7 | 140 | Б | | 10 | 2 | |
| | 11 | 08 12 42 | 36,6 | 70,3 | 210 | Б | | 10 | 1 | |
| | | 20 07 05 | 36,6 | 70,3 | 210 | Б | | 9 | 1 | |
| | | 22 45 45 | 43,1 | 74,1 | | А | 3,6 | 10 | 18 | |
| | 12 | 01 10 24 | 36,5 | 71,2 | 120 | Б | | 9 | 1 | |
| | | 07 07 51 | 38,0 | 73,5 | 70 | Б | | 9 | 2 | |
| | | 09 35 24 | 39,8 | 72,2 | | | | 10 | 5 | |
| | | 19 29 23 | 36,0 | 70,3 | 230 | Б | | 9 | 1 | |
| | | 19 45 32 | 36,1 | 70,3 | 80 | Б | | 9 | 1 | |
| | | 22 58 56 | 36,2 | 69,3 | | | | 9 | 1 | |
| | | 23 08 33 | 37,3 | 71,8 | 170 | Б | | 9 | 2 | |
| | | 23 45 06 | 36,5 | 70,3 | 140 | Б | | 9 | 1 | |
| | | 23 5[illegible] 53 | 38,2 | 73,8 | 180 | Б | | 10 | 2 | |
| | 13 | 01 47 03 | 36,7 | 71,2 | 180 | Б | | 9 | 1 | |
| | | 02 28 05 | 36,7 | 70,3 | 220 | Б | | 11 | 1 | |
| | | 05 39 46 | 36,2 | 70,9 | 80 | Б | | 9 | 1 | |
| | | 06 15 24 | 36,7 | 70,4 | 250 | Б | | 9 | 1 | |
| | | 13 37 52 | 41,9 | 79,7 | | А | 2,7 | 9 | 5 | |
| | | 13 38 43 | 37,3 | 71,7 | 140 | Б | | 9 | 2 | |
| | | 16 34 12 | 36,2 | 70,5 | 110 | Б | | 9 | 1 | |
| | | 18 11 24 | 36,3 | 71,0 | 100 | Б | | 11 | 1 | |
| | | 18 29 56 | 36,7 | 70,8 | 220 | Б | | 9 | 1 | |
| | | 22 12 04 | 36,6 | 70,3 | 210 | Б | | 9 | 1 | |
| | 14 | 00 04 06 | 37,3 | 71,6 | 110 | Б | | 9 | 2 | |
| | | 00 26 22 | 37,4 | 72,7 | | Б | | 10 | 2 | |
| | | 07 18 34 | 41,9 | 71,2 | | А | 3,6 | 10 | 9 | |
| | | 13 10 03 | 36,3 | 69,1 | | Б | | 9 | 1 | |
| | | 13 21 31 | 37,4 | 71,6 | 140 | Б | | 10 | 2 | |
| | | 21 14 13 | 36,6 | 70,4 | 210 | Б | | 11 | 1 | |
| | 15 | 08 06 52,5 | 40,8 | 72,9 | 5 | А | | 9 | 8 | |
| | | 10 13 31 | 39,7 | 74,5 | | А | | 9 | 11 | |

[Table, contd]

| φ | Число | Момент возникновения, час мин сек | Координаты эпицентра φ°N | λ°E | Глубина очага, км | Класс точности | Магнитуда | K | № района | Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 15 | 17 08 52 | 36,6 | 70,3 | 210 | | | 9 | 1 | |
| | 16 | 00 13 02 | 38,0 | 72,4 | 90 | Б | | 9 | 2 | |
| | | 02 45 57 | 37,5 | 72,1 | 180 | Б | | 9 | 2 | |
| | | 04 40 40 | 37,1 | 71,9 | | Б | | 9 | 2 | |
| | | 20 31 37 | 37,5 | 71,9 | 160 | Б | | 9 | 2 | |
| | | 22 28 15 | 38,5 | 72,1 | 100 | Б | | 10 | 3 | |
| 159 | 18 | 02 31 49 | 39,4 | 73,8 | | Б | 4,9* | 12 | 11 | |
| 160 | | 03 26 05 | 37,4 | 72,8 | | Б | 4,8* | 12 | 2 | |
| | | 20 34 22 | 36,5 | 70,8 | 200 | Б | | 11 | 1 | |
| | | 20 51 46 | 36,4 | 70,9 | 90 | Б | | 10 | 1 | |
| | 19 | 01 12 13 | 36,4 | 71,0 | 70 | Б | | 10 | 1 | |
| | | 03 23 05 | 36,1 | 70,3 | 70 | | | 9 | 1 | |
| | | 10 31 11 | 38,5 | 73,3 | | | | 9 | 2 | |
| | | 13 33 33 | 36,8 | 71,2 | 190 | Б | | 9 | 1 | |
| | 20 | 06 12 08 | 37,6 | 69,8 | | Б | | 11 | 2 | |
| | | 17 22 43 | 36,6 | 69,6 | 170 | Б | | 10 | 1 | |
| | | 22 49 56 | 39,4 | 71,0 | 80 | Б | | 9 | 5 | |
| | 21 | 07 23 34 | 39,4 | 72,7 | | Б | | 9 | 3 | |
| | | 15 52 59 | 36,6 | 70,2 | 210 | Б | | 9 | 1 | |
| | | 16 22 49 | 36,7 | 70,2 | 200 | Б | | 9 | 1 | |
| | | 17 41 01 | 36,4 | 69,4 | 80 | Б | | 9 | 1 | |
| | | 19 30 13 | 36,6 | 70,1 | 220 | Б | | 9 | 1 | |
| | 22 | 04 21 36 | 37,1 | 72,4 | | Б | | 10 | 2 | |
| | | 08 54 02 | 41,1 | 63,9 | 5 | А | | 9 | 21 | |
| | | 15 20 47 | 37,6 | 69,8 | 1–2 | Б | | 10 | 2 | |
| | | 17 02 21 | 36,9 | 71,8 | 80 | Б | | 9 | 1 | |
| | | 20 41 11 | 36,4 | 70,7 | 150 | А | | 9 | 1 | |
| | | 21 40 27 | 37,8 | 69,8 | 2–5 | Б | | 9 | 3 | |
| | | 21 50 10 | 37,8 | 69,8 | 2–5 | Б | | 9 | 3 | |
| | | 22 17 34 | 39,9 | 76,5 | | Б | 3,3 | 10 | 5 | |
| | 23 | 01 27 29 | 36,2 | 70,2 | 100 | Б | | 9 | 1 | |
| | | 03 04 35 | 37,4 | 72,0 | 200 | Б | | 9 | 2 | |
| | | 09 36 07 | 36,6 | 70,8 | 250 | Б | | 10 | 1 | |
| | | 11 09 21 | 42,0 | 78,3 | | А | 2,7 | 9 | 6 | |
| | | 12 28 41 | 38,6 | 73,3 | 110 | Б | | 10 | 2 | |
| | | 13 07 52 | 40,3 | 77,1 | | Б | 3,5 | 10 | 5 | |
| | | 14 27 50 | 36,6 | 70,2 | 210 | Б | | 9 | 1 | |
| | | 23 05 36 | 37,4 | 71,9 | 210 | Б | | 9 | 2 | |
| | | 23 49 38 | 36,6 | 70,4 | 220 | Б | | 11 | 1 | |
| | | 23 52 21 | 37,6 | 69,8 | | Б | | 10 | 2 | |
| | 24 | 02 52 28 | 36,0 | 71,2 | | Б | | 9 | 1 | |
| | | 09 07 14 | 36,9 | 71,0 | 250 | | | 9 | 1 | |
| | | 13 54 59 | 36,0 | 70,2 | 100 | Б | | 10 | 1 | |
| | | 17 25 03 | 36,8 | 70,5 | | Б | | 9 | 1 | |
| 161 | | 19 55 33 | 36,5 | 70,4 | 200 | А | 5,0* | 13 | 1 | see text |
| | | 21 07 04 | 36,8 | 71,1 | 200 | А | | 9 | 1 | |
| | 25 | 00 00 09 | 36,5 | 70,7 | 200 | А | | 11 | 1 | |
| | | 01 39 46 | 38,3 | 73,0 | | Б | | 10 | 2 | |
| | | 16 28 30 | 36,1 | 70,3 | 100 | Б | | 10 | 1 | |
| | | 17 34 57 | 39,2 | 72,8 | | А | 3 | 9 | 3 | |
| | 26 | 00 03 04 | 36,4 | 70,8 | 80 | Б | | 9 | 1 | |
| | | 01 54 12 | 36,7 | 70,9 | 210 | Б | | 11 | 1 | |
| | | 06 36 05 | 36,8 | 71,3 | 190 | Б | | 9 | 1 | |
| | | 12 02 31 | 43,1 | 75,1 | | А | | 9 | 7 | |
| | | 12 18 35 | 40,2 | 68,6 | 0 | А | | 9 | 10 | |
| | | 18 35 09 | 37,0 | 70,7 | | Б | | 9 | 1 | |
| | | 19 39 00 | 37,4 | 71,9 | 100 | | | 9 | 2 | |
| | 27 | 07 16 54,3 | 41,90 | 72,40 | 5 | б | 3,5 | 10 | 9 | |
| | | 08 06 50 | 36,5 | 70,3 | 220 | Б | | 10 | 1 | |
| | | 13 10 30 | 36,6 | 70,0 | 180 | | | 9 | 1 | |
| | | 21 42 20 | 37,8 | 73,1 | | | | 9 | 2 | |
| | | 21 52 30 | 36,7 | 70,4 | 210 | Б | | 9 | 1 | |
| | | 23 13 8 | 37,5 | 75,2 | | Б | | 10 | 11 | |
| | | 23 42 23 | 36,1 | 70,5 | 80 | Б | | 9 | 1 | |

[Table, contd]

| № | Число | Момент возникновения, час мин сек | Координаты эпицентров | | Глубина очага, км | Класс точности | Магнитуда | K | № района | Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | $\varphi^{\circ}N$ | $\lambda^{\circ}E$ | | | | | | |
| | 28 | 07 21 02,2 | 41,00 | 73,55 | 5 | б | 3,1 | 9 | 8 | |
| | | 08 07 10 | 37,6 | 69,7 | 2 | Б | | 10 | 2 | see text |
| | | 09 13 52 | 37,6 | 69,8 | 1–2 | Б | | 9 | 2 | |
| | | 17 41 56 | 37,7 | 69,8 | 1–2 | Б | | 9 | 2 | |
| | | 20 21 37 | 37,0 | 71,4 | 100 | А | | 9 | 2 | |
| 162 | 29 | 04 59 01 | 39,2 | 71,7 | | Б | 5,1* | 12 | 3 | |
| | | 17 59 20 | 36,3 | 70,7 | 100 | Б | | 11 | 1 | |
| | | 20 14 43 | 36,5 | 71,1 | 80 | | | 9 | 1 | |
| 163 | 30 | 04 47 46 | 36,2 | 69,6 | 70 | Б | 5,6 | 13 | 1 | Dushanbe force, 2 |
| | | 08 23 00 | 36,5 | 70,2 | 170 | Б | | 11 | 1 | |
| | | 13 25 23 | 37,5 | 72,1 | 180 | Б | | 10 | 2 | |
| | | 14 36 18 | 36,8 | 71,1 | 200 | Б | | 9 | 1 | |
| 164 | | 16 24 52 | 36,6 | 70,7 | 70 | Б | | 12 | 1 | |
| | 31 | 01 36 38 | 38,3 | 68,5 | 5 | Б | | 9 | 4 | |
| | | 08 17 01 | 36,6 | 70,7 | 130 | Б | | 9 | 1 | |
| | | 11 45 34 | 36,5 | 69,7 | 160 | Б | | 9 | 1 | |
| | | 14 22 37 | 42,70 | 77,90 | 130 | в | | 11 | 6 | |

EARTHQUAKES OF NORTHERN TYAN'-SHAN'

[Article by B. M. Urazayev, A. B. Ospanov, N. N. Mikhaylova]

In 1974 observations were made in the Northern Tyan'-Shan' seismic zone at the seismic stations of Alma-Ata, the Central Seismic Station, Kurmenty, Chilik, Kzyl-Agach, Fabrichnaya, Ili[1], Kurty[1], Dzhambul. The Chimkent station did not operate for an entire year in connection with transfer to a new location. The Kurmenty station was shut down for half a year as a result of building repairs. By comparison with 1973, significant changes were made in the "permanent" equipment at the seismic stations. When determining the earthquake parameters, in addition to the enumerated stations, regular use was made of the materials from the Talgar, Naryn, Przheval'sk and Kadzhi-Say stations.

The coordinates of the epicenters were determined by the isochron method; the energy classification was made by the Rautian nomogram [1]. The depth of the centers was not estimated in view of the insufficient number of stations.

There were 91 earthquake epicenters within the zone, which indicates the reduction in total number of earthquakes by comparison with the preceding year. Their distribution with respect to energy classes was as follows:

| K | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|
| No of earthquakes | 12 | 38 | 27 | 9 | 3 | 2 |

The distribution of the epicenters of the earthquakes in the investigated territory in 1974 is shown in Fig 1. On comparison with the epicenter map of 1973, a reduction in seismic activity was noted north of the Ili River, west of the 78° meridian where a swarm of 14 epicenters was observed in 1973. The number of earthquakes in the vicinity of the Zailiyskiy Alatau Ridge south of Alma-Ata increased. Of the four, the vicinities of the Kungey-Alatau Ridge, near Kurmenty, the Kokshaal-Tau Ridge, the south end of the Chu-Iliyskiye Mountains and the Kirgiz Ridge are active.

[1]Temporary stations.

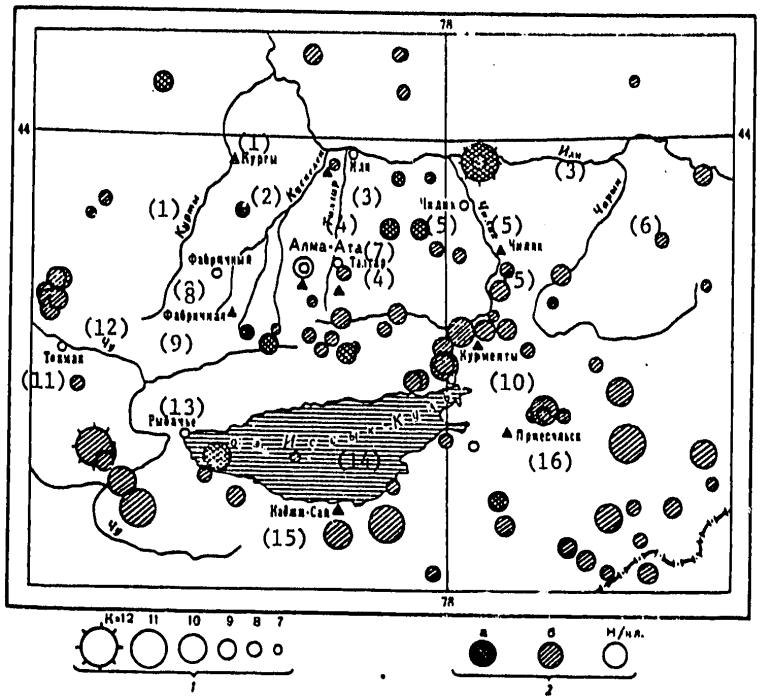


Figure 1. Map of the epicenters of earthquakes in Northern Tyan'-Shan'
1 -- energy of the earthquake; 2 -- accuracy of determining the epicenter

Key:
1. Kurty; 2. Kaskelen; 3. Ili; 4. Talgar; 5. Chilik; 6. Charyn;
7. Alma-Ata; 8. Fabrichnyy; 9. Fabrichnaya; 10. Kurmenty;
11. Tokmak; 12. Chu; 13. Rybach'ye; 14. Issyk-Kul' Lake;
15. Kadzhi-Say; 16. Przhsval'sk

The strongest earthquakes of that year were two with K=12: the epicenter of the first was located 40 km north of Chilik, and the second, in the spurs of the Kirgiz Ridge. The results of the macroseismic examination of the first of them were published in reference [2].

The density maps of the epicenters and seismic activity (Figures 2-4) were constructed by the observations of 1973-1974 in two versions; one using circular patterns and the other, elliptic. The radii of averaging for the circular pattern were calculated by the formula [3, 4]

$$R=\sqrt{\frac{1000N_{\epsilon}\,(1-10^{-\gamma})^{1}}{\pi AT10^{-\gamma(K-K_{0})}}},$$

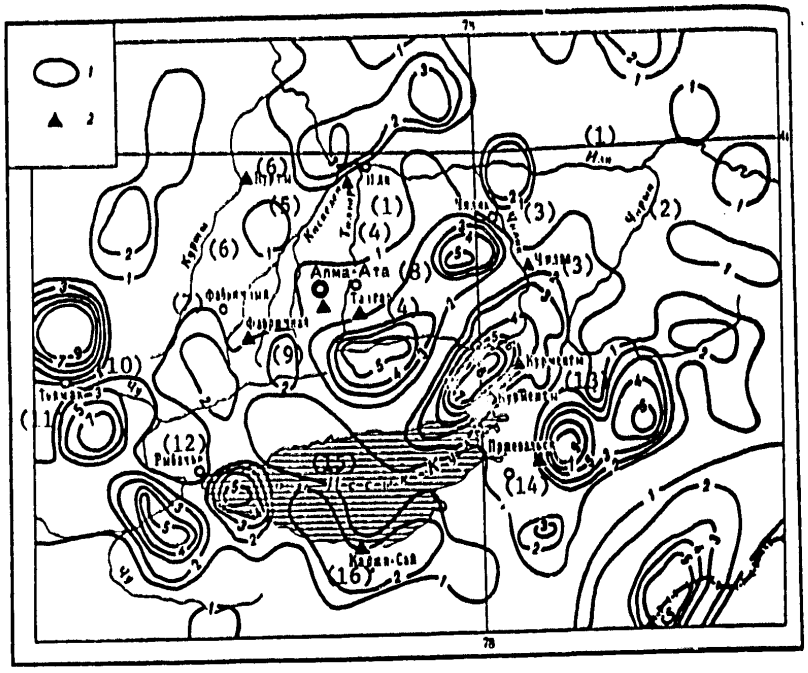


Figure 2. Density map of the epicenters of earthquakes in 1973-1974
1 -- density isolines of the epicenters; 2 -- seismic stations

Key:
1. Ili; 2. Charyn; 3. Chilik; 4. Talgar; 5. Kaskelen; 6. Kurty; 7. Fabrichnyy; 8. Alma-Ata; 9. Fabrichnaya; 10. Chu; 11. Tokmak; 12. Rybach'ye; 13. Kurmenty; 14. Przheval'sk; 15. Issyk-Kul' Lake; 16. Kadzhi-Say

where R is the radius of averaging; $N_\epsilon$ is the number of epicenters in the area of averaging; $\gamma$ is the coefficient of the slope angle of the recurrence graphs; A is the activity; T is the observation period; K is the energy class.

For the calculations $N_\epsilon$ was assumed equal to five. The activity isolines corresponded to values of 2.0, 1.0, 0.7, 0.5, 0.2, 0.1, 0.05, 0.02, 0.01. When constructing the activity map with circular averaging areas, the seismotectonic situation of the area is not taken into account. In order to determine the value of the activity at any point of the investigated zone it is necessary to select five epicenters in the area of the circle of averaging. In the general case these earthquakes can belong to different seismogenic regions, thus confusing the actual picture.

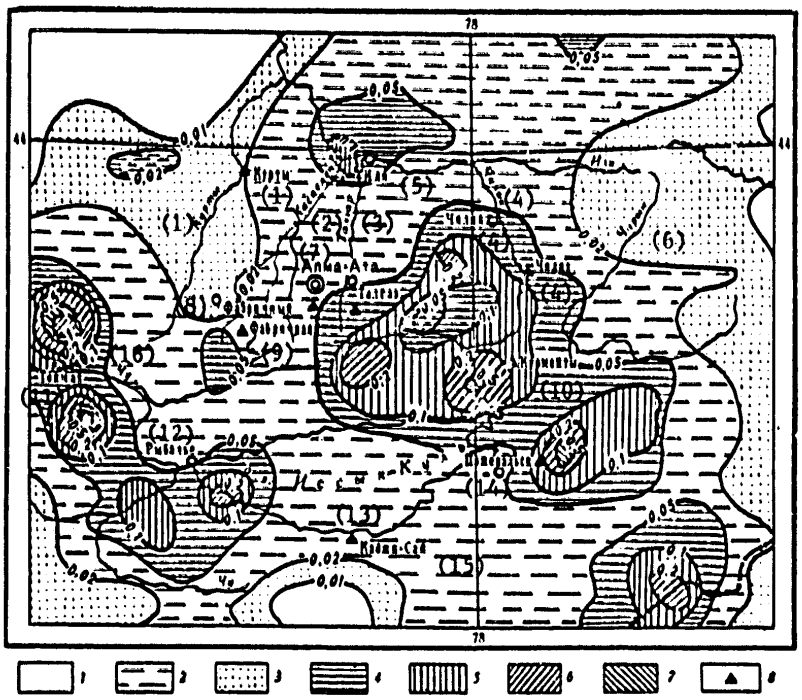

Figure 3. Activity map constructed using circular patterns.
1 -- activity less than 0.01; 2 -- 0.01-0.02; 3 -- 0.02-0.05;
4 -- 0.05-0.1; 5 -- 0.1-0.26; 6 -- 0.2-0.5; 7 -- more than 0.5;
8 -- seismic stations

Key:
1. Kurty; 2. Kaskelen; 3. Talgar; 4. Chilik; 5. Ili; 6. Charyn;
7. Alma-Ata; 8. Fabrichnyy; 9. Fabrichnaya; 10. Kurmenty;
11. Tokmak; 12. Rybach'ye; 13. Issyk-Kul' Lake; 14. Przheval'sk;
15. Kadzhi-Say; 16. Chu

It appears more logical to use the patterns of elliptic shape when performing the construction encompassing the earthquakes within the limits of one defined structure, for the basic geological structures of the area have linearly elongated shapes. Therefore the circular patterns with defined radii of averaging were transformed to elliptic retaining the corresponding areas of averaging. Beginning with the longitudinal and transverse dimensions of the geological structures of the area, ellipses were selected with a ratio of the axes of 1:1.6. When calculating the activity map, the major axis of the ellipse was oriented parallel to the strike of the geological structures.

The calculation of the axes of the ellipses of the averaging was made by the formula:

$$a = \sqrt{\frac{1000N_{e.}(1-10^{-\gamma})}{1{,}6\pi AT10^{-\gamma(K-K_0)}}};\quad b = 1{,}6\,a.$$

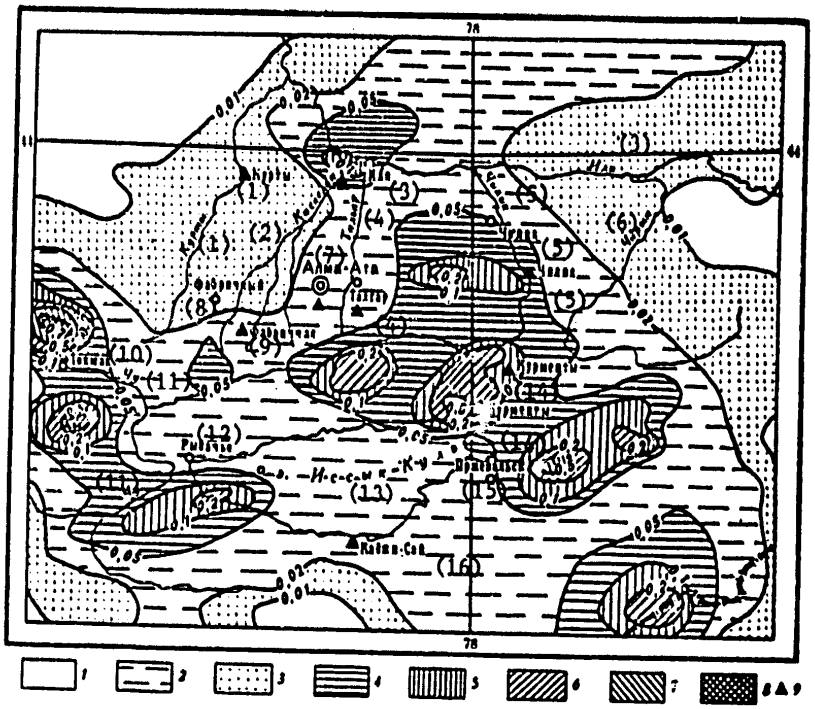

Figure 4. Activity map constructed using elliptic patterns.
1 -- activity less than 0.01; 2 -- 0.01-0.02; 3 -- 0.02-0.05;
4 -- 0.05-0.1; 5 -- 0.1-0.2; 6 -- 0.2-0.5; 7 -- 0.5-0.7;
8 -- more than 0.7; 9 -- seismic stations

Key:

1. Kurty; 2. Kaskelen; 3. Ili; 4. Talgar; 5. Chilik; 6. Charyn;
7. Alma-Ata; 8. Fabrichnyy; 9. Fabrichnaya; 10. Tokmak; 11. Chu;
12. Rybach'ye; 13. Issyk-Kul' Lake; 14. Kurmenty; 15. Przheval'sk;
16. Kadzhi-Say

The activity isolines corresponded to the same values as in the case of calculating the radii of averaging of circular patterns. During the construction, three areas of the basic structures of the zone were taken into account: Northern Tyan'-Shan', Dzhungarskiy Alatau and Chu-Iliyskiye Mountains.

On the obtained maps of the density of the epicenters and the activity, a number of sections of increased activity were traced characteristic of all of the maps: 1) the central part of the Zailiyskiy Alatau, south of Alma-Ata; 2) the eastern end of the Zailiyskiy Alatau Ridge, west of Chilik; 3) the eastern part of the Kungey-Alatau Ridge, southwest of Kurmenty; 4) the eastern end of the Terskey-Alatau Ridge, east of Przheval'sk; 5) the western end of Terskey-Alatau Ridge, south of Rybach'ye; 6, 7) two anomalies in the vicinity of the articulations of the Kirgiz Ridge with the structures of the Chu-Iliyskiye Mountains.

However, on the activity map constructed by the elliptic pattern, they have somewhat more elongated form along the geological structures. The greatest activity characterizes the section (activity 2.0) north of Tokmak.

Then with respect to activity, it is necessary to isolate the region east of Przheval'sk -- 1.0.

By comparison with 1973, the section on the west end of the Terskey-Alatau Ridge characterized by an activity of 0.1-0.2 was activated. This is obviously connected with the earthquake of the 12th energy class occurring here.

As is obvious from the recurrence rate graph (see Fig 5) constructed by the results of 1974, the 8th energy class earthquakes do not lie on a straight line, that is, that year the 8th energy class was not representative. This is connected with the fact that the Kurmenty seismic station was not in operation for a prolonged period of time. However, the linear relation of lg N and lg E, $\gamma=0.48$, $A_{10}=0.072$ is very well sustained for classes 9, 10 and 11.

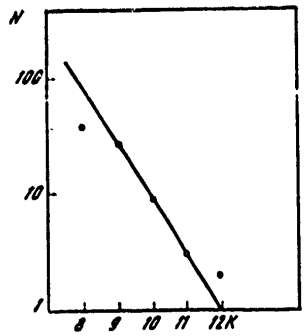


Figure 5. Graph of the recurrence rate of earthquakes in 1974

Let us note that in spite of the reduction by comparison with 1973 in the total number of earthquakes, the level of activity in 1974 increased noticeably. This is explained by the fact that not all of the earthquakes of the 8th energy class which occurred in 1974 in this region were processed.

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Catalog of Earthquakes of Northern Tyan'-Shan' in 1974

| (1) Число | (2) Момент возникновения, час мин сек | (3) Координаты эпицентра φ N | λ E | (4) Класс точности | K | (5) № района |
|---|---|---|---|---|---|---|
| | | January | | | | |
| 2 | 09 33 52,8 | 40°40' | 79°27' | A | 9 | 11 |
| 3 | 10 16 20,0 | 43 08 | 75 00 | A | 8 | 3 |
| | 15 44 59,8 | 42 18 | 79 53 | A | 10 | 11 |
| 14 | 01 38 03,1 | 42 53 | 78 37 | A | 8 | 5 |
| | 07 51 53,7 | 42 43 | 77 49 | A | 9 | 6 |
| 15 | 12 18 32,4 | 43 12 | 75 04 | A | 8 | 3 |
| 21 | 09 41 46,0 | 41 54 | 77 11 | A | 10 | 7 |
| 30 | 00 45 18,2 | 42 32 | 78 42 | A | 10 | 8 |
| | | February | | | | |
| 3 | 14 13 55,2 | 43 31 | 77 34 | б | 9 | 2 |
| 17 | 03 35 03,5 | 41 48 | 78 52 | A | 9 | 11 |
| 19 | 21 25 40,4 | 43 37 | 76 27 | б | 8 | 2 |
| 25 | 19 52 26,3 | 41 45 | 79 00 | A | 9 | 11 |
| 27 | 05 13 04,6 | 44 16 | 75 49 | б | 8 | 14 |
| | | March | | | | |
| 1 | 05 12 09,4 | 42 08 | 75 36 | б | 10 | 7 |
| 2 | 20 50 58,4 | 42 49 | 77 59 | A | 9 | 5 |
| 4 | 14 03 56,8 | 43 53 | 78 15 | б | 12 | 2 |
| | 16 22 25,0 | 43 52 | 78 15 | б | 8 | 2 |
| 6 | 01 18 56,0 | 43 25 | 77 57 | A | 8 | 2 |
| | 04 22 34,2 | 43 40 | 75 29 | A | 9 | 13 |

Key:
1. Number
2. Time of occurrence, hours, minutes, seconds
3. Coordinates of the epicenter
4. Accuracy class
5. Region No

[Contd]

| (1) Число | (2) Момент возникновения, час мин сек | (3) Координаты эпицентра φN | λE | (4) Класс точности | K | (5) № района |
|---|---|---|---|---|---|---|
| 7 | 20 47 50,9 | 43° 31' | 77°47' | 6 | 9 | 2 |
| 15 | 10 22 43,6 | 43 48 | 79 58 | A | 9 | 1 |
| 17 | 10 53 46,6 | 44 15 | 77 40 | A | 8 | 1 |
| 18 | 05 56 56,0 | 43 00 | 77 32 | A | 8 | 4 |
| | 12 48 45,6 | 42 10 | 76 14 | A | 8 | 7 |
| 21 | 12 28 36,6 | 43 02 | 75 01 | A | 8 | 3 |
| 22 | 04 39 11,3 | 42 59 | 78 18 | A | 9 | 5 |
| | 09 49 23,1 | 42 57 | 78 06 | A | 10 | 5 |
| | 23 37 14,5 | 42 17 | 76 19 | 6 | 10 | 7 |
| 26 | 10 46 09,0 | 43 12 | 75 05 | A | 8 | 3 |
| | | April | | | | |
| 8 | 16 06 16,2 | 43 48 | 77 52 | A | 7 | 2 |
| 17 | 18 17 56,4 | 42 16 | 76 53 | A | 7 | 6 |
| | 19 04 29,2 | 42 58 | 76 43 | A | 7 | 4 |
| 27 | 07 11 14,8 | 42 53 | 77 18 | A | 7 | 4 |
| | 10 56 41,2 | 43 03 | 77 11 | A | 9 | 4 |
| 30 | 12 46 09,4 | 43 08 | 78 48 | A | 7 | 5 |
| | | May | | | | |
| 4 | 08 29 52,0 | 42 31 | 78 43 | A | 8 | 8 |
| 6 | 21 51 29,0 | 42 55 | 76 40 | 6 | 9 | 4 |
| 9 | 12 00 50,8 | 43 48 | 77 38 | 6 | 8 | 2 |
| 25 | 14 33 58,0 | 42 39 | 79 18 | A | 10 | 8 |
| 27 | 02 28 10,8 | 44 19 | 79 26 | A | 7 | 1 |
| 29 | 12 10 01,6 | 43 52 | 77 09 | a | 7 | 2 |
| 30 | 20 18 25,2 | 42 52 | 77 15 | 6 | 9 | 4 |
| | | June | | | | |
| 6 | 04 31 50,6 | 44 28 | 77 40 | A | 7 | 1 |
| 10 | 13 14 45,2 | 42 47 | 79 07 | 6 | 8 | 8 |
| 19 | 00 27 06,0 | 42 57 | 76 30 | 6 | 8 | 4 |
| 23 | 07 45 02,3 | 43 34 | 75 16 | A | 7 | 13 |
| 28 | 10 19 07,6 | 42 38 | 75 14 | A | 8 | 10 |
| | | July | | | | |
| 2 | 12 41 58,1 | 43 11 | 79 57 | A | 7 | 9 |
| | 16 41 05,7 | 42 17 | 75 23 | A | 12 | 10 |
| | 17 14 18,2 | 42 14 | 75 30 | A | 8 | 10 |
| 3 | 03 38 57,9 | 42 01 | 79 21 | A | 8 | 11 |
| 7 | 03 19 07,6 | 42 08 | 77 36 | A | 8 | 6 |
| | 16 44 12,4 | 42 31 | 78 39 | A | 8 | 8 |
| 16 | 06 06 23,2 | 41 58 | 79 11 | A | 10 | 11 |
| | 22 48 41,7 | 42 30 | 78 52 | A | 8 | 8 |
| 22 | 18 19 52,4 | 42 51 | 77 04 | A | 8 | 4 |
| 24 | 11 27 31,2 | 42 13 | 75 28 | A | 9 | 10 |
| | | August | | | | |
| 8 | 10 53 37,2 | 44 28 | 77 38 | A | 8 | 1 |
| 9 | 00 46 28,7 | 43 17 | 77 12 | A | 8 | 4 |
| 11 | 00 23 45,0 | 42 04 | 76 26 | A | 9 | 7 |
| 22 | 09 49 04,8 | 43 19 | 78 27 | A | 8 | 5 |
| 25 | 02 54 43,8 | 42 01 | 77 39 | A | 9 | 11 |
| 28 | 11 08 25,0 | 43 12 | 78 23 | A | 9 | 5 |

[Contd]

| (1) Число | (2) Момент возникновения, час мин сек | (3) Координаты эпицентра | | (4) Класс точности | K | (5) № района |
|---|---|---|---|---|---|---|
| | | φ N | λ E | | | |
| | | September | | | | |
| 18 | 03 05 21,6 | 42°55' | 77°08' | A | 8 | 4 |
| 21 | 02 52 50,8 | 41 40 | 77 53 | A | 8 | 12 |
| 25 | 04 41 44,8 | 43 05 | 77 37 | A | 9 | 4 |
| 26 | 18 38 08,0 | 43 17 | 78 51 | A | 9 | 5 |
| | | October | | | | |
| 5 | 05 39 05,2 | 41 58 | 75 43 | A | 11 | 7 |
| 6 | 00 52 40,5 | 42 58 | 76 59 | 6 | 8 | 4 |
| 8 | 14 59 35,5 | 42 11 | 75 44 | 6 | 8 | 7 |
| 12 | 02 31 22,0 | 43 26 | 79 37 | A | 8 | 2 |
| 13 | 02 27 52,0 | 42 09 | 79 57 | A | 8 | 11 |
| 19 | 22 21 46,6 | 42 04 | 78 22 | 6 | 9 | 7 |
| 24 | 07 36 35,3 | 42 53 | 77 58 | A | 9 | 5 |
| | | November | | | | |
| 4 | 19 00 49,2 | 42 42 | 77 44 | A | 9 | 6 |
| 5 | 10 13 55,5 | 43 39 | 75 24 | A | 8 | 13 |
| 10 | 05 29 47,2 | 41 50 | 79 25 | A | 8 | 11 |
| 22 | 10 53 22,0 | 43 05 | 75 00 | A | 9 | 3 |
| 29 | 07 33 25,8 | 44 27 | 76 58 | 6 | 9 | 1 |
| 30 | 19 57 19,7 | 41 57 | 77 32 | A | 11 | 7 |
| | | December | | | | |
| 3 | 00 01 05,6 | 43 04 | 78 20 | A | 7 | 5 |
| 8 | 08 53 13,2 | 42 22 | 79 20 | A | 11 | 7 |
| 10 | 06 28 02,8 | 43 00 | 78 27 | A | 9 | 5 |
| 12 | 15 29 00,8 | 43 23 | 78 07 | A | 8 | 5 |
| 13 | 13 37 54,0 | 41 40 | 79 10 | A | 9 | 11 |
| 22 | 03 45 22,0 | 42 50 | 77 59 | A | 8 | 5 |
| 23 | 11 09 19,2 | 41 56 | 78 25 | A | 9 | 7 |
| 26 | 12 02 30,8 | 43 06 | 75 05 | A | 9 | 3 |
| 28 | 10 49 46,2 | 43 09 | 76 59 | 6 | 7 | 4 |
| 31 | 06 27 37,0 | 42 24 | 78 40 | A | 8 | 8 |
| | 14 22 37,6 | 42 47 | 78 00 | A | 10 | 5 |

EARTHQUAKES OF ALTAY AND SAYAN

[Article by I. D. Tsibul'chik, A. G. Filina]

The seismic observations in Altay-Sayan Oblast in 1974 were realized by the same network of stations as in 1973. The equipment and the procedure for processing earthquakes also were unchanged.

With respect to the total number of earthquakes (Fig 1, 2) 1974 was approximately on the 1973 level. The number of earthquakes with K≥12 increased somewhat:

| K | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|
| No of earthquakes | 68 | 14 | 12 | 3 | - | 1 |

As before increased seismicity characterized the vicinity of the Ureg-Nurskoye earthquake of 1970. For 5 years after the basic shock the series of aftershocks continued, the distribution of which with respect to energy classes was as follows in 1974:

| K | 5-7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|
| No of aftershocks | 51 | 34 | 8 | 2 | - | - | 1 |

The total number of aftershocks in 1974 was somewhat lower than in 1973. The distribution anomaly of the aftershocks with respect to energy classes in 1973 is not observed in 1974.

In Fig 3 it is quite obvious that in spite of the general trend toward a reduction in seismic activity (with respect to aftershocks) it remains on a higher level than for the 7 years preceding the Ureg-Nurskoye earthquake.

In 1973 the possibility of the occurrence of relatively strong earthquakes at the junction of the Western Sayan and Shapshal'skiy Ridges was noted. The observations of 1974 confirmed this proposition: on 5 September a 12th energy class earthquake occurred there.

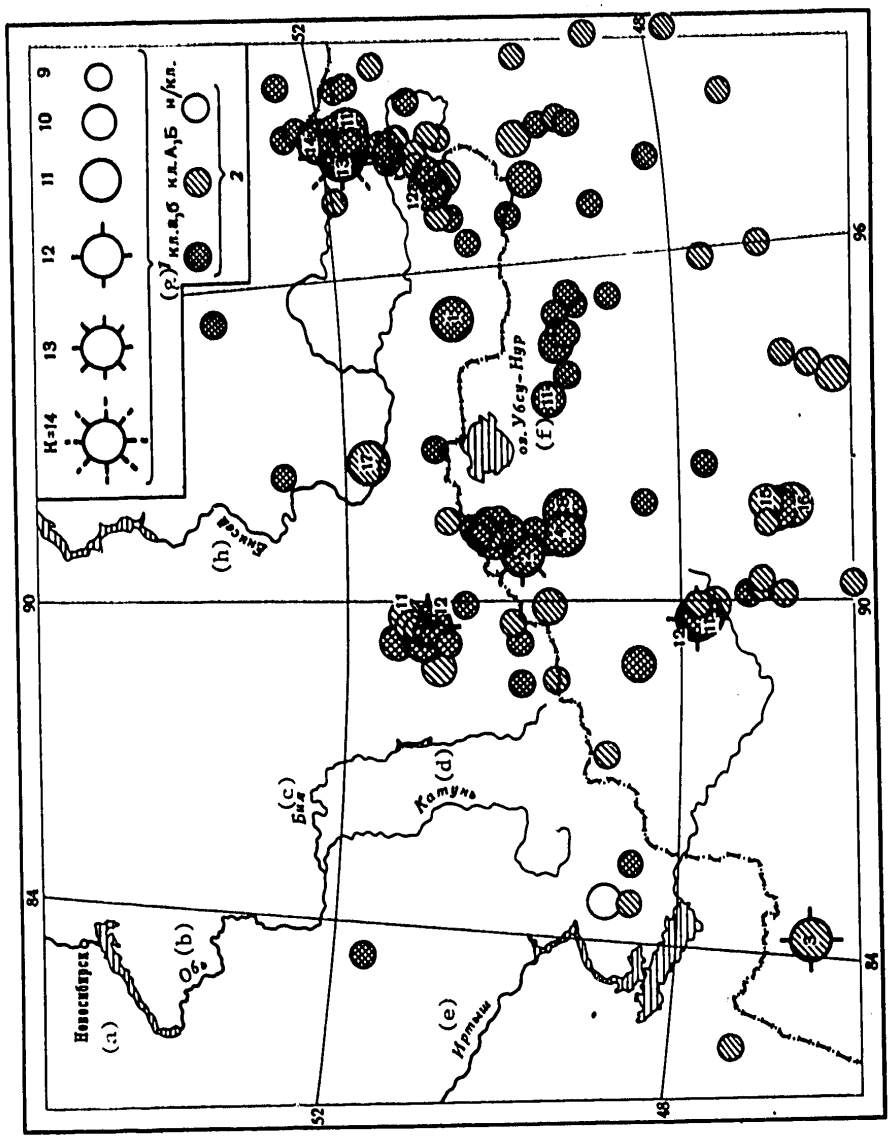


Figure 1. Map of the epicenters of earthquakes of Altay and Sayan with $K \geq 9$. 1--earthquake energy; 2--accuracy of determining the epicenter.

Key: (a) Novosibirsk (b) Ob' (c) Biya (d) Katun' (e) Irtysh (f) Ubsu-Nur Lake (g) kl. a, b; kl. A,B, n/kl. (h) Yenisey

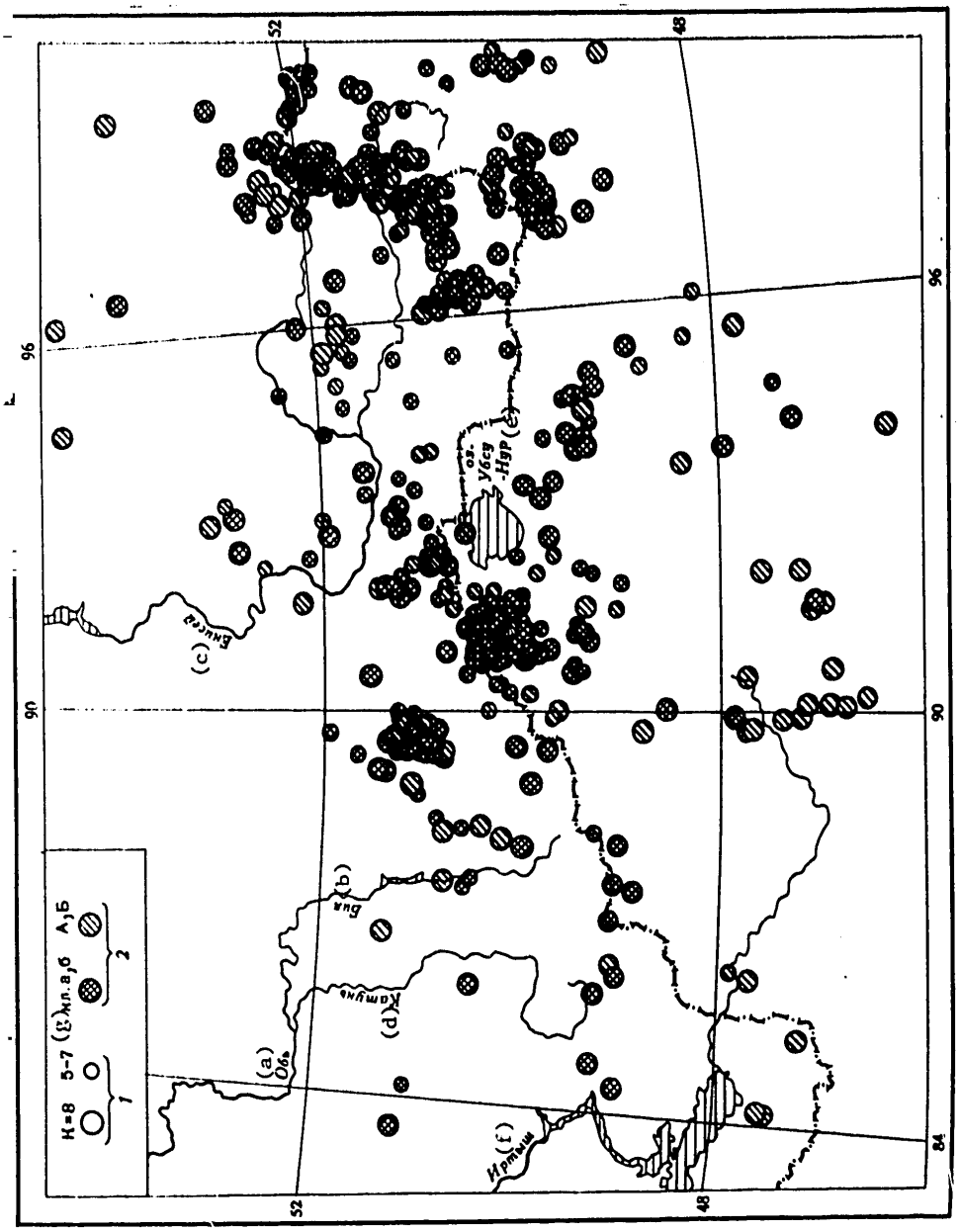


Figure 1. Map of the epicenters of the earthquakes of Altay and Sayan with $K \geq 8$. 1--energy of earthquakes; 2--accuracy of determining the epicenter.

Key: (a) Ob' (b) Biya (c) Yenisey (d) Katun' (e) Ubsu-Nur Lake (f) Irtysh (g) kl. a,b A,B

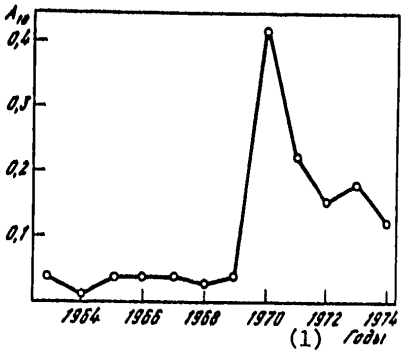


Figure 3. Graph of the behavior of the seismic activity in the vicinity of the Ureg-Nurskoye earthquake
Key:
1. years

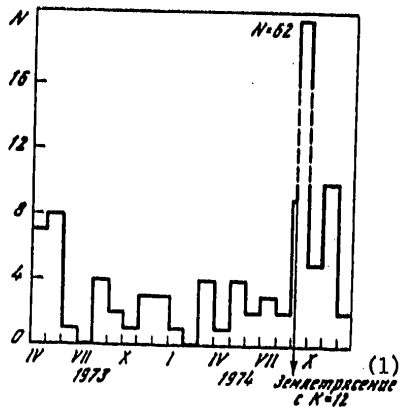


Figure 4. Behavior of the seismic process with time in the vicinity of the earthquake on 5 September ($\phi$=50.5 to 52.0°; $\lambda$=80.5 to 90.5°)
Key:
1. earthquake with K=12

Fig 4 shows the behavior with time of the seismic process in the vicinity of the earthquake of 5 September for the period from April 1973. After a brief series of aftershocks of the earthquake of 30 April 1973, the course of the seismicity equalized before September 1974 when a sharp blip is observed preceding the second earthquake of energy class 12 in this region occurring on 5 September. It is interesting to note that the earthquake of 30 April was accompanied by an insignificant number of aftershocks, whereas after the earthquake of 5 September came numerous repeated shocks. Their distribution with respect to energy classes is as follows:

| K | 5-7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|
| No of aftershocks | 50 | 22 | 5 | 1 | 1 |

As was noted in the preceding collection, the aftershocks of the earthquake of 30 April 1973 occupied an anomalously large region, although many of them were located directly near the main shock (Fig 5, a). During the period from August 1973 to February 1974, the epicenters were arranged uniformly with respect to the entire investigated region (Fig 5, b), whereas the basic seismic energy is released in the same small section. The period from March to August 1974 (Fig 5, c) is also characterized by uniform distribution of the epicenters with respect to the entire region with predominance of strong earthquakes along its periphery. The sharp blip noted on the graph for the behavior of the seismic process beginning on 2 September includes the foreshocks of the earthquake of 5 September basically located in the vicinity of the future earthquake. The region of greatest concentration of the aftershocks of the earthquake of 30 April 1973 is in that period aseismic (Fig 5, d).

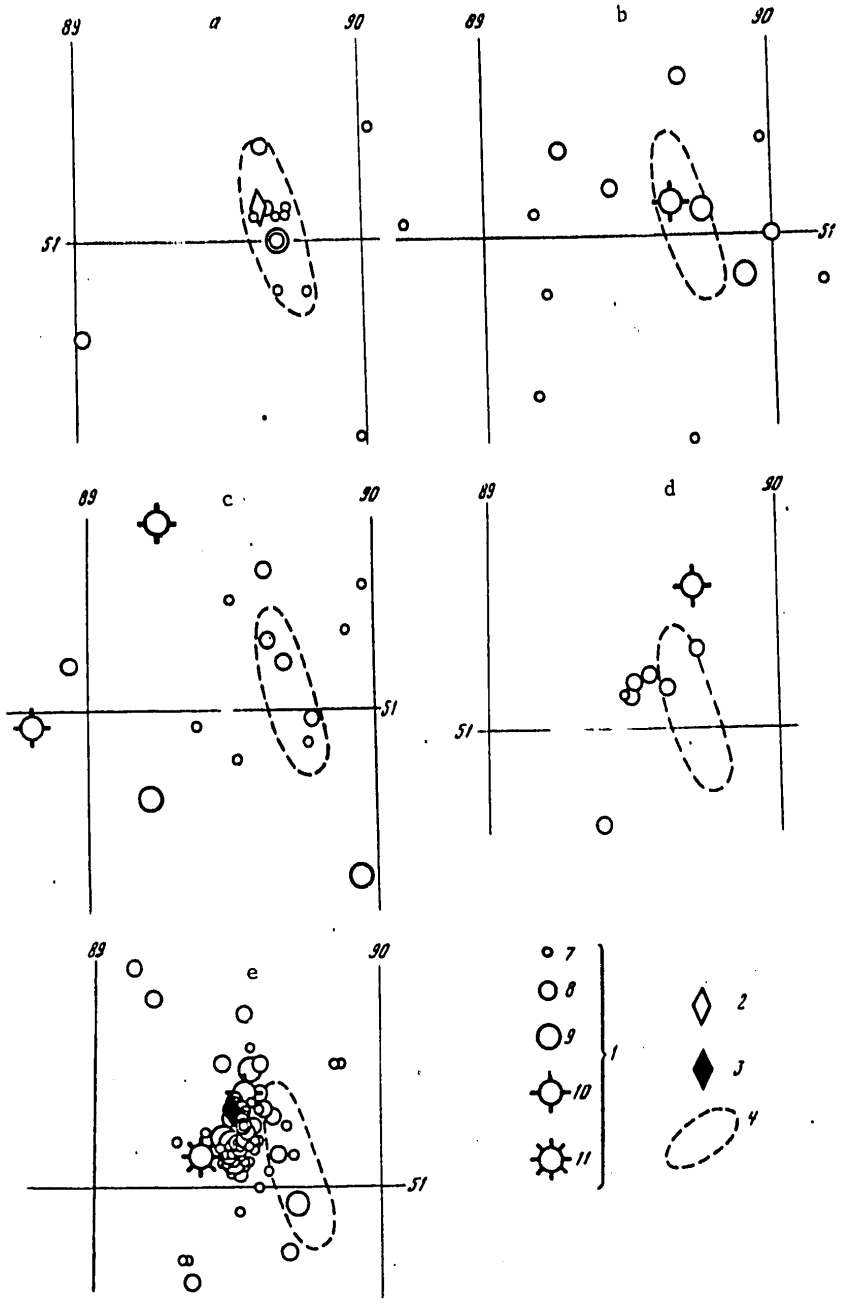


Figure 5 [see legend on p 13i]

Figure 5 [see p 130],

Development of the seismic process before and after the earthquake of 5 September in the section bounded by the coordinates: $\phi$=50.5 to 52.5°; $\lambda$=80.5 to 90.5°.
1 -- energy of the earthquake; 2 -- shock on 30 April 1973 with K=12; 3 -- shock on 5 September 1974 with K=12; 4 -- region of maximum concentration of aftershocks of the earthquake of 30 April 1973.

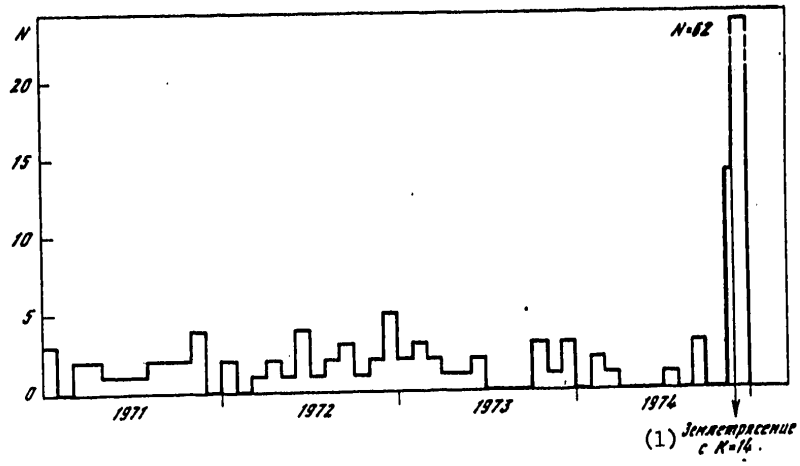


Figure 6. Behavior of the seismic process in the vicinity of the earthquake of 29 November ($\phi$=51.3 to 52.0°; $\lambda$=98.0 to 99.0°).

Key:
1. Earthquake with K=14.

The aftershocks of the earthquake of 5 September occupy an anomalously large region (60x80 km) with predominant concentration in the vicinity of the epicenter of the earthquake of 5 September at the northwestern edge of the region of maximum concentration of aftershocks of the earthquake of 30 April (Fig 5, e). From Fig 5 it is easily seen how in the time preceding this earthquake various sections of the investigated region were activated alternately.

The stressed state in the center of the earthquake of 5 September changed little by comparison with the stress distribution at the center of 30 April 1973. Both the first and the second earthquakes occurred under the conditions of close to horizontal tension of a northwesterly strike. The axis of compression maintains the direction of the strike, but it rotates to a near vertical position. Both nodal planes found for the earthquake of 5 September are extended in the northeasterly direction and, independently of the choice of one of them as the fracture plane, the movement at the center of the earthquake will be of the nature of the normal fault. The components of the movement of plane I along the strike of 65°, with respect to dip 25°, azimuth 17°, a=47°. The components of the movement of plane II with respect to strike 66°, with respect to dip 24°, azimuth 52°, a=49°. The azimuth of the axis of the compressive stress 30°, intermediate 21.5°, tension 125°. The angles formed by the axis of compressive stress with the horizontal, 71°, intermediate stress 18°, tensile stress 2°.

As before, the vicinity of the northeastern boundary of Tuva and Mongolia is seismically active. In this section an earthquake with energy class 14 occurred on 29 November. In 1966 a shock of energy class 13 was recorded 30 km from the epicenter of 29 November. The graph of the behavior of the seismic process in the vicinity of the epicenter of 29 November constructed for more than a 3-year observation period indicates significant seismic activity also in subsequent years (Fig 6). Some decrease in seismic activity from July 1973 to November 1974 is well obvious in the figure. Directly before the earthquake, beginning on 13 November, a sharp rise in seismicity was recorded. The earthquake was accompanied by aftershocks:

| K | 5-7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|
| No of aftershocks | 30 | 23 | 9 | 1 | 1 |

The localization of the epicenters of the earthquakes preceding the shock of 29 November beginning in 1971 and its aftershocks is indicated in Fig 7. The entire observation period was provisionally divided into five intervals; during the first of them, including 1971, the basic mass of the shocks was located in the southwest part of the investigated section where the greater part of the seismic energy was released ( Fig 7, a). During the following period of time (January 1972 to September 1973) the epicenters were located uniformly along a strip stretching from the southwest to the northeast through the entire investigated region, but the basic part of the

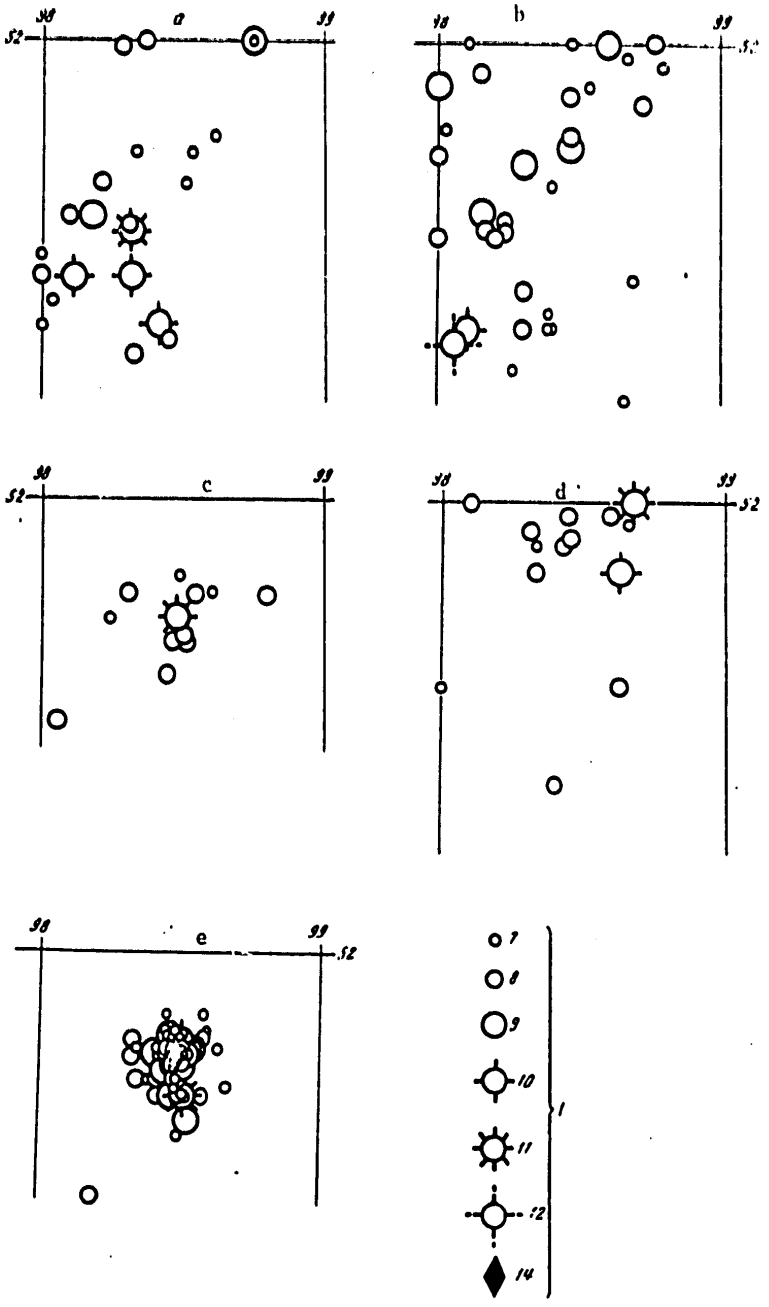


Figure 7. Development of the seismic process before and after the earthquake of 29 November in the section bounded by the coordinates: $\phi$=51.3-52.0°, $\lambda$=98.0-99.0°.
1 -- energy of the earthquakes.

seismic energy as before went to the same southwestern section (Fig 7, b). During the third time interval (from October 1973 to November 1974), the epicenters were located in the northeast within the boundaries of a relatively small territory, and the previously active southwestern section becomes nonseismic (Fig 7, c). The fourth time interval is the shortest (from 13 to 29 November), and it contains the foreshocks of the investigated strong earthquake (Fig 7, d). All of the earthquakes are stretched out to the region of the indicated earthquake, and the sections that are active in the preceding periods do not participate in the third period in the seismic process. The fifth period (from 29 November to 31 December) contains a series of aftershocks densely located around the main shock (Fig 7, e). The dimensions of the aftershock region are 30x20 km.

As is obvious from Fig 7, the seismic process which develops in time, alternately includes different conjugate parts of the territory not encompassing the region of the center of the future earthquake directly.

Catalog of Earthquakes of Altay and Sayan with K≥9 in 1974

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | (4) Координаты эпицентра $\varphi^0$N | $\lambda^0$E | (5) Класс точности | K | (6) № района |
|---|---|---|---|---|---|---|---|
| | | | January | | | | |
| | 1 | 15 32 28 | 51,2 | 98,2 | A | 9 | 3 |
| | 3 | 09 31 40,0 | 50,82 | 97,90 | 6 | 9 | 3 |
| | 5 | 14 39 02,1 | 50,13 | 91,28 | 6 | 10 | 1 |
| | 7 | 02 41 06 | 48,6 | 84,7 | A | 9 | 15 |
| | 12 | 12 39 42,5 | 52,42 | 98,83 | 6 | 9 | 4 |
| | 13 | 08 48 04,6 | 52,45 | 99,73 | 6 | 9 | 4 |
| | 15 | 01 53 40 | 50,7 | 98,5 | A | 9 | 23 |
| | | 21 07 5· | 49,6 | 99,7 | A | 9 | 8 |
| | 18 | 08 08 00 | 49,05 | 98,37 | 6 | 9 | 8 |
| | 21 | 09 54 19 | 46,0 | 80,6 | A | 9 | 24 |
| | 22 | 01 02 11,8 | 50,70 | 97,60 | 6 | 10 | 7 |
| 1 | | 01 23 06,0 | 50,63 | 97,58 | 6 | 11 | 7 |
| | 23 | 19 53 53 | 50,7 | 97,6 | A | 9 | 7 |
| | 25 | 06 17 12,1 | 49,40 | 95,15 | 6 | 9 | 9 |
| | 28 | 16 04 23,0 | 49,27 | 94,75 | 6 | 9 | 9 |
| | 30 | 06 05 35 | 48,9 | 87,3 | A | 9 | 11 |
| | | 19 21 18 | 47,6 | 95,9 | A | 9 | 25 |
| | | | February | | | | |
| | 1 | 19 54 29 | 48,9 | 84,7 | | 10 | 15 |
| | 5 | 12 43 18,0 | 49,45 | 98,45 | 6 | 9 | 8-25 |
| | | 21 04 17 | 51,2 | 98,4 | A | 9 | 3 |
| | 6 | 17 23 26,5 | 49,25 | 95,48 | 6 | 9 | 9 |
| | 7 | 15 48 22,0 | 49,40 | 94,53 | 6 | 10 | 9 |
| | 9 | 21 44 28 | 49,2 | 98,5 | A | 9 | 8 |
| | 17 | 02 49 38,5 | 48,47 | 91,72 | 6 | 9 | 10 |
| | 21 | 15 49 40 | 49,7 | 98,2 | A | 10 | 7 |
| 2 | 22 | 04 59 28,0 | 49,37 | 91,62 | 6 | 11 | 11 |
| | | | March | | | | |
| 3 | 6 | 21 35 39 | 46,4 | 84,3 | A | 12 | 14 |
| | 8 | 13 51 33 | 46,7 | 94,2 | A | 9 | 10 |
| | 16 | 15 01 04,0 | 52,72 | 92,38 | 6 | 9 | 2 |
| | 22 | 00 37 09 | 51,9 | 97,5 | A | 9 | 3 |
| 4 | | 18 13 41,5 | 49,95 | 90,87 | 6 | 13 | 10 |
| | | | | | | $M$=5,1 | |
| | 23 | 19 50 19,5 | 50,57 | 96,97 | 6 | 9 | 7 |
| | 25 | 11 34 51,0 | 50,25 | 91,30 | 6 | 10 | 1 |
| | 27 | 10 08 50 | 50,0 | 89,6 | A | 9 | 1 |
| | | 13 44 03,0 | 50,88 | 92,80 | 6 | 9 | 6 |
| | 28 | 06 12 24,0 | 51,67 | 83,40 | 6 | 9 | 1 |
| | 29 | 15 25 52 | 47,2 | 82,4 | A | 9 | 14 |
| | 30 | 07 48 49 | 49,5 | 88,6 | A | 9 | 1 |
| | | | April | | | | |
| | 3 | 01 10 02,0 | 50,92 | 99,17 | 6 | 9 | 23 |
| | 7 | 10 08 46 | 50,9 | 98,2 | A | 9 | 3 |
| | 9 | 17 35 45 | 50,9 | 98,2 | A | 9 | 3 |
| | | 21 50 58 | 50,6 | 98,4 | A | 9 | 7 |
| | 13 | 17 19 32,0 | 52,30 | 98,90 | 6 | 9 | 4 |
| | 24 | 07 19 58,5 | 49,80 | 91,27 | 6 | 9 | 10 |
| | 25 | 04 41 37 | 51,3 | 99,9 | A | 9 | 23 |
| | | 17 10 58 | 51,1 | 98,5 | A | 9 | 3 |
| | 27 | 12 37 54 | 51,2 | 98,4 | A | 9 | 3 |

[See key, p 137]

[Continued]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | (4) Координаты эпицентра $\varphi^{\circ}N$ | $\lambda^{\circ}E$ | (5) Класс точности | $K$ | (6) № района |
|---|---|---|---|---|---|---|---|
| | | | May | | | | |
| | 3 | 06 10 26,6 | 50,42 | 96,48 | 6 | 9 | 7 |
| | | 23 00 09,0 | 53,50 | 95,33 | 6 | 9 | 4 |
| | 7 | 21 07 37,4 | 51,23 | 98,28 | 6 | 9 | 3 |
| | 10 | 23 13 35,0 | 50,82 | 89,22 | 6 | 9 | 1 |
| | 15 | 00 56 13,8 | 49,67 | 97,53 | 6 | 10 | 7 |
| | 22 | 16 45 25,0 | 51,40 | 89,25 | 6 | 10 | 2 |
| | | | June | | | | |
| | 15 | 10 05 49 | 50,6 | 97,7 | A | 10 | 7 |
| | | 12 14 25 | 50,7 | 97,0 | A | 9 | 7 |
| | 22 | 05 43 43,5 | 50,42 | 91,18 | 6 | 9 | 5 |
| | 23 | 22 29 37,2 | 49,32 | 94,00 | 6 | 9 | 9 |
| | | | July | | | | |
| | 3 | 08 12 38 | 50,8 | 91,5 | A | 9 | 5 |
| | 16 | 02 25 12 | 50,9 | 88,8 | A | 10 | 1 |
| | 19 | 12 22 32 | 50,3 | 91,3 | A | 9 | 5 |
| | 22 | 19 56 27,2 | 47,10 | 90,33 | A | 9 | 11 |
| | | | August | | | | |
| | 3 | 10 45 04,0 | 50,37 | 91,45 | 6 | 9 | 5 |
| | | 11 48 06,0 | 50,65 | 89,95 | 6 | 9 | 1 |
| | 20 | 19 03 00 | 48,92 | 88,50 | 6 | 9 | 11 |
| | 26 | 23 21 44 | 47,1 | 90,2 | A | 9 | 11 |
| | 27 | 02 38 45,6 | 49,17 | 95,07 | 6 | 9 | 9 |
| | 30 | 14 57 41,5 | 49,52 | 93,62 | 6 | 10 | 9 |
| | | | September | | | | |
| | 2 | 00 31 18,3 | 48,90 | 96,97 | 6 | 9 | 8 |
| | | 15 14 01 | 51,3 | 89,7 | A | 10 | 2 |
| 5 | 5 | 03 57 13,7 | 51,17 | 89,47 | 6 | 12 | 2 |
| 6 | | 05 09 24,0 | 51,07 | 89,37 | 6 | 11 | 1 |
| | | 20 42 43,0 | 49,88 | 96,90 | 6 | 9 | 7 |
| | 7 | 10 18 34 | 51,2 | 89,5 | A | 10 | 2 |
| | | 10 29 51 | 51,2 | 89,5 | A | 9 | 2 |
| | | 13 39 38 | 51,1 | 89,4 | A | 9 | 1 |
| | | 13 47 05,0 | 50,97 | 89,40 | 6 | 9 | 1 |
| | 9 | 17 42 12 | 47,6 | 89,9 | A | 10 | 11 |
| | 10 | 03 27 19,3 | 51,05 | 89,48 | 6 | 9 | 1 |
| 7 | | 07 18 41,2 | 52,00 | 98,68 | 6 | 11 | 3 |
| | | 12 31 35,6 | 49,95 | 89,27 | 6 | 9 | 1 |
| 8 | 11 | 03 31 22,0 | 49,43 | 91,17 | 6 | 11 | 10 |
| | 13 | 14 50 56,0 | 51,08 | 89,48 | 6 | 9 | 1–2 |
| | 23 | 02 54 39,8 | 49,33 | 94,75 | 6 | 9 | 9 |
| | | | October | | | | |
| | 6 | 03 00 23 | 46,0 | 90,2 | A | 9 | 12 |
| | 9 | 11 31 39 | 46,8 | 90,1 | Б | 9 | 11 |
| | 12 | 23 18 22,3 | 50,25 | 91,30 | 6 | 9 | 1 |
| | 14 | 00 59 10,0 | 48,18 | 97,70 | 6 | 9 | 25 |
| 9 | 16 | 04 50 21,5 | 47,72 | 89,73 | 6 | 11 | 11 |
| 10 | 24 | 02 01 48,0 | 50,60 | 95,17 | 6 | 11 | 6–7 |
| 11 | 25 | 06 56 31 | 47,8 | 89,7 | A | 12 | 11 |

[Continued]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | (4) Координаты эпицентра $\varphi^0$ N | $\lambda^0$ E | (5) Класс точности | K | (6) № района |
|---|---|---|---|---|---|---|---|
| | | | November | | | | |
| | 4 | 07 57 45,0 | 48,75 | 95,35 | 6 | 9 | 10 |
| | 15 | 17 20 35,9 | 48,67 | 99,97 | 6 | 9 | 8 |
| 12 | 17 | 13 04 50,0 | 51,75 | 98,47 | 6 | 11 | 3 |
| | 18 | 09 48 45 | 47,0 | 96,0 | А | 9 | 10 |
| | 19 | 16 53 03,0 | 50,30 | 91,38 | 6 | 9 | 5 |
| | 24 | 08 42 30,0 | 48,52 | 88,92 | 6 | 10 | 11 |
| | 25 | 04 57 07,0 | 47,25 | 90,08 | 6 | 9 | 11 |
| | 28 | 18 18 11 | 50,3 | 91,2 | А | 9 | 1 |
| 13 | 29 | 21 05 27,7 | 51,99 | 98,67 | 6 | 14 $M = 5,2$ | 3 |
| 14 | | 21 21 43,9 | 51,70 | 98,50 | 6 | 11 | 3 |
| | | 21 26 43,7 | 51,78 | 98,48 | 6 | 9 | 3 |
| | 30 | 00 27 11,2 | 51,79 | 98,51 | 6 | 9 | 3 |
| | | 17 41 15,3 | 51,65 | 98,51 | 6 | 9 | 3 |
| | | | December | | | | |
| | 1 | 02 40 04,2 | 51,80 | 98,50 | 6 | 10 | 3 |
| | | 06 43 21,0 | 51,76 | 98,50 | а | 9 | 3 |
| | | 06 45 11,0 | 51,78 | 98,47 | 6 | 9 | 3 |
| | 3 | 08 28 32 | 46,1 | 93,8 | Б | 10 | 11 |
| | 4 | 09 09 27,7 | 48,58 | 85,43 | 6 | 9 | 15 |
| | 5 | 00 02 53,4 | 51,70 | 98,45 | 6 | 9 | 3 |
| | 12 | 04 00 42,9 | 51,63 | 99,58 | 6 | 9 | 4 |
| | | 22 35 07 | 46,4 | 94,0 | А | 9 | 11 |
| | 15 | 17 33 36,8 | 51,80 | 98,53 | 6 | 9 | 3 |
| | 20 | 04 14 42 | 51,8 | 98,4 | А | 9 | 3 |
| | 21 | 14 44 32,4 | 51,75 | 98,42 | 6 | 9 | 3 |
| 15 | 22 | 10 42 38,0 | 46,90 | 91,53 | 6 | 11 | 11 |
| 16 | | 10 43 04 | 46,7 | 91,6 | А | 11 | 11 |
| | 23 | 15 28 58 | 47,2 | 98,6 | А | 9 | 25 |
| | | 19 30 36 | 47,0 | 91,3 | А | 9 | 11 |
| 17 | 24 | 02 53 37 | 51,7 | 92,6 | А | 11 | 2 |
| | 26 | 03 27 48,5 | 47,70 | 92,33 | 6 | 9 | 11 |
| | | 14 25 17 | 47,0 | 91,5 | А | 10 | 11 |
| | 27 | 14 28 08,7 | 51,78 | 98,37 | 6 | 9 | 3 |
| | 29 | 04 18 51,6 | 51,73 | 99,53 | а | 9 | 3 |
| | | 06 16 30 | 47,8 | 89,9 | А | 9 | 11 |
| | | 12 52 30 | 48,7 | 100,0 | А | 9 | 8 |

Key:

1. No
2. Number
3. Time of occurrence, hours, minutes, seconds
4. Coordinates of the epicenter
5. Accuracy class
6. No of the region

EARTHQUAKES OF PRIBAYKAL'YE [THE BAYKAL REGION]

[Article by S. I. Golenetskiy]

The seismicity of the Baykal region was studied in 1974 by the observations of the same network of 18 stationary seismic stations as in the preceding years. Neither the equipment used nor its frequency characteristics were altered significantly in 1974. The procedure for studying the seismicity was retained for the most part.

Some of the changes since 1974 have been introduced into the summary processing of the observations of the network of seismic stations described previously in [1]. On the basis of the results of studying the average hodographs of the seismic waves since 1974 the following values of the velocities of the longitudinal and transverse waves were assumed: $V_P$=6.15 km/sec and $V_S$=3.58 km/sec [2]. The relation obtained by K. I. Bukina for the coefficient k for determining the initial time of occurrence of an earthquake -- the time at the center -- as a function of the epicentral distance or from S-P was introduced into the processing. This relation was obtained as a result of studying 68 strong earthquakes, and it has the following form: k=0.001 Δkm+2.3 (k=2.31; 2.32; 2.35; 2.40, respectively for the epicentral distances of 100, 200, 500 and 1000 km). This makes it possible to improve the agreement of the time of occurrence of the earthquakes established on the one hand by the difference S-P, and on the other hand, the times of arrival of the S wave with respect to the finally determined epicenter. When using a constant value of k=7/3 differences of up to several seconds were systematically observed between them. Differences were also noted in the times of occurrence of the earthquake established by the Vatai graphs. The indicated variations of the procedure do not solve the problem completely (in particular, the possible systematic deviations of the individual seismic stations are still not taken into account), but they improve the determination of the basic parameters of the earthquakes, especially the epicenters in the epicentral order zones bordering with the adjacent Altay-Sayan (on the west) and the Yakut (on the east) seismic regions.

An effort was made for the first time using the materials of 1974 to realize a summary processing of the observations of the networks of seismic stations of adjacent regions for more exact establishment of the epicenters in the transition belts from Altay-Sayan to Baykal (between the 96th and the 99th meridian) and from the Baykal to the Yakut seismic zones (between the 120th and 122d meridians, north of the 56th parallel). The epicenters in the indicated territories are determined by the required set of observations by the seismologists of Novosibirsk and Yakutsk. For the rest, the procedure used did not differ from that used when compiling the seismicity surveys in preceding years.

In 1974 a total of 2365 earthquake epicenters were determined in the Baykal seismic zone, that is, the usual number for a year of average seismicity in recent times. The strongest earthquakes (from energy class 12) are presented in Table 1. The epicenters of three of them (24 June, 8 October and 21 November), although formerly outside the zone, lie close to its boundaries and therefore are included in the table.

The distribution of the investigated shock with respec to energy classes is illustrated in Table 2. This distribution is characterized by relative lowering of the number of earthquakes of energy class 11, especially in the southwestern half of the rift region which leads to an increase in the angular coefficients of the recurrence rate graphs $\gamma$ and an increase in the error in determining them. A comparison of the annual number of shocks of different energy in the entire zone and individual parts of it by the materials of the seismicity surveys in recent years indicates the unquestioned overall constancy of the seismic process.

Table 1

Earthquakes with K≥12 Recorded in the Baykal Seismic Zone

| (1) № п/п | (2) Дата | (3) Момент возникновения, час мин сек | (4) Координаты эпицентра | | K |
|---|---|---|---|---|---|
| | | | $\varphi^{\circ}$ N | $\lambda^{\circ}$E | |
| 1 | 22.I | 22 25 35,6 | 54,90 | 112,62 | 12 |
| 2 | 19.II | 02 05 48,2 | 56,39 | 112,69 | 12 |
| 3 | 13.IV | 05 01 32,3 | 55,43 | 111,33 | 12 |
| 4 | 21.VI | 20 56 44,5 | 56,35 | 117,70 | 14 |
| 5 | 24.VI | 08 30 30,2 | 56,85 | 122,22 | 12 |
| 6 | 1.VII | 05 21 44,2 | 56,09 | 113,81 | 13 |
| 7 | 22.VIII | 04 46 14,9 | 53,83 | 109,08 | 12 |
| 8 | 8.X | 03 07 14 | 60,5 | 118,4 | 13 |
| 9 | 10.X | 00 43 34,2 | 53,83 | 109,10 | 12 |
| 10 | 17.XI | 13 04 51,1 | 51,73 | 98,51 | 12 |
| 11 | 21.XI | 02 35 04,2 | 54,05 | 123,74 | 13 |
| 12 | 29.XI | 21 05 27,7 | 51,79 | 98,47 | 14 |
| 13 | 16.XII | 16 03 40,3 | 56,15 | 116,46 | 12 |
| 14 | 18.XII | 07 54 37,7 | 48,39 | 103,15 | 14 |

Key: 1. Item No; 2. date; 3. time of occurrence, hours, minutes, seconds; 4. epicenter coordinates

The list of earthquakes with energy class 9 is presented in the catalog containing information about 305 shocks. The numbers of the region are presented in accordance with the schematic for division of the zone into provisional regions [1].

The maps of the epicenters of the stronger (K≥9) and weaker (K=7 to 8) earthquakes are presented in Figures 1 and 2. The activity map constructed by the previously described procedure in the isolines of the seismic activity $A_{10}$ by the data on earthquakes with K≥9 is shown in Fig 3.

Table 2

Distribution of the Earthquakes of Pribaykal'ye by Energy Class

| K | (1) Число землетрясений | | | |
|---|---|---|---|---|
| | Вся зона (2) | Рифт (3) | Северо-восточная часть рифта I (4) | Юго-западная часть рифта II (5) |
| 14 | 3 | 1 | 1 | – |
| 13 | 3 | 1 | 1 | – |
| 12 | 8 | 6 | 4 | 2 |
| 11 | 13 | 7 | 6 | 1 |
| 10 | 56 | 37 | 29 | 8 |
| 9 | 222 | 143 | 92 | 51 |
| 8 | 724 | 467 | 307 | 160 |
| 7 | 1079 | 899 | 746 | 153 |
| 6 | 257 | 224 | 190 | 34 |
| 5 | 9 | 9 | 9 | – |
| (6) | 2374 | 1794 | 1385 | 409 |
| γ | −0,51±0,04 | −0,51±0,06 | −0,50±0,04 | −0,55±0,12 |

Key:
1. No of earthquakes
2. Entire zone
3. Rift
4. Northeastern part of the rift I
5. Southeastern part of the rift II
6. Total number of earthquakes

The development of the seismic process with time in the vicinity of the Baykal rift is characterized by the diagram (Fig 4) where the earthquakes are presented in the projection on the provisional axis of the rift system (see the preceding seismicity surveys for Pribaykal'ye).

The seismicity of Pribaykal'ye in 1974 reflects the natural continuation of the seismic process observed in the preceding time. This finds reflection both in the main features of the general structure of the epicentral field, from year to year giving the same picture coordinated with the vicinity of the Baykal rift, and in individual specific, more local manifestations.

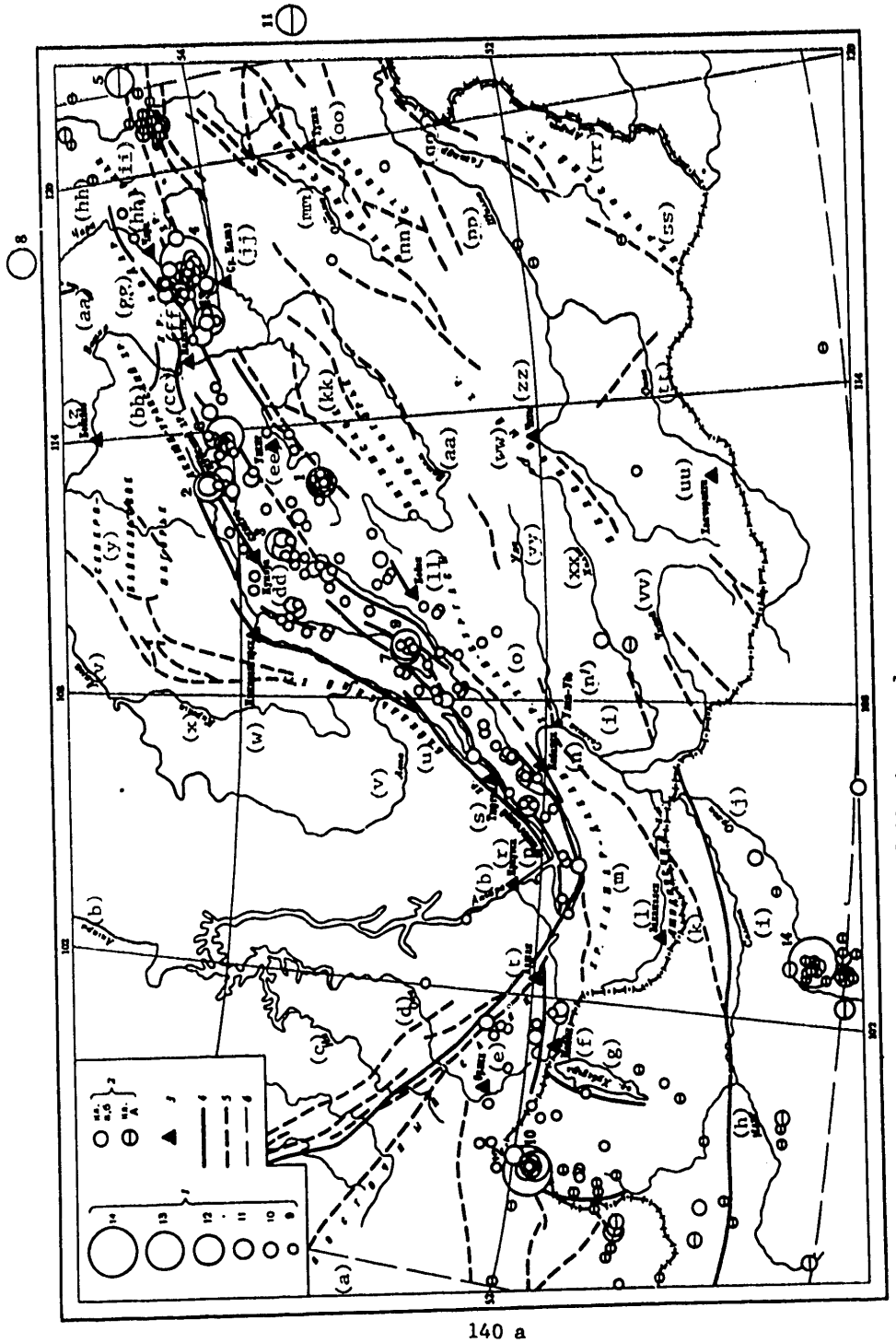

Figure 1. [Title and key on following page]

Figure 1. Map of epicenters of the earthquakes of the Baykal Zone with $K \geq 9$. 1--energy of earthquakes; 2--accuracy of determining epicenters; 3--seismic stations; 4--activated faults; 5--faults; 6--boundary of seismic zone; 7-14--earthquakes with $K \geq 12$ in chronological order.

Key:

(a) Eastern Sayan
(b) Angara
(c) Iya
(d) Oka
(e) Orlik
(f) Mondy
(g) Lake Khubsugul
(h) Iler
(i) Selenga
(j) Orkhon
(k) Dzhidinskiy Ridge
(l) Zakamensk
(m) Khamar-Daban Ridge
(n) Kabansk
(n') Ulna-Ude
(o) Ulan-Burgasy Ridge
(p) Primorskiy Ridge
(r) Irkutsk
(s) Tyrgan
(t) Arshan
(u) Baykal Ridge
(v) Lena River
(w) Nizhneangarsk
(x) Kirenga
(y) Northern Baykal Highland
(z) Bodaybo
(aa) Vitim
(bb) Delyun-Uranskiy Ridge
(cc) Northern Muya Ridge
(dd) Kumora
(ee) Uakit
(ff) Nelyaty
(gg) Kodar Ridge
(hh) Chara
(ii) Udokan Ridge
(jj) Sr. Kalar
(kk) Vitim Plateau
(ll) Bodon
(mm) Olekma
(nn) Olekmaskiy Stanovik
(oo) Tupik
(pp) Shilka
(qq) Gazimur
(rr) Argun'
(ss) Nerchinskiy Ridge
(tt) Onon
(uu) Khapcheranga
(vv) Chikoy
(ww) Yablonovyy Ridge
(xx) Khilok River
(yy) Uda River
(zz) Chita

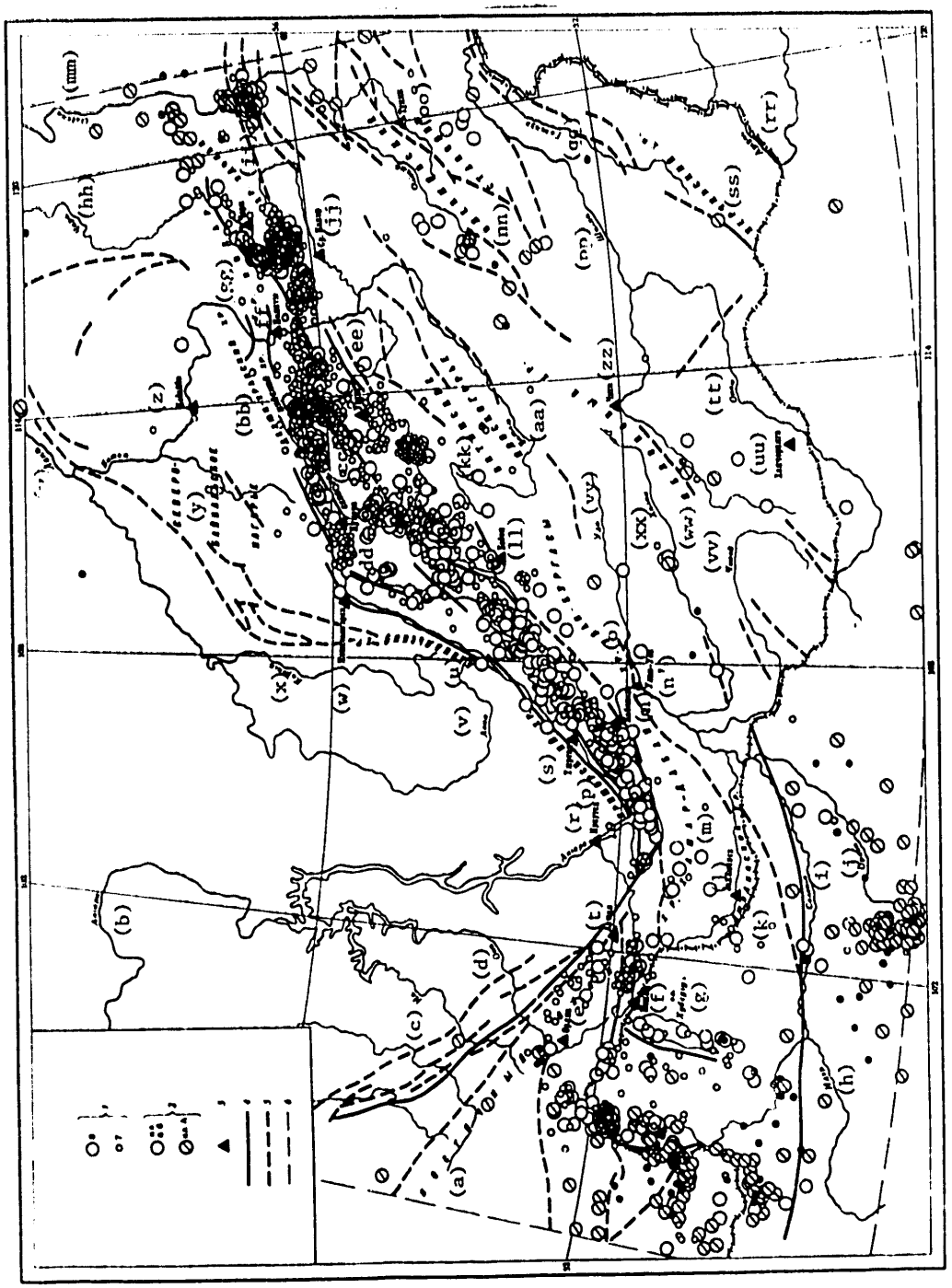

Figure 2. [Title and key on following page]

[Title and key to map on preceding page]

Figure 2. Map of epicenters of earthquakes of the Baykal Zone with K = 7-8. 1--energy of earthquakes; 2-6--see Figure 1.

[Key the same as in Figure 1]

[Title and key to map on following page]

Figure 3. Map of seismic activity of the Baykal Zone in 1974 (in the isolines $A_{10}$). 1--isolines of seismic activity $A_{10}$; 2--activated faults; 3--faults; 4--boundaries of the seismic zone; 5--energy of earthquakes; 6--seismic stations

[Key is same as for map in Figure 1]

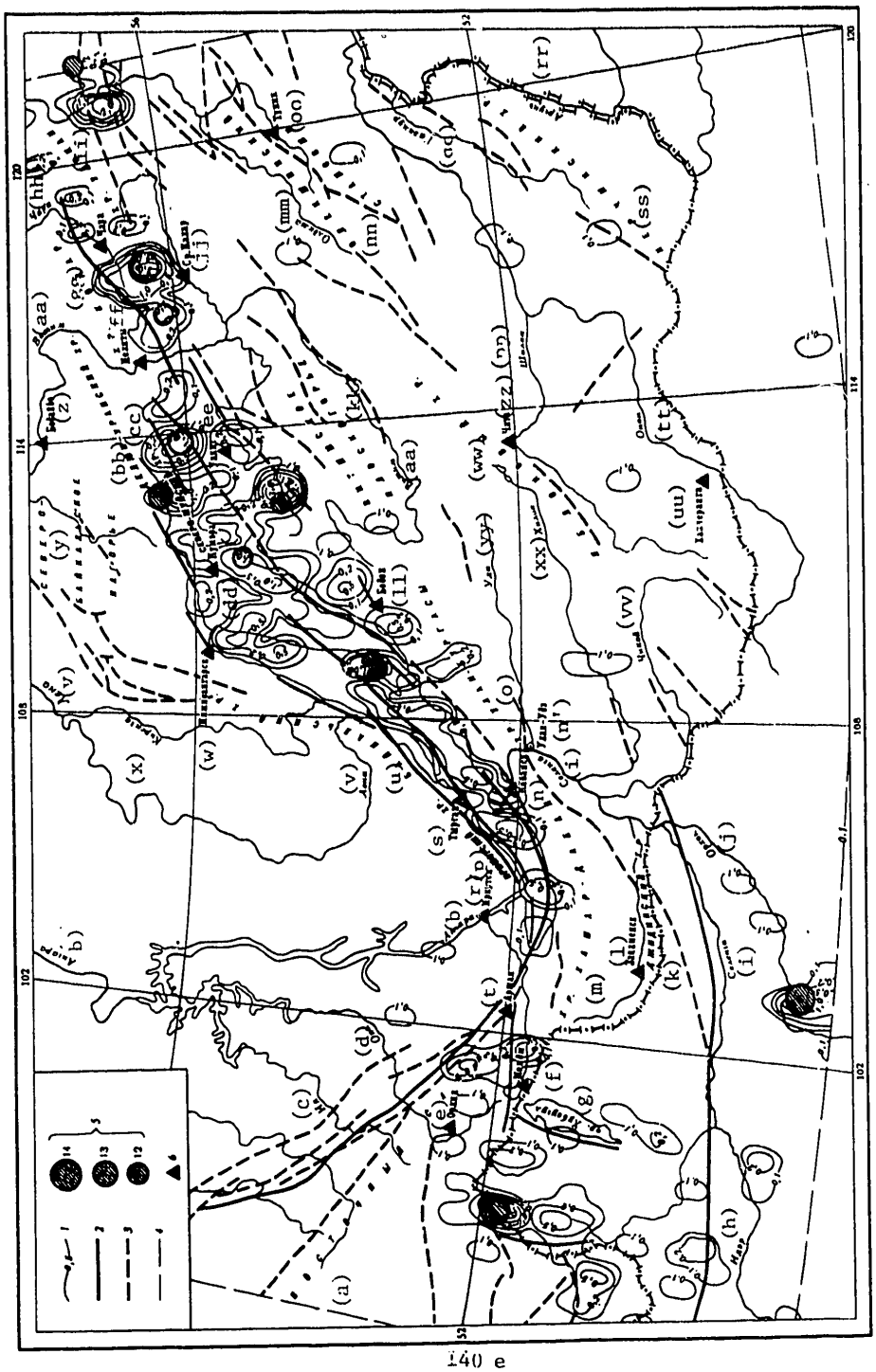

Figure 3. [Title and key on preceding page]

The predominant with respect to 1973 was the increased seismic activity during the first half of 1974 in the vicinity of the northeastern part of the Tsipikanskaya Basin after the earthquake of 22 January 1974 (No 1) of energy class 12. An earthquake of the same class was recorded here on 10 May 1973, and 13th class on 16 June 1973. The description of the following quite large series of weak shocks in 1973 in this region and its seismotectonic characteristic are presented in the seismicity survey for Pribaykal'ye in 1973 [3].

In 1974 in an area bounded by the coordinates of 54.7-55.1° north latitude and 112.5-113.1° east longitude, approximately 115 earthquakes of energy classes 7 to 9 were noted. They basically occurred in January-May 1974, then before the end of the year the number of shocks was small and quite uniformly distributed with respect to months with some activation in August. Thus, in 1974 obviously it is possible to propose that completion of the time activation of the seismic process in the vicinity of the northeastern part of the Tsipikanskaya Basin is observed. The values of the seismic activity were the largest in the entire zone in 1974 ($A_{10}$=3).

As always, the region of the mountainous commissure between the Upper Angara and the Muya Basins was active in 1974 also. On 19 February 1974 (No 2) an earthquake of 12th energy class occurred in its western section, and on 1 July, an earthquake of 13th class in the eastern part. Whereas for the first of the indicated earthquakes, according to the results of studying the mechanism of the center (Table 3) out of the two possible planes of movement the plane of northeasterly strike dipping sharply to the southeast is selected, then the movement during the earthquake must be predominantly of the normal fault type. As for the center of the earthquake of 1 July, in any case the azimuth of the strike of the plane is easterly, and the movement is in practice purely an upthrow fault. The tensile stress with respect to the results for this earthquake makes a significant angle with the horizontal plane. The earthquake of 1 July was accompanied by some activation of the corresponding local region in July and August of 1974. However, no large swarms of earthquakes occurred in the vicinity of the mountain commissure between the Upper Angara and Muya Basins in 1974. The seismic activity in the western and eastern regions of the commissure in 1974 $A_{10}$=1.

The earthquake of 13 April 1974 (K=12) in the region between the Barguzinskaya and the Upper Angara Basins is of interest in that its epicenter was located in the section of the seismically active strip of northeasterly orientation noted between the Barguzinskiy Ridge and the Upper Muya Basin [4]. The earthquakesof such classes are quite rare here. The closest epicenter located somewhat to the southwest belongs to the earthquake of 1963 (K=12). The seismic activity in 1974 $A_{10}$=1.

One of the most important seismic events in the Baykal rift region in 1974 was the earthquake of 21 June with M=5.1 in the Udokanskiy Rayon. In recent times the intensity of the earthquakes recorded here increased.

Table 3

Parameters of the Mechanism of the Centers of the Earthquakes

| Date and time of occurrence of the earthquake | Plane I | | Components of movement with respect to strike | Components of movement with respect to dip | Plane II | |
|---|---|---|---|---|---|---|
| | Az° | a° | | | Az° | a° |
| 19 February 0205 hours | 10 | 19NW | +0.643 | -0.766 | 52 | 75SE |
| 21 June 2056 hours | 40 | 58SE | +0.643 | -0.766 | 99 | 50NE |
| 1 July 0521 hours | 82 | 80NW | -0.018 | +1.000 | 87 | 10SE |

In 1973 a 12th class earthquake which was maximum for that year occurred [3] with the epicenter in the Udokan uplift between the southwestern end of the Charskaya Basin and the embryonic Lurbunskaya Basin located in the central mountain steppe of the Udokan Ridge. The epicenter of the earthquake in 1974 was located, in contrast to the preceding one, not to the north, but to the south of the Lurbunskaya Basin, in the Dovachanskiy block which is the spur of the Udokan Ridge. Seismicity of this block obviously characterized by an increased seismic potential, just as the peculiarities of its tectonics, was described previously [5]. An earthquake with K=11 accompanied by aftershocks was recorded here in 1969, but the greatest activation for the entire period was noted in 1971 when the maximum shock with respect to strength also reached class 11.

The events of 1974 in practice began with the strongest shock. In the second half of 1973, the number of weak earthquakes in this area was relatively small. In 1974 in the regions bounded by the coordinates of 56.3-56.5° north latitude, 117.3-117.9° east longitude a total of 166 earthquakes of energy class 7 were recorded. The number of earthquakes, as usual, decreased with time after the basic shock. The epicentral region of the aftershocks, in addition to the Dovachanskiy block, encompassed the Lurbunskaya Basin and reached the above-indicated vicinity of the epicenter of the earthquake of 1973 (K=12). By comparison with the Kodarskoye earthquake of 1970 (K=14) the number of aftershocks of the 1974 earthquake in the Udokan region was appreciably less. In spite of the fact that the basic earthquake of 1974 is among the strongest recorded in the region in 1974, information about the macroseismic manifestations of it are meager to a significant degree as a result of the low population of the territory. By the reports of individual people, the strength of the earthquake at the permafrost station in Udokan and in the village of Sredniy Kalar (epicentral distances to 50 km) was force 4. The earthquake was felt in

Table 3, continued

(determination by L. A. Misharinoy)

| Plane II | | Stress | | | | | |
|---|---|---|---|---|---|---|---|
| Components of movements | | Compression | | Intermediate | | Tensile | |
| with respect to strike | with respect to dip | Az° | a° | Az° | a° | Az° | a° |
| -0.208 | -0.978 | 158 | 32 | 48 | 78 | 312 | 61 |
| -0.719 | -0.695 | 74 | 34 | 244 | 56 | 337 | 86 |
| +0.087 | +0.996 | 172 | 55 | 82 | 89 | 350 | 35 |

the village of Nelyaty and its environs (distances of about 100 km). Cases of waking of those who were asleep are noted. As follows from the reports, the earthquake was not felt in the villages of Chara, Kalakan and Ust'-Karenga.

According to the results of determining the mechanism of the center (Table 3) the orientation of the stress axes according to the data on the earthquake of 21 June is difficult for the Baykal rift zone: the compressive stress is closer to vertical than to horizontal, the tensile stress is in practice horizontal and oriented across the basic geological structures. However, the shear component of the movement has great significance in the process.

The value of the seismic activity in the investigated region was characterized in 1974 just as in the region of the Tsipikanskaya Basin, by a maximum level of $A_{10}=3$.

Significantly to the east of the indicated epicentral region on the Stanovoy Ridge, on 24 June 1974 a 12th class earthquake occurred. During the period of existence of the network of regional seismic stations at the same locations only one earthquake is known -- 23 October 1970.

Among the other strongest earthquakes in 1974 it is necessary to note two shocks of class 12 in practice with the same epicenter in the vicinity of the Chibyrkuyskiy Bay on Baykal: 22 August (No 7) and 10 October (No 9). The same earthquake occurred here in 1969. This region is interesting in that it borders on the northern region where the seismicity has decreased for the entire period of instrument observations.

In November 1974, the northern part of the border zone between eastern Tuva and Mongolia became active. The increased seismicity of this meridionally oriented strip is known [4] and clearly manifested, in

particular, on the weak earthquake map (K=7-8) for 1974 (see Fig 2). In the indicated northern part of the strip on 17 November 1974 a 12th class earthquake occurred (No 10), and on 29 November, an earthquake of class 14 (No 12). The process of seismic relaxation continued in December. In 1974 a total of about 70 shocks were recorded. The level of seismic activity was characterized by a high value of $A_{10}$~2. The earthquake of 29 November is the first class 14 shock recorded in the given epicentral region since the time of organizing the regional network of seismic stations. According to the report by M. Kh. Plakhin, director of the seismic station of Orlik, the earthquake was felt in the village of Orlik at a distance of about 120 km from the epicenter with a force of 4 (rattling of dishes, rattling of windows, in a number of cases waking up those were sleeping) and it was accompanied by a rumble. It was also weakly felt in Mondy, Zakamensk and Irkutsk.

By the information obtained in the same village of Orlik and its environs of 13 January 1974 a force 3-4 earthquake was felt at 0848 hours, the energy class of which was 9. The epicenter was located near the village (at a distance of 10 km).

In two of the three regions of constantly increased seismic activity where the strongest earthquake recently occurred, stronger shocks were recorded in 1974. In the region where the aftershocks of the Muya earthquake of 1957 were located, a 12th class shock was recorded against a background of increasing seismicity (the seismic activity of the area was approximately 0.5). In the vicinity of the aftershocks of the Mogotskoye earthquake of 1967, on 18 December 1974 a class 14 earthquake was noted (M=5.4) accompanied by a comparatively small number of aftershocks. An earthquake of this strength had not been recorded since 1967. This earthquake was so intense that it was felt as force 3 (4) at distances of more than 20 km from the epicenter at a number of points in the southern part of Buryatiya (in Zakamensk, Kholtoson, Bayangol, Tsakir according to the reports of the head of the seismic station in Zakamensk, N. I. Shemetova). In Sanaga which is located somewhat to the northwest, the earthquake was not felt. The value of $A_{10}$ in this region was approximately 1 in 1974.

In the epicentral region of the aftershocks of the Tas-Yuryakhskoye earthquake of 1967, the maximum earthquake was with K=11 ($A_{10}$~2).

A comparative characteristic of the general trends in the manifestation of seismicity in these regions in recent years is clear from the data in Table 4 (see also [6]).

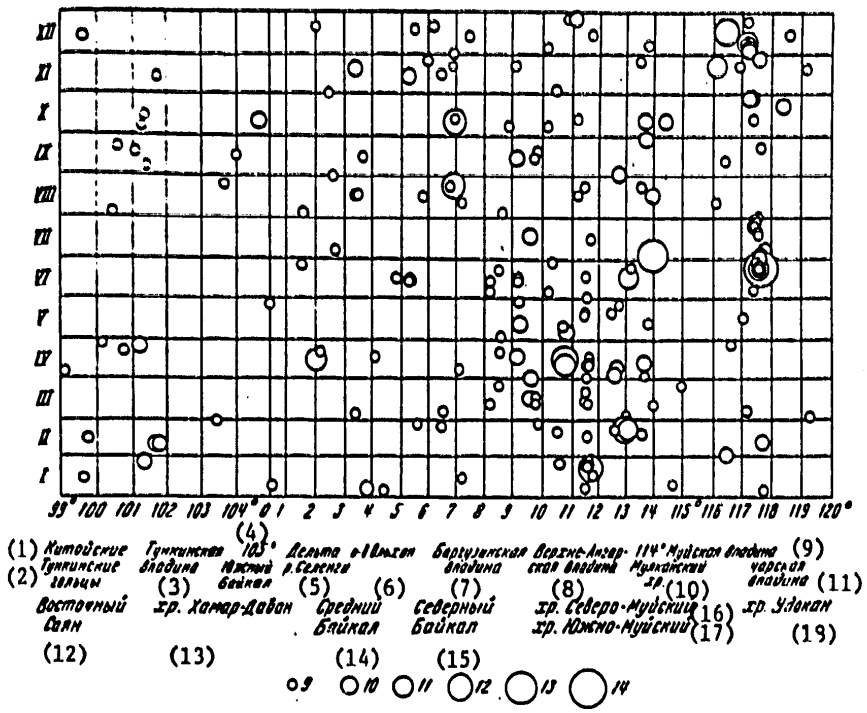


Figure 4. Graph of the time-space distribution of earthquakes in 1974 (in the projection on the provisional axis of the Baykal rift system). The numbers in the circles correspond to the energy classes of the earthquakes.

Key:

1. Kitoyskiye
2. Tunkinskiye bald peaks
3. Tunkinskaya Basin
4. 105° Southern Baykal
5. Selenga River delta
6. Ol'khon Island
7. Barguzinskaya Basin
8. Upper Angara Basin
9. 114° Muya Basin
10. Muyakanskiy Ridge
11. Charskaya Basin
12. Eastern Sayan
13. Khamar-Daban Ridge
14. Central Baykal
15. Northern Baykal
16. Northern Muya Ridge
17. Southern Muya Ridge
18. Udokan Ridge

Table 4

Earthquakes from the Aftershock Regions of the Strong Shocks in the Baykal Region in 1971-1974

| Землетрясение (1) | Район (2) | 1971 г. | | 1972 г. | | 1973 г. | | 1974 г. | |
|---|---|---|---|---|---|---|---|---|---|
| | | n | $K_{max}$ | n | $K_{max}$ | n | $K_{max}$ | n | $K_{max}$ |
| Муйское (3) | 55,9-56,3° с.ш.(4) | 103 | 11 | 84 | 10 | 60 | 10 | 92 | 12 |
| 1957 г. | 116,1-117,1° в.д.(5) | 79** | | 58** | | 43** | | 85** | |
| Тас-Юряхское (6) | 56,3-56,7° с.ш.(4) | 83 | 10 | 43 | 11 | 56 | 11 | 46 | 11 |
| 1967 г. | 120,5-121,5° в.д.(5) | 50* | | 28* | | 37* | | 40* | |
| Моготское (7) | 47,9-48,7° с.ш. | 74 | 11 | 72 | 10 | 70 | 12 | 56 | 14 |
| 1967 г. | 102,5-103,5° в.д. | 54* | | 55* | | 56* | | 51* | |

Key:
1. Earthquake
2. Region
3. Muya
4. north latitude
5. east longitude
6. Tas-Yuryakhskoye
7. Mogotskoye

n is the number of all recorded earthquakes.

*SK≥8.
**SK≥7.

The Earthquake of 8 October 1974

The shock of 8 October 1974 (No 8) plays a special role among the earthquakes not only in 1974, but also in all of the existing information about the seismicity of the region. Its epicenter was located within the Prilenskoye plateau, in the uninhabited territory of the southwestern part of Yakutia, near the northern border of the Baykal region where no earthquake had been noted before. The earthquake of 8 October 1974 is unusual with respect to the nature of its recording on the seismograms. The intense P, S waves are not always expressed on them, but the P, S waves are very intense.

According to the data from the operative seismological bulletin of the Earth Physics Institute of the USSR Academy of Sciences, at two of the seismic stations in the Soviet Union during the primary processing of the observations waves were isolated which can be interpreted as pP and sP. The stations of the Baykal regional network also recorded arrivals which can be identified with similar waves and the sS waves. This indicates that the center of the earthquake was located at shallow depths under the bottom of the earth's crust, which is highly extraordinary for the region.

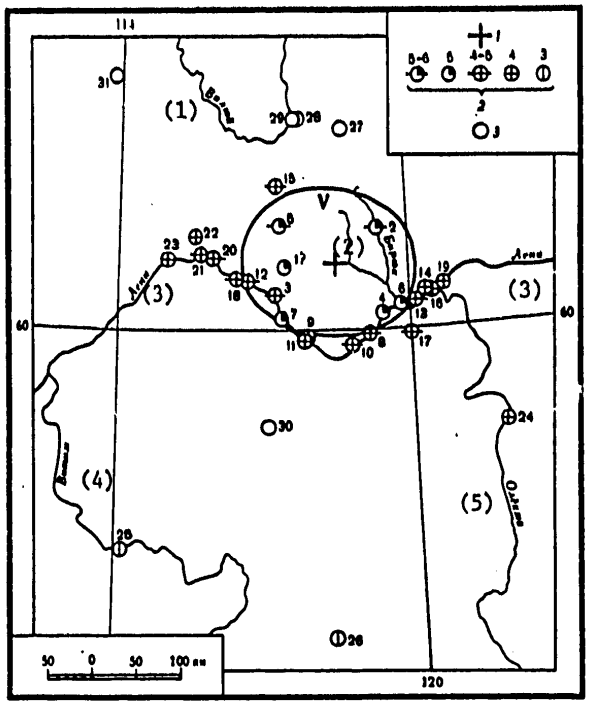


Figure 5. Map of the macroseismic data on the earthquake of 8 October 1974. Compiled by the materials from the investigation by A. D. Abalakov, questionnaires and information from the seismic stations.
1 -- epicenter of the earthquake; 2 -- force; 3 -- not felt.
The numbers of the populated areas on the map correspond to their numbers in Table 5.

Key:

1. Vilyuy
2. Biryuk
3. Lena
4. Vitim
5. Olekma

The reflected pP and sS waves usually are not isolated when interpreting the seismograms at small epicentral distances. The calculations usually indicate that the existence of these waves at small epicentral distances (to 1000 km) with the center under the foot of the crust is possible if the medium under the Mokhorovichich boundary is gradient, that is, the propagation rates of the seismic waves increase noticeably with depths. Thus, the observations of the earthquake of 8 October 1974 also indicate the presence of a velocity gradient under the foot of the crust in the

corresponding region. The epicenter of the earthquake is in the territory of the Berezovskiy kray trough on the edge of the Siberian platform. Not only is a quite sharp inflection of the foundation noted here, but also a large dislocation with a break in continuity is discovered -- the zone of the Kempendyayskoy-Batamayskiy fracture. According to the results of the deep seismic sounding (G. D. Babayan, et al.), the indicated fracture penetrates the mantle and separates the blocks of the earth's crust of different thickness.

The magnitude of the earthquake of 8 October 1974 is not very great ($m_{PV}$=5.2), but it was felt in the southern and southwestern directions from the epicenter at distances to 400 km. There is information about manifestations of the earthquake in the Lena, the Olekma, Vilyuyskiy Rayons of the Yakut ASSR, in the northeastern regions of the Irkutsk Oblast, in the northern part of the Chita Oblast. The field examinationsof the manifestations of the earthquake and their analysis at 10 populated places were accomplished by the coworkers of the Institute of the Earth's Crust of the Siberian Department of the USSR Academy of Sciences A. D. Abalakov and T. M. Kozyreva. Questionnaires were received from a number of stations. The coworkers of the Geology Institute of the Yakut branch of the Siberian Department of the USSR Academy of Sciences B. M. Koz'min and A. G. Larionov promoted the gathering of macroseismic information and data on the structure of the epicentral region.

The constructed isoseism map is presented in Fig 5. The list of stations with indication of the force and distance to the epicenter is presented in Table 5.

The discovered strongest tremors reached force 5-6. In the words of the witnesses, the earthquake began with an explosive impact. The vibrations were felt when walking, in particular, in the open air. In the buildings cracks appeared and the plaster fell off the walls. A rumble was heard resembling the sound of wind or a distant explosion. These effects were observed in the Kiliyer weather station.

The map of the macroseismic manifestations of the earthquake of 8 October 1974 indicate significant nonuniformity of the spread of the tremors. The tremors damped significantly faster to the north than to the south. The earthquake was not noted in the villages of Suntar and Kempendyay 150 km north of the epicenter whereas it reached the villages of Chara and Bodaybo (about 400 km) in the southerly and southwesterly directions. For a more detailed study of this extraordinary earthquake it is expedient to perform a special study later.

The initial factual materials for the survey were basically prepared by coworkers of the Laboratory of Regional Seismicity of the Institute of the Earth's Crust of the Siberian Department of the USSR Academy of Sciences K. I. Bukina, L. V. Anisimova, L. I. Belova, L. P. Vinogradova, N. I. Dorogokupets, G. F. Drennova, G. I. Perevalova, E. A. Tret'yak, Ye. V. Fomina.

Table 5

Macroseismological Data on the Earthquakes on 8 October

| | Station | Δ, км | Force | | Station | Δ, км | Force |
|---|---|---|---|---|---|---|---|
| 1 | Dzhampa | 55 | 5 | 15 | Monterskiy punkt Bysyttakh | 105 | 4-5 |
| 2 | Kiliyer | 60 | 5-6 | | | | |
| 3 | Tinnaya | 75 | 4-5 | 16 | Olekminsk | 110 | 4 |
| 4 | Daban | 75 | 5* | 17 | Tokko | 110 | 4-5 |
| 5 | Ergedzhey | 75 | 5-6 | 18 | Nyuya | 110 | 4-5* |
| 6 | Neryuktey-1 | 85 | 5* | 19 | Solyanka | 120 | 4 |
| 7 | Chapayevo | 85 | 5 | 20 | Saldykel' | 135 | 4-5 |
| 8 | Kochegarovo | 85 | 4-5 | 21 | Batamay | 150 | 4-5* |
| 9 | Nokhtuysk | 85 | 4 | 22 | Kurung | 155 | 4 |
| 10 | Del'geyskaya | 85 | 4-5 | 23 | Lensk | 185 | 4 |
| 11 | Macha | 90 | 4 | 24 | Dzhikimde | 255 | 4 |
| 12 | Turukta | 100 | 4-5 | 25 | Mamakan | 390 | 3 |
| 13 | Abaga | 100 | 4-5 | 26 | Chara | 400 | 3 |
| 14 | Unkyur | 105 | 4 | | | | |

*A rumble was heard. Earthquakes not felt at these stations: Kempendyay (27), Ust'-Kempendyay (28), Surtar (29), Perevoz (30), Mirnyy (31).

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Catalog of Earthquakes of Pribaykal'ye [Baykal Region] with K≥9 in 1974

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | (4) Координаты эпицентра φ°N | (4) λ°E | (5) Класс точности | K | (6) № района | (7) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|
| | | | January | | | | | |
| | 1 | 15 32 28,0 | 51,17 | 98,18 | A | 9 | 2 | |
| | 3 | 09 31 42,8 | 50,87 | 97,91 | A | 9 | 2 | |
| | 4 | 01 54 07,5 | 56,33 | 117,76 | Б | 9 | 20 | |
| | | 03 00 27,2 | 52,84 | 107,49 | Б | 9 | 8 | |
| | 5 | 18 01 03,6 | 54,87 | 112,68 | Б | 9 | 16 | |
| | 6 | 08 21 36,9 | 52,96 | 106,85 | Б | 10 | 8 | |
| | 7 | 16 17 09,6 | 56,11 | 114,68 | Б | 9 | 15 | |
| | | 21 43 10,5 | 51,72 | 104,81 | Б | 9 | 5 | |
| | 8 | 03 47 21,2 | 52,23 | 98,37 | Б | 9 | 2 | |
| | | 20 18 06,9 | 48,43 | 103,01 | A | 9 | 7 | |
| | 12 | 12 39 42,5 | 52,47 | 98,83 | Б | 9 | 2 | |
| | | 14 17 04,2 | 57,45 | 120,08 | A | 9 | 20 | |
| | 13 | 08 48 05,4 | 52,44 | 99,69 | Б | 9 | 1 | Orlik, force 3-4 |
| | | 22 58 41,9 | 53,45 | 109,77 | Б | 9 | 14 | |
| | 15 | 01 53 40,7 | 50,68 | 98,61 | A | 9 | 2 | |
| | | 21 07 50,1 | 49,59 | 99,54 | A | 9 | 2 | |
| | 16 | 08 00 38,8 | 54,91 | 112,86 | Б | 9 | 16 | |
| | 18 | 08 08 00,0 | 49,10 | 98,12 | A | 9 | 2 | |
| | 22 | 01 02 12,2 | 50,59 | 97,62 | A | 10 | 2 | |
| | | 01 23 07,6 | 50,59 | 97,56 | A | 11 | 2 | |
| 1 | | 22 25 35,6 | 54,90 | 112,62 | Б | 12 | 16 | |
| | | 22 37 50,7 | 54,88 | 112,59 | Б | 9 | 16 | |
| | 23 | 03 29 28,9 | 54,87 | 112,58 | Б | 9 | 16 | |
| | | 19 53 48,9 | 50,53 | 97,56 | A | 9 | 2 | |

Key:
1. No
2. Number
3. Time of occurrence, hours, minutes, seconds
4. Coordinates of the epicenter
5. Accuracy class
6. No of the region
7. Macroseismic data

[Continued]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) φ°N | λ°E | (5) Класс точности | K | (6) № района | (7) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|
| | 24 | 08 34 17,3 | 54,85 | 112,69 | а | 9 | 16 | |
| | | 18 01 48,9 | 54,87 | 112,60 | б | 9 | 16 | |
| | 25 | 13 07 41,4 | 53,74 | 111,89 | б | 9 | 17 | |
| | 26 | 21 39 30,5 | 52,57 | 101,31 | б | 10 | 1 | |
| | | 23 49 47,6 | 55,41 | 111,06 | б | 9 | 14 | |
| | 27 | 15 27 49,4 | 54,89 | 112,73 | а | 9 | 16 | |
| | 31 | 16 27 25,0 | 56,21 | 116,45 | а | 10 | 19 | |
| | | | February | | | | | |
| | 2 | 22 20 06,0 | 50,69 | 117,12 | А | 9 | 18 | |
| | 5 | 12 43 15,0 | 49,24 | 98,46 | А | 9 | 2 | |
| | | 21 04 17,0 | 51,35 | 98,55 | А | 9 | 2 | |
| | 6 | 00 58 16,6 | 48,94 | 104,42 | А | 9 | 7 | |
| | 7 | 08 36 03,4 | 51,63 | 101,76 | б | 10 | 4 | |
| | | 21 07 42,4 | 51,67 | 101,75 | б | 10 | 4 | |
| | 9 | 21 44 30,0 | 49,26 | 98,47 | А | 9 | 2 | |
| | | 22 44 39,2 | 48,21 | 114,67 | А | 9 | 22 | |
| | 10 | 09 18 59,6 | 56,60 | 117,73 | б | 10 | 20 | |
| | 11 | 13 46 19,9 | 51,87 | 99,74 | б | 9 | 2 | |
| | 13 | 11 36 09,4 | 54,90 | 112,69 | а | 9 | 16 | |
| | 14 | 20 46 35,8 | 56,54 | 121,18 | А | 9 | 20 | |
| | 16 | 08 41 51,2 | 56,01 | 113,49 | а | 9 | 15 | |
| | 18 | 01 51 54,0 | 55,83 | 110,64 | б | 9 | 13 | |
| 2 | 19 | 02 05 48,2 | 56,39 | 112,69 | б | 12 | 13 | |
| | | 02 30 36,7 | 56,39 | 112,74 | б | 11 | 13 | |
| | 20 | 03 53 31,1 | 55,23 | 113,45 | б | 9 | 16 | |
| | 21 | 10 38 48,2 | 53,42 | 108,93 | б | 9 | 8 | |
| | | 15 49 39,0 | 49,53 | 98,26 | А | 10 | 2 | |
| | 23 | 04 31 24,8 | 55,19 | 110,66 | б | 9 | 14 | |
| | 24 | 12 16 14,6 | 53,49 | 108,11 | б | 9 | 8 | |
| | 25 | 13 21 32,3 | 52,95 | 103,43 | б | 9 | 3 | |
| | | | March | | | | | |
| | 1 | 23 53 47,0 | 53,64 | 119,31 | б | 9 | 21 | |
| | 2 | 07 29 36,4 | 56,25 | 112,76 | а | 9 | 13 | |
| | 4 | 09 57 03,2 | 52,48 | 106,86 | б | 9 | 8 | |
| | 5 | 12 39 13,8 | 53,94 | 108,54 | б | 9 | 8 | |
| | 6 | 10 01 46,3 | 56,47 | 117,17 | а | 9 | 20 | |
| | 10 | 01 30 35,6 | 56,33 | 113,89 | б | 9 | 15 | |
| | 11 | 04 36 44,9 | 57,51 | 122,07 | А | 9 | 12 | |
| | | 14 51 43,1 | 54,91 | 112,86 | б | 9 | 16 | |
| | | 22 53 33,4 | 54,94 | 109,31 | б | 9 | 9 | |
| | 12 | 05 02 00,0 | 54,29 | 111,54 | б | 9 | 14 | |
| | 13 | 00 11 42,8 | 54,92 | 112,54 | б | 9 | 16 | |
| | 16 | 04 25 52,0 | 48,61 | 100,20 | А | 10 | 2 | |
| | | 23 54 04,2 | 54,87 | 110,63 | б | 10 | 14 | |
| | | 23 55 29,9 | 54,86 | 110,73 | б | 9 | 14 | |
| | 19 | 08 36 35,0 | 54,86 | 112,57 | а | 9 | 16 | |
| | 20 | 14 00 11,9 | 50,77 | 112,58 | б | 9 | 18 | |
| | 22 | 00 37 10,2 | 51,92 | 97,61 | А | 9 | 2 | |
| | 23 | 19 50 23,4 | 50,63 | 97,00 | А | 9 | 2 | |
| | 25 | 20 07 03,7 | 56,19 | 115,00 | а | 9 | 19 | |
| | 26 | 02 35 00,6 | 54,09 | 110,52 | б | 9 | 14 | |
| | 27 | 02 15 32,1 | 48,45 | 103,00 | А | 9 | 7 | |
| | 28 | 08 07 45,2 | 50,92 | 109,14 | А | 10 | 10 | |
| | 31 | 08 16 58,8 | 55,06 | 110,47 | б | 10 | 14 | |
| | | 19 02 57,2 | 54,91 | 112,59 | б | 9 | 16 | |
| | | 21 14 59,8 | 54,50 | 117,48 | б | 9 | 21 | |
| | | | April | | | | | |
| | 1 | 12 53 12,4 | 56,05 | 113,67 | б | 9 | 15 | |
| | | 20 34 35,1 | 48,06 | 102,96 | А | 9 | 7 | |

[Contd]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) φ°N | λ°E | (5) Класс точности | K | (6) № района | (7) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|
| | 2 | 14 05 53,0 | 56,08 | 112,56 | 6 | 10 | 13 | |
| | 3 | 01 10 03,0 | 50,86 | 99,15 | 6 | 9 | 2 | |
| | 6 | 17 09 30,5 | 53,93 | 109,09 | 6 | 9 | 8 | |
| | 7 | 10 08 48,0 | 50,86 | 98,25 | A | 9 | 2 | |
| | | 20 12 48,6 | 56,15 | 112,69 | a | 10 | 13 | |
| | 9 | 03 11 01,3 | 55,46 | 111,26 | 6 | 11 | 14 | |
| | | 16 07 49,0 | 54,94 | 112,80 | a | 9 | 9 | |
| | | 18 12 01,9 | 54,88 | 112,68 | a | 9 | 16 | |
| | | 21 51 05,6 | 50,89 | 98,41 | A | 9 | 2 | |
| | 10 | 02 40 27,5 | 52,85 | 109,16 | 6 | 9 | 10 | |
| | 11 | 01 07 00,0 | 55,00 | 112,75 | 6 | 9 | 16 | |
| | 13 | 03 26 24,7 | 56,14 | 113,67 | 6 | 10 | 15 | |
| 3 | | 05 01 32,3 | 55,43 | 111,33 | 6 | 12 | 14 | |
| | | 17 19 31,3 | 52,35 | 98,88 | 6 | 9 | 2 | |
| | 14 | 09 29 30,4 | 52,20 | 105,84 | 6 | 11 | 5 | Irkutsk, to force 5 |
| | | 12 16 37,5 | 49,98 | 100,28 | A | 9 | 2 | |
| | 15 | 11 40 48,2 | 55,65 | 112,14 | a | 9 | 15 | |
| | | 19 03 53,2 | 55,35 | 110,00 | 6 | 10 | 9 | |
| | 17 | 15 06 23,5 | 52,82 | 107,30 | 6 | 9 | 8 | Shore of Lake Baykal (Krestovaya wharf) to force 3 |
| | 19 | 04 47 23,4 | 50,57 | 100,76 | A | 9 | 2 | |
| | 20 | 00 07 01,6 | 54,07 | 110,62 | 6 | 9 | 14 | |
| | | 13 31 31,8 | 52,29 | 105,90 | 6 | 9 | 8 | |
| | 24 | 14 52 33,8 | 51,90 | 101,14 | 6 | 10 | 4 | Mondy, to force 3 |
| | 25 | 04 41 38,6 | 51,19 | 100,16 | 6 | 9 | 2 | |
| | | 17 10 56,3 | 51,13 | 98,50 | 6 | 9 | 2 | |
| | 26 | 21 44 40,9 | 56,18 | 116,65 | a | 9 | 19 | |
| | 27 | 12 37 52,8 | 51,15 | 98,51 | 6 | 9 | 2 | |
| | | | | May | | | | |
| | 2 | 05 54 38,8 | 55,19 | 109,39 | 6 | 9 | 9 | |
| | 3 | 00 40 34,9 | 56,66 | 121,85 | A | 9 | 20 | |
| | | 06 10 26,6 | 50,42 | 96,48 | 6 | 9 | 2 | |
| | 6 | 13 36 48,1 | 56,47 | 121,01 | | 9 | 20 | |
| | | 19 58 08,1 | 55,44 | 111,40 | 6 | 10 | 14 | |
| | 7 | 21 07 36,6 | 51,15 | 98,61 | 6 | 9 | 2 | |
| | 10 | 13 06 40,2 | 55,36 | 111,36 | 6 | 9 | 14 | |
| | 11 | 20 19 59,3 | 56,14 | 113,62 | a | 9 | 15 | |
| | 12 | 10 17 52,0 | 55,32 | 109,97 | 6 | 10 | 9 | |
| | 15 | 00 56 13,0 | 49,54 | 97,63 | A | 10 | 2 | |
| | 16 | 15 01 12,5 | 56,36 | 117,09 | a | 9 | 20 | |
| | 18 | 10 22 33,4 | 54,86 | 112,62 | 6 | 9 | 16 | |
| | 20 | 02 04 54,4 | 55,31 | 112,22 | 6 | 9 | 15 | |
| | | 09 04 54,1 | 56,05 | 112,42 | 6 | 9 | 13 | |
| | 21 | 23 19 05,5 | 48,22 | 102,86 | A | 9 | 7 | |
| | 25 | 02 51 32,0 | 55,78 | 113,00 | 6 | 9 | 15 | |
| | 26 | 21 34 03,4 | 51,68 | 104,74 | 6 | 9 | 5 | |
| | 28 | 10 26 00,3 | 55,50 | 109,67 | 6 | 9 | 9 | |
| | 31 | 16 19 25,3 | 54,89 | 112,64 | a | 9 | 16 | |
| | | | | June | | | | |
| | 2 | 05 23 20,9 | 46,68 | 103,00 | A | 10 | 7 | |
| | 4 | 01 18 44,9 | 55,19 | 111,02 | 6 | 9 | 14 | |
| | | 14 02 09,3 | 54,33 | 109,85 | 6 | 9 | 9 | |
| | | 22 16 18,5 | 56,64 | 121,39 | A | 9 | 20 | |
| | 5 | 06 26 20,8 | 56,28 | 117,41 | 6 | 9 | 20 | |
| | 8 | 09 51 17,7 | 56,52 | 121,61 | A | 9 | 20 | |
| | | 15 49 04,0 | 47,98 | 103,00 | A | 9 | 7 | |
| | 11 | 10 43 03,5 | 55,28 | 110,00 | 6 | 9 | 14 | |
| | | 16 52 59,2 | 54,88 | 109,41 | 6 | 9 | 9 | |
| | 12 | 09 17 45,5 | 53,19 | 108,19 | 6 | 9 | 8 | |
| | | 12 16 13,6 | 53,14 | 108,15 | 6 | 9 | 8 | |

[Contd]



| (1) № | (2) Число | (3) Момент возникновения, час мин сек | (4) Координаты эпицентра φ°N | λ°E | (5) Класс точности | K | (6) № района | (7) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|
| | 12 | 14 41 31,8 | 54,87 | 110,37 | б | 9 | 14 | |
| | 13 | 00 42 27,8 | 53,13 | 108,15 | б | 9 | 8 | |
| | | 05 33 39,1 | 56,55 | 120,97 | А | 9 | 20 | |
| | | 07 41 36,7 | 53,07 | 107,75 | б | 9 | 8 | |
| | | 16 51 24,6 | 53,12 | 108,17 | б | 9 | 8 | |
| | 15 | 10 05 52,0 | 50,58 | 97,70 | А | 10 | 2 | |
| | | 12 14 22,0 | 50,60 | 97,19 | А | 9 | 2 | |
| | | 18 14 02,2 | 54,87 | 112,63 | б | 9 | 16 | |
| | 16 | 04 0. 40,1 | 52,02 | 117,31 | А | 9 | 18 | |
| | | 22 12 33,7 | 56,18 | 112,89 | б | 11 | 13 | |
| | 19 | 16 42 48,1 | 54,22 | 110,42 | б | 9 | 14 | |
| | 21 | 13 35 00,9 | 55,29 | 113,81 | б | 9 | 16 | |
| 4 | | 20 56 44,5 | 56,35 | 117,70 | б | 14 M=4,8° M=5,2°° | 20 | Central Kalar, Udokan, force 4; felt in Nelyaty |
| | 22 | 05 59 02,0 | 56,37 | 117,61 | б | 9 | 30 | |
| | | 06 27 38,2 | 56,37 | 117,64 | б | 10 | 20 | |
| | | 06 51 01,8 | 56,36 | 117,59 | б | 11 | 20 | |
| | 23 | 03 13 34,3 | 56,37 | 117,63 | б | 9 | 20 | |
| 5 | 24 | 08 30 30,2 | 56,85 | 122,22 | А | 12 | 20 | |
| | | 20 53 29,9 | 51,98 | 105,61 | б | 9 | 5 | |
| | 26 | 12 48 05,5 | 56,37 | 117,51 | а | 9 | 20 | |
| | 28 | 07 02 08,4 | 55,31 | 111,08 | б | 9 | 14 | |
| | 29 | 14 33 25,4 | 56,46 | 121,02 | А | 11 | 20 | |
| | | 17 50 30,2 | 56,32 | 117,58 | б | 10 | 20 | |
| | | | | July | | | | |
| 6 | 1 | 05 21 44,2 | 56,09 | 113,81 | б | 13 | 15 | |
| | 3 | 03 38 43,8 | 57,67 | 121,24 | А | 10 | 12 | |
| | 4 | 10 07 06,0 | 56,40 | 117,72 | а | 9 | 20 | |
| | | 10 24 49,5 | 56,33 | 117,76 | б | 10 | 20 | |
| | 6 | 03 17 08,0 | 52,29 | 106,46 | а | 9 | 8 | |
| | 9 | 18 41 58,7 | 48,00 | 103,00 | А | 11 | 7 | |
| | 13 | 08 02 45,2 | 55,00 | 112,70 | а | 9 | 16 | |
| | 16 | 15 22 50,0 | 54,94 | 110,73 | б | 10 | 14 | |
| | 18 | 11 33 16,4 | 56,35 | 117,59 | б | 9 | 20 | |
| | 20 | 14 59 31,0 | 56,28 | 117,59 | б | 9 | 20 | |
| | 24 | 17 06 43,2 | 56,69 | 117,42 | а | 10 | 20 | |
| | | 17 11 38,5 | 56,69 | 117,41 | а | 9 | 20 | |
| | 27 | 10 21 04,6 | 56,32 | 117,50 | б | 9 | 20 | |
| | 30 | 04 44 13,1 | 56,70 | 117,40 | б | 9 | 20 | |
| | 31 | 14 01 47,8 | 56,37 | 117,58 | б | 9 | 20 | |
| | | | | August | | | | |
| | 1 | 10 52 54,4 | 52,25 | 100,44 | а | 9 | 1 | |
| | | 19 11 35,8 | 51,88 | 105,80 | б | 9 | 5 | |
| | 2 | 22 48 16,3 | 54,65 | 110,08 | б | 9 | 14 | |
| | 8 | 17 12 46,2 | 47,89 | 102,97 | А | 9 | 7 | |
| | 9 | 01 54 13,5 | 53,43 | 109,82 | б | 9 | 14 | |
| | 10 | 16 43 40,5 | 56,40 | 116,10 | б | 9 | 19 | |
| | 13 | 00 14 34,4 | 53,70 | 108,13 | б | 9 | 8 | |
| | 15 | 06 48 10,0 | 54,94 | 112,26 | а | 9 | 16 | |
| | | 15 30 17,2 | 52,28 | 113,79 | б | 10 | 15 | |
| | 16 | 14 25 02,8 | 48,03 | 103,66 | А | 9 | 7 | |
| | 17 | 07 33 57,6 | 56,28 | 109,18 | б | 10 | 10 | |
| | 20 | 18 47 28,0 | 52,54 | 106,92 | б | 9 | 8 | |
| | | 18 47 59,1 | 52,54 | 106,93 | б | 9 | 8 | |
| | 21 | 01 47 43,6 | 54,88 | 112,64 | б | 9 | 16 | |
| | 22 | 00 12 56,8 | 56,21 | 113,41 | а | 9 | 15 | |
| 7 | | 04 46 14,9 | 53,83 | 109,08 | б | 12 | 8 | Bodon, Barguzin, force 2-3 |
| | | 06 12 46,4 | 53,76 | 109,04 | б | 9 | 8 | |
| | | 23 28 34,0 | 47,95 | 102,36 | А | 11 | 7 | |
| | 24 | 08 05 01,2 | 51,63 | 103,63 | б | 9 | 7 | |

[Contd]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | (4) Координаты эпицентра $\varphi^{\circ}N$ | $\lambda^{\circ}E$ | (5) Класс точности | $K$ | (6) № района | (7) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|
| | 30 | 10 52 24,2 | 52,47 | 106,07 | б | 9 | 8 | |
| | 31 | 15 38 46,1 | 56,53 | 121,00 | А | 9 | 20 | |
| | | 16 37 48,9 | 55,80 | 112,88 | б | 10 | 15 | |
| | | | | September | | | | |
| | 1 | 22 48 49,7 | 56,59 | 121,10 | А | 9 | 20 | |
| | 2 | 22 46 00,9 | 47,89 | 103,40 | А | 9 | 7 | |
| | | 23 37 36,1 | 56,68 | 121,18 | А | 9 | 20 | |
| | 3 | 00 31 36,5 | 56,63 | 121,00 | А | 9 | 20 | |
| | 5 | 18 36 07,1 | 51,90 | 101,40 | б | 8 | 4 | |
| | | 20 42 42,0 | 49,81 | 96,80 | А | 9 | 2 | |
| | 9 | 22 29 18,3 | 56,09 | 116,48 | а | 9 | 19 | |
| | 10 | 07 18 41,2 | 52,00 | 98,68 | б | 11 | 2 | |
| | 11 | 04 19 21,1 | 54,19 | 110,96 | б | 10 | 14 | |
| | 12 | 05 02 45,7 | 48,50 | 103,18 | А | 9 | 7 | |
| | | 06 32 06,8 | 54,72 | 111,00 | б | 9 | 14 | |
| | | 15 20 34,8 | 52,68 | 107,03 | б | 9 | 8 | |
| | 13 | 14 17 26,4 | 51,70 | 104,00 | б | 9 | 5 | |
| | 16 | 03 54 23,6 | 54,98 | 110,83 | а | 9 | 14 | |
| | | 04 25 28,8 | 52,46 | 101,07 | а | 9 | 1 | |
| | 19 | 02 49 39,8 | 50,18 | 100,58 | б | 9 | 2 | |
| | 20 | 11 34 26,1 | 56,23 | 117,69 | а | 9 | 20 | |
| | 21 | 19 42 17,7 | 59,50 | 112,32 | А | 9 | 12 | |
| | 22 | 18 35 19,4 | 52,01 | 96,07 | А | 9 | 2 | |
| | 25 | 12 10 52,4 | 56,27 | 113,42 | б | 10 | 15 | |
| | | | | October | | | | |
| | 1 | 01 29 22,0 | 48,05 | 103,39 | А | 9 | 7 | |
| | | 07 31 03,0 | 48,04 | 103,34 | А | 10 | 7 | |
| | 2 | 03 49 41,8 | 56,57 | 121,02 | А | 10 | 20 | |
| | 5 | 12 36 55,2 | 55,84 | 110,36 | б | 9 | 13 | |
| | | 20 28 40,0 | 55,42 | 109,53 | б | 9 | 9 | |
| | 6 | 16 03 07,3 | 52,29 | 101,22 | а | 9 | 1 | |
| 8 | 8 | 03 07 14 | 60,5 | 118,4 | А | 13 | 12 | see text, Fig 5 |
| | | | | $h$ ~45 км | | $M$=5,2[mb] | | |
| | 9 | 14 38 06,3 | 56,09 | 113,66 | б | 10 | 15 | |
| | | 16 54 30,0 | 56,27 | 114,41 | б | 10 | 15 | |
| | | 23 06 33,0 | 51,53 | 104,66 | б | 10 | 5 | |
| 9 | 10 | 00 43 34,2 | 53,83 | 109,10 | б | 12 | 8 | |
| | 12 | 11 13 31,8 | 56,70 | 117,40 | а | 9 | 20 | |
| | | 15 55 14,5 | 53,81 | 109,14 | б | 9 | 8 | |
| | | 22 47 15,4 | 55,95 | 111,27 | б | 9 | 13 | |
| | 13 | 23 52 25,0 | 52,39 | 101,29 | б | 9 | 1 | |
| | 14 | 00 59 10,0 | 48,06 | 97,59 | А | 10 | 2 | |
| | 16 | 11 54 37,5 | 56,63 | 121,05 | А | 10 | 20 | |
| | 18 | 20 55 17,8 | 56,62 | 121,08 | А | 9 | 20 | |
| | 21 | 09 02 38,5 | 56,46 | 118,41 | а | 10 | 20 | |
| | 27 | 03 38 14,7 | 56,13 | 117,27 | б | 10 | 20 | |
| | | 04 04 48,0 | 49,24 | 105,05 | б | 10 | 7 | |
| | | 18 25 19,3 | 56,10 | 117,26 | б | 10 | 20 | |
| | 31 | 21 23 05,3 | 52,12 | 106,43 | б | 9 | 8 | |
| | | | | November | | | | |
| | 2 | 14 12 46,0 | 55,34 | 111,08 | а | 9 | 14 | |
| | 10 | 19 33 26,7 | 56,65 | 121,23 | А | 10 | 20 | |
| | 11 | 02 50 47,4 | 53,33 | 107,98 | б | 10 | 8 | |
| | | 12 43 26,4 | 51,70 | 101,69 | б | 9 | 4 | |
| | 13 | 16 54 35,4 | 53,89 | 108,47 | б | 9 | 8 | |
| | 15 | 17 20 38,0 | 48,62 | 99,75 | А | 9 | 2 | |
| 10 | 17 | 13 04 51,1 | 51,73 | 98,51 | б | 12 | 2 | |
| | 18 | 12 41 23,0 | 57,10 | 119,20 | б | 9 | 20 | |
| | | 14 26 18,5 | 52,48 | 106,80 | б | 10 | 8 | |
| | 19 | 14 44 01,9 | 56,28 | 116,17 | а | 11 | 19 | |

[Contd]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | (4) Координаты эпицентра φ°N | λ°E | (5) Класс точности | K | (6) № района | (7) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|
| | 20 | 15 23 46,0 | 51,85 | 116,92 | A | 8 | 18 | |
| | | 15 41 48,2 | 53,84 | 109,08 | 6 | 8 | 8 | |
| | | 22 56 26,6 | 55,41 | 109,71 | 6 | 8 | 9 | |
| 11 | 21 | 02 35 04,2 | 54,05 | 123,74 | A | 12 | 21 | |
| | 23 | 09 14 49,9 | 57,62 | 121,02 | A | 8 | 20 | |
| | | 14 56 00,0 | 55,57 | 113,90 | a | 8 | 16 | |
| | 24 | 13 29 13,1 | 53,17 | 108,88 | 6 | 8 | 8 | |
| | 25 | 13 58 26,5 | 56,41 | 117,61 | 6 | 10 | 20 | |
| | 28 | 20 55 43,6 | 56,83 | 121,24 | A | 8 | 20 | |
| 12 | 29 | 21 05 27,7 | 51,79 | 98,47 | 6 | 14 M=5,4* M=5,4** | 2 | Orlik, force 4, felt in Mondy, Zakamensk, Irkutsk |
| | | 21 21 43,9 | 51,80 | 98,52 | 6 | 11 | 2 | |
| | | 21 27 43,7 | 51,78 | 98,52 | 6 | 9 | 2 | |
| | 30 | 00 27 11,2 | 51,79 | 98,51 | 6 | 9 | 2 | |
| | | 02 21 07,4 | 53,80 | 109,10 | 6 | 9 | 8 | |
| | | 17 41 15,3 | 51,82 | 98,48 | 6 | 9 | 2 | |
| | | | | December | | | | |
| | 1 | 02 40 04,2 | 51,80 | 98,50 | 6 | 10 | 2 | |
| | | 06 43 21,9 | 51,76 | 98,50 | 6 | 9 | 2 | |
| | | 06 45 12,7 | 51,75 | 98,57 | 6 | 9 | 2 | |
| | 2 | 17 58 16,0 | 56,69 | 117,24 | 6 | 10 | 20 | |
| | 3 | 02 17 44,5 | 55,33 | 110,88 | 6 | 9 | 14 | |
| | 4 | 18 45 34,5 | 56,65 | 117,22 | a | 10 | 20 | |
| | 5 | 18 11 45,7 | 56,14 | 113,64 | 6 | 9 | 15 | |
| | 8 | 15 05 18,4 | 56,49 | 117,15 | 6 | 11 | 20 | |
| | | 15 16 35,0 | 56,50 | 117,05 | a | 9 | 20 | |
| | | 15 19 58,7 | 56,50 | 117,18 | 6 | 10 | 20 | |
| | 12 | 04 00 42,9 | 51,53 | 99,64 | 6 | 9 | 2 | |
| | | 18 14 27,1 | 53,63 | 109,92 | 6 | 9 | 14 | |
| | 13 | 22 37 37,3 | 57,02 | 118,57 | 6 | 9 | 20 | |
| | 14 | 00 03 10,3 | 56,12 | 111,64 | 6 | 9 | 13 | |
| | 15 | 17 33 37,7 | 51,76 | 98,57 | 6 | 9 | 2 | |
| 13 | 16 | 16 03 40,3 | 56,15 | 116,46 | 6 | 12 | 19 | felt in Bodaybo |
| | 17 | 08 21 36,3 | 53,46 | 108,00 | 6 | 9 | 8 | |
| 14 | 18 | 07 54 37,7 | 48,39 | 103,15 | A | 14 M=5,6* M=5,5** | 7 | felt with force 3-4 in Zakamensk, Kholtoson, Bayangol, Tsakir, to force 4 in Irkutsk |
| | 18 | 13 38 56,5 | 48,36 | 103,00 | A | 9 | 7 | |
| | | 17 53 46,0 | 47,93 | 106,50 | 6 | 10 | 7 | |
| | 19 | 01 17 04,3 | 53,58 | 108,69 | 6 | 9 | 8 | |
| | | 08 02 36,8 | 48,49 | 102,91 | A | 9 | 7 | |
| | | 09 22 20,6 | 53,40 | 102,00 | 6 | 9 | 3 | |
| | | 09 34 24,2 | 51,16 | 105,85 | 6 | 9 | 5 | |
| | 20 | 04 14 42,4 | 51,85 | 98,59 | 6 | 9 | 2 | |
| | | 12 15 03,3 | 52,67 | 109,36 | 6 | 9 | 10 | |
| | 21 | 14 44 32,4 | 51,77 | 98,47 | 6 | 10 | 2 | |
| | 22 | 04 28 03,9 | 48,41 | 103,05 | A | 9 | 7 | |
| | | 20 10 44,2 | 51,76 | 98,50 | 6 | 9 | 2 | |
| | 23 | 02 59 49,9 | 56,56 | 120,90 | A | 9 | 20 | |
| | | 03 12 42,9 | 56,64 | 120,90 | A | 9 | 20 | |
| | | 03 29 01,3 | 56,56 | 121,16 | A | 9 | 20 | |
| | 24 | 07 51 18,3 | 56,50 | 117,18 | 6 | 9 | 20 | |
| | | 10 08 03,2 | 48,35 | 103,07 | A | 10 | 7 | |
| | 25 | 16 18 31,3 | 55,22 | 111,95 | 6 | 10 | 15 | |
| | | 16 54 39,0 | 55,23 | 111,71 | a | 9 | 14 | |
| | 27 | 14 28 08,7 | 51,78 | 98,37 | 6 | 9 | 2 | |
| | 28 | 05 34 38,7 | 46,40 | 103,08 | A | 9 | 7 | |
| | 29 | 04 18 51,6 | 51,73 | 99,53 | 6 | 9 | 2 | |
| | | 12 52 30,0 | 48,64 | 100 00 | A | 9 | 2 | |

*notation for the magnitude $M_L$ with respect to surface waves.
**the same mpv SKM with respect to volumetric waves.

EARTHQUAKES OF YAKUTIA AND THE NORTHEAST

[Article by B. M. Koz'min, T. A. Andreyev, N. M. Dareshkina]

In 1974 the system of instrument observations remained as before, seven stations were active in the territory of Yakutia and six in the Magadan Oblast. The data on the equipment parameters are presented in Table 1.

The coordinates of the epicenters of nearby earthquakes were estimated basically by the intersections of the straight transverse seismic waves. Their velocity was assumed to be 3.6 km/sec for Yakutia and 3.5 km/sec for the Magadan Oblast. In individual cases, the head and straight longitudinal waves were used in the processing where the energy of the shock exceeded $10^{12}$ joules.

The time of occurrence of the earthquake was calculated by the procedure used at the Institute of the Earth's Crust of the Siberian Department of the USSR Academy of Sciences [1].

When determining the parameters of earthquakes in the north and northeast of the territory, the bulletins from the seismic station in Tiksi (the Institute of Earth Physics of the USSR Academy of Sciences), seismograms and bulletins of the network of stations of the SVKNII Institute of the Far Eastern Scientific Center of the USSR Academy of Sciences were used. In the south the location of the centers was established by the data from the network of Yakutian stations and also on the basis of the instrument observations of the Chara, Central Kalar and Tupik stations (the Institute of Earth Physics of the Siberian Department of the USSR Academy of Sciences) and the Bulletin of Observations of the Temporary Station of Kirovskiy (the Amur Oblast) which belongs to the SakhKNII Institute.

The accuracy classes of determining the coordinates of the epicenters corresponded to their gradation in the Earthquake Atlas of the USSR. The best accuracy of classes "a" and "b" was recorded in the southern part of Yakutia in the border zone with the Baykal Region [Pribaykal'ye]. The accuracy class "b" was established for the earthquakes of the Northeast and individual sections in the southern part of the Magadan Oblast.

Over the greater part of the territory the earthquakes were determined with less accuracy corresponding to classes "A" and "B." In the extreme north of the region there are also nonclass determinations.

The depth of the center was found for the equation of the hyperbolic hodograph under the condition $\Delta \leq 50$ km. These estimates were made only for the middle course of the Olekma River. The energy of the earthquakes was determined by the Rautian pattern.

The representativeness of the earthquakes remained at the 1973 level for the entire territory and improved somewhat in the south in connection with using the data from the Kirovskiy station, which made it possible to record tremors with $K \geq 9$ without skips. The system for dividing the region into different areas remained unchanged.

Information is presented in the catalog on 309 earthquakes for which it was possible to determine their coordinates.

The group of southern regions of Yakutia is highly seismically active. Thus, in the vicinity of the Tas-Yuryakhskoye earthquake of 1967 (the middle course of the Olekma River) weak shocks with $K \leq 5$ continued to be recorded (the number of them is indicated in the circle in the figure). Whereas previously the shocks were observed in the interfluve of the Tas-Yuryakh and Imangra Rivers, in 1974 the epicenters shifted to the north, in the Imangra-Khani interfluve (left tributaries of the Olekma River). The dependence of the Tas-Yuryakhskoye epicentral field on the fracture tectonics of the region where the Tas-Yuryakh and Imangra fractures of the sublatitudinal system of the Kanovoy structural suture manifest themselves most actively [2] is unquestioned. The depth of occurrence of these hypocenters is 8-20 km.

Another accumulation of epicenters stretching toward the Tas-Miyelinskaya submeridional fracture system was observed in the vicinity of the earthquake of 15 January 1972 in the Olekmo-Chara Highland.

The most interesting event in the Olekma region is the earthquake occurring on 8 October 1974 at 030718 hours on the left bank of the Lena River in the eastern part of the Siberian platform (B erezovskiy trough) with M=5.2. The shock with the possible force 6 effect of the tremor in the epicenter was felt over an area of about 80,000 $km^2$. The force 4-5 fractures were noted at a number of populated places of the Olekminsk (Olekminsk, the villages of Abaga, Kudu-Kyuyel', and so on) and the Lenskiy (villages of Nyuya, Batagay, and so on) Rayons of the Yakut ASSR. A dull rumble was heard similar to the sound of an operating tractor. In individual houses objects fell off the tables and shelves. The floors and ceilings squeaked, and the windows and dishes rattled.

As before, this year the most active was the western part of the Stanovoy Ridge where a shock of energy class 11 was noted. The system of fractures of the Stanovoy deep fault was directly accompanied here by chains of local earthquakes.

Table 1

Basic Instrument Parameters

| (1) Станция | (2) Тип аппаратуры | Z | | E - W | | N - S | |
|---|---|---|---|---|---|---|---|
| | | $V_{max}$ | $T_{max}$ | $V_{max}$ | $T_{max}$ | $V_{max}$ | $T_{max}$ |
| **Якутия (3)** | | | | | | | |
| (4) Батагай* (11) | СКМ-3 | 31 100 | 0,2–1,1 | 34 700 | 0,2–1,1 | 36 300 | 0,2–1,1 |
| (5) Усть-Нера | СКМ-3 | 27 500 | 0,3–1,0 | 33 800 | 0,3–1,0 | 31 800 | 0,3–1,0 |
| (6) Усть-Нюкжа | СКМ-3 | 38 100 | 0,3–1,2 | 48 000 | 0,3–1,2 | 38 400 | 0,3–1,2 |
| (7) Хандыга | СКМ-3 | 26 300 | 0,2–0,9 | 28 200 | 0,2–0,9 | 27 900 | 0,2–1,3 |
| (8) Чагда | СКМ-3 | 34 400 | 0,2–1,1 | 41 500 | 0,2–1,1 | 39 000 | 0,2–1,1 |
| (9) Чульман | СКМ-3 | 47 700 | 0,3–0,9 | 53 300 | 0,3–0,9 | 50 700 | 0,3–0,9 |
| (10) Якутск (19) | СК | 800 | 0,5–10 | 1 830 | 0,4–11 | 1 900 | 0,4–11 |
| | СКМ-3 | 46 500 | 0,2–1,1 | 38 900 | 0,7–1,4 | 39 200 | 0,7–1,4 |
| **Северо-Восток (12)** | | | | | | | |
| (13) Магадан | СК | 200 | 1–10 | 760 | 1–10 | 720 | 1–10 |
| (14) Магадан-1 | СКМ-3 | 19 500 | 0,9–1,2 | 18 900 | 0,9–1,2 | 23 000 | 0,9–1,2 |
| (15) Омсукчан | СКМ-3 | 12 500 | 0,8–1,2 | 20 000 | 0,2–0,6 | 20 000 | 0,2–0,6 |
| (16) Сеймчан | СКМ-3 | 48 000 | 0,2–0,8 | 47 500 | 0,2–0,8 | 48 000 | 0,2–0,8 |
| (17) Сусуман | СКМ-3 | 18 000 | 0,6–1,0 | 15 500 | 0,6–1,0 | 18 000 | 0,6–1,0 |
| (18) Усть-Омчуг | СКМ-3 | 20 000 | 0,2–0,6 | 20 000 | 0,2–0,6 | 20 000 | 0,2–0,6 |

Key:

1. Station
2. Type of equipment
3. Yakutia
4. Batagay*
5. Ust'-Nera
6. Ust'-Nyukzha
7. Khandyga
8. Chagda
9. Chul'man
10. Yakutsk
11. SKM
12. Northeast
13. Magadan
14. Magadan-1
15. Omsukchan
16. Seymchan
17. Susuman
18. Ust'-Omchut
19. SK

*Temporary stations

Just as in the past years, aftershocks of the earthquake of 14 June 1971 were recorded at Larba in the energy range of $10^7$ to $10^{10}$ joules.

In the eastern part of Stanovik, near Lake Toko, the activity increased somewhat by comparison with 1973, More than 10 earthquakes with K=7 to 10 occurred here.

The seismic activity in the western part of the Aldan Island was enlivened somewhat where the significant number of weak tremors with K≤8 were noted.

On the right bank of the Timpton River, just as before, a group of earthquakes was again recorded with an energy at the center of $10^7$ to $10^{10}$ joules. The articulation zone of the Stanovoy Ridge and Dzhugdzhur where a number of shocks of energy classes 8 to 9 were recorded looks somewhat more active.

On the whole the nature of the seismicity in 1974 in the southern part of Yakutia changed little.

In Table 2 we have the distribution of the earthquakes with respect to energy for the provisionally isolated areas. The data are not presented here only for the regions south of the Stanovoy Ridge (No 4). This information is available in the following article.

The most active region of the Northeastern part of Yakutia in 1974 was the system of Cherskiy Ridge where on the southeastern flank on 19 June 1974 at 030940 hours (No 5) a strong underground shock was recorded with M=4.9. Its epicenter coincided with one of the central fractures of the Cherskiy-Ulakhan Ridge running along the north side of the Seymchano-Buyundinskaya Basin. The intensity of the tremors in the epicenter was about force 7.

The macroseismic examination of the Seymchanskoye earthquake was performed by the coworkers of the Geophysics Laboratory of the SVKNII Institute of the Far Eastern Scientific Center of the USSR Academy of Sciences. It was felt over the greater part of the southern region of Magadan Oblast in an area of about 160,000 $km^2$.

The force 6-7 manifestations of the earthquake were observed in the settlements of El'gen, Tuonnakh, Taskan, the weather stations of Kan'on and Lazo at the epicentral distances of 20-40 km. A dull underground rumble was heard in the settlement of Taskan. At the time of the shock, the windows rattled. In the house where the telephone station was located, a furnace with a brick lining was partially destroyed. In the vicinity of the Kan'on weather station an underground rumble was heard, rocks fell from the mountains, the windows rattled and dishes clanked. A crack formed in a brick smokestack. The glass cracked in the windows in the village of Lazo. A furnace also cracked. The meteorological instruments shook.

The force 6 effects were observed in the villages of Seymchan and Yagodnoye (60-80 km from the epicenter). The earthquake was felt by all of the residents. Panic occurred. Many felt two shocks accompanied by an underground rumble. Squeaking of the furniture was heard. In some apartments the furnaces were damaged.

The shock was felt with force 5 at a distance of 60-110 km in the populated areas of Tumannyy, Verkhniy At-Yuryakh, Spornoye, Ust'-Srednikan, and Buyunda. In the settlement of Spornyy, the people ran out of the houses in fright. To the audience of a movie theater it appeared as if a bulldozer had broken into the building and it squeaked. The electric lights swayed, the doors opened, the windows and dishes rattled. Two shocks with simultaneous underground rumbling were perceived in Tumannyy.

An intensity of force 3-4 was recorded in Strelka, Palatka, Ola and Magadan 300 km from the epicenter of the earthquake. The vibrations of the earth were felt by many people. The sound of dishes was heard, and the furniture rocked slightly.

In Magadan, the shock was especially noticeable on the upper floors of the buildings. The people who were sleeping woke up, the lights swayed, the furniture rocked, and the dishes rattled.

An interesting characteristic of the given earthquake is the absence of repeated shocks. Up to the end of 1974, only a few weak aftershocks with an energy at the center of $10^7$ to $10^8$ joules were noted in the epicentral zone of the Seymchanskoye earthquake. A similar picture was observed also for the Ayan-Yuryakhskoye earthquake of 5 June 1970.

Table 2

Distribution of Earthquakes of Yakutia and the Northeast by Energy Classes

| (1) Номер района | (2) Энергетический класс | | | | | | Σ |
|---|---|---|---|---|---|---|---|
| | 8 | 9 | 10 | 11 | 12 | 13 | |
| 1 | 30 | 12 | 4 | 1 | – | 1 | 48 |
| 2 | 49 | 16 | 6 | 1 | – | – | 72 |
| 3 | 13 | 3 | 1 | – | – | – | 17 |
| 4 | – | – | – | – | – | – | – |
| 5 | 4 | 3 | 2 | – | – | – | 9 |
| 6 | 19 | 17 | 6 | 3 | 3 | 1 | 49 |
| 7 | 3 | – | – | – | – | – | 3 |
| 8 | 4 | 10 | 4 | – | – | – | 18 |
| 9 | 4 | 3 | – | – | – | – | 7 |
| 10 | 47 | 20 | 9 | 1 | – | 1 | 78 |
| 11 | 1 | 1 | 2 | – | 1 | – | 5 |
| 12 | – | – | 1 | 1 | – | 1 | 3 |
| Вся зона (3) | 174 | 85 | 35 | 7 | 4 | 4 | 309 |

Key:
1. No of the region
2. Energy class
3. Entire zone

The southeastern part of the system of the Cherskiy Ridge is significantly more active than its northwestern part. The greater part of the seismic energy of the entire region is released annually here.

One of the active areas in the southeast is the region of the Artykskoye earthquake of 18 May 1971 with M=7.1 (on the map represented by a square where the number of aftershocks is indicated). The belt of epicenters stretches along the basic tectonic lines of the Cherskiy Ridge:

Ulakhan, Darpir, In'yali-Debinskiy and others, to the Sea of Okhotsk. The northwestern part of the system is represented only by individual groups of shocks stretching through the Darpir fracture with an energy at the center of $10^9$ to $10^{10}$ joules.

The zone of influence of the Chelomdzha-Yamskiy fracture on the north coast of the Sea of Okhotsk along which a chain of Neogenic and Quaternary superposed basins stretches [2] is more active than in 1973. The earthquake of 29 August 1974 with K=12 stretching toward the given fracture was perceived in Magadan and the village of Stekol'nyy with a force 3. The seismic activity in the northern part of the Sea of Okhotsk where the earthquake of 25 October 1974 with K=13 was recorded, increased significantly.

Out of the other active parts of the territory it is possible to isolate the Polousnyy Ridge in the northern part of Yakutia where a shock with K=12 (No 10), a group of epicenters in the Adychi River basin (the right tributary of the Yana) and also the lower course of the Yana and Lena Rivers were noted.

It is especially necessary to note the high level of seismicity at the mouth of the Olenek River. Here two earthquakes occurred with an energy of $10^{13}$ and $10^{11}$ joules. Their association with the Leno-Anabar marginal suture running from the mouth of the Lena to the Taymyr Peninsula and bordering the Siberian platform on the north [3] is obvious.

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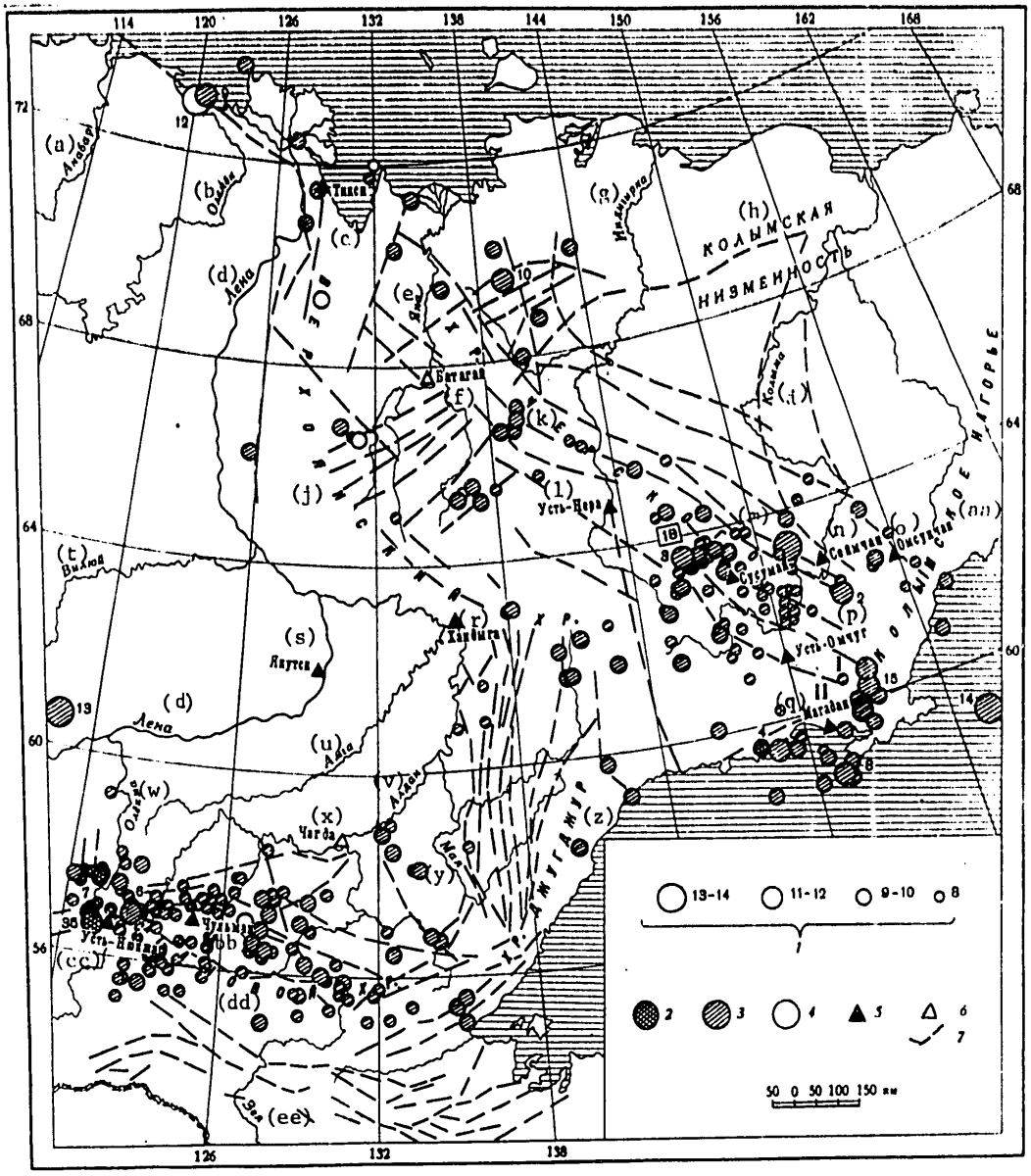


Map of epicenters of the earthquakes of the Yakutia and the North East. 1--energy of earthquakes; accuracy of determing the epicenter; 2--class a, b; 3--Class A,B; 4--nonclassified; 5--permanently operating seismic stations; 6--the same, temporary; 7--faults [2, 3].

[Key on following page]

[Key to figure on preceding page]

(a) Anabar
(b) Olenek
(c) Tiksi
(d) Lena
(e) Yana
(f) Batagay
(g) Indigirka
(h) Kolyma Lowland
(i) Kolyma
(j) Verkhoyanskiy [Upper Yana] Ridge
(k) Cherskiy Ridge
(l) Ust'-Nera
(m) Susuman
(n) Seymchan
(o) Omsukchan
(p) Ust'-Omchug
(q) Magadan
(r) Khandyga
(s) Yakutsk
(t) Vilyuy
(u) Amga
(v) Aldan
(w) Olekma
(x) Chagda
(y) Maya
(z) Dzhugdzhur Ridge
(aa) Kolyma Highland
(bb) Chul'man
(cc) Yus'-Nyukzha
(dd) Stanovoy Ridge
(ee) Zeya

Catalog of Earthquakes of Yakutia and the Northeast with Ka8 in 1974

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) $\varphi^{\circ}$ N | $\lambda^{\circ}$ E | (5) Глубина очага, км | (6) Класс точности | K | (7) № района |
|---|---|---|---|---|---|---|---|---|
| | | | January | | | | | |
| | 1 | 11 18 14 | 62,9 | 155,9 | | A | 8 | 6 |
| | | 19 37 56 | 57,6 | 128,3 | | A | 8 | 3 |
| | 2 | 02 35 40,1 | 56,61 | 121,13 | | a | 8 | 1 |
| | 3 | 10 09 20 | 56,2 | 129,2 | | A | 9 | 2 |
| | 5 | 01 35 11 | 57,4 | 125,6 | | A | 8 | 2 |
| | 7 | 08 20 45 | 61,2 | 152,5 | | A | 8 | 6 |
| | 8 | 03 46 06 | 62,2 | 150,6 | | A | 8 | 6 |
| | | 14 32 57 | 57,5 | 120,9 | | A | 8 | 1 |
| | | 20 51 45 | 57,2 | 127,8 | | A | 8 | 3 |
| | 10 | 06 38 48 | 63,3 | 146,3 | | A | 8 | 10 |
| | 11 | 05 04 31 | 62,1 | 147,7 | | A | 8 | 10 |
| | | 23 10 20 | 60,5 | 153,1 | | A | 11 | 6 |
| | 12 | 14 17 00 | 57,5 | 120,2 | | A | 9 | 1 |
| | 13 | 19 49 10 | 56,3 | 123,5 | | A | 8 | 2 |
| | 16 | 09 30 23 | 56,4 | 132,6 | | A | 9 | 2 |
| | 18 | 17 23 22 | 64,3 | 146,4 | | A | 8 | 10 |
| | | 23 57 58 | 65,0 | 133,0 | | | 8 | 8 |
| | 19 | 04 53 18 | 65,3 | 136,1 | | A | 9 | 9 |
| | | 14 20 04,6 | 56,61 | 121,05 | | б | 8 | 1 |
| | | 23 07 12,0 | 56,66 | 121,04 | 14 | б | 8 | 1 |
| | 20 | 13 05 27,6 | 56,61 | 121,12 | 8 | б | 8 | 1 |
| | 21 | 15 19 12 | 59,2 | 121,1 | | A | 8 | 1 |
| | 23 | 05 10 25,4 | 56,61 | 120,71 | | б | 8 | 1 |
| | 27 | 02 05 11 | 61,6 | 147,9 | | A | 8 | 10 |

Key:

1. No
2. Number
3. Time of occurrence, hours, minutes, seconds
4. Coordinates of the epicenter
5. Depth of the center, km
6. Accuracy class
7. No of region

[Contd]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) | | (5) Глубина очага, км | (6) Класс точности | K | (7) № района |
|---|---|---|---|---|---|---|---|---|
| | | | φ° N | λ° E | | | | |
| | 27 | 03 09 01 | 63,6 | 147,2 | | А | 9 | 10 |
| | | 16 22 39 | 60,9 | 148,2 | | А | 8 | 6 |
| | | 21 15 43 | 56,1 | 123,9 | | А | 8 | 2 |
| | 28 | 04 53 06 | 61,6 | 145,5 | | А | 9 | 6 |
| | 29 | 11 20 55,7 | 56,55 | 121,13 | | а | 8 | 1 |
| | | 22 22 26 | 63,1 | 149,0 | | А | 8 | 10 |
| | | February | | | | | | |
| | 1 | 02 07 07,7 | 57,62 | 120,74 | | б | 8 | 1 |
| | 9 | 06 14 30 | 62,5 | 150,5 | | А | 8 | 10 |
| | 11 | 08 19 33 | 58,1 | 133,4 | | А | 8 | 5 |
| | | 09 06 44 | 71,8 | 131,7 | | Б | 8 | 8 |
| | | 09 36 48 | 72,0 | 132,0 | | | 8 | 8 |
| | | 13 50 28 | 58,9 | 151,5 | | А | 9 | 6 |
| | 14 | 20 46 38,6 | 56,53 | 121,20 | | а | 9 | 1 |
| | 15 | 02 46 51 | 57,1 | 125,8 | | Б | 8 | 2 |
| | | 17 14 41 | 63,3 | 146,2 | | А | 8 | 10 |
| | 17 | 23 29 54 | 64,4 | 145,9 | | А | 8 | 10 |
| | 19 | 15 33 15 | 63,1 | 148,2 | | А | 9 | 10 |
| | | 15 34 17 | 63,1 | 148,3 | | А | 8 | 10 |
| | | 20 05 45 | 63,1 | 148,2 | | А | 8 | 10 |
| | 23 | 07 43 08 | 62,5 | 149,6 | | А | 8 | 10 |
| | 27 | 09 55 50 | 64,2 | 146,2 | | А | 9 | 10 |
| | | 11 43 59 | 62,6 | 155,0 | | А | 10 | 6 |
| | 28 | 23 07 33 | 64,1 | 146,4 | | А | 9 | 10 |
| | | March | | | | | | |
| | 2 | 02 29 09 | 62,7 | 148,8 | | А | 8 | 10 |
| | | 07 24 20 | 57,6 | 128,2 | | А | 8 | 3 |
| | | 10 36 43 | 63,0 | 148,6 | | А | 9 | 10 |
| | 3 | 05 23 20 | 60,8 | 156,8 | | А | 9 | 6 |
| | 4 | 07 44 33 | 60,9 | 136,6 | | А | 8 | 7 |
| | | 22 01 15 | 61,6 | 140,6 | | А | 9 | 6 |
| | 5 | 12 00 36 | 62,3 | 141,2 | | А | 9 | 8 |
| | 6 | 08 39 24 | 55,9 | 130,6 | | А | 9 | 2 |
| | | 21 47 28 | 59,9 | 152,6 | | А | 9 | 6 |
| | 7 | 06 47 51,9 | 56,57 | 121,02 | | б | 8 | 1 |
| | 8 | 06 28 41 | 65,3 | 136,4 | | А | 8 | 9 |
| | | 08 47 14 | 57,1 | 127,8 | | А | 8 | 3 |
| | | 13 58 08 | 56,6 | 123,4 | | А | 8 | 2 |
| | | 19 22 20 | 64,4 | 153,2 | | А | 8 | 11 |
| | 9 | 05 34 42 | 56,6 | 127,2 | | А | 10 | 2 |
| | | 07 58 58 | 56,5 | 127,2 | | А | 8 | 2 |
| | 10 | 11 31 15 | 63,0 | 145,9 | | А | 8 | 10 |
| | 11 | 04 36 49 | 57,4 | 121,9 | | А | 9 | 2 |
| | | 18 55 42,7 | 56,54 | 121,09 | 12 | б | 8 | 1 |
| | 15 | 05 45 18 | 57,0 | 122,8 | | А | 8 | 2 |
| | 16 | 18 48 22 | 57,1 | 126,8 | | А | 8 | 2 |
| | 17 | 13 39 44 | 56,0 | 123,8 | | А | 8 | 2 |
| | 18 | 15 53 37 | 57,2 | 123,2 | | А | 8 | 2 |
| | 20 | 10 22 49 | 61,6 | 136,6 | | А | 8 | 7 |
| | 21 | 00 51 14 | 72,4 | 127,0 | | Б | 9 | 8 |
| | 22 | 13 45 15 | 56,3 | 127,6 | | А | 8 | 2 |
| | | 22 04 16 | 73,8 | 123,0 | | Б | 10 | 12 |
| | 25 | 02 29 22 | 61,9 | 147,3 | | А | 9 | 10 |
| | 27 | 12 34 56 | 61,8 | 150,3 | | А | 8 | 6 |
| | 28 | 02 51 43 | 56,4 | 128,0 | | А | 8 | 2 |
| | 30 | 13 55 20 | 56,4 | 127,4 | | А | 8 | 2 |
| | | April | | | | | | |
| | 2 | 16 23 45 | 57,6 | 125,6 | | А | 8 | 3 |
| | 3 | 06 11 18 | 63,0 | 149,0 | | А | 9 | 10 |

[Contd]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) φ° N | λ° E | (5) Глубина очага, км | (6) Класс точности | K | (7) № района |
|---|---|---|---|---|---|---|---|---|
| | 3 | 10 15 01 | 61,6 | 140,6 | | А | 8 | 6 |
| | | 13 47 25 | 61,6 | 140,4 | | А | 9 | 6 |
| | 5 | 20 46 33 | 64,5 | 145,8 | | А | 8 | 10 |
| | 6 | 02 36 06 | 65,5 | 147,7 | | А | 8 | 10 |
| | | 13 56 14 | 62,6 | 145,2 | | А | 8 | 10 |
| | | 17 02 42 | 63,8 | 151,6 | | А | 9 | 10 |
| 2 | | 19 00 50 | 62,1 | 153,1 | | А | 12 | 6 |
| | 7 | 10 24 12 | 63,4 | 146,2 | | А | 8 | 10 |
| | | 10 24 54 | 63,6 | 146,4 | | А | 9 | 10 |
| | 10 | 06 55 55 | 55,8 | 132,0 | | Б | 8 | 2 |
| | 11 | 20 32 36 | 61,8 | 156,6 | | А | 10 | 6 |
| | 14 | 10 24 23 | 61,9 | 147,3 | | А | 8 | 10 |
| | | 18 26 35 | 70,8 | 127,9 | | Б | 9 | 8 |
| | 16 | 11 22 03,4 | 57,60 | 120,54 | | б | 8 | 1 |
| | | 19 16 30,9 | 56,45 | 124,41 | | б | 8 | 2 |
| | 17 | 16 37 50 | 55,7 | 128,8 | | А | 8 | 2 |
| | 20 | 04 26 40 | 63,0 | 146,1 | | А | 9 | 10 |
| | | 05 15 17 | 62,4 | 151,1 | | А | 8 | 10 |
| | 20 | 22 32 08 | 61,7 | 142,7 | | А | 9 | 8 |
| | 21 | 10 27 02 | 66,7 | 130,8 | | Б | 8 | 8 |
| | 24 | 22 30 59 | 55,7 | 130,6 | | А | 8 | 2 |
| | 25 | 03 47 16 | 57,2 | 125,4 | | А | 8 | 2 |
| | | 05 06 13 | 57,9 | 122,7 | | А | 9 | 2 |
| | | 19 48 06 | 57,0 | 122,8 | | А | 8 | 2 |
| | 26 | 03 33 12 | 57,2 | 127,8 | | А | 10 | 3 |
| | 28 | 06 12 11 | 64,3 | 146,0 | | А | 8 | 10 |
| | | 08 58 51 | 60,8 | 135,3 | | А | 8 | 7 |
| | 29 | 14 57 37 | 55,8 | 130,7 | | А | 8 | 2 |
| | | | May | | | | | |
| 3 | 1 | 07 38 51 | 63,6 | 146,5 | | А | 11 | 10 |
| | | 12 02 50 | 63,4 | 146,3 | | Б | 8 | 10 |
| | 3 | 00 40 36 | 56,6 | 122,0 | | А | 9 | 2 |
| | 6 | 13 36 48,0 | 56,52 | 121,12 | | б | 9 | 1 |
| | 8 | 12 52 29 | 62,3 | 153,2 | | А | 8 | 6 |
| | 9 | 04 02 30 | 63,5 | 147,3 | | Б | 8 | 10 |
| | 13 | 12 00 48 | 63,5 | 148,6 | | А | 10 | 10 |
| | 14 | 15 29 10 | 69,3 | 130,0 | | | 9 | 8 |
| | 15 | 01 26 45 | 57,3 | 124,5 | | А | 8 | 2 |
| | 16 | 09 05 20,3 | 56,18 | 123,67 | | а | 10 | 2 |
| | | 17 54 16 | 63,8 | 149,6 | | А | 8 | 10 |
| 4 | 18 | 06 45 13,4 | 59,43 | 148,75 | | б | 11 | 6 |
| | 19 | 05 11 54 | 56,2 | 123,7 | | А | 8 | 2 |
| | | 22 53 46,4 | 56,14 | 123,74 | | б | 8 | 2 |
| | 22 | 00 41 48 | 57,4 | 128,0 | | А | 8 | 3 |
| | | 08 56 14 | 57,6 | 127,9 | | А | 8 | 3 |
| | 23 | 22 02 13 | 63,8 | 149,4 | | А | 8 | 10 |
| | 24 | 13 29 43 | 65,4 | 138,0 | | А | 8 | 9 |
| | 25 | 23 49 50 | 66,6 | 131,2 | | А | 9 | 8 |
| | 26 | 23 10 34 | 55,1 | 131,6 | | Б | 8 | 2 |
| | 27 | 15 18 41 | 55,1 | 135,2 | | Б | 9 | 2 |
| | | 16 07 21 | 64,0 | 146,4 | | А | 9 | 10 |
| | 28 | 14 16 00 | 55,8 | 125,4 | | А | 8 | 2 |
| | | | June | | | | | |
| | 1 | 14 09 11 | 64,2 | 146,5 | | А | 9 | 10 |
| | | 14 32 16 | 57,3 | 127,8 | | А | 8 | 3 |
| | 4 | 21 01 18 | 70,3 | 133,2 | | А | 9 | 8 |
| | | 22 16 21,0 | 56,63 | 121,21 | 9 | б | 9 | 1 |
| | 6 | 00 29 27 | 55,7 | 122,5 | | А | 8 | 2 |
| | 8 | 01 18 32 | 60,0 | 153,2 | | А | 9 | 6 |
| | | 20 39 27,1 | 56,58 | 121,12 | | б | 8 | 1 |

[contd]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) $\varphi^{\circ}$ N | $\lambda^{\circ}$ E | (5) Глубина очага, км | (6) Класс точности | $K$ | (7) № района |
|---|---|---|---|---|---|---|---|---|
| | 8 | 20 51 23 | 55,4 | 134,9 | | А | 10 | 2 |
| | 9 | 09 51 18,0 | 56,52 | 121,58 | | Б | 9 | 1 |
| | 13 | 05 33 38,9 | 56,53 | 120,97 | | а | 9 | 1 |
| | 15 | 14 36 55,9 | 57,00 | 122,83 | | б | 9 | 2 |
| | 17 | 18 41 47 | 55,6 | 135,2 | | А | 9 | 2 |
| | 18 | 17 36 49 | 60,5 | 152,1 | | А | 8 | 6 |
| | 19 | 02 57 21 | 63,4 | 146,6 | | А | 8 | 10 |
| 5 | | 03 09 40 | 63,2 | 151,3 | | А | 13 | 10 |
| | | | | | | | $M = 4,9$ | |
| | | 15 22 10 | 62,8 | 151,2 | | А | 8 | 10 |
| | 22 | 03 09 27 | 62,5 | 142,5 | | Б | 8 | 9 |
| | | 04 27 31 | 70,0 | 143,7 | | А | 10 | 11 |
| | 23 | 17 39 28 | 69,5 | 135,8 | | А | 9 | 10 |
| | | 21 59 07,3 | 56,56 | 121,46 | | б | 8 | 1 |
| 6 | 24 | 08 30 28,0 | 56,86 | 122,53 | | б | 11 | 2 |
| | 26 | 09 04 20 | 62,0 | 145,2 | | Б | 8 | 6 |
| 7 | 29 | 14 33 24,9 | 56,54 | 121,09 | | б | 11 | 1 |
| | 30 | 13 57 50 | 58,6 | 148,2 | | А | 9 | 6 |
| | | 23 44 02 | 66,6 | 139,2 | | А | 9 | 10 |
| | | | July | | | | | |
| | 1 | 09 34 28 | 63,2 | 148,3 | | А | 8 | 10 |
| | 2 | 09 19 23 | 66,8 | 139,4 | | А | 10 | 10 |
| | | 17 04 04 | 66,6 | 138,5 | | А | 10 | 10 |
| | 3 | 03 38 48 | 57,6 | 121,2 | | А | 10 | 1 |
| | | 19 36 02 | 62,8 | 147,2 | | А | 8 | 10 |
| 8 | | 21 06 43 | 58,7 | 151,1 | | А | 11 | 6 |
| | | 21 09 46 | 58,7 | 151,4 | | А | 9 | 6 |
| | 6 | 04 48 58 | 59,6 | 152,8 | | А | 9 | 6 |
| | 11 | 12 33 05 | 58,5 | 132,6 | | А | 9 | 5 |
| | 12 | 02 37 12 | 63,4 | 146,8 | | А | 8 | 10 |
| | 16 | 02 28 11 | 58,6 | 135,6 | | А | 8 | 5 |
| | | 22 25 17 | 57,6 | 130,7 | | А | 8 | 3 |
| | 18 | 01 18 04 | 61,9 | 148,4 | | А | 8 | 6 |
| | | 01 25 12 | 60,2 | 149,2 | | А | 8 | 6 |
| | 19 | 02 25 45 | 55,2 | 122,2 | | А | 8 | 2 |
| | 21 | 17 03 49,3 | 63,49 | 146,60 | | б | 9 | 10 |
| | 23 | 01 38 00,5 | 56,22 | 123,71 | | б | 8 | 2 |
| | | 11 20 16 | 63,2 | 150,9 | | А | 8 | 10 |
| | | 15 49 49 | 62,6 | 150,0 | | А | 8 | 10 |
| | 27 | 01 09 56 | 63,5 | 147,1 | | А | 8 | 10 |
| | 30 | 09 31 55 | 64,1 | 146,0 | | А | 9 | 10 |
| | | | August | | | | | |
| | 1 | 03 05 41 | 63,8 | 147,4 | | А | 8 | 10 |
| | | 10 45 13 | 64,1 | 146,4 | | А | 10 | 10 |
| | 4 | 05 16 02 | 56,0 | 129,8 | | А | 9 | 2 |
| | 5 | 01 59 59,2 | 56,96 | 122,73 | | б | 9 | 2 |
| | 6 | 20 56 28 | 55,2 | 122,3 | | А | 8 | 2 |
| | 7 | 05 26 11,4 | 56,31 | 122,97 | | а | 8 | 2 |
| | | 05 34 10 | 63,8 | 147,6 | | А | 8 | 10 |
| | | 18 31 29 | 64,2 | 145,7 | | А | 8 | 10 |
| | 8 | 03 55 37 | 65,6 | 140,1 | | А | 8 | 9 |
| | | 04 15 37 | 64,4 | 145,6 | | А | 8 | 10 |
| | | 05 21 51 | 56,5 | 128,7 | | Б | 8 | 2 |
| 9 | 10 | 16 50 00 | 73,1 | 120,6 | | А | 11 | 12 |
| | 12 | 07 40 41 | 55,6 | 130,9 | | Б | 8 | 2 |
| | | 11 32 14 | 58,1 | 121,9 | | А | 8 | 1 |
| | 13 | 11 49 09 | 64,1 | 146,0 | | А | 9 | 10 |
| | 15 | 12 27 02 | 64,0 | 146,0 | | А | 9 | 10 |
| | | 13 08 59 | 64,0 | 146,2 | | А | 8 | 10 |
| | 17 | 00 16 37 | 66,1 | 142,6 | | А | 8 | 10 |

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| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) φ° N | λ° E | (5) Глубина очага, км | (6) Класс точности | K | (7) № района |
|---|---|---|---|---|---|---|---|---|
| | 17 | 08 02 50 | 57,6 | 121,1 | | A | 8 | 1 |
| | 18 | 02 14 42 | 66,2 | 142,0 | | A | 8 | 10 |
| | 19 | 06 48 52 | 57,0 | 129,0 | | A | 9 | 3 |
| | 20 | 12 03 20 | 59,6 | 151,6 | | A | 10 | 6 |
| 10 | 24 | 16 37 03 | 69,6 | 139,5 | | A | 12 | 11 |
| | 25 | 08 59 05 | 71,3 | 134,3 | | A | 10 | 8 |
| | | 13 15 04 | 59,6 | 148,0 | | A | 10 | 6 |
| | | 19 01 46 | 63,6 | 155,0 | | A | 9 | 6 |
| | 25 | 22 49 59 | 55,6 | 123,0 | | A | 10 | 2 |
| | 27 | 22 16 32 | 62,5 | 145,4 | | A | 10 | 10 |
| 11 | 29 | 06 18 49 | 59,8 | 152,5 | | A | 12 | 6 |
| 12 | | 08 36 56 | 73,0 | 120,0 | | | 13 | 12 |
| | | 13 54 19 | 56,8 | 127,5 | | A | 10 | 2 |
| | 30 | 23 32 40,8 | 56,58 | 120,90 | | б | 8 | 1 |
| | 31 | 15 38 45,9 | 56,56 | 121,00 | | б | 9 | 1 |
| | | 17 54 08 | 63,2 | 145,0 | | A | 8 | 10 |
| | | | September | | | | | |
| | 1 | 02 27 09 | 63,4 | 146,8 | | A | 9 | 10 |
| | | 22 48 48 | 56,6 | 121,2 | | A | 9 | 1 |
| | 2 | 23 37 38,8 | 56,60 | 121,14 | 11 | б | 9 | 1 |
| | 3 | 00 31 37,0 | 56,52 | 120,96 | | б | 9 | 1 |
| | 7 | 07 09 06,3 | 57,00 | 124,79 | 13 | б | 8 | 3 |
| | 8 | 04 51 00 | 57,8 | 126,5 | | A | 8 | 3 |
| | 12 | 16 05 11 | 59,8 | 141,6 | | A | 10 | 6 |
| | 14 | 06 12 16 | 71,5 | 128,5 | | A | 9 | 8 |
| | 18 | 00 12 25 | 57,4 | 129,3 | | A | 9 | 3 |
| | | 03 10 16 | 56,1 | 123,3 | | A | 8 | 2 |
| | | 07 38 08 | 58,8 | 132,2 | | A | 9 | 5 |
| | | 13 42 45 | 60,0 | 152,5 | | A | 9 | 6 |
| | 21 | 17 22 48 | 55,8 | 123,3 | | A | 8 | 2 |
| | 22 | 15 31 22 | 56,8 | 126,6 | | A | 8 | 2 |
| | 23 | 05 40 07 | 55,8 | 123,4 | | A | 8 | 2 |
| | 24 | 03 03 14,2 | 56,50 | 121,07 | 11 | б | 8 | 1 |
| | | 05 48 36 | 60,1 | 146,4 | | Б | 9 | 6 |
| | | 19 44 02 | 56,8 | 134,0 | | A | 10 | 5 |
| | | 20 07 55 | 56,7 | 134,3 | | A | 10 | 5 |
| | 25 | 09 22 38 | 56,9 | 122,8 | | A | 8 | 2 |
| | | 12 24 45 | 62,4 | 154,8 | | A | 8 | 6 |
| | 26 | 12 37 58,6 | 57,11 | 122,83 | | б | 8 | 2 |
| | 27 | 22 19 13 | 65,4 | 145,0 | | A | 9 | 10 |
| | 28 | 08 26 30 | 57,5 | 127,5 | | A | 9 | 3 |
| | | 15 01 27 | 67,0 | 139,5 | | A | 10 | 10 |
| | | 22 42 40 | 62,0 | 147,5 | | A | 8 | 10 |
| | | | October | | | | | |
| | 1 | 17 34 06 | 59,0 | 132,5 | | A | 8 | 5 |
| | 2 | 03 49 39 | 56,6 | 121,1 | | A | 10 | 1 |
| | | 14 10 47,4 | 56,59 | 121,12 | | б | 8 | 1 |
| | 4 | 05 32 48 | 63,4 | 146,9 | | A | 8 | 10 |
| | 5 | 10 46 26 | 56,4 | 127,1 | | A | 8 | 2 |
| | 6 | 14 17 29 | 56,9 | 132,3 | | A | 8 | 5 |
| 13 | 8 | 03 07 18 | 60,6 | 118,5 | | A | 13 | 1 |
| | | | | | | | $M = 5,2$ | |
| | 10 | 12 45 45 | 62,2 | 152,9 | | A | 8 | 6 |
| | 11 | 00 30 17 | 56,0 | 126,9 | | A | 8 | 2 |
| | 12 | 05 25 26 | 62,0 | 150,8 | | A | 8 | 6 |
| | | 21 36 07 | 62,0 | 150,6 | | A | 8 | 6 |
| | 14 | 05 09 44 | 55,7 | 129,0 | | A | 9 | 2 |
| | 16 | 01 54 39 | 56,6 | 121,1 | | A | 10 | 1 |
| | | 08 59 52 | 55,9 | 130,0 | | A | 8 | 2 |
| | | 13 31 05 | 58,3 | 140,0 | | A | 9 | 6 |

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| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) | | (5) Глубина очага, км | (6) Класс точности | K | (7) № района |
|---|---|---|---|---|---|---|---|---|
| | | | φ° N | λ° E | | | | |
| | 17 | 10 49 17 | 55,5 | 124,0 | | А | 8 | 2 |
| | | 16 58 30 | 56,7 | 130,5 | | Б | 8 | 2 |
| | 18 | 06 34 48 | 56,4 | 127,3 | | А | 10 | 2 |
| | | 20 55 18,5 | 56,60 | 121,09 | | б | 8 | 1 |
| | 22 | 05 47 58 | 63,2 | 146,8 | | А | 8 | 10 |
| | | 06 00 25 | 57,0 | 122,5 | | А | 9 | 2 |
| | | 07 57 12 | 59,4 | 149,5 | | А | 9 | 6 |
| | 24 | 14 53 31 | 68,7 | 141,4 | | А | 9 | 11 |
| 14 | 25 | 21 57 25 | 59,0 | 157,5 | | Б | 13 | 6 |
| | 26 | 23 24 04 | 58,4 | 127,6 | | А | 8 | 3 |
| | | November | | | | | | |
| | 5 | 03 36 39 | 57,2 | 122,3 | | А | 8 | 2 |
| | 6 | 03 46 05 | 58,6 | 150,2 | | А | 9 | 6 |
| | 8 | 12 36 34 | 62,1 | 140,1 | | А | 9 | 8 |
| | 10 | 19 33 28,6 | 56,51 | 121,15 | 20 | б | 10 | 1 |
| | 11 | 16 23 51 | 57,6 | 121,1 | | А | 8 | 1 |
| | 14 | 01 31 43 | 58,1 | 133,6 | | А | 9 | 5 |
| | 15 | 15 33 56 | 57,0 | 123,5 | | А | 8 | 2 |
| | 17 | 00 39 36 | 63,0 | 138,1 | | А | 10 | 8 |
| | | 00 40 36 | 63,0 | 138,1 | | А | 10 | 8 |
| | 18 | 21 27 27 | 56,2 | 130,4 | | А | 8 | 2 |
| | 19 | 17 13 51 | 70,2 | 139,1 | | А | 10 | 11 |
| | 23 | 09 14 50,0 | 57,57 | 121,13 | | б | 9 | 1 |
| | 25 | 01 16 15 | 55,8 | 122,5 | | А | 8 | 2 |
| | 28 | 20 16 25,6 | 56,76 | 121,04 | 14 | б | 8 | 1 |
| | | 20 17 25,4 | 56,76 | 121,04 | 16 | б | 8 | 1 |
| | | 20 20 07,5 | 56,80 | 120,96 | 8 | б | 8 | 1 |
| | | 20 55 49,2 | 56,78 | 120,98 | | а | 9 | 1 |
| | | 20 58 05,6 | 56,75 | 121,08 | | б | 8 | 1 |
| | 29 | 21 07 48 | 57,4 | 120,4 | | А | 8 | 1 |
| | | December | | | | | | |
| | 1 | 01 36 22 | 62,9 | 149,5 | | А | 8 | 10 |
| | 6 | 12 43 14 | 68,0 | 140,1 | | А | 10 | 10 |
| | 7 | 12 36 11 | 64,3 | 147,8 | | А | 10 | 10 |
| | 10 | 14 33 00 | 61,9 | 151,6 | | А | 8 | 6 |
| | 11 | 07 17 35 | 56,4 | 127,7 | | А | 9 | 2 |
| | | 09 08 57 | 65,6 | 136,8 | | А | 9 | 9 |
| | | 13 53 28 | 65,2 | 137,2 | | А | 9 | 9 |
| | 13 | 05 55 34 | 57,0 | 126,9 | | А | 9 | 2 |
| | | 10 01 01 | 57,1 | 126,4 | | А | 8 | 2 |
| | 14 | 07 02 44 | 57,6 | 126,4 | | А | 8 | 3 |
| | 16 | 05 29 29 | 61,4 | 148,8 | | А | 8 | 6 |
| | | 15 41 50 | 56,5 | 124,9 | | А | 8 | 2 |
| | 17 | 07 11 02 | 66,2 | 125,6 | | А | 10 | 8 |
| 15 | | 16 40 13 | 60,2 | 153,0 | | А | 12 | 6 |
| | 18 | 08 43 40,5 | 57,61 | 121,04 | | б | 8 | 1 |
| | 19 | 05 45 54 | 63,6 | 147,6 | | А | 8 | 10 |
| | 20 | 22 58 14 | 64,5 | 146,2 | | А | 10 | 10 |
| | 22 | 00 24 31 | 55,0 | 127,6 | | А | 9 | 2 |
| | 23 | 02 59 49,4 | 56,56 | 120,96 | | а | 8 | 1 |
| | | 03 12 43,9 | 56,51 | 121,03 | | а | 8 | 1 |
| | | 03 29 03,1 | 56,55 | 120,96 | | б | 8 | 1 |
| | | 04 20 09 | 59,1 | 150,6 | | А | 10 | 6 |
| | 25 | 01 40 52 | 59,1 | 142,4 | | А | 9 | 6 |
| | 26 | 09 18 19 | 64,1 | 152,3 | | б | 8 | 10 |
| | 27 | 22 04 52 | 64,1 | 146,2 | | А | 8 | 10 |
| | 28 | 08 42 33 | 59,2 | 150,5 | | А | 8 | 6 |
| | 31 | 07 53 17 | 59,6 | 149,7 | | А | 8 | 6 |
| | | 12 04 56 | 66,8 | 130,2 | | А | 9 | 8 |

# EARTHQUAKES OF PRIAMUR'YA [THE AMUR REGION]

[Article by B. M. Kozymin , L. S. Oskorbin, L. F. Volkova, T. V. Nagornykh]

The instrument observations of the earthquakes of Priamur'ye [the Amur region] including the territory of the Amur Oblast and the regions of the Yakut ASSR and the Khabarovsk Kray adjacent to it were made by only two stations until 1971: Chul'man and Ust'-Nyukzha (the Yakut branch of the Siberian Department of the USSR Academy of Sciences). At the end of 1970 the SakhKNII Institute of the Far Eastern Scientific Center of the USSR Academy of Sciences organized a seismic station in Nikolayevsk-na-Amur,[1] and at the beginning of 1974 in connection with studying the seismic regime in the Zeyskiy Rayon of the Amur Oblast the SakhKNII Institute opened stations at Kirovskiy[1] and Bomnak.[1] Thus, the system of stations operating in the investigated territory makes it possible to record underground shocks with an energy of $10^{10}$ to $10^{11}$ joules and more without skipping. In addition to the above-enumerated stations, when processing the data for 1974, the observations of the seismic stations of Chara, Central Kalar, and Tupik were used (the Institute of the Earth's Crust of the Siberian Department of the USSR Academy of Sciences). The parameters of the seismic equipment at the Priamur'ye stations are presented in the table.

The processing of the earthquakes of the Amur region recorded by three or more stations was carried out by the method of intersections with respect to $t_p$ and $t_s$. The epicenters of the earthquakes recorded by any one station were found by the azimuth to the epicenter and the epicentral distance calculated on the basis of the hodograph $t_s-t_p=f(\Delta)$. In both cases the Jeffries-Bullen hodograph was used. The errors in determining the coordinates of the epicenters did not exceed 25-50 km.

The energy of the earthquakes was calculated as K=lg E joules; the Rautian scale was used in the Yakut branch of the Siberian Department of the USSR Academy of Sciences [1].

When processing the earthquakes at the SakhKNII Institute for determining the energy class, the nomogram of Solov'yev and Solov'yeva [2] was used, and by the expression [3]

$$K_p = K_c + 1.7\ (\pm 0.3)$$

[1]Temporary stations



the earthquakes were reduced to the classes $K_p$. The energy classes of certain earthquakes determined at the SakhKNII Institute and the Yakut branch were verified.

The epicenters of the earthquakes which took place in 1974 in the territory of Priamur'ye are depicted on the figure; their basic parameters are placed in the catalog which contains information about 145 underground shocks. The distribution of the earthquakes with respect to energy class $K_p$ is the following:

| K | 12 | 11 | 10 | 9 | 8 | 7 | 6 |
|---|---|---|---|---|---|---|---|
| No of earthquakes | 1 | 0 | 12 | 21 | 61 | 38 | 12 |

The most seismically active is the Stanovoy Ridge adjacent on the north to the investigated region. The spatial arrangement of the centers of the earthquakes was caused by the Stanovoy deep suture, along the system of fractures of which the basic mass of shocks is traced. The Stanovoy suture extends sublatitudinally from the Olekma River to the Dzhugdzhur Ridge.

The greatest in Priamur'ye was observed in the vicinity of the Tukuringra Ridge where on 13 June 1972 and 2 November 1973 two of the force 7 tremors were noted with M=5.5-5.6. In 1974 the Tukuringra Ridge in practice was active in its entire extent. Here it is possible to isolate the region of clustering of the aftershocks in the epicentral zone of the Zeyskoye earthquake of 1973 with the coordinates $\phi$=54.1 to 54.3N, $\lambda$=126.2 to 126.7 E. The seismic activity of the Tukuringra Ridge can be related to the movement along the Gilyuyskiy, Tukuringrskiy and the Yuzhno-Tukuringrskiy sublatitudinal fractures [4].

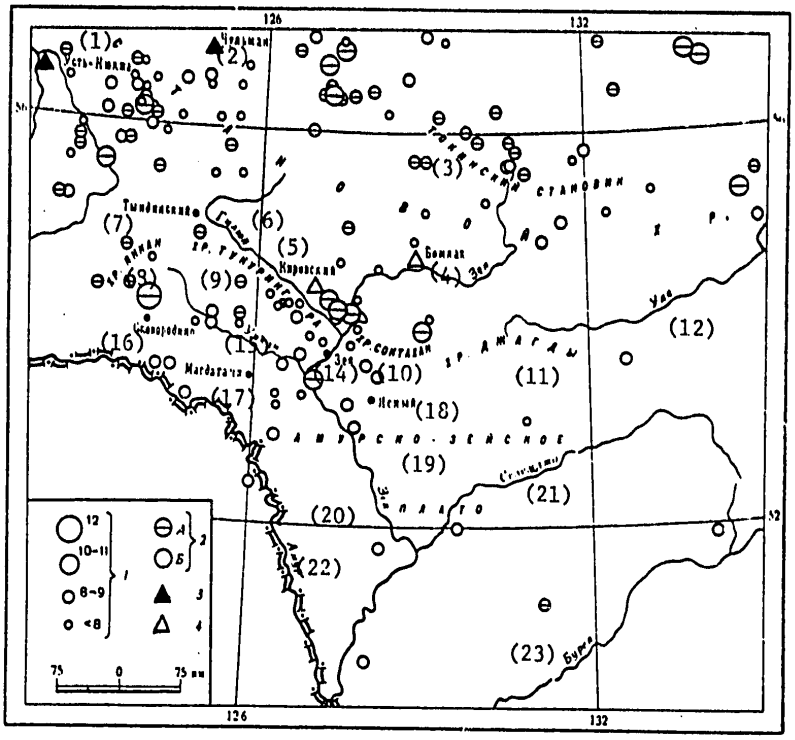
Parameters of the Instruments of the Seismic Stations Which Record the Priamur'ye Earthquakes

| Станция (1) | Тип аппаратуры (2) | Z | | E – W | | N – S | |
|---|---|---|---|---|---|---|---|
| | | $V_{max}$ | $T_{max}$ | $V_{max}$ | $T_{max}$ | $V_{max}$ | $T_{max}$ |
| (3) Усть-Нюкжа | СК-3М (8) | 38 100 | 0,3–1,2 | 48 000 | 0,3–1,2 | 38 400 | 0,3–1,2 |
| (4) Чульман | СК-3М | 47 700 | 0,3–0,9 | 53 300 | 0,3–0,9 | 50 700 | 0,3–0,9 |
| (5) Николаевск-на-Амуре* | СК-3М | 175 000 | 0,5–0,6 | 175 000 | 0,5–0,6 | 175 000 | 0,5–0,6 |
| (6) Кировский* | СК-3М | 155 000 | 0,5–0,6 | 155 000 | 0,5–0,6 | 155 000 | 0,5–0,6 |
| (7) Бомнак* | СК-3М | 154 800 | 0,5–0,6 | 159 000 | 0,5–0,6 | 155 300 | 0,5–0,6 |

Key:
1. Station
2. Type of equipment
3. Ust'-Nyukzha
4. Chul'man
5. Nikolayevsk-na-Amur*
6. Kirovskiy*
7. Bomnak*
8. SK-3M

*Temporary stations

Judging by the distributions of the centers of the earthquakes in space, it is possible to note that the strip of epicenters from Mongolia and Transbaykal through the Tukuringra, Soktakhan and Dzhagdy Ridges obviously extends to the Sea of Okhotsk.




Map of the earthquake epicenters of the Amur Region
1 -- energy of the earthquake; 2 -- accuracy of determining the epicenters; 3 -- permanently active seismic stations; 4 -- the same, temporary

Key:

1. Ust'-Nyukzha; 2. Chul'man; 3. Tokinskiy Stanovik; 4. Bomnak; 5. Kirovskiy; 6. Gilyuy; 7. Tyndinskiy; 8. Yankan Ridge; 9. Tukuringra Ridge; 10. Soktakhan Ridge; 11. Dzhagdy Ridge; 12. Uda; 13. Stanovoy Ridge; 14. Zeya; 15. Urkan; 16. Skovorodino; 17. Magdagachi; 18. Yasnyy; 19. Amur-Zeya Plateau; 20; Zeya; 21. Selemdzha; 22. Amur; 23. Bureya.

Among the other most active actions in the Amur region it is possible to note the Yankan Ridge where a shock with the greatest energy at the center in 1974 ($10^{12}$ joules) was noted on 21 November; the articulation zone of the Stanovoy Ridge with the Dzhugdzhur Ridge where a group of strong earthquakes with K≥9 was recorded; the vicinity of the Amur-Zeya Plateau where epicenters were observed arranged approximately meridionally in the lower course of the Zaya River. Several underground shocks with K<9 were recorded in the territory between the Selemdzha and the Bureya Rivers.

It must be emphasized that the seismicity of the Amur region has been studied extremely little and only in recent years in connection with the exploitation of this territory and the construction of the Baykal-Amur railroad have the first steps been taken with respect to a detailed study of the seismic activity of the individual parts of this territory.

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Catalog of Earthquakes of the Amur Region for 1974

| (1) Число | (2) Момент возникновения, час мин сек | (3) Координаты эпицентра | | (4) Класс точности | K |
|---|---|---|---|---|---|
| | | $\varphi^{\circ}$ N | $\lambda^{\circ}$ E | | |
| | | January | | | |
| 3 | 10 09 20 | 56,2 | 129,2 | А | 9 |
| 9 | 00 33 59 | 55,6 | 122,3 | А | 7 |
| 13 | 12 32 11 | 56,4 | 123,4 | А | 7 |
| | 19 49 10 | 56,3 | 123,5 | А | 8 |
| 16 | 09 30 23 | 56,4 | 132,6 | А | 9 |
| 19 | 00 32 06 | 56,6 | 125,6 | А | 7 |
| 27 | 21 15 43 | 56,1 | 123,9 | А | 8 |
| | | February | | | |
| 11 | 08 45 43 | 53,1 | 130,9 | Б | 7 |
| 25 | 18 41 52 | 51,2 | 131,1 | Б | 9 |
| | | March | | | |
| 6 | 08 39 24 | 55,9 | 130,6 | А | 9 |
| | 13 58 08 | 56,6 | 123,4 | А | 8 |
| 9 | 05 34 42 | 56,6 | 127,2 | А | 10 |
| | 07 58 58 | 56,5 | 127,2 | А | 8 |
| | 22 20 39 | 54,1 | 125,7 | А | 8 |
| 17 | 13 39 44 | 56,0 | 123,8 | А | 8 |
| 22 | 09 30 45 | 56,4 | 124,9 | А | 7 |
| 24 | 12 04 43 | 55,2 | 132,4 | Б | 7 |
| 28 | 02 51 43 | 56,4 | 128,0 | А | 8 |
| 29 | 22 42 57 | 56,4 | 125,5 | А | 7 |
| 30 | 13 55 20 | 56,4 | 127,4 | А | 8 |
| 31 | 04 36 25 | 52,9 | 126,4 | Б | 8 |

Key:

1. Number
2. Time of occurrence, hours, minutes, seconds
3. Coordinates of the epicenters
4. Accuracy class

[Contd]

| (1) Число | (2) Момент возникновения, час мин сек | (3) Координаты эпицентра | | (4) Класс точности | K |
|---|---|---|---|---|---|
| | | $\varphi^{\circ}$N | $\lambda^{\circ}$E | | |
| | | April | | | |
| 2 | 16 23 46 | 51,9 | 134,1 | Б | 7 |
| | 19 35 32 | 53,2 | 127,7 | Б | 8 |
| 3 | 06 58 02 | 53,2 | 127,7 | Б | 7 |
| 7 | 20 57 46 | 55,7 | 131,8 | Б | 7 |
| 8 | 16 03 34 | 54,6 | 128,2 | Б | 7 |
| 10 | 06 55 55 | 55,8 | 132,0 | Б | 8 |
| | 23 52 29 | 56,9 | 127,5 | А | 7 |
| 11 | 02 01 47 | 56,4 | 123,8 | А | 7 |
| | 13 06 28 | 53,7 | 126,8 | Б | 8 |
| 14 | 17 57 47 | 55,9 | 124,1 | А | 6 |
| 15 | 15 14 47 | 55,5 | 124,6 | А | 7 |
| 16 | 07 57 05 | 53,5 | 128,2 | Б | 8 |
| | 19 16 30,9 | 56,45 | 124,41 | б | 8 |
| 17 | 09 39 52 | 53,2 | 124,8 | Б | 8 |
| | 16 37 50 | 55,7 | 128,8 | А | 8 |
| | 17 36 20 | 56,2 | 128,3 | Б | 7 |
| 18 | 15 01 19 | 53,3 | 126,4 | Б | 7 |
| 19 | 14 27 14,4 | 55,88 | 122,48 | б | 7 |
| 23 | 06 32 42 | 54,2 | 126,6 | Б | 7 |
| | 14 53 58 | 56,6 | 123,5 | А | 7 |
| 24 | 22 30 59 | 55,7 | 130,6 | А | 8 |
| 29 | 14 57 37 | 55,8 | 130,7 | А | 8 |
| 30 | 03 39 23 | 56,1 | 124,4 | А | 7 |
| | | May | | | |
| 1 | 17 06 27 | 55,3 | 130,1 | Б | 7 |
| 3 | 00 40 36 | 56,6 | 122,0 | А | 9 |
| 16 | 09 05 20,3 | 56,18 | 123,67 | а | 10 |
| 19 | 05 11 54 | 56,2 | 123,7 | А | 8 |
| | 22 53 46,4 | 56,14 | 123,74 | б | 8 |
| 22 | 06 08 42 | 56,2 | 123,7 | А | 7 |
| 23 | 10 18 12 | 56,2 | 123,6 | А | 7 |
| | 15 18 41 | 55,1 | 135,2 | Б | 9 |
| 26 | 14 30 35 | 54,9 | 131,2 | Б | 9 |
| | 23 10 34 | 55,1 | 131,6 | Б | 8 |
| 27 | 15 18 41 | 55,1 | 135,2 | Б | 9 |
| 28 | 14 16 00 | 55,8 | 125,4 | А | 8 |
| 30 | 05 58 27 | 54,2 | 127,6 | А | 10 |
| | | June | | | |
| 5 | 16 40 25 | 54,0 | 129,0 | А | 10 |
| | 16 44 28 | 54,0 | 129,0 | А | 9 |
| 6 | 00 29 27 | 55,7 | 122,5 | А | 8 |
| 8 | 20 51 23 | 55,4 | 134,9 | А | 10 |
| 17 | 18 41 47 | 55,6 | 135,2 | А | 9 |
| | | July | | | |
| 10 | 01 41 10 | 55,4 | 133,2 | Б | 6 |
| 12 | 19 26 43 | 54,9 | 128,8 | А | 7 |
| 16 | 22 25 17 | 57,6 | 130,7 | А | 8 |

[Cont'd]

| (1) Число | (2) Момент возникновения, час мин сек | (3) Координаты эпицентра | | (4) Класс точности | K |
|---|---|---|---|---|---|
| | | φ° N | λ° E | | |
| 16 | 22 27 22 | 56,1 | 125,5 | А | 7 |
| 17 | 07 56 50 | 57,0 | 125,5 | А | 7 |
| 18 | 23 50 29 | 56,2 | 123,6 | А | 7 |
| 19 | 02 25 45 | 55,2 | 122,2 | А | 8 |
| 20 | 10 49 24 | 54,1 | 129,1 | Б | 6 |
| 21 | 14 32 20,8 | 54,92 | 124,84 | б | 8 |
| 23 | 01 38 00 | 56,2 | 123,7 | А | 8 |
| 27 | 05 50 22 | 54,1 | 127,6 | А | 7 |
| | 12 19 50 | 54,3 | 127,4 | А | 10 |
| 31 | 20 49 51 | 55,2 | 129,0 | А | 7 |
| | | August | | | |
| 4 | 05 16 02 | 56,0 | 129,8 | А | 9 |
| 6 | 20 56 28 | 55,2 | 122,3 | А | 8 |
| 7 | 05 26 11,4 | 56,31 | 122,97 | а | 8 |
| | 08 43 23 | 53,6 | 126,5 | Б | 8 |
| 8 | 05 21 51 | 56,5 | 128,7 | Б | 8 |
| 12 | 07 40 41 | 55,6 | 130,9 | Б | 8 |
| 13 | 08 42 40 | 53,0 | 127,8 | Б | 8 |
| 16 | 07 50 49 | 53,3 | 126,9 | Б | 7 |
| 19 | 06 48 52 | 57,0 | 129,0 | А | 9 |
| | 13 24 21 | 54,2 | 127,5 | А | 10 |
| 25 | 22 49 59 | 55,6 | 123,0 | А | 10 |
| 29 | 13 54 19 | 56,8 | 127,5 | А | 10 |
| | | September | | | |
| 18 | 03 10 16 | 56,1 | 123,3 | А | 8 |
| 20 | 15 46 09 | 54,0 | 125,2 | Б | 8 |
| 21 | 17 22 48 | 55,8 | 123,3 | А | 8 |
| 22 | 15 31 22 | 56,8 | 126,6 | А | 8 |
| 23 | 05 40 07 | 55,8 | 123,4 | А | 8 |
| 24 | 17 54 38 | 54,3 | 123,0 | А | 9 |
| | 17 59 28 | 54,4 | 125,7 | А | 9 |
| | 19 44 02 | 56,8 | 134,0 | А | 10 |
| | 20 07 55 | 56,7 | 134,3 | А | 10 |
| 30 | 20 01 46 | 53,4 | 127,1 | А | 10 |
| | | October | | | |
| 2 | 07 25 36 | 53,5 | 124,5 | Б | 9 |
| 3 | 08 07 18 | 54,0 | 125,7 | Б | 6 |
| | 10 29 33 | 53,5 | 124,2 | Б | 8 |
| | 16 55 50 | 54,3 | 126,2 | Б | 7 |
| 4 | 20 49 04 | 54,0 | 124,9 | Б | 7 |
| 5 | 01 56 35 | 53,2 | 126,4 | Б | 7 |
| | 10 35 16 | 54,2 | 126,2 | Б | 6 |
| | 10 46 26 | 56,4 | 127,1 | А | 8 |
| 6 | 14 17 29 | 56,9 | 132,3 | А | 8 |
| 11 | 00 30 17 | 56,0 | 126,9 | А | 8 |
| 14 | 05 09 44 | 55,7 | 129,0 | А | 9 |
| 16 | 08 59 52 | 55,9 | 130,0 | А | 8 |
| | 09 58 04 | 54,6 | 124,0 | А | 8 |
| 17 | 10 49 17 | 55,5 | 124,0 | А | 8 |
| | 16 58 30 | 56,7 | 130,5 | Б | 8 |
| 18 | 06 34 48 | 56,4 | 127,3 | А | 10 |

[Contd]

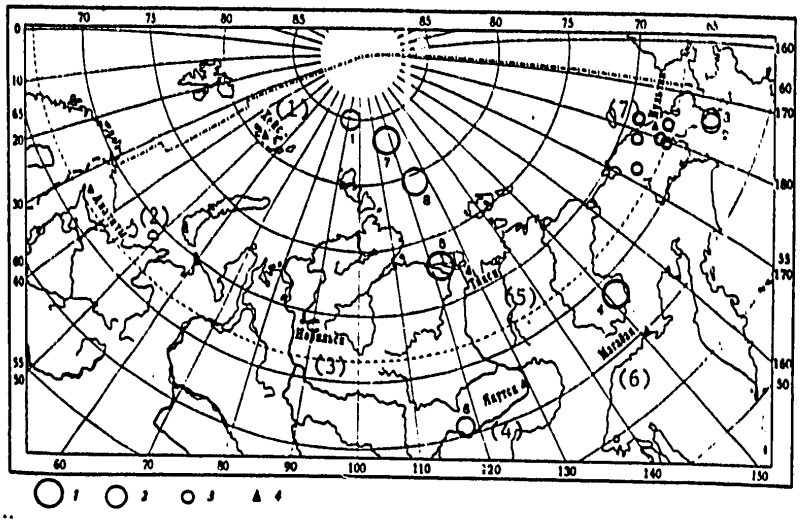
| (1) Число | (2) Момент возникновения, час мин сек | (3) Координаты эпицентра | | (4) Класс точности | K |
|---|---|---|---|---|---|
| | | $\varphi^{o}$ N | $\lambda^{o}$ E | | |
| 21 | 15 17 18 | 56,1 | 125,1 | А | 7 |
| 26 | 03 33 10 | 53,8 | 127,2 | Б | 6 |
| 29 | 02 07 47 | 54,2 | 127,4 | Б | 7 |
| | | November | | | |
| 1 | 22 37 51 | 54,7 | 123,5 | А | 8 |
| 2 | 03 29 47 | 53,9 | 127,0 | Б | 6 |
| 18 | 21 27 27 | 56,2 | 130,4 | А | 8 |
| 19 | 06 53 35 | 51,8 | 128,3 | | 8 |
| 21 | 02 35 06 | 54,2 | 124,0 | А | 12 |
| | 02 49 47 | 54,3 | 123,6 | А | 9 |
| 22 | 17 50 47 | 54,2 | 126,6 | А | 6 |
| 23 | 12 12 36 | 50,6 | 128,1 | | 8 |
| 24 | 18 45 48 | 54,1 | 125,2 | Б | 8 |
| | 22 22 11 | 53,7 | 132,7 | Б | 8 |
| 25 | 01 16 15 | 55,8 | 122,5 | А | 8 |
| 27 | 09 07 15 | 54,2 | 126,8 | Б | 6 |
| | 12 07 48 | 56,9 | 129,3 | Б | 7 |
| 28 | 02 56 04 | 54,1 | 126,7 | Б | 8 |
| | 03 24 51 | 54,2 | 126,5 | А | 7 |
| | 18 51 15 | 54,3 | 127,8 | А | 6 |
| | | December | | | |
| 2 | 09 43 38 | 54,1 | 127,4 | А | 6 |
| 5 | 23 39 14 | 53,6 | 128,0 | Б | 8 |
| 8 | 22 07 05 | 53,3 | 122,0 | | 8 |
| 9 | 16 18 07 | 54,7 | 127,5 | Б | 6 |
| 11 | 07 17 35 | 56,4 | 127,7 | А | 9 |
| 13 | 05 55 34 | 57,0 | 126,9 | А | 9 |
| 16 | 15 41 50 | 56,5 | 124,9 | А | 8 |
| 18 | 07 12 27 | 54,1 | 122,9 | А | 8 |
| 20 | 13 54 36 | 52,0 | 129,6 | | 8 |
| 21 | 03 40 34 | 52,4 | 126,0 | | 8 |
| 22 | 00 24 31 | 55,0 | 127,6 | А | 9 |
| 29 | 01 53 08 | 54,0 | 127,8 | Б | 7 |
| 31 | 07 41 14 | 54,1 | 127,5 | Б | 8 |

EARTHQUAKES OF THE ARCTIC

[Article by A. P. Lazareva]

The numerous seismic stations of the Arctic zone and the provision of them with equipment in 1974 did not change by comparison with the past year [1]. As before only the epicenters of earthquakes with M>4 are determined reliably. The weaker earthquakes are usually recorded by one nearby station, and their parameters are determined insufficiently exactly. The majority of the recorded weak earthquakes are interpreted only with respect to the epicentral distance and the energy class (K) or they are not interpreted in general. For example, the analysis of the observation materials from July 1972 to September 1974 demonstrated that the earthquakes of the Chukotka Peninsula with K<11 are not recorded by any other stations of the YeSSN integrated system except the Iul'tin station. In particular, they are not recorded even (at a distance of 1300-1700 km) by the stations of the Northeastern part of the USSR: Magadan, Seymchan, Susuman, and so on. Correspondingly, even the earthquakes with K<11, the epicenters of which are located in the Arctic west of 150°E are not noted by the Iul'tyn station.

Some of the "quiet" regions of the Arctic turn out to be seismically active when conducting specialized observations in them. Thus, as a result of a number of short-term seismic observations in 1972-1974, the expedition of the SEVMORGEO Scientific Production Association recorded about one hundred weak shocks in the vicinity of the Novosibirsk islands [2], at the same time as during the entire preceding period of teleseismic observations from 1908 to 1973 no earthquakes were recorded in this region. The first instrument epicenter was noted in December 1973 by the teleseismic network. On 8 October 1974 an earthquake with $m_{PV}$=4.6 was recorded in Central Siberia in the region where previously no epicenters were known by the teleseismic observations. As a result of the deficiency in the development of the network of seismic stations in the Arctic, there are "dead spots" in this broad region. However, with time the earthquake data are being accumulated, and this has become especially noticeable in recent years when epicenters in regions where they have not been previously known have been systematically appearing on the map of the Arctic.




Map of epicenters of earthquakes in the Arctic
Classification with respect to M and K: 1 -- 4.6<M<5.5; 2 -- 3.5<M<4.5; 3 -- 8≤K≤10; 4 -- seismic stations.

Key:
1. Kheys Island
2. Apatity
3. Noril'sk
4. Yakutsk
5. Tiksi
6. Magadan
7. Iul'tin

Distribution of Weak Earthquakes by Energy Classes and Recording Range

| (1) Станция | Число землетрясений (2) | | (3) Энергетический класс K | | | | |
|---|---|---|---|---|---|---|---|
| | Δ<100 км | Δ<200 км | <6 | 7 | 8 | 9 | 10 |
| (4) Иультин | 6 | 82 | 46 | 17 | 15 | 8 | 2 |
| (5) Тикси | 34 | 7 | - | - | - | - | - |

Key:
1. Station
2. No of earthquakes
3. Energy class K
4. Iul'tin
5. Tiksi

Note. Only the vertical SKM-3 channel is operating in Tiksi.

The catalog of earthquakes of the Arctic zone was compiled according to the materials of the Operative Seismological Bulletin of the Earth Physics Institute of the USSR Academy of Sciences, the Preliminary Determination of Epicenters (USA), the bulletins and seismograms of the seismic stations of Kheys, Tiksi, Iul'tin (report), Seymchan, Noril'sk. The methods used to process the data, the nomograms, and the hodographs are described in the preceding collections.

The figure shows the arrangement of the epicenters in 1974. The table gives a summary of the weak nearby earthquakes recorded by only one station for which only the epicentral distance and energy class were determined.

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Catalog of Earthquakes of the Arctic in 1974

| (1) № | (2) Дата | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) $\varphi^{\circ}N$ | $\lambda^{\circ}$ | M | K | (5) Район |
|---|---|---|---|---|---|---|---|
| | 1.III | 05 52 08 | 66,3 | 179,6E | | 9 | Chukotka Peninsula |
| 1 | 4.III | 06 17 34 | 85,3 | 91,6E | 4,0 | | North of Severnaya Zemlya |
| 2 | 14.IV | 15 43 11 | 64,2 | 174,0W | 4,4 | 14 | |
| 3 | 15.IV | 02 29 35 | 64,1 | 173,9W | 4,2 | 13 | Anadyrskiy Bay |
| 4 | 19.VI | 03 09 38 | 63,3 | 151,0E | 5,4 | | Cherskiy Ridge |
| 5 | 29.VIII | 08 37 18 | 73,2 | 123,2E | $m_{PV}$=5,1 | | Northern Part of Yakutia |
| | 9.IX | 04 31 37 | 66,9 | 176,8W | | 9 | Chukotka Peninsula |
| | 12.IX | 01 55 26 | 67,6 | 172,0E | | 9 | Anadyrskoye Plateau |
| 6 | 8.X | 03 07 15 | 60,5 | 118,3E | 4,4 $m_{PV}$=4,6 | | Yakutia |
| 7 | 11.X | 13 41 21 | 83,5 | 117,7E | $m_{PV}$=4,3 | | North of Severnaya Zemlya |
| | 16.XI | 02 02 59 | 66,6 | 179,6E | | 10 | Chukotka Peninsula |
| 8 | 27.XI | 20 38 03 | 79,2 | 124,4E | ~4 | | Sea of Laptev |
| | 10.XII | 03 27 32 | 69,0 | 178,8W | | 10 | Chukotskoye Sea |
| | 16.XII | 22 14 22 | 68,9 | 178,6E | | 8 | Chukotskoye Island |

Key:
1. No
2. Date
3. Time of occurrence, hours, minutes, seconds
4. Coordinates of epicenter
5. Region

EARTHQUAKES OF KAMCHATKA AND THE KOMANDORSKIYE ISLANDS

[Article by S. A. Fedotov, I. G. Simbireva, V. D. Feofilaktov, Yu. D. Matviyenko]

The detailed seismological observations in Kamchatka and the Komandorskiye Islands continued in 1974.

The Kamchatka network of stations was directed by the Laboratory of Seismometry of the Institute of Vulcanology of the Far Eastern Scientific Center of the USSR Academy of Sciences (laboratory head V. D. Feofilaktov). The earthquakes in 1974 were processed by the Laboratory of Seismometry by a group made up of I. G. Simbireva (laboratory chief), T. S. Lepskaya, I. P. Grigor'yeva, L. I. Bogatova, Z. A. Borisova, N. P. Pasechko, Ye. V. Popkova, L. I. Pribylova. The general direction of the seismological studies in Kamchatka was realized by S. A. Fedotov.

In 1974 the Institute of Vulcanology continued the work aimed at giving the network original seismic stations of Kamchatka a stationary form: a special building was built for the seismic station in Esso, the construction of the stationary seismic station of Kronoki was completed. In October the Kronoki station went into operation with a set of standard regional VEGIK-GB-IV equipment with amplification of 5,000 and the SSRZ seismograph for recording strong earthquakes.

According to the plan for creation of a test area for recording strong earthquakes in 1974 in Kamchatka, the SSRZ seismographs were installed also at the seismic stations nearest to the focal zone: Shipunskaya, Krutoberegovo, Pauzhetka, and two instruments were installed in the city of Petropavlovska-Kamchatskiy.

In July 1974, in connection with the fact that the Karymskiy station[1] began to operate by a full program, the Semlyachik station was opened in Zhupanovo.

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[1] Temporary station.

APPROVED FOR RELEASE: 2007/02/09: CIA-RDP82-00850R000100060003-1

The seismicity in 1974 is illustrated by the catalog of earthquakes of the generally accepted model with $K^{\Phi 68}_{S1,2} \geq 10$, the map of earthquake epicenters with $K \geq 9$ (Fig 1), the vertical section across the volcanic arc (Fig 2) and the map of seismic activity (Fig 3).

The processing of the observations and methods of analyzing seismicity in 1974 remain the same as in the preceding year [1]. The energy class was determined by the nomogram of S. A. Fedotov [2].

In 1974 within the Kamchatka region, 1463 earthquakes were recorded and processed which were distributed as follows with respect to energy:

| $K^{\Phi 68}_{S1,2}$ | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|
| No of earthquakes | 462 | 556 | 283 | 111 | 37 | 9 | 5 |

The most active was the region east of the Paramushir and Shumshu Islands. After the Northern Kuril earthquake of 28 February 1973 (M=7.4) came a series of aftershocks, part of which even in 1974 had a magnitude of M>5.5: 15 May -- $K^{\Phi 68}_{Sk,2}$=14.3, M=6.7; 27 May -- $K^{\Phi 68}_{S1,2}$=13.5, M=5.8. Therefore in spite of the decrease in seismic activity, the maximum value of which in 1974 was $A_{10}$=4.6 (in 1973 $A_{10}$=12.0), this region, just as in 1973, remained the most active in Kamchatka [3].

Just as in past years, in 1974 energy releases were observed as a result of the swarm type earthquakes causing an increase in seismic activity in certain parts of Kamchatka: in June-July, northeast of Esso, in September-October, in the northern part of the center zone of the disastrous earthquake of 4 December 1952 (Avachinskiy Bay). The increase in activity was observed also on the Komindorskiy Islands where on 27 July north of the Bering Island there was an earthquake with K=13 (M=5.9) felt with force 5 on Bering Island at the village of Nikol'skiy.

According to the report of the head of the seismic station I. T. Vasil'yev, the earthquake of 27 July was noted by many of the residents of the village, who exhibited anxiety and left their homes to go out into the street. The floors and walls creaked in the seismic station building, the windows and dishes rattled, hanging objects swayed, and lights swung. In the Kronotskiy and Kamchatka Bays the level of seismic activity in the western part did not change, but it dropped significantly in the east.

The strongest was the earthquake of 21 October felt in many of the populated places (see the catalog). It appeared with greatest force on Cape Shipunskiy (force 5-6) where the windows rattled in the seismic station building, furniture moved, the floors and walls creaked, and hanging objects swayed (report of V. V. Razumovskiy). The coworkers of the Karymskaya seismic station noted a drop in the water level in the thermal spring (force 5).

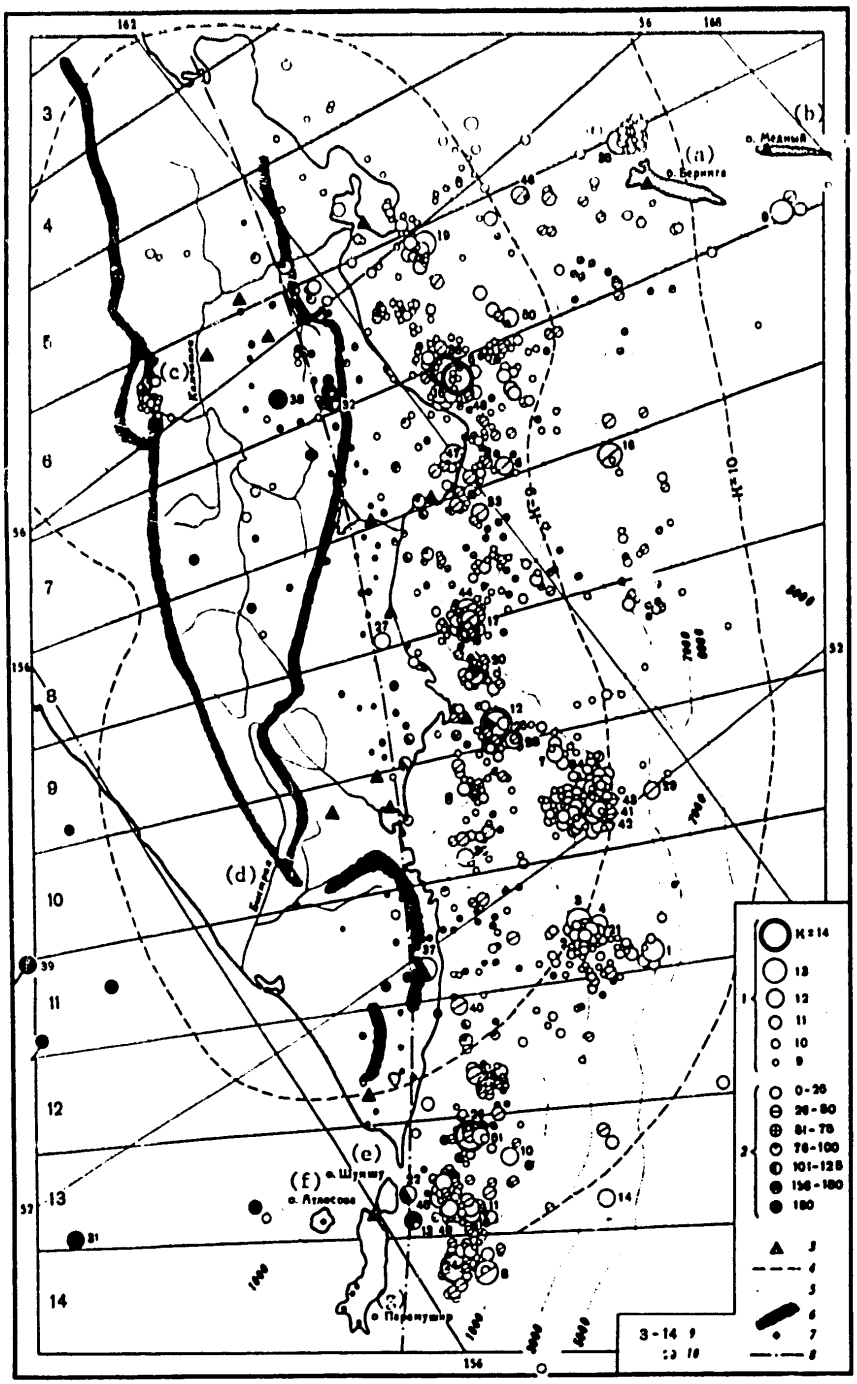


Figure 1. See following page for title and key.

[See preceding page for figure]

Figure 1. Map of the epicenters of the earthquakes of Kamchatka and the Komandorskiy Islands with $K \geq 9$.

1--energy of the earthquakes; 2--depth of center, Km, 3--seismic stations; 4--the boundaries of the regions of certain recording of the earthquakes with K = 9 and 10; 5--isobaths; 6--basic mountain ranges of Kamchatka; 7--volcanoes; 8--axis of volcanic arc; 9--sections of the volcanic arc; 10--numbers of earthquakes with $K \geq 12$.

Key: (a) Bering Island
(b) Mednyy Island
(c) Kamchatka
(d) Bystraya
(e) Shumshu Island
(f) Atlasova Island
(g) Paramushir Island

[See following page for figure]

Figure 2. Vertical section across Kamchatka.

1--accuracy of determining the depth of centers; 2--earthquake energy; 3--boundaries of the region of reliable recording with K = 9 and 10; 4--water; 5--sediment; 6--granite layer; 7--basaltic layer.

Key: (a) Kamchatka
(b) Petropavlovsk - Kamchatskiy
(c) Okean
(d) Crust mantle

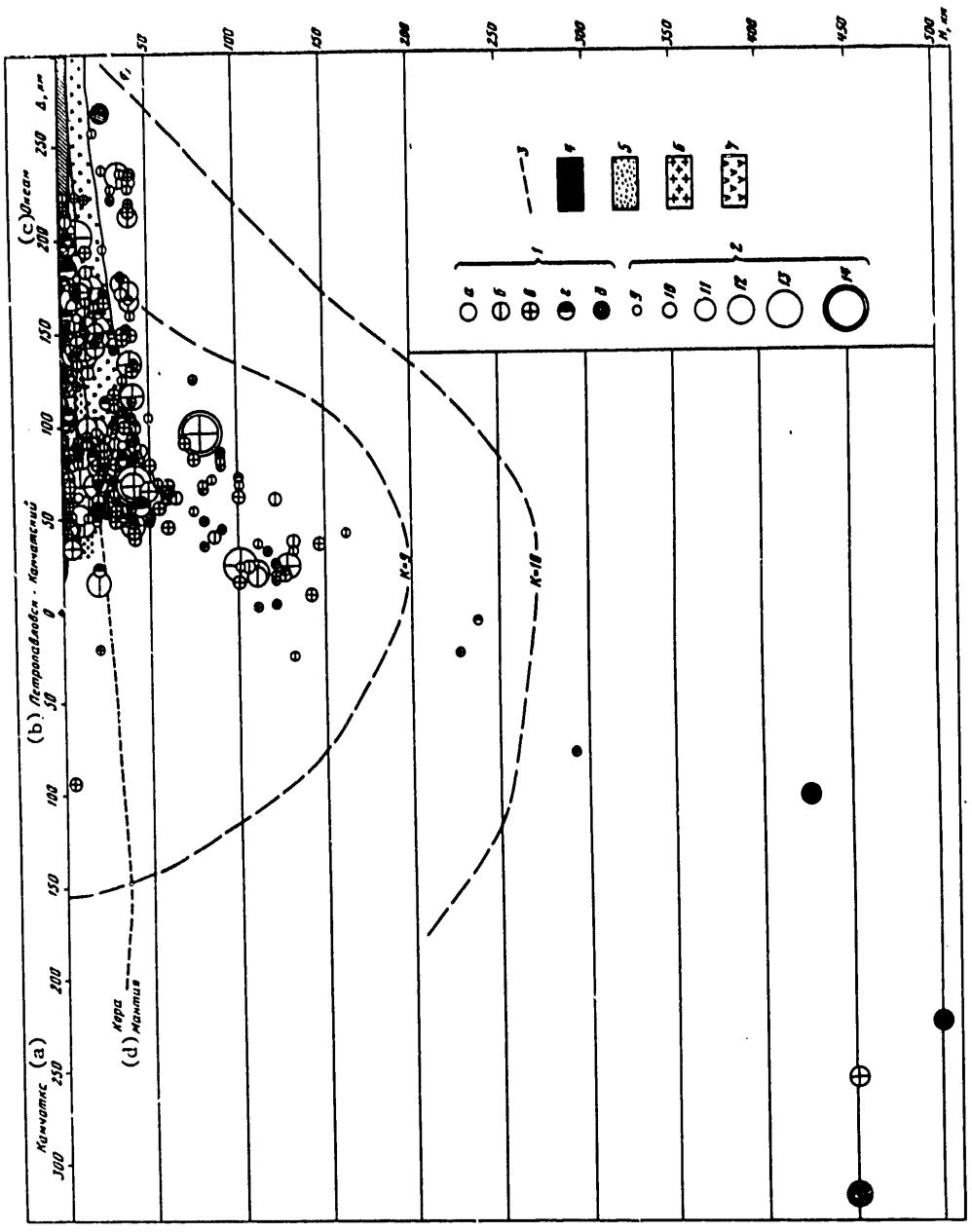


Figure 2. See preceding page for title and key.

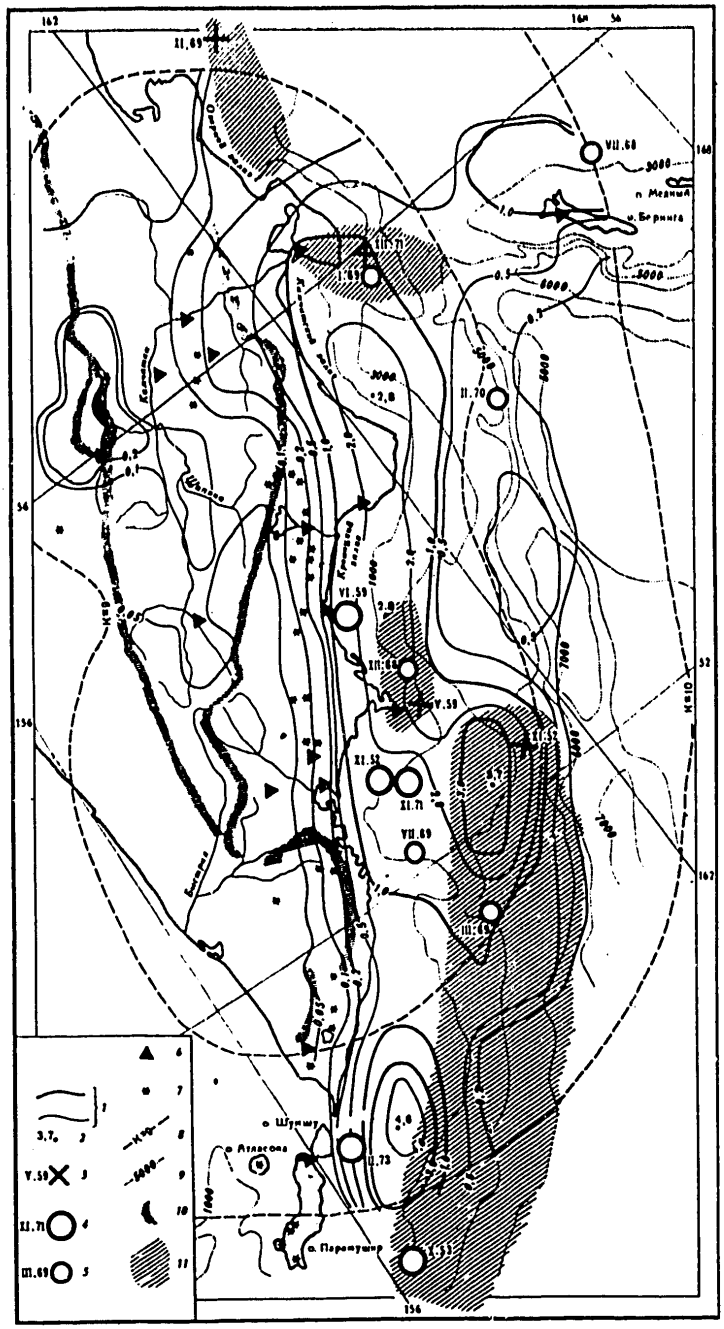

Figure 3. Map of the seismic activity of Kamchatka and the Komandorskiye Islands. 1 -- isolines of seismic activity in units $A_{10}$; 2 -- maxima and minima of seismic activity in units $A_{10}$; 3 -- epicenters by instrument data of strong earthquakes of November 1952, May 1959, November 1969 and December 1971; 4 -- epicenters of strong earthquakes with M=7-7.5 for the preceding 20 years; 5 -- epicenters of strong earthquakes with M=6-6.25 for the preceding 5 years; 6 -- seismic stations; 7 -- active volcano; 8 -- boundaries of the regions of reliable recording of earthquakes with K=9 and 10; 9 -- isobaths; 10 -- basic ridges; 11 -- region of earthquake centers November 1952, May 1959, November 1969, December 1971.

[See key on p 183]

[Key to Fig 3, p 182]:
1. Bystraya; 2. Kamchatka; 3. Shapika; 4. Ozernoy Bay;
5. Kamchatka Bay; 6. Kronotskiy Bay; 7. Shumshu Island;
8. Atlasova Island; 9. Paramushir Island; 10. Mednyy Island;
11. Bering Island.

On the Kamchatka Peninsula (including the vicinity of Esso) the seismic activity remained on the 1973 level.

Thus, in 1974 the level of seismic activity in the Avachinskiy Bay and on the Komandorskiye Islands increased; east of the Kamchatka and Kronotskiy Bays and also the Paramushir and Shumshu Islands, a decrease in activity was observed. The earthquakes occurred basically at a depth of 0-80 km.

In addition to the earthquakes presented in the catalog, an earthquake swarm of local nature was noted near Pauzhetka (S-P=1-2 seconds) recorded by only one seismic station felt with a force to force 6. Thus, for example, on 14 July a force 6 tremor from the earthquake was recorded at 0444 hours and 1054 hours; one with force 5-6 at 1048 hours, 1148 hours and 1243 hours; force 5 at 1034 hours. On 16 July a shock with force 4 was recorded at 1924 hours. In March, April, July, August and December more than 20 force 2-3 earthquakes were recorded.

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Catalog of Earthquakes of Kamchatka and the Komandorskiye Islands in 1974

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | Координаты эпицентра (4) φ°N | λ°E | (5) Глубина очага, км | (6) Класс точности | M | K | (7) № района | (8) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | January | | | | | | | |
| | 1 | 02 58 22,5 | 54,11 | 168,43 | 0 | в/н | | 9,7 | 20б | |
| | | 03 42 31,5 | 54,18 | 168,56 | 0 | в/н | | 9,8 | 20б | |
| | | 20 23 58,0 | 54,46 | 161,97 | 40 | в/в | | 9,7 | 7 | |
| | | 23 35 39,0 | 54,81 | 163,65 | 30–40 | б/в | | 9,5 | 20в | |
| | 3 | 00 56 44,2 | 50,22 | 156,96 | 40 | а/в | | 10,0 | 13 | |
| | | 14 45 36,5 | 50,20 | 156,95 | 0–40 | с/с | | 10,3 | 13 | |
| | | 22 10 41,0 | 53,15 | 159,08 | 110 | а/б | | 10,5 | 10 | |
| | 4 | 07 00 32,5 | 56,10 | 161,60 | 90 | а/б | | 9,8 | 6 | |
| | 7 | 22 58 19,0 | 53,62 | 160,63 | 30–40 | а/б | | 9,5 | 9 | |
| 1 | 9 | 02 49 35,7 | 51,17 | 160,35 | 0 | б/в | 5,4 | 13,0 | 22а | |
| | | 03 37 48,0 | 50,93 | 159,23 | 10–40 | в/н | | 9,9 | 12 | |
| | | 05 32 21,0 | 51,44 | 159,67 | 10 | а/в | | 10,3 | 11 | |
| | | 22 47 41,7 | 51,17 | 159,53 | 0 | б/в | | 9,7 | 11 | |
| | 10 | 01 50 16,0 | 51,67 | 159,50 | 0 | а/в | | 9,7 | 11 | |
| 2 | | 02 37 00,0 | 51,51 | 159,78 | 20 | а/б | 4,9 | 11,5 | 11 | |
| | | 05 25 36,6 | 51,59 | 159,76 | 10 | а/в | | 10,0 | 11 | |
| 3 | | 05 18 52,2 | 51,57 | 159,78 | 10–20 | а/в | 5,3 | 12,6 | 11 | |
| | | 12 28 40,7 | 51,47 | 159,84 | 0 | в/н | | 9,7 | 11 | |
| 4 | 11 | 09 22 22,9 | 51,53 | 159,80 | 10 | а/б | 4,6 | 11,6 | 11 | |
| | | 09 42 26,0 | 50,21 | 156,72 | 0–50 | с/с | | 9,5 | 13–14 | |
| | 12 | 16 38 39,4 | 51,26 | 159,60 | 0–10 | б/н | | 9,5 | 11 | |
| | 13 | 02 10 07,0 | 54,48 | 161,69 | 40 | а/в | | 10,6 | 7 | |
| | | 03 17 45,0 | 55,74 | 162,01 | 20–30 | а/в | | 9,7 | 6 | |
| | | 21 25 19,3 | 51,57 | 159,81 | 20 | а/б | | 10,6 | 11 | |
| | 16 | 07 05 40,4 | 52,50 | 159,10 | 40–50 | а/б | | 10,8 | 10 | |
| | | 19 41 20,5 | 51,27 | 160,08 | 0 | б/н | | 10,5 | 22а | |
| | | 19 44 23,2 | 51,26 | 159,57 | 0 | б/н | | 9,7 | 11 | |
| | | 21 45 14,8 | 51,31 | 160,03 | 0 | а/в | | 10,2 | 22а | |
| | 17 | 01 15 17,5 | 53,66 | 160,64 | 30–40 | а/в | | 10,0 | 9 | |
| | 19 | 04 40 53,5 | 51,50 | 159,92 | 0–10 | б/б | | 10,6 | 11 | |
| | | 11 46 40,5 | 51,45 | 159,93 | 0–10 | б/в | | 10,3 | 11 | |
| | | 21 34 32,0 | 51,80 | 159,10 | 30–40 | а/б | | 11,3 | 11 | |
| | | 22 21 47,0 | 57,37 | 163,40 | 0 | а/в | | 9,8 | 4 | |
| | 22 | 09 18 10,5 | 51,05 | 157,93 | 20–30 | б/в | | 9,5 | 12 | |
| 5 | | 13 28 17,8 | 55,05 | 162,34 | 0–10 | а/в | 5,7 | 13,7 | 7 | Zhupanovo, force 3-4; Klyuchi, f 3; Karymskiy, f 2-3 |
| | | 13 39 32,5 | 54,89 | 162,39 | 10–20 | а/в | | 11,1 | 7 | |
| | 23 | 01 16 51,6 | 51,53 | 159,31 | 0 | б/в | | 9,6 | 11 | |
| | 25 | 14 22 38,0 | 53,40 | 160,55 | 20 | а/б | | 9,6 | 9 | |
| | | 23 01 30,5 | 51,51 | 159,70 | 10 | б/б | | 9,8 | 11 | |
| | 26 | 01 25 50,4 | 52,44 | 159,45 | 30 | а/в | | 10,5 | 10 | |
| | | 15 52 02,5 | 50,12 | 156,87 | 0 | б/в | | 11,1 | 14 | |
| | 27 | 02 47 12,0 | 53,90 | 161,40 | 40 | а/в | | 10,0 | 8 | |
| | | 17 10 55,0 | 51,50 | 159,70 | 0 | б/в | | 10,0 | 11 | |
| | 29 | 04 13 55,0 | 54,98 | 162,15 | 10 | а/б | | 11,4 | 7 | |
| | | 06 41 00,0 | 55,10 | 162,35 | 10–20 | а/б | | 10,9 | 6 | |
| | 31 | 12 32 06,2 | 55,61 | 163,93 | 0–50 | а/в | | 10,7 | 20б | |
| | | | February | | | | | | | |
| | 1 | 06 08 36,3 | 50,19 | 157,24 | 20 | б/н | | 10,6 | 13 | |
| 6 | | 15 04 50,7 | 54,35 | 162,11 | 30–40 | а/в | | 11,8 | 7 | |
| | | 19 21 22,0 | 54,37 | 161,37 | 40 | а/в | | 10,6 | 8 | |
| | | 23 51 47,0 | 52,93 | 160,14 | 40 | а/в | | 10,1 | 9–10 | |
| | 3 | 06 01 07,5 | 50,11 | 156,92 | 0 | б/в | | 10,0 | 13–14 | |
| | 4 | 07 30 28,0 | 50,54 | 157,12 | 30 | а/в | | 9,5 | 13 | |
| | 5 | 01 06 42,4 | 50,33 | 156,99 | 0 | а/в | | 10,2 | 13 | |
| 7 | 6 | 02 51 20,9 | 52,59 | 160,57 | 10 | а/б | 4,7 | 11,5 | 10 | |
| | | 08 35 41,5 | 55,21 | 165,31 | 40 | а/б | | 9,7 | 20б | |
| | | 08 45 21,5 | 52,61 | 160,64 | 10–20 | а/б | | 10,7 | 10 | |

[See key, p 192]

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | (4) Координаты эпицентра φ° N | λ° E | (5) Глубина очага, км | (6) Класс точности | M | K | (7) № района | (8) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 6 | 08 50 09,0 | 52,59 | 160,58 | 10–20 | а/б | | 11,2 | 10 | |
| | | 11 04 46,0 | 53,67 | 159,48 | 120–130 | а/б | | 9,8 | 9 | |
| | 7 | 12 40 18,0 | 50,46 | 157,02 | 20 | а/в | | 9,6 | 13 | |
| 8 | | 19 04 06,0 | 49,90 | 156,87 | 0–50 | с/с | 5,0 | 12,5 | 14 | |
| 9 | 8 | 14 21 38,4 | 54,41 | 167,18 | 10 | а/в | 5,4 | 12,9 | 20б | |
| | | 14 56 10,7 | 54,32 | 167,37 | 10–20 | а/в | | 10,6 | 20б | |
| 10 | 9 | 18 22 12,5 | 50,47 | 157,77 | 20 | а/в | 4,9 | 11,8 | 13 | |
| | 11 | 13 40 50,0 | 56,15 | 161,71 | 10 | а/в | | 11,1 | 6 | |
| | 13 | 01 02 56,0 | 55,19 | 162,00 | 30 | а/в | | 9,9 | 7 | |
| | 14 | 08 32 20,0 | 51,32 | 160,10 | 0 | б/в | | 9,9 | 22а | |
| | 15 | 17 44 26,5 | 54,46 | 161,52 | 40 | а/б | | 10,1 | 7–8 | |
| 11 | 17 | 08 34 34,2 | 50,58 | 157,01 | 10 | а/б | 4,6 | 12,2 | 13 | |
| | 19 | 21 58 01,3 | 54,44 | 167,34 | 10–40 | в/н | | 11,3 | 20б | |
| | | 23 27 00 | 51,17 | 155,00 | 425 | с/с | | 10,7 | | |
| | 22 | 11 04 57,0 | 50,51 | 156,95 | 0 | б/н | | 9,8 | 13 | |
| | 23 | 11 42 45,5 | 50,66 | 157,29 | 40–70 | в/в | | 10,1 | 13 | |
| | 24 | 18 32 30,7 | 50,05 | 156,77 | 0–50 | с/с | | 9,8 | 14 | |
| | 26 | 03 37 47,8 | 50,00 | 156,74 | 0–50 | с/с | | 9,8 | 14 | Petropavlovsk-Kamchatskiy, force 3-5; Avacha, force 4-5; Karymskiy, force 3; Zhupanovo, force 3,5,4; Cape Shipunskiy, force 3 |
| 12 | | 06 23 43,8 | 53,07 | 160,21 | 80 | а/в | 5,6 | 13,6 | 9 | |
| | 27 | 03 27 15,5 | 54,84 | 163,55 | 30–40 | а/в | | 9,7 | 20в | |
| | | 22 43 38,8 | 52,99 | 160,08 | 40–50 | а/б | | 10,3 | 9 | |
| | | | | March | | | | | | |
| | 1 | 16 03 53,0 | 54,11 | 169,17 | 30 | н/н | | 10,9 | 20б | |
| | | 21 59 59,2 | 50,97 | 158,08 | 30–40 | а/б | | 9,5 | 12 | |
| | 2 | 17 54 23,0 | 54,89 | 162,35 | 20–30 | а/в | | 10,0 | 7 | |
| | 3 | 03 03 24,5 | 50,38 | 157,12 | 30 | а/в | | 10,6 | 13 | |
| | 5 | 16 50 55,9 | 50,18 | 158,85 | 30–40 | б/б | | 10,7 | 13 | |
| | 6 | 02 29 22,6 | 50,37 | 156,93 | 0 | б/в | | 9,8 | 13 | |
| | | 16 56 19,5 | 54,65 | 161,45 | 40 | а/в | | 10,8 | 7 | |
| | 8 | 13 43 44,5 | 52,52 | 159,04 | 30–40 | б/б | | 9,5 | 10 | |
| | 10 | 07 37 49,5 | 50,50 | 156,95 | 10 | а/в | | 9,6 | 13 | |
| | | 14 08 48,2 | 51,25 | 158,30 | 70–80 | а/в | | 9,8 | 12 | |
| | 11 | 11 38 24,1 | 55,56 | 162,89 | 30 | а/б | | 10,8 | 6 | |
| 13 | 12 | 03 42 32,7 | 50,46 | 156,45 | 120–130 | а/в | 4,2 | 11,6 | 13 | |
| | | 05 06 28,0 | 50,82 | 157,25 | 60 | а/в | | 10,2 | 13 | |
| | | 21 20 19,4 | 50,18 | 157,04 | 0 | с/с | | 10,0 | 13 | |
| 14 | | 23 19 09,3 | 49,88 | 158,43 | 0–20 | н/в | | 11,7 | 13 | |
| | 14 | 15 42 34,0 | 52,36 | 158,02 | 0 | б/в | | 9,7 | 11 | |
| | 18 | 21 16 52,4 | 53,39 | 160,33 | 30 | а/б | | 10,1 | 9 | |
| | 19 | 05 55 42,1 | 55,51 | 162,66 | 10 | а/б | | 10,2 | 6 | |
| | | 23 53 32,2 | 52,33 | 160,78 | 10–20 | а/в | | 9,6 | 10 | |
| | 20 | 15 07 53,0 | 50,01 | 156,77 | 0–50 | с/с | | 10,2 | 14 | |
| | | 20 46 26,0 | 49,90 | 156,57 | 40 | б/б | | 10,7 | 14 | |
| | 22 | 00 39 33,0 | 51,02 | 155,05 | 0–10 | б/в | | 9,6 | 15б | |
| | | 08 57 19,0 | 50,40 | 156,95 | 20 | а/б | | 10,3 | 13 | |
| | 24 | 14 12 04,2 | 50,43 | 157,00 | 40 | а/б | | 9,9 | 13 | |
| | 27 | 00 30 33,4 | 53,71 | 160,87 | 30–40 | а/б | | 9,8 | 8 | |
| | 28 | 14 52 37,6 | 52,63 | 159,60 | 90 | а/в | | 10,1 | 10 | |
| | | | | April | | | | | | |
| | 3 | 15 13 08,5 | 54,62 | 161,56 | 40 | а/б | | 10,0 | 7 | |
| | 4 | 10 56 05,0 | 55,34 | 162,25 | 20 | а/б | | 10,6 | 6 | |
| | 5 | 19 13 05,0 | 56,11 | 163,08 | 10 | а/б | | 10,4 | 5 | |
| | 6 | 12 44 26,5 | 52,11 | 159,54 | 0 ; | а/в | | 10,0 | 11 | Krutoberegovo, force 3-4 |

| (1) № | (20 Число | (3) Момент возникновения, час мин сек | (4) Координаты эпицентра $\varphi^\circ$ N | $\lambda^\circ$ E | (5) Глубина очага, км | (6) Класс точности | M | K | (7) № района | (8) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 6 | 19 32 56,5 | 55,38 | 164,62 | 30–40 | а/в | | 10,6 | 20б | |
| | 10 | 20 47 37,5 | 53,11 | 159,80 | 60–70 | а/б | | 10,3 | 9 | |
| | 13 | 14 27 56,3 | 50,96 | 157,98 | 40–60 | б/в | | 10,2 | 12 | |
| 15 | | 20 09 12,5 | 55,10 | 162,03 | 20–30 | а/б | 4,8 | 11,8 | 7 | |
| | 14 | 00 12 49,9 | 55,00 | 162,29 | 20–30 | а/б | | 11,0 | 7 | |
| | | 20 36 55,2 | 53,55 | 160,21 | 50 | а/б | | 9,9 | 9 | |
| | 16 | 02 33 14,0 | 54,97 | 163,01 | 10 | а/б | | 10,2 | 7 | |
| | | 18 24 20,0 | 52,85 | 160,33 | 40 | б/б | | 10,4 | 10 | |
| | 17 | 20 50 52,8 | 51,31 | 157,97 | 30 | а/в | | 9,9 | 12 | |
| 16 | 18 | 10 31 04,3 | 53,98 | 163,20 | 30–40 | а/б | 5,0 | 12,8 | 20в | |
| | | 20 26 51,3 | 50,35 | 157,93 | 20–40 | в/н | | 10,1 | 13 | |
| | 19 | 03 31 43,7 | 55,84 | 162,98 | 10 | а/в | | 10,6 | 6 | |
| | | 17 20 58,2 | 52,69 | 159,95 | 40 | б/в | | 9,7 | 10 | |
| | 20 | 13 42 33,3 | 50,68 | 157,66 | 10 | а/в | | 9,7 | 13 | |
| 17 | 22 | 07 18 02,8 | 53,71 | 160,70 | 40 | а/б | 4,6 | 11,9 | 9 | Semlyachik, force 4; Petropavlovsk-Kamchatskiy, force 2-3 |
| 18 | | 13 41 51,8 | 50,37 | 157,06 | 20 | а/в | 4,8 | 11,8 | 13 | Petropavlovsk-Kamchatskiy, force 2-3 |
| | 23 | 08 07 30,9 | 51,24 | 160,40 | 0 | б/н | | 10,2 | 22а | |
| | | 09 03 45,8 | 49,91 | 156,48 | 40 | б/в | | 10,5 | 14 | |
| | | 17 11 38,2 | 54,30 | 160,51 | 100–110 | в/в | | 9,7 | 8 | |
| | 24 | 20 50 52,4 | 51,96 | 157,80 | 140 | а/в | | 10,4 | 11 | |
| | 25 | 17 03 09,5 | 52,45 | 159,35 | 20 | а/б | | 9,7 | 10 | |
| | | 20 55 58,5 | 50,40 | 156,96 | 20–30 | а/б | | 9,5 | 13 | |
| | 27 | 04 28 46,0 | 56,00 | 163,10 | 10 | а/в | | 11,2 | 5 | Krutoberegovo, force 2-3 |
| 19 | | 10 00 59,0 | 55,80 | 163,10 | 0 | а/в | 5,0 | 12,5 | 6 | |
| | | 10 42 23,0 | 55,78 | 162,95 | 0–10 | а/в | | 10,0 | 6 | |
| | 28 | 05 13 29,5 | 53,35 | 162,89 | 40 | а/б | | 9,8 | 21а | |
| | 29 | 10 52 22,7 | 55,82 | 163,03 | 0–10 | а/б | | 11,4 | 6 | |
| | | 11 13 53,7 | 55,83 | 163,04 | 5–10 | а/б | | 10,8 | 6 | |
| | | 23 11 49,4 | 55,82 | 163,40 | 0 | а/в | | 9,9 | 6 | |
| | | | | May | | | | | | |
| | 1 | 06 45 10,8 | 50,98 | 157,95 | 30 | а/в | | 10,4 | 12 | |
| | | 15 13 43,3 | 54,57 | 161,04 | 100 | а/б | | 10,6 | 7–8 | |
| | | 18 02 56,5 | 51,47 | 159,60 | 0 | б/в | | 10,0 | 11 | |
| 20 | | 21 56 21,6 | 53,37 | 160,38 | 40 | а/б | 4,7 | 11,8 | 9 | Semlyachik, force 2 |
| | 2 | 21 41 24,3 | 50,55 | 156,91 | 0 | б/н | | 9,8 | 13 | |
| | | 22 36 11,6 | 51,57 | 159,83 | 20 | а/в | 4,6 | 11,3 | 11 | |
| 21 | 4 | 21 57 08,5 | 51,55 | 159,88 | 20 | а/б | 4,6 | 11,5 | 11 | |
| | 5 | 03 09 52,7 | 52,78 | 159,51 | 10 | а/в | | 10,9 | 10 | |
| | | 19 52 36,5 | 53,63 | 160,63 | 40 | а/б | | 9,5 | 9 | |
| | 8 | 15 14 53,5 | 51,15 | 160,27 | 0 | б/в | | 11,1 | 22а | |
| | 9 | 05 25 26,6 | 51,19 | 160,26 | 0 | а/в | 4,1 | 11,1 | 22а | |
| | | 16 10 07,4 | 51,27 | 159,93 | 0 | в/в | | 10,3 | 22а | |
| | 10 | 08 46 18,2 | 51,50 | 159,36 | 0 | в/в | | 9,6 | 11 | |
| | 12 | 05 36 54,0 | 51,36 | 159,84 | 20 | б/в | | 9,7 | –22а | |
| | | 10 50 10,5 | 50,59 | 157,12 | 10–40 | б/в | | 9,6 | 13 | |
| | | 20 31 45,0 | 53,70 | 159,85 | 130 | а/б | | 9,8 | 9 | |
| 22 | 13 | 01 42 23,4 | 50,67 | 156,58 | 110 | б/б | 4,3 | 11,7 | 13 | |
| 23 | 14 | 10 54 20,0 | 51,13 | 157,92 | 40 | а/б | 4,7 | 11,5 | 12 | |
| | 15 | 06 54 33,5 | 51,18 | 159,00 | 0 | б/н | | 9,5 | 12 | |
| 24 | | 18 59 56,4 | 50,07 | 156,67 | 10–40 | а/б | 6,1 | 14,3 | 14 | Petropavlovsk-Kamchatskiy, force 3-4; Ozernoy, force 4 |
| | | 19 21 46,7 | 49,98 | 156,70 | 10 | а/в | | 9,6 | 14 | |
| | 16 | 01 56 19,8 | 50,14 | 156,80 | 30–40 | б/в | | 10,5 | 13–14 | |
| | | 17 35 09,3 | 54,64 | 158,60 | 230 | а/в | | 9,5 | 6в | |

| № | Число | Момент возникновения, час мин сек | Координаты эпицентра | | Глубина очага, км | Класс точности | M | K | № района | Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | φ° N | λ° E | | | | | | |
| | 18 | 05 55 31,3 | 55,25 | 158,38 | 300–320 | н/в | | 9,9 | 17а | |
| | 19 | 02 48 12,3 | 52,82 | 160,05 | 30 | а/в | | 9,6 | 10 | |
| | 20 | 00 14 18,8 | 51,26 | 159,85 | 40 | а/б | 4,6 | 11,3 | 11 | |
| | | 13 18 57,3 | 54,62 | 161,63 | 30 | а/в | | 10,2 | 7 | |
| | 22 | 04 17 41,5 | 50,40 | 157,49 | 40 | а/в | | 9,6 | 13 | |
| | | 07 08 03,2 | 50,08 | 160,22 | 0–50 | с/с | | 10,8 | 22б | |
| | | 11 20 04,0 | 55,42 | 165,51 | 0 | а/в | | 9,8 | 20б | |
| | | 21 49 11,9 | 52,20 | 160,78 | 10–20 | б/в | | 10,0 | 10 | |
| | 23 | 19 59 15,0 | 55,82 | 164,94 | 40 | а/в | | 9,7 | 20а | |
| 25 | 24 | 20 26 36,9 | 52,92 | 160,06 | 40 | а/б | 5,0 | 11,5 | 9–10 | |
| | | 23 48 09,5 | 56,30 | 159,16 | 0 | а/в | | 9,7 | 17б | |
| | 26 | 17 50 32,0 | 55,98 | 161,55 | 80 | а/б | | 9,9 | 6 | |
| 26 | 27 | 04 41 25,5 | 50,77 | 157,49 | 40 | а/в | 5,6 | 13,5 | 13 | Pauzhetka, force 4–5 |
| | 28 | 16 35 57,3 | 53,92 | 161,04 | 40 | а/б | | 9,8 | 8 | |
| | 30 | 01 08 37,4 | 50,33 | 157,68 | 40 | б/в | | 10,1 | 13 | |
| 27 | 31 | 01 57 05,0 | 53,95 | 159,69 | 120 | а/б | 4,9 | 11,7 | 9 | |
| 28 | | 09 10 38,9 | 52,85 | 160,28 | 40 | а/б | 5,1 | 12,4 | 10 | Cape Shipunskiy, force 2 |
| | | | | | June | | | | | |
| | 1 | 02 56 35,0 | 52,98 | 162,55 | 40 | а/б | | 9,9 | 21б | |
| | | 19 00 16,4 | 53,37 | 160,34 | 40 | а/б | 4,5 | 11,0 | 9 | |
| | 2 | 01 30 02,2 | 53,71 | 160,79 | 30–40 | а/в | | 10,3 | 9 | |
| | 6 | 12 47 57,0 | 54,22 | 161,43 | 30 | а/в | | 9,8 | 8 | |
| | 8 | 03 02 10,0 | 53,11 | 162,32 | 40 | а/б | 4,3 | 10,6 | 21б | |
| | | 10 20 49,9 | 50,48 | 157,03 | 40 | б/в | | 9,7 | 13 | |
| | 11 | 13 30 00,0 | 53,95 | 161,23 | 30–40 | а/в | | 11,4 | 8 | Karymskiy, force 3; Khonokh, force 4 |
| | 12 | 04 48 36,5 | 50,27 | 158,83 | 40 | а/б | | 10,8 | 13 | |
| | 13 | 07 11 58,0 | 49,99 | 157,16 | 40 | а/б | | 9,8 | 14 | |
| | 14 | 04 13 59,0 | 50,60 | 157,10 | 40 | а/в | | 9,8 | 13 | |
| | | 18 49 44,0 | 56,37 | 161,64 | 80 | б/б | | 10,5 | 5 | |
| | 15 | 05 17 59,5 | 52,51 | 159,28 | 40 | а/б | | 10,1 | 10 | |
| | 17 | 02 40 41,5 | 55,24 | 164,36 | 40 | б/в | | 9,7 | 20б | |
| | | 16 03 29,4 | 50,32 | 156,95 | 40 | а/б | | 9,6 | 13 | |
| | 19 | 08 18 38,5 | 55,17 | 163,20 | 40 | а/б | | 9,9 | 6 | |
| | | 17 28 37,3 | 54,13 | 163,42 | 40 | б/в | 4,4 | 10,7 | 20в | |
| | 20 | 01 42 11,7 | 52,15 | 158,19 | 30–40 | б/в | | 9,9 | 11 | |
| | 21 | 06 36 05,1 | 55,72 | 162,90 | 5–10 | а/б | | 10,7 | 6 | |
| | 23 | 19 07 12,5 | 50,52 | 157,26 | 40 | а/в | | 9,8 | 13 | |
| | | 19 52 18,2 | 54,62 | 162,10 | 40 | а/б | | 9,9 | 7 | |
| | 24 | 11 04 31,7 | 56,31 | 159,14 | 10–20 | а/б | | 10,1 | 17б | |
| | 27 | 03 48 03,0 | 56,33 | 159,14 | 10 | а/б | | 10,1 | 17б | |
| | | 13 40 23,3 | 56,34 | 159,14 | 10 | а/б | | 9,5 | 17б | |
| | | 14 56 18,3 | 51,36 | 158,03 | 100 | а/в | 4,6 | 11,1 | 12 | |
| | | 15 14 03,8 | 55,54 | 160,83 | 160 | а/б | | 10,4 | 6 | |
| | | 18 09 35,9 | 51,14 | 158,56 | 0 | б/н | | 10,4 | 12 | |
| | | 23 38 48,4 | 53,51 | 162,72 | 10 | а/б | | 9,5 | 21а | |
| 29 | 29 | 21 38 35,3 | 51,97 | 161,17 | 30–40 | а/б | 4,6 | 11,7 | 21в | |
| | 30 | 15 51 36,3 | 50,73 | 157,46 | 0 | а/в | | 10,2 | 13 | |
| | | 18 25 06,2 | 53,73 | 160,83 | 40 | а/в | 4,8 | 11,4 | 8 | |
| | | 19 20 27,3 | 50,78 | 157,40 | 0 | а/в | | 9,6 | 13 | |
| | | | | | July | | | | | |
| | 1 | 10 45 05,0 | 54,69 | 161,66 | 30 | а/б | | 9,7 | 7 | |
| | 4 | 02 45 16,7 | 53,64 | 161,63 | 0 | а/б | 4,3 | 10,6 | 8 | |
| | 6 | 20 34 12,1 | 52,95 | 162,61 | 40 | а/б | | 9,9 | 21б | |
| | 7 | 21 38 32,4 | 51,03 | 157,87 | 40 | а/в | | 10,2 | 12 | |
| 30 | 8 | 10 [illegible] 52,7 | 52,40 | 159,05 | 10–20 | а/б | 4,8 | 11,5 | 10 | Petropavlovsk-Kamchatskiy, force 3–4 |

| № | Чис. ло | Момент возникновения, час мин сек | Координаты эпицентра | | Глубина очага, км | Класс точности | M | K | № района | Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | φ°N | λ° E | | | | | | |
| | 8 | 20 05 07,8 | 51,11 | 157,30 | 0 | а/в | | 10,9 | 12 | |
| | 9 | 10 44 33,1 | 50,65 | 156,94 | 40 | а/в | | 10,0 | 13 | |
| | | 11 16 00,2 | 56,38 | 159,34 | 10 | а/б | | 9,7 | 17б | |
| | 11 | 03 21 23,5 | 50,03 | 156,49 | 40 | б/н | | 10,0 | 14 | |
| | 12 | 01 03 28,5 | 54,01 | 163,80 | 30–40 | б/н | | 10,0 | 20в | |
| | | 05 48 38,0 | 52,93 | 159,60 | 30–40 | а/б | | 10,6 | 10 | |
| | 13 | 04 31 06,8 | 50,41 | 156,86 | 30 | а/в | | 10,3 | 13 | |
| | | 19 26 29,0 | 52,67 | 161,47 | 10–20 | б/б | | 9,8 | 21б | |
| | 14 | 06 19 36,5 | 51,00 | 157,94 | 40 | а/б | | 11,0 | 12 | |
| | | 11 56 33,0 | 53,15 | 162,40 | 40 | а/в | | 10,2 | 21б | |
| 31 | | 16 25 29,6 | 51,58 | 153,00 | 450 | с/с | | 11,5 | 15б | |
| | | 18 15 58,8 | 50,12 | 156,87 | 0 | а/в | | 10,2 | 14 | |
| 32 | 15 | 09 06 56,3 | 55,51 | 160,93 | 160 | а/в | 4,7 | 11,8 | 6 | Krutoberegovo, force 2; Nikol'skoye, force 2–3 |
| | 16 | 13 13 22,0 | 56,00 | 164,43 | 20 | а/в | | 9,5 | 20в | |
| | | 22 18 00,6 | 54,48 | 160,95 | 100–110 | а/в | | 9,7 | 8 | |
| 33 | 17 | 02 44 27,7 | 54,25 | 161,54 | 40 | а/б | 4,3 | 11,5 | 8 | |
| 34 | 18 | 00 17 00 | 52,25 | 160,28 | 10–20 | б/в | 4,7 | 11,6 | 10 | |
| | | 00 31 33,5 | 52,16 | 160,34 | 10–20 | а/в | 4,4 | 11,1 | 10 | |
| | | 01 14 06,4 | 52,26 | 160,10 | 0 | а/в | | 10,0 | 10 | |
| | | 01 49 07,3 | 52,24 | 160,30 | 10 | а/в | | 10,5 | 10 | |
| | | 01 50 21,0 | 52,20 | 160,24 | 5–10 | а/б | | 10,6 | 10 | |
| | | 06 55 01,7 | 50,49 | 157,00 | 10 | а/в | | 9,8 | 13 | |
| | | 13 45 11,7 | 54,70 | 164,50 | 40 | б/в | | 9,8 | 20в | |
| | 22 | 13 18 45,5 | 55,58 | 160,97 | 170 | а/в | 4,8 | 11,3 | 6 | |
| | 24 | 14 23 36,8 | 49,95 | 156,92 | 40 | а/б | | 9,5 | 14 | |
| | 25 | 20 06 26,7 | 54,13 | 160,89 | 20–30 | а/в | | 9,7 | 8 | |
| | | 21 01 10,0 | 50,41 | 156,75 | 40 | б/в | | 9,6 | 13 | |
| 35 | 27 | 04 26 29,0 | 55,54 | 166,18 | 20 | б/в | 5,3 | 12,8 | 20в | Nikol'skoye, force 5 |
| | | 04 32 24,5 | 55,51 | 166,25 | 20 | н/н | | 11,0 | 20в | |
| | | 08 47 46,6 | 55,45 | 166,22 | 20 | б/н | | 9,8 | 20в | |
| | | 08 51 53,0 | 55,48 | 166,29 | 20 | б/н | | 10,5 | 20в | |
| | | 12 04 06,5 | 55,52 | 166,22 | 20 | а/б | | 9,9 | 20в | |
| | 28 | 02 46 17,0 | 55,55 | 166,20 | 20 | б/в | | 10,3 | 20в | |
| | | 03 45 47,0 | 55,50 | 166,15 | 20–30 | б/в | | 10,2 | 20в | |
| | | 03 49 47,0 | 55,51 | 166,26 | 20 | б/в | | 10,3 | 20в | |
| | | 07 07 45,5 | 55,55 | 166,20 | 20 | б/в | | 10,0 | 20в | |
| | 29 | 03 42 59,0 | 55,56 | 166,15 | 30 | б/н | | 10,1 | 20в | |
| | | 22 59 55,0 | 55,54 | 166,10 | 20 | б/в | | 9,8 | 20в | |
| | 30 | 16 56 44,8 | 55,52 | 166,19 | 20 | б/в | | 10,1 | 20в | |
| | | 21 35 28,5 | 55,50 | 166,14 | 20 | б/в | | 10,0 | 20в | |
| | | 21 37 33,5 | 55,52 | 166,19 | 20 | б/в | | 10,4 | 20в | |
| | 31 | 02 54 01,5 | 55,52 | 166,19 | 20 | б/в | | 10,1 | 20в | |
| | | 03 00 08,0 | 55,52 | 166,19 | 20 | б/в | | 10,4 | 20в | |
| | | 14 25 45,5 | 55,48 | 166,23 | 30 | б/в | | 10,4 | 20в | |
| | | 22 15 56,3 | 50,35 | 157,40 | 40 | а/б | | 11,1 | 13 | |
| | | | | August | | | | | | |
| | 1 | 23 19 37,5 | 53,21 | 160,59 | 40 | а/в | | 9,6 | 9 | |
| | 2 | 07 13 40,5 | 54,25 | 160,77 | 80–90 | а/в | 4,5 | 10,9 | 8 | |
| | | 14 17 19,5 | 54,79 | 166,06 | 5–10 | б/н | | 9,6 | 20б | |
| | 3 | 01 47 19,4 | 54,51 | 162,46 | 30 | а/в | | 10,2 | 7 | |
| | | 08 42 28,0 | 56,56 | 161,44 | 90 | а/б | | 9,5 | 5 | |
| | 4 | 00 26 10,0 | 55,46 | 166,32 | 30 | а/в | | 10,3 | 20в | |
| | 5 | 11 57 37,5 | 55,03 | 161,52 | 90–100 | б/в | | 10,2 | 7 | |
| | 6 | 00 17 39,0 | 50,11 | 156,88 | 0 | а/в | | 9,8 | 14 | |
| | | 12 56 10,5 | 55,24 | 159,21 | 0–10 | б/н | | 10,0 | 17а | |
| | 10 | 17 06 45,6 | 50,06 | 156,75 | 0–20 | н/н | | 10,9 | 14 | |
| | 12 | 03 07 11,0 | 54,85 | 162,81 | 20 | а/б | | 10,7 | 7 | |
| | | 04 30 44,5 | 56,15 | 162,56 | 10 | а/б | | 9,7 | 5 | Krutoberegovo, force 4–5 |

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | (4) Координаты эпицентра φ° N | λ° E | (5) Глубина очага, км | (6) Класс точности | M | K | (7) № района | (8) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 12 | 08 46 05,0 | 52,11 | 159,06 | 30–40 | а/б | 4,2 | 11,4 | 11 | |
| | 14 | 02 35 44,9 | 56,13 | 164,63 | 20 | а/б | | 10,5 | 20а | |
| | 16 | 14 15 41,0 | 50,32 | 157,68 | 30–40 | в/в | | 10,4 | 13 | |
| | 22 | 02 41 46,4 | 53,31 | 159,31 | 100–110 | а/б | | 9,7 | 9 | |
| | | 11 57 35,8 | 55,45 | 166,24 | 30 | а/в | | 9,6 | 20а | |
| | 23 | 13 00 00,4 | 52,50 | 152,27 | 450 | с/с | | 10,7 | | |
| | | 15 21 30,0 | 55,30 | 162,45 | 20–30 | а/в | 4,4 | 10,9 | 6 | |
| | | 19 59 05,4 | 55,96 | 162,39 | 10–20 | б/б | | 10,1 | 6 | |
| | 24 | 02 48 14,0 | 52,99 | 168,60 | 0–30 | с/с | | 10,1 | 20в | |
| | 25 | 22 54 19,5 | 53,24 | 160,00 | 60 | а/в | | 9,5 | 9 | |
| | 28 | 12 46 56,0 | 50,78 | 157,93 | 30 | а/в | | 10,8 | 12 | |
| | 29 | 00 58 07,0 | 51,79 | 158,85 | 20 | а/в | | 9,5 | 11 | |
| | 30 | 02 43 19,3 | 54,57 | 162,26 | 30 | а/б | | 9,9 | 7 | |
| | | 12 12 10,5 | 54,56 | 162,30 | 20–30 | а/б | | 10,3 | 7 | |
| | | | | September | | | | | | |
| | 3 | 02 01 54,0 | 50,55 | 157,94 | 40 | а/в | | 9,6 | 13 | |
| | 8 | 05 19 37,5 | 52,86 | 158,79 | 100 | а/в | | 10,0 | 10 | |
| | 10 | 16 34 40,2 | 54,45 | 161,91 | 30 | а/б | | 10,3 | 7 | |
| | 11 | 00 10 04,1 | 53,73 | 160,61 | 30 | а/в | 4,3 | 11,0 | 9 | |
| 36 | 13 | 07 53 02,0 | 55,14 | 162,30 | 40 | а/б | 5,3 | 13,8 | 7 | Kronoki, force 4-5 |
| | | 08 07 32,2 | 55,14 | 162,28 | 40 | а/б | | 9,5 | 7 | |
| | | 15 26 38,0 | 54,54 | 161,45 | 40 | а/в | | 9,7 | 7 | |
| | | 19 14 11,5 | 55,04 | 162,44 | 20 | а/б | | 10,6 | 7 | |
| | 15 | 16 46 35,0 | 51,11 | 157,98 | 10–20 | в/в | | 10,8 | 12 | |
| | | 21 50 41,7 | 51,66 | 159,46 | 0 | а/б | | 10,1 | 11 | |
| | 16 | 05 58 55,5 | 53,04 | 160,20 | 40 | а/в | | 9,9 | 9 | |
| | 17 | 08 52 32,7 | 52,31 | 160,15 | 0 | а/в | 4,6 | 11,4 | 10 | |
| | | 17 30 50,5 | 52,22 | 160,27 | 30–40 | а/в | 4,6 | 11,3 | 10 | |
| | | 17 34 15,5 | 53,60 | 163,53 | 40 | в/в | | 10,0 | 21а | |
| | | 19 22 34,0 | 52,24 | 160,50 | 30–40 | б/в | | 10,2 | 10 | |
| | | 19 55 32,4 | 52,22 | 160,37 | 20 | а/в | | 9,6 | 10 | |
| | | 20 32 01,1 | 52,26 | 160,10 | 0 | а/в | | 9,7 | 10 | |
| | | 22 18 48,5 | 52,37 | 160,87 | 0 | а/в | | 9,7 | 10 | |
| | 18 | 01 39 13,4 | 52,15 | 160,34 | 20–30 | б/в | 4,5 | 10,7 | 10 | |
| | | 02 28 21,4 | 52,18 | 160,30 | 20 | а/б | | 10,1 | 10 | |
| | | 06 02 49,0 | 54,39 | 161,67 | 30–40 | а/в | | 10,5 | 8 | |
| | 20 | 03 59 38,0 | 55,04 | 162,15 | 20 | а/б | | 11,3 | 7 | |
| | 21 | 00 27 24,0 | 55,61 | 162,39 | 5–10 | а/б | | 9,6 | 6 | |
| | | 13 30 49,4 | 55.62 | 162,45 | 10 | а/б | | 9,8 | 6 | |
| 37 | | 15 54 59,6 | 51,87 | 158,13 | 110 | б/б | 5,8 | 13,4 | 11 | Petropavlovsk-Kamchatskiy, force 3-4 |
| | 23 | 15 08 10,6 | 55,01 | 160,42 | 120–130 | б/в | | 10,6 | 7 | |
| | | 19 34 38,0 | 53,53 | 161,70 | 50 | а/в | | 9,6 | 8 | |
| | | 21 48 21,8 | 55,35 | 159,50 | 0 | а/в | | 9,5 | 17а | |
| 38 | 24 | 07 32 44,5 | 55,75 | 160,43 | 200–210 | б/б | | 11,5 | 17б | |
| | | 21 27 20,3 | 53,88 | 160,45 | 20 | а/в | | 9,8 | 8 | |
| | | 23 28 29,6 | 55,36 | 165,30 | 40 | а/б | | 10,2 | 20б | Nikol'skoye, force 3-4 |
| | 25 | 13 50 25,5 | 56,34 | 159,09 | 10 | а/в | | 9,9 | 17б | |
| | 27 | 01 54 05,7 | 55,02 | 162,24 | 30–40 | а/б | | 9,6 | 7 | |
| | | 13 47 07,2 | 50,01 | 157,01 | 20 | а/в | | 10,8 | 14 | |
| | 28 | 10 06 41,0 | 55,77 | 164,16 | 5–10 | б/в | | 9,5 | 20б | |
| 39 | 29 | 23 50 01,5 | 53,45 | 153,17 | 450 | с/с | 4,6 | 11,6 | | |
| | | | | October | | | | | | |
| | 1 | 16 23 08,7 | 51,04 | 158,99 | 10 | а/в | | 9,8 | 12 | |
| | 2 | 02 35 15,5 | 52,75 | 159,68 | 40 | а/б | | 9,6 | 10 | |
| | | 11 45 59,0 | 51,97 | 160,59 | 30–40 | б/б | | 10,1 | 10 | |
| | | 12 51 11,0 | 52,17 | 160,65 | 10 | б/в | | 9,6 | 10 | |

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | (4) Координаты эпицентра φ° N | λ° E | (5) Глубина очага, км | (6) Класс точности | M | K | (7) № района | (8) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 2 | 14 56 32,9 | 51,60 | 158,17 | 40 | а/в | 5,2 | 11,9 | 12 | Petropavlovsk-Kamchatskiy, force 2 |
| | 3 | 06 28 57,4 | 52,06 | 160,65 | 10 | а/б | | 10,2 | 10 | |
| | | 08 22 47,3 | 52,04 | 160,51 | 0–10 | б/в | | 10,7 | 10 | |
| | | 08 23 41,0 | 52,17 | 160,56 | 0 | б/н | | 10,4 | 10 | |
| | | 08 31 40,6 | 52,17 | 160,56 | 0 | б/б | | 9,6 | 10 | |
| | | 11 14 39,5 | 52,10 | 160,61 | 10 | б/б | | 10,0 | 10 | |
| | | 14 28 36,0 | 52,07 | 160,53 | 5–10 | а/б | | 9,9 | 10 | |
| | 4 | 06 44 05,0 | 52,14 | 160,59 | 0–10 | б/б | 4,7 | 11,0 | 10 | |
| | | 14 55 46,4 | 52,13 | 160,69 | 0–10 | в/б | | 10,4 | 10 | |
| 41 | | 17 36 05,8 | 52,10 | 160,59 | 10 | а/б | 4,9 | 11,9 | 10 | |
| | | 17 51 21,0 | 52,10 | 160,59 | 10 | а/в | | 11,0 | 10 | |
| 42 | | 17 55 34,5 | 52,11 | 160,60 | 0–10 | б/б | 4,9 | 12,3 | 10 | |
| | | 17 58 05,4 | 52,19 | 160,68 | 0–10 | а/б | 5,0 | 11,3 | 10 | |
| | | 18 03 37,5 | 52,11 | 160,60 | 0–10 | б/б | | 10,4 | 10 | |
| | | 21 03 26,5 | 52,10 | 160,59 | 10 | а/в | | 9,6 | 10 | |
| 43 | | 22 35 27,0 | 52,15 | 160,60 | 10 | а/в | 5,3 | 11,9 | 10 | |
| | | 23 44 17,4 | 52,14 | 160,62 | 0–10 | б/б | | 10,4 | 10 | |
| | 5 | 01 33 23,4 | 52,21 | 160,68 | 0–10 | а/в | | 9,5 | 10 | |
| | | 04 06 25,5 | 52,10 | 160,61 | 10 | а/б | | 11,0 | 10 | |
| | | 04 33 55,5 | 52,10 | 160,62 | 0–10 | б/б | 4,6 | 11,1 | 10 | |
| | | 04 33 55,5 | 52,10 | 160,62 | 0–10 | б/б | 4,6 | 11,1 | 10 | |
| | | 04 36 15,0 | 52,21 | 160,68 | 0–10 | а/в | | 10,7 | 10 | |
| | | 05 41 13,0 | 52,19 | 160,56 | 10 | а/б | | 9,8 | 10 | |
| | | 08 35 28,8 | 52,22 | 160,77 | 0–10 | а/в | | 9,7 | 10 | |
| | | 16 15 43,0 | 52,12 | 160,64 | 10 | а/б | | 10,3 | 10 | |
| | | 19 41 17,3 | 52,18 | 160,69 | 0–10 | в/б | | 10,5 | 10 | |
| | | 19 57 23,5 | 52,17 | 160,57 | 0 | б/в | | 9,7 | 10 | |
| | | 21 47 11,0 | 52,16 | 160,57 | 0 | б/в | | 10,0 | 10 | |
| | | 21 56 10,0 | 52,22 | 160,77 | 0–10 | а/в | | 9,6 | 10 | |
| | 6 | 01 23 02,0 | 50,05 | 156,84 | 10 | б/в | 4,5 | 11,1 | 14 | |
| | | 03 41 56,0 | 52,22 | 160,77 | 0–10 | а/в | | 10,0 | 10 | |
| | | 15 06 01,4 | 9,91 | 156,49 | 30–50 | б/в | | 10,0 | 14 | |
| | | 22 34 40,4 | 52,12 | 160,55 | 20–30 | а/в | | 10,0 | 10 | |
| | 8 | 07 47 31,2 | 56,17 | 163,10 | 0–10 | а/б | | 10,0 | 5 | |
| | | 10 57 52,9 | 52,28 | 160,40 | 10–20 | а/б | | 10,7 | 10 | |
| | | 11 19 21,5 | 52,27 | 160,35 | 20 | а/б | | 10,6 | 10 | |
| | 10 | 11 20 31,6 | 55,07 | 162,24 | 30 | а/в | | 9,5 | 7 | |
| | | 15 24 12,8 | 52,14 | 160,43 | 0–5 | а/б | 4,6 | 10,8 | 10 | |
| | | 17 03 58,6 | 52,40 | 160,96 | 0 | б/в | | 10,2 | 10 | |
| | | 17 57 27,6 | 52,25 | 160,34 | 10 | а/в | | 9,8 | 10 | |
| | 11 | 05 48 37,5 | 53,58 | 161,38 | 20–30 | а/б | | 9,6 | 8 | |
| | | 12 56 02,7 | 50,61 | 157,67 | 0 | в/в | | 9,6 | 13 | |
| | | 16 10 10,0 | 54,61 | 162,86 | 10–20 | а/в | | 10,4 | 7 | |
| | | 21 33 32,2 | 55,26 | 162,20 | 20–30 | а/в | | 9,7 | 6 | |
| | 12 | 03 32 03,0 | 54,63 | 162,85 | 40 | а/в | | 10,0 | 7 | |
| | | 17 42 47,3 | 52,04 | 160,45 | 10–20 | б/в | | 10,8 | 10 | |
| | | 17 52 38,3 | 52,21 | 160,36 | 20–30 | а/б | | 10,3 | 10 | |
| | | 18 04 30,5 | 52,10 | 160,45 | 10 | а/в | | 9,7 | 10 | |
| | | 20 28 22,2 | 52,37 | 160,64 | 20 | а/в | | 9,9 | 10 | |
| | | 20 46 19,0 | 52,11 | 160,55 | 10 | а/б | | 9,8 | 10 | |
| | 13 | 00 49 25,6 | 55,10 | 162,34 | 30–40 | а/в | | 9,5 | 7 | |
| | | 13 42 34,3 | 52,22 | 160,55 | 0–10 | б/в | | 9,8 | 10 | |
| | | 19 44 30,0 | 55,31 | 160,32 | 190 | б/б | | 9,9 | 7 | |
| | | 20 54 30,5 | 55,44 | 164,65 | 10 | а/в | | 9,6 | 206 | |
| | 14 | 18 00 50,4 | 53,41 | 160,52 | 30 | а/в | | 9,5 | 9 | |
| | | 19 18 51,7 | 50,47 | 157,00 | 0 | а/в | | 9,5 | 13 | |
| | 15 | 15 16 23,7 | 52,25 | 160,42 | 10 | а/б | | 11,4 | 10 | |
| | | 15 27 54,5 | 52,16 | 160,52 | 10 | а/б | | 9,7 | 10 | |
| | | 16 02 06,0 | 52,16 | 160,53 | 10 | а/б | 4,7 | 11,1 | 10 | |
| | | 16 20 44,0 | 52,19 | 160,50 | 5–10 | а/б | | 10,3 | 10 | |

| (1) № | (2) Число | (3) Момент возникновения, час мин сек | (4) Координаты эпицентра φ°N | λ°E | (5) Глубина очага, км | (6) Класс точности | M | K | (7) № района | (8) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | 15 | 18 57 23,4 | 56,08 | 162,30 | 5–10 | а/в | | 10,2 | 6 | |
| | 16 | 21 19 19,6 | 55,70 | 165,93 | 10 | а/в | | 10,1 | 20а | |
| | 17 | 22 37 34,9 | 55,65 | 165,61 | 10 | а/в | | 9,9 | 20а | |
| | 19 | 02 20 04,7 | 54,81 | 166,00 | 40 | а/в | | 10,1 | 20б | |
| 44 | 21 | 12 48 17,5 | 53,73 | 160,69 | 40 | а/б | 5,7 | 12,9 | 8–9 | Petropavlovsk-Kamchatskiy, force 4; Avacha, force 5; Cape Shipunskiy force 5-6; Kronoki, force 5; Karymskiy, force 5 |
| | 22 | 12 02 18,5 | 53,60 | 160,69 | 40 | а/б | | 10,3 | 9 | |
| | 24 | 04 06 08,3 | 53,33 | 160,32 | 30–40 | а/в | | 9,7 | 9 | |
| | | 08 20 03,2 | 54,77 | 162,89 | 20 | а/в | | 11,0 | 7 | |
| | | 08 20 03,5 | 54,74 | 162,85 | 20 | а/в | | 11,1 | 7 | |
| | | 10 43 43,5 | 54,89 | 162,90 | 0–10 | а/в | | 10,2 | 7 | |
| | | 15 13 57,0 | 54,82 | 162,96 | 5–10 | а/в | | 9,5 | 7 | |
| | 25 | 16 42 35,0 | 53,35 | 162,60 | 0 | а/в | | 10,0 | 21а | |
| | 28 | 10 59 28,8 | 56,43 | 162,60 | 0 | б/б | | 10,8 | 5 | |
| | 29 | 09 49 07,0 | 53,00 | 154,70 | 500 | с/с | | 11,3 | | |
| | | | | | November | | | | | |
| | 1 | 05 19 09,3 | 55,00 | 165,65 | 30–40 | б/н | | 9,5 | 20б | |
| | | 17 31 37,8 | 51,46 | 158,10 | 120 | б/б | | 10,1 | 12 | |
| | 2 | 02 59 52,0 | 53,73 | 160,56 | 30 | а/в | 4,6 | 11,0 | 9 | |
| | 4 | 13 55 21,5 | 56,21 | 164,23 | 20 | а/б | | 9,5 | 20а | |
| | 5 | 02 15 47,8 | 50,92 | 157,57 | 30 | а/в | | 9,6 | 12 | |
| 45 | 7 | 15 01 29,0 | 50,51 | 156,93 | 40 | а/в | | 11,6 | 13 | |
| 46 | | 20 02 51,0 | 55,58 | 164,40 | 40 | а/в | 4,7 | 12,2 | 20б | |
| | 9 | 10 36 08,0 | 53,20 | 160,43 | 40 | а/б | | 11,3 | 9 | |
| | | 14 36 00 | 53,17 | 160,25 | 20–30 | а/б | | 9,6 | 9 | |
| | 12 | 03 16 39,0 | 53,73 | 160,65 | 40 | а/б | 4,8 | 10,1 | 9 | Kronoki, force 2-3 |
| | 15 | 00 59 17,6 | 57,11 | 160,47 | 5–10 | а/в | | 9,7 | 17в | |
| | | 02 30 00,8 | 52,90 | 159,60 | 60 | а/б | | 9,5 | 10 | |
| | | 17 06 35,0 | 55,11 | 165,60 | 40 | а/в | | 9,9 | 20б | |
| 47 | 17 | 17 24 19,0 | 54,67 | 161,77 | 20–30 | а/б | 5,3 | 12,3 | 7 | |
| | | 17 59 26,5 | 52,87 | 160,03 | 70 | а/б | | 10,0 | 10 | |
| | | 22 25 17,5 | 49,91 | 156,46 | 40 | б/с | | 9,9 | 14 | |
| 48 | 18 | 07 16 03,7 | 54,94 | 162,35 | 40 | а/б | 4,6 | 11,7 | 7 | |
| | 19 | 10 53 28,5 | 53,23 | 159,91 | 60 | а/б | | 9,6 | 9 | |
| | 24 | 08 31 41,0 | 53,77 | 160,42 | 30–40 | а/б | | 10,7 | 9 | Kronoki, force 2 |
| | | 10 16 06,7 | 50,54 | 157,10 | 0 | а/в | | 10,0 | 13 | |
| | 25 | 13 46 51,0 | 52,25 | 160,65 | 0 | а/в | | 11,0 | 10 | |
| | 27 | 11 13 35,8 | 52,33 | 158,72 | 80–90 | а/б | | 9,8 | 11 | |
| | 28 | 07 20 15,5 | 55,01 | 162,86 | 10 | а/в | | 10,4 | 7 | |
| | 29 | 04 55 38,5 | 50,52 | 156,90 | 0 | а/в | | 9,9 | 13 | |
| | 30 | 10 30 31,6 | 51,01 | 158,17 | 20–30 | а/б | | 11,0 | 12 | |
| | | | | | December | | | | | |
| | 2 | 00 51 01,3 | 50,82 | 157,56 | 40 | б/в | | 10,9 | 13 | |
| | | 01 21 34,8 | 54,95 | 163,24 | 40 | б/в | | 9,9 | 7 | |
| | | 22 04 23,8 | 52,88 | 160,18 | 30–40 | б/б | | 9,6 | 10 | |
| | 6 | 20 17 01,0 | 51,00 | 157,00 | 20 | б/н | | 10,1 | 13 | |
| 49 | 7 | 03 37 56,5 | 50,38 | 156,98 | 10–40 | б/н | 4,4 | 11,5 | 13 | |
| | 8 | 11 01 41,0 | 55,62 | 161,05 | 170 | а/б | | 10,2 | 6 | |
| | | 19 22 34,3 | 51,34 | 160,64 | 0–5 | б/б | | 9,7 | 22а | |
| | 11 | 10 35 12,0 | 56,02 | 161,73 | 0 | а/б | | 10,4 | 6 | |
| | | 13 24 15,0 | 55,24 | 163,20 | 20 | а/б | 4,7 | 11,0 | 6 | |
| 50 | 12 | 03 35 02,5 | 55,12 | 163,30 | 0 | а/б | 4,3 | 11,5 | 6 | |

| (1) № | (2) Чис. ло | (3) Момент возникновения, час мин сек | (4) Координаты эпицентра | | (5) Глубина очага, км | (6) Класс точности | M | K | (7) № района | (8) Макросейсмические данные |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | φ° N | λ° E | | | | | | |
| | 13 | 14 30 39,4 | 54,85 | 161,07 | 130–140 | а/б | | 10,3 | 7 | |
| | 16 | 11 39 37,6 | 55,41 | 164,65 | 40 | а/б | | 10,2 | 206 | |
| | 18 | 00 58 07,5 | 50,42 | 156,90 | 20 | а/в | | 9,6 | 13 | |
| 51 | 20 | 12 16 49,0 | 50,71 | 157,60 | 10 | а/б | 5,1 | 12,0 | 13 | |
| | | 23 19 51,5 | 53,22 | 155,32 | 450 | н/в | | 9,6 | | |
| | 21 | 14 15 46,3 | 55,39 | 163,23 | 0–10 | б/в | | 10,8 | 6 | |
| | | 14 19 51,0 | 54,50 | 166,20 | 20 | б/н | | 9,8 | 206 | |
| | 24 | 23 11 56,2 | 52,95 | 160,30 | 10–20 | а/б | | 10,9 | 9 | |
| | | 23 18 46,0 | 53,81 | 161,52 | 20–30 | б/в | | 10,3 | 8 | |
| | 26 | 08 49 52,0 | 50,39 | 157,02 | 40 | а/в | | 10,5 | 13 | |
| | | 13 41 23,0 | 54,77 | 164,57 | 30–40 | а/б | | 9,8 | 206 | |
| | | 18 46 06,0 | 51,63 | 157,90 | 140–150 | а/в | | 9,8 | 12 | |
| | 27 | 20 27 52,0 | 52,79 | 160,65 | 10–20 | а/б | | 9,8 | 9 | |
| | 31 | 02 45 34,5 | 50,77 | 157,51 | 40 | а/б | | 10,7 | 13 | |

The accuracy of determining the epicenter and depth of center:
a -- error ±5 km from the central position of the hypocenter;
b -- the same ±10 km; c -- the same ±15 km; c -- the same >25 km

Key to catalog, beginning on p 184:

1. No
2. Number
3. Time of occurrence, hours, minutes, seconds
4. Coordinates of the epicenter
5. Depth of center, km
6. Accuracy class
7. Region No
8. Macroseismic data

EARTHQUAKES OF SAKHALIN

[Article by L. S. Oskorbin, L. F. Volkova]

The instrument observations of the earthquakes in the Sakhalin zone (including the Tatar Strait and the adjacent sections of the Khabarovsk Kray) were performed in 1974 by the permanently active seismic stations of Yuzhno-Sakhalin, Uglegorsk, Tymovskoye, Okha and Nikolayevsk-Na-Amure. The information about the equipment of these stations and its parameters are presented in reference [1]. The regions of recording the Sakhalin earthquakes by any of the three seismic stations are presented there. Among the temporary seismic stations there is only one in operation--in the village of Utesnoya (40 km southeast of Yuzhno-Sakhalinsk), the parameters of the seismic equipment of which are presented in reference [2].

The methods of determining the parameters (the energy classification, the position of the epicenter, the depth of the center, and so on) of the Sakhalin earthquakes did not change by comparison with 1969-1973, and their description can be found in references [1-3]. The separation of the Sakhalin zone including Sakhaline Island with the island shelf, the Tatar Strait and the adjacent border of the Khabarovsk Kray into provisionally separate seismically active regions was investigated in reference [3]. In this article the boundaries between the regions are presented in Figures 1 and 2, and numbering of them is given.

The overall level of seismic activity in the Sakhalin zone in 1974 is comparable to 1972, but it is somewhat lower than in 1973. It is true that the greatest magnitude of the earthquake is identical for the two years. In 1974, two strong earthquakes were recorded with M = 5.2 and 4.2, the remaining underground shock had a magnitude of less than 4. The basic parameters of the Sakhalin earthquakes with centers within the boundaries of the earth crust are presented in the catalog which contains data on 32 earthquakes in the Sakhalin zone with $K \geq 8$, including underground shocks in the adjacent sections of the Khabarovsk Kray. The distribution of the recorded earthquakes with respect to energy level in 1973 and 1974 for different provisional areas is presented in the table.

The territorial arrangement of the epicenters of the Sakhalin earthquakes with $K \geq 8$ is depicted in Figure 1 and with $K < 8$, in Figure 2. According to the table data, the recurrence rate graph was constructed (Figure 3). Its slope was found to be equal to $\gamma = 0.38$; for all of Sakhalin over many years $\gamma = 0.44$ [4]. The graph of the recurrence rate for 1974 is approximated by the expression $\lg N = 3.0$ to $0.38 K$.

The highest seismicity in 1974 was observed in region No. 2 and is obviously connected with the eastern Sakhalin proposed deep fracture. On the eastern boundary of this region on 17 Augus' at 0513 hours Greenwich time, the strongest earthquake in Sakhalin occurred with a magnitude of $M = 5.2$; its depth according to the instrument data is estimated at 10-20 km. An hour before this earthquake an underground shock was recorded with $M = 4.2$ at the same depth as can be considered among the preceding earthquakes. The earthquake of 17 August was not accompanied by repeated shocks within the limits of the instrument recording possibilities. In 1970 to 1973 there were also no underground shocks recorded in the vicinity of the epicenter of the earthquake of 17 August 1974. Two underground shocks (November-December) with $K = 7$ to 9 were noted east of Shmidt Peninsula or 70 km south of the earthquake of 17 August; in September, northeast of it, at approximately the same distance (outside the boundaries of the region), an earthquake was noted with $K = 9$-10. In other parts of region No. 2 the seismicity was manifested only south and southwest of the city of Okhi where the Ekhabinskoye earthquake of 1970 ($M = 4.2$) and the underground shock of 19 May 1972 with $M = 4.5$ occurred.

All of the earthquakes which occurred in 1974 in the Northern Sakhalin region (No. 1) can be broken down into three groups: northern, central and southwestern. The underground shocks in the northern part are basically associated with the center regions of the Northern Sakhalin earthquakes in December 1967 [5] and January 1971. The strongest of them was in April with $K = 9$. In the central part of region No. 1 of the epicenters of the earthquakes were located between Shmidt Peninsula and the epicentral region of the earthquake with $M = 5$ occurring in November 1973; obviously all of them can be considered aftershocks of the latter. By comparison with 1970-1973, in 1974 increased seismicity was observed in the southwestern part of region No. 1 where the Nyydovskoye earthquakes occurred in 1962 and somewhat more to the south. Four underground shocks were noted here with $K = 8$-9 and six with $K = 6$-8.

The seismicity of region No. 3 (the Eastern Sakhalin Ridge) was on the 1973 level. Only one earthquake was recorded here with $K = 8$-9 east of Tymovskoye, and northeast of it, a group of earthquakes with $K < 8$.

In 1974, just as in 1971-1973, no earthquakes were recorded under the bottom of Aniv and Terpeniy (region No. 5).

In the eastern part of Southern Sakhalin (region No. 6) underground shocks occurred only with $K < 8$, the epicenters of which are located along the contact of the Susunayskaya Valley with the Susunayskiy Ridge and the Korsakovskiye Plateau. In 1973 two earthquakes were recorded here with $K > 8$. In the last five years, the seismicity of this region was the least in 1974.

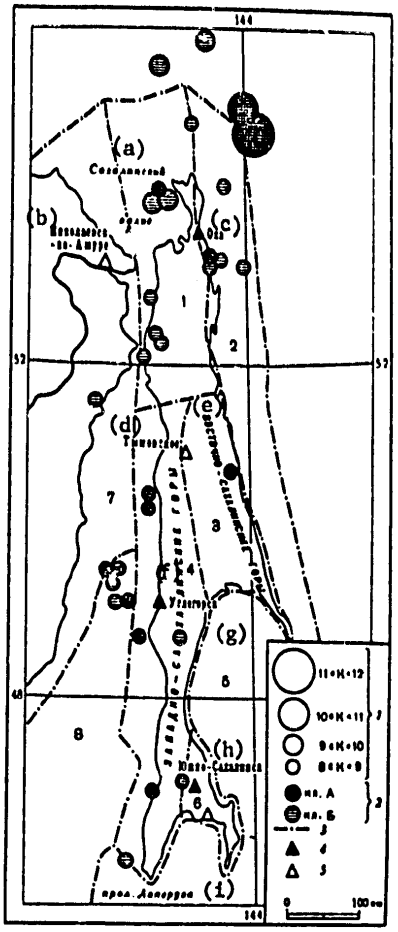


Figure 1. Map of the epicenters of the earthquakes of Sakhalin with $K \geq 8$. 1--energy of the earthquake; 2--accuracy of determining the epicenters; 3--boundaries of the seismically active regions; 4--constantly operating seismic stations; 5--the same, temporary.

Key:
(a) Sakhalin Bay
(b) Nikolayevsk-na-Amure
(c) Okha
(d) Tymovskoye
(e) Eastern Sakhalin Mountains
(f) Western Sakhalin Mountains
(g) Uglegorsk
(h) Yuzhno-Sakhalinsk
(i) Laperouse Strait

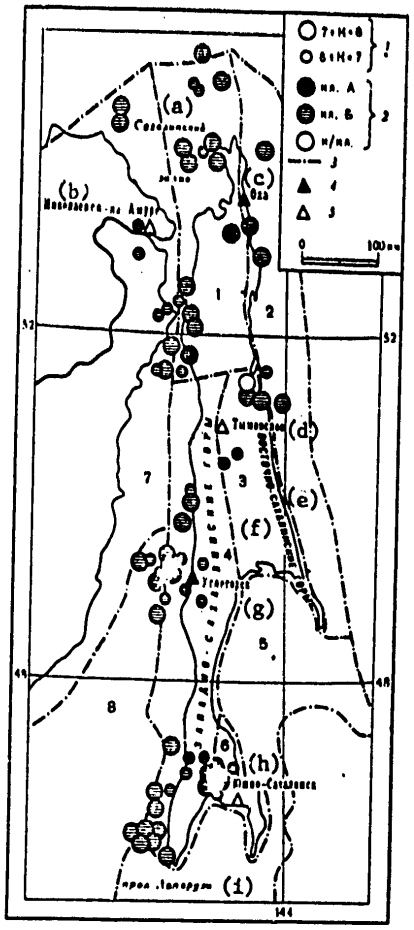


Figure 2. Map of the epicenters of the earthquakes of Sakhalin with K < 8. The provisional notation is the same as in Figure 1.

Key:
(a) Sakhalin Bay
(b) Nikolayevsk-na-Amure
(c) Okha
(d) Tymovskoye
(e) Eastern Sakhalin Mountains
(f) Western Sakhalin Mountains
(g) Uglegorsk
(h) Yuzhno-Sakhalinsk
(i) Laperouse Strait

In the southern part of region No. 4, a further shift of the seismic activity from the center region of the Moneronskoye earthquake toward the island was observed. Thus, both earthquakes with K = 8-9 occurred east of the indicated center region, and only a few epicenters of the underground shocks with K < 8 were recorded in its eastern part. A number of earthquakes were noted along the Central Sakhalin upper fault of the overthrust in the vicinity of the Pereval'skoye earthquake of 1949 and the Anivskoye earthquakes of 1951 and 1964. In the vicinity of Uglegorsk, the earthquakes occurred both in the basic part of the Western Sakhalin Ridge and in the shelf region north and south of the epicenter of the Uglegorsk earthquake of 6 February 1973 (M = 4.7). Two of them (29 July and 18 October) were energy class 8 and 9. Underground shocks were not noted in the vicinity of Lesogorsk. North of the Uglegorsk-Lesogorsk region, just as in 1973, two earthquakes were recorded with K = 8-9 and three with K = 6-8; their epicenters are located in the shelf section, southwest of Tymovskoye. In contrast to 1970-1973, epicenters of underground shocks are absent northwest of Tymovskoye.

In 1971-1974, seismicity was manifested annually in the northern part of the Tatar Strait (region No. 8). Five earthquakes with K = 8-9 and a number of weaker ones were noted here in 1974. At the boundary of the regions No. 4 and 8 in the center part of the Moneronskoye earthquake in September 1971 several weak underground shocks were also recorded.

Distribution of Sakhalin Earthquakes with K < 7 by Regions and Energy Classes

| Region No. | Year | 6≥M≥5 | 11>K≥10 | 10>K≥9 | 9>K≥8 | 8>K≥7 | K<7 | Total |
|---|---|---|---|---|---|---|---|---|
| 1 | 1973 | 1 | – | – | 4 | 10 | 1 | 16 |
| | 1974 | – | – | 4 | 4 | 12 | 7 | 27 |
| 2 | 1973 | – | – | 1 | 4 | 7 | 4 | 16 |
| | 1974 | 1 | 1 | – | 7 | 4 | 2 | 15 |
| 3 | 1973 | – | – | – | 1 | 7 | – | 8 |
| | 1974 | – | – | – | 1 | 5 | 2 | 8 |
| 4 | 1973 | – | 2 | 2 | 23 | 47 | 9 | 83 |
| | 1974 | – | – | – | 7 | 14 | 15 | 36 |
| 5 | 1973 | – | – | – | – | – | – | – |
| | 1974 | – | – | – | – | – | – | – |
| 6 | 1973 | – | – | – | 2 | 3 | 4 | 9 |
| | 1974 | – | – | – | – | 1 | 5 | 6 |
| 7 | 1973 | – | – | – | 3 | 3 | 1 | 7 |
| | 1974 | – | – | – | 1 | 5 | 3 | 9 |
| 8 | 1973 | – | 1 | 2 | – | 4 | – | 7 |
| | 1974 | – | – | – | 5 | 5 | 5 | 15 |
| Total | 1973 | 1 | 3 | 5 | 37 | 81 | 19 | 146 |
| | 1974 | 1 | 1 | 4 | 25 | 46 | 39 | 116 |

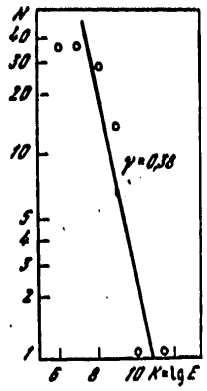


Figure 3. Graph of the recurrence rate of the Sakhalin earthquakes in 1974.

Significant improvement of the conditions of recording the earthquakes in Northern Sakhalin was achieved in 1966-1970. This is connected with the opening of the expedition station in Nizhniy Armudan in September 1967 (in 1969 it was transferred to the village of Tymovskoye), the same station in Nikolayevsk-na-Amure (September 1970) and the installation of regional type equipment at the Okha Station. Accordingly, earthquakes began to be recorded in the various regions of the Khabarovsk Kray adjacent to the Tatar Strait (region No. 7). They include the following: north of Nikolayevsk-na-Amure (the earthquakes of 1973-1974 in the western part of the Sakhalin Strait); the vicinity of the same city within a radius of 50 km (underground shocks with $K < 8$ in 1970, 1973-1974); west of Nikolayevsk-na-Amure, the earthquakes of 1971; the region of latitude $52.0 \pm 0.5$ (underground shocks in 1970-1972 with $K < 8$, earthquakes with $K = 8$-9 were also recorded in 1973-1974); the group of Vaninskoye earthquakes of different energy level in 1968-1970. The presence of seismic activity in the indicated period is also indicated by the published data on the perceptibility of past earthquakes in Nikolayevsk-na-Amure, the villages of Mariinskiy and Voznesenskiy, and so on [6, 7].

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Catalog of Earthquakes of Sakhalin in 1974

| Number | Time of occurrence, hrs,min,sec | Coordinates of the epicenter | | Depth of center, km | Accuracy class | $K$ | Number of region |
|---|---|---|---|---|---|---|---|
| | | $\varphi^\circ N$ | $\lambda^\circ E$ | | | | |
| | | January | | | | | |
| 1 | 11 24 56 | 50,4 | 141,9 | 10 | А | 8 | 4 |
| | 13 01 42 | 53,2 | 143,2 | 0–10 | А | 8 | 2 |
| 15 | 17 13 33 | 52,7 | 141,9 | 10–20 | Б | 8 | 1 |
| | | February | | | | | |
| 3 | 04 37 54 | 49,3 | 141,3 | 10 | А | 8 | 8 |
| 6 | 00 36 57 | 53,2 | 143,9 | 10 | Б | 8 | 2 |
| 20 | 06 56 12 | 49,5 | 141,3 | 10 | А | 8,5 | 8 |

| Number | Time of occurrence, hrs, min., sec. | Coordinates of the epicenter | | Depth of center, km | Accuracy class | $K$ | Number of region |
|---|---|---|---|---|---|---|---|
| | | $\varphi$°N | $\lambda$°E | | | | |
| | | | April | | | | |
| 3 | 10 00 53 | 49,1 | 141,5 | 10 | А | 8 | 8 |
| | 08 19 50 | 49,1 | 141,3 | 10–20 | Б | 8,5 | 8 |
| 5 | 12 31 04 | 54,0 | 142,2 | 10–20 | А | 8 | 1 |
| 23 | 19 19 20 | 55,5 | 142,2 | 10 | Б | 9 | 1 |
| 28 | 00 59 09 | 50,4 | 139,2 | 0–10 | Б | 8,5 | |
| | | | May | | | | |
| 23 | 18 03 38 | 50,3 | 141,9 | 10 | А | 8 | 4 |
| | | | June | | | | |
| 18 | 05 05 46 | 51,5 | 140,8 | 10–20 | Б | 8 | 7 |
| | | | July | | | | |
| 29 | 16 02 15 | 50,7 | 143,6 | 10 | А | 8,5 | 3 |
| | | | August | | | | |
| 7 | 20 46 32 | 53,9 | 142,0 | 10–20 | Б | 9 | |
| 16 | 03 57 01 | 54,8 | 142,8 | 10–20 | Б | 8,5 | 2 |
| 17 | 03 50 20 | 55,0 | 144,0 | 10–20 | А | $M$=4,2 | 2 |
| | 05 13 12 | 54,7 | 144,3 | 10–20 | А | $M$=5,2 | 2 |
| 19 | 05 50 03 | 46,2 | 141,6 | 5–10 | Б | 8,5 | 4 |
| | | | September | | | | |
| 1 | 06 57 29 | 48,7 | 142,6 | 10–20 | Б | 8,5 | 4 |
| 6 | 06 35 42 | 55,9 | 143,2 | 10 | Б | 9 | |
| 8 | 19 51 02 | 53,3 | 143,1 | 10–20 | А | 8 | 2 |
| 26 | 21 56 06 | 52,4 | 142,0 | | Б | 8 | 1 |
| | | | October | | | | |
| 8 | 07 52 14 | 49,5 | 141,2 | 10–20 | А | 8,5 | 8 |
| 18 | 08 41 12 | 48,7 | 141,8 | 10 | А | 8 | 4 |
| 27 | 15 55 50 | 53,9 | 142,1 | 10–20 | Б | 9 | 1 |
| | | | November | | | | |
| 10 | 16 33 04 | 53,3 | 143,3 | 10 | Б | 8 | 2 |
| 11 | 06 01 35* | 46,8 | 142,1 | 10 | А | 8 | 4 |
| 21 | 07 31 50 | 54,1 | 143,6 | 10–20 | Б | 8,5 | 2 |
| 24 | 02 30 38 | 52,3 | 142,1 | 10–20 | Б | 8 | 1 |
| | 03 03 20 | 52,1 | 141,7 | 10–20 | Б | 8 | 1 |
| | | | December | | | | |
| 14 | 01 04 38 | 47,0 | 142,6 | 10 | А | 8,5 | 4 |

* The earthquake was felt in the city of Kholmsk with a force of 2-3.

# EARTHQUAKES OF THE KURIL-OKHOTSK REGION

[Article by A. N. Boychuk, L. N. Poplavskaya, M. I. Rudik]

In 1974 the process of intense stress relief in the flanks of the Kuril archipelago started in 1973 continued [1, 2]. Significant seismic activity was also manifested by the Central Kuril Islands where in July 1974 an earthquake with M = 6.9 was noted which caused significant aftershock activity.

The catalog of Kuril-Okhotsk earthquakes containes information about 724 shocks with $M \geq 4$ ($K \geq 9$). In addition, for graphical constructions and calculations of the parameters of the seismic regime the information was taken into account on the 48 earthquakes of the northern part of the Kuril Islands--south of Kamchatka (51-52° north latitude) (see the Kamchatka Catalog). The distribution of these earthquakes with respect to depth intervals and the amount of released energy is presented in Table 1, and with respect to magnitude M and energy class K, in table 2.

As is obvious from Table 1, in all of the seismically active regions east of the Kuril archipelago and also east of Hokkaido, just as in preceding years, the greater part of the earthquakes occurred at depths of H = 0-80 km. However, in the Onekotan-Matuanskiy Rayon and east of Hokkaido, the energy contribution of the earthquakes with an intermediate depth of center (H = 81 to 300 km) significantly exceeded the energy released by the shallow focus earthquakes of the corresponding regions.

In the basis of table 2, a graph was constructed for the recurrence rate of the earthquake with normal depth of center on the whole throughout the Kuril-Okhotsk region which can be expressed by the function

$$\lg n = 6.07 - 0.97\ M\ (\pm 0.25).$$

where n is the number of earthquakes of given magnitude M varying from 4.5 to 6.75 with a stepside of $\Delta M = 0.25$. From the equation it is obvious that in 1974 the earthquakes of the Kuril-Okhotsk region with $M \geq 4$ were recorded without skips.

By the materials presented in the catalog, maps of the epicenters (Figure 1), a map of the density of the epicenters reduced to the M = 4 level using the recurrence rate graph (Figure 2), projections of the centers of the Kuril earthquakes on the vertical planes parallel (Figure 3) and orthogonal to the strike of the Kuril archipelago (Figure 4) were constructed. For each seismically active region of the Kuril Islands Benioff graphs (Figure 5) and hisotgrams of the distribution in time of the earthquakes of the corresponding region with maximum energy each day (Figure 6) were constructed. The descriptions of the manifestations of the individual earthquakes obtained from the seismic and the hydrometeorological stations made it possible to estimate the macroseismic effect of 54 seismic shocks (Table 3).

On the basis of the information about distribution of the signs of the first shifts in the P wave it was possible to determine the mechanisms of the centers of 70 Kuril-Okhotsk earthquakes (see Table 4).

An analysis of tables 1-4, the catalog of earthquakes and the above-enumerated graphical materials made it possible to compile a description of the manifestation of seismic activity in the individual seismically active regions isolated in Figure 1.

Paramushirskiy Rayon. The seismic activity here continued to remain extraordinarily active. On 15 May at 1859 hours and 27 May at 0441 hours in the southern and northern territories of the epicentral region of the earthquake on 28 February 1973 [1], underground shocks were noted with M = 6.5 and 5.7 respectively. The depth of occurrence of the hypocenters of these shocks H = 50 km. Thus, the maximum released energy in the hypocentral region of the earthquake of 28 February 1973 in 1974 belongs to its southern territory.

Table 1. Earthquake Distribution and Magnitude of Energy with Respect to Depths

| Region | No. of shocks | | | Amount of energy released E $\cdot 10^{18}$, ergs | | |
|---|---|---|---|---|---|---|
| | 0-80 | 81-300 | >300 | 0-80 | 81-300 | >300 |
| Paramushirskiy | 201 | 12 | 0 | 4 843 | 472 | 0 |
| Onekotan-Matuanskiy | 86 | 8 | 0 | 233 | 481 | 0 |
| Simushir-Urupskiy | 189 | 11 | 0 | 19 609 | 130 | 0 |
| Severo-Iturupskiy | 49 | 1 | 0 | 7 669 | 0,6 | 0 |
| Kunashir-Shikotanskiy | 115 | 12 | 0 | 40 142 | 76 | 0 |
| Hokkaido Island | 45 | 14 | 0 | 1 334 | 28 259 | 0 |
| Sea of Japan | 0 | 7 | 1 | 0 | 33 | 5 |
| Sea of Okhotsk | 2 | 5 | 15 | 15 | 54 | 425 |
| Total | 687 | 70 | 16 | 73 845 | 29 505,6 | 430 |

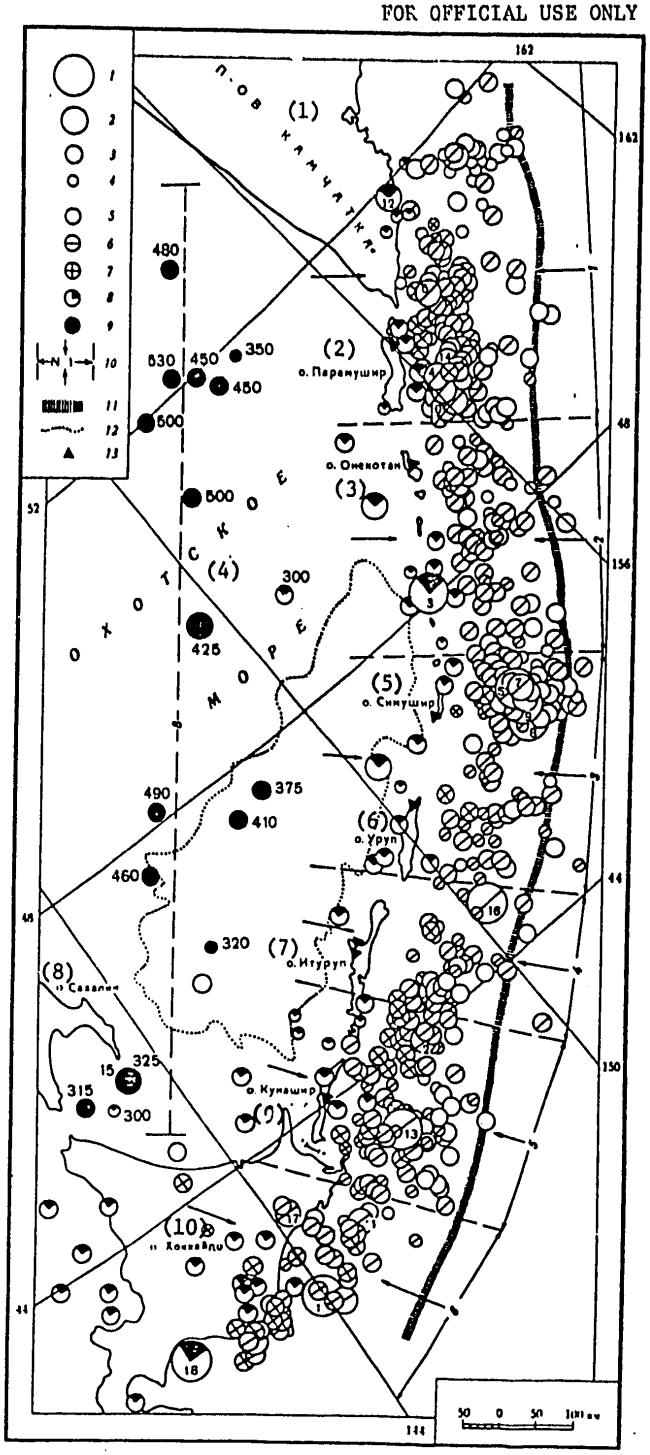



Figure 1. Map of the epicenters of the Kuril-Okhotsk earthquakes with $K \geq 9$ ($M \geq 4$).

The magnitude and energy class: 1--$M \geq 6.5$; 2--$5.25 \leq M < 6.5$, $11 < K < 14$; 3--$4.25 \leq M \leq 5.25$, $9 < K \leq 11$; 4--$K = 9$; depth of center, km: 5--$0 < H < 30$; 6--$30 \leq H < 60$; 7--$60 \leq H < 90$; 8--$90 \leq H < 300$; 9--$H > 300$; 10--boundaries of the seismically active regions of the Kuril Islands and the position of the axial part of the depth sections depicted in Figures 3 and 4; 11--axis of the deep Kuril-Kamchat trough; 12--outline of the deep Southern Okhotsk Basin; 13--permanently operating seismic stations.

Key:

(1) Kamchatka Peninsula
(2) Paramushir Island
(3) Onekotan Island
(4) Okhotskoye Sea
(5) Simushir Island
(6) Urup Island
(7) Iturup Island
(8) Sakhalin Island
(9) Kunashir Island
(10) Hokkaido Island

Table 2. Distribution of Shallow-Focus Kuril-Okhotsk Earthquakes with Respect to Magnitude and Energy Class

| M (K) | Number of earthquakes in the area | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 4 (9) | 39 | 34 | 83 | 18 | 57 | 8 | – | 1 |
| 4,25 (9,5) | 47 | 29 | 55 | 15 | 30 | 13 | – | – |
| 4,5 (10) | 32 | 14 | 27 | 8 | 13 | 11 | – | – |
| 4,75 (10,5) | 15 | 6 | 11 | 4 | 9 | 5 | – | 1 |
| 5 (11) | 8 | 2 | 6 | – | 3 | 4 | – | – |
| 5,25 (11,5) | 4 | 1 | 3 | 1 | 2 | 1 | – | – |
| 5,5 (12) | 3 | – | – | | – | 2 | – | – |
| 5,75 (12,5) | 1 | – | – | – | – | – | – | – |
| 6 (13) | – | – | 1 | 1 | – | 1 | – | – |
| 6,25 | – | – | 1 | – | – | – | – | – |
| 6,5 | 1 | – | 1 | – | – | – | – | – |
| 6,75 | – | – | – | 1 | – | – | – | – |
| 7 | – | – | 1 | – | – | – | – | – |
| 7,25 | – | – | – | – | 1 | – | – | – |
| Всего | 150 | 86 | 189 | 48 | 115 | 45 | – | 2 |

Table 3. Distribution of Earthquakes Felt Throughout the Seismically Active Regions

| Region No. | Total number of earthquakes | Number felt | Maximum force | Region No. | Total number of earthquakes | Number felt | Maximum force |
|---|---|---|---|---|---|---|---|
| 1 | 213 | 17 | 5-6 | 5 | 127 | 12 | 4-5 |
| 2 | 94 | 7 | 4 | 6 | 59 | 7 | 8 |
| 3 | 198 | 7 | 4-5 | 7 | 8 | – | – |
| 4 | 50 | 2 | 6 | 8 | 23 | 2 | 2 |

The calculation of the parameters of the recurrence rate graph of the shallow-focus earthquakes of the Paramushirskiy Rayon demonstrated that in 1974 they varied insignificantly, which indicates the duration of the aftershock process, the beginning of which we traced in [1]. Actually, the parameters of the graph of the recurrence rate of the earthquakes in the sequence of aftershocks of 1973 had the following values: $a = 6.0$; $b = -0.98$. For the earthquakes of 1974, $a = 5.7$, $b = -0.96$. The duration of the aftershock process is also indicated by the similarity of the Benioff graphs for the sequence of aftershocks of 1973 and the Paramushirskiye earthquakes of 1974.

The large number of earthquakes of the investigated region in 1974 had the center mechanism analogous to the mechanism of the center of the main shock of 28 February 1973. The near horizontal orientation of the axes of the main compressive stresses orthagonal to the strike of the Kuril archipelago and also the near horizontal orientation of the intermediate stresses parallel to the strike of the archipelago are characteristic of them. Strike-slip dislocations were observed for these shocks.

The course of the seismic process in time (Figure 6) was quite uniform, except a three-week seismic calm was observed in March-April.

The Onekotan-Matuanskiy Rayon was characterized by a low level of seismic activity (Figure 1, 2, 5). The majority of the earthquakes occurred at depths of 30-50 km (Figures 3, 4; Table 1). The maximum observed magnitude of the shallow-focus shocks M = 5.2. The graph of the recurrence rate of these earthquakes calculated for the interval of magnitude M = 4 to 5.25 with a magnitude step size of $\Delta M = 0.25$, had the parameters: a = 6.9 and b = 1.31.

From Table 1 it is obvious that the greatest energy contribution to the activity of the region was played by the earthquakes with intermediate (H = 81 to 300 km) depth of center the strongest of which was shock of 11 March at 1137 hours in the vicinity of the Matua Island ($M_{PV}$ = 5.9; H = 160 to 170 km). The microseismic effect of this earthquake on Matua Island was estimated at force 4, in the southern part of Paramushir Island force 3-4, and in the northern part of this island, 2-3. The results of determining the dynamic parameters of the earthquake of 11 March (Table 4) indicates that its center is under the effect of the near-horizontal compressive stresses and more steeply oriented tensile stresses. The characteristic dislocation for this and the majority of other of the Onekotan-Matua earthquakes was strike-slip with predominance of the shift component of the movement in the center.

The course of the seismic process in time (Figure 6) was nonuniform. In January to the first half of March the rayon was in practice aseismic; then in April-July the seismic activity of the rayon became uniform, and the rate of release of the other deformations (Figure 5) increases. Then before the end of the year in the Onekotan-Matua Rayon the earthquakes occurred rarely, and their magnitude did not exceed 4-4.5.

In 1974 the Simushir-Urupskiy Rayon was significantly activated (Figures 1, 2). The epicenters of the earthquakes in this rayon formed two special groups: east of the Simushir Island and east of the Urup Island. The last group is the most numerous and is basically formed by the earthquake of 28 July at 1124 hours and repeated shocks. The depth of this earthquake is determined by the phase difference of the reflect P-waves near the epicenter and the first arrivals of seventeen stations was 25 to 30 km.

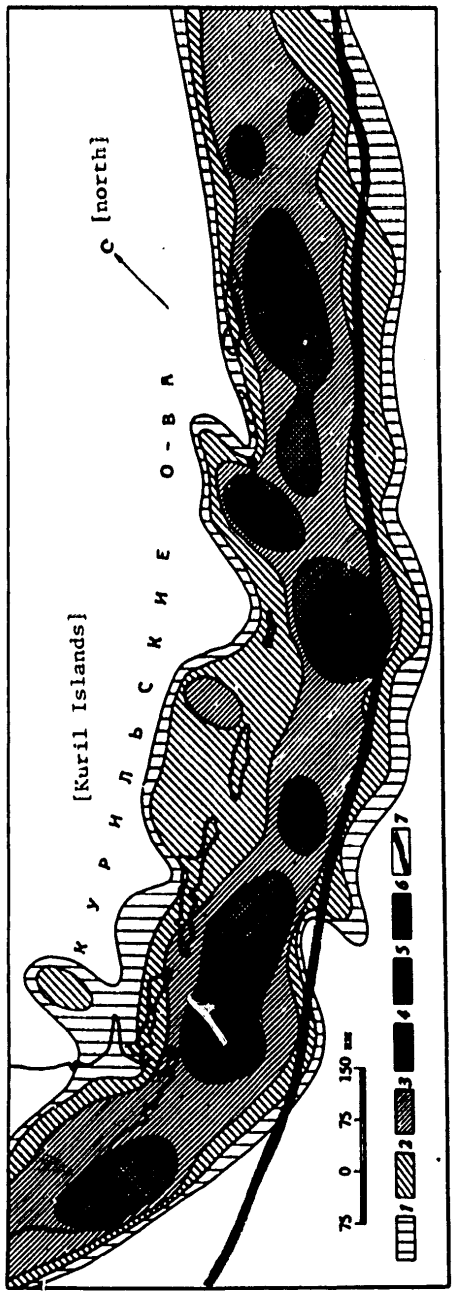



Figure 2. Density map of the Kuril earthquakes reduced to the M = 4 level using the recurrence rate graph.

$1 - \Pi_M = 4 < 1{,}2 - 1{,}1 \leq \Pi_M = 4 < 3{,}3 - 3{,}1 < \Pi_M = 4 < 9{,}1 - 9{,}1 \leq \Pi_M = 4 < 27{,}5 - 27{,}1 < \Pi_M = 4 < 81{,}6 - 81{,}1 \leq \Pi_M = 4$;

7--axis of the deep trough.




Figure 3. Projections of the hypocenters of the Kuril earthquakes on the vertical plane running along the Kuril-Kamachatka archipelgo at a distance of 130 km from shore.

Key: (a) Hokkaido Island
(b) Kumashir Island
(c) Iturup Island
(d) Urup Island
(e) Simushir Island
(f) Matua Island
(g) Onekotan Island
(h) Paramushir Island
(i) Kamchatka Peninsula

1-4 correspond to the values in Figure 1; 5--water; 6--sediment (average velocity of the P-wave less than 3.5 km/sec); 7--"granite" layer (velocity of the P-waves 5.2-6.4 km/sec); 8--basalt layer (velocity of the P-waves 6.4-7.0 km/sec).

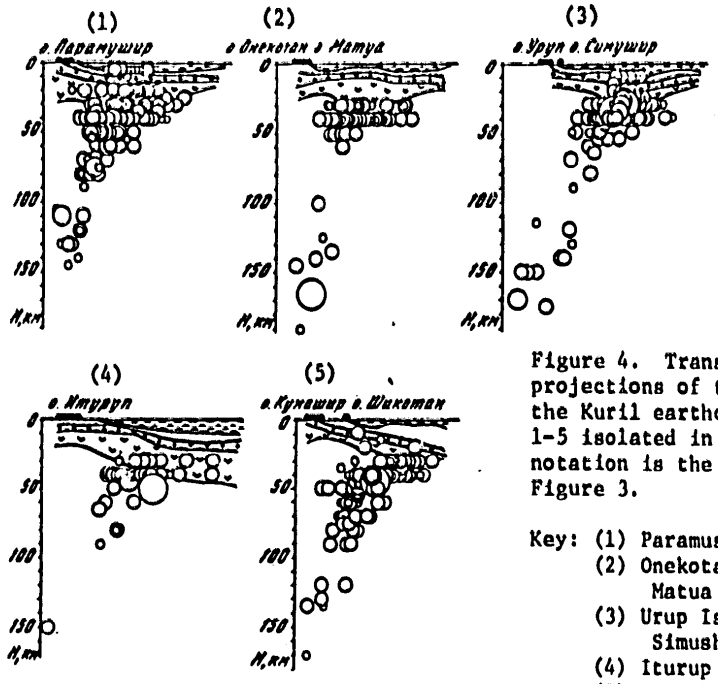



Figure 4. Transverse vertical projections of the centers of the Kuril earthquakes for regions 1-5 isolated in Figure 1. The notation is the same as in Figure 3.

Key: (1) Paramushir Island
(2) Onekotan Island and Matua Island
(3) Urup Island and Simushir Island
(4) Iturup Island
(5) Kunashir Island and Shikaton Island

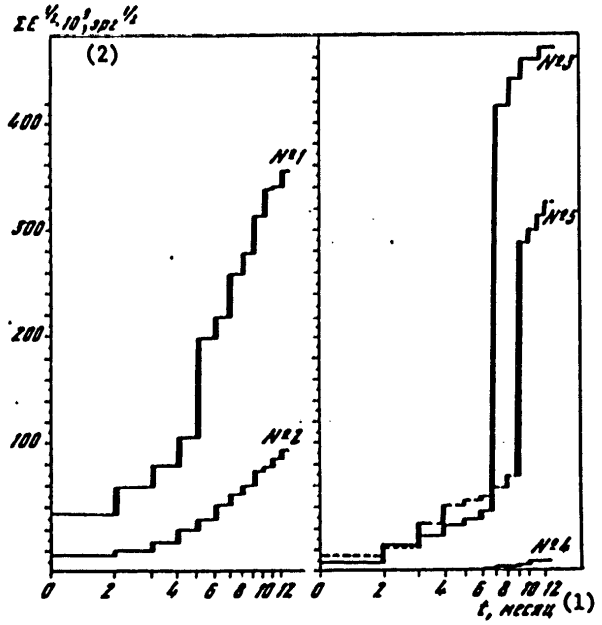



Figure 5. Graphs of the release of elastic deformations in the individual regions of the Kuril epicentral zone.

Key: (1) months
(2) ergs

Table 4. Earthquakes in 1974

| Date | Time of occurrence hrs., min sec. | Coordinates of the epicenter | | H, km | M | $m_{PV}$ | No. of region | Plane I | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | $\varphi^{\circ}$N | $\lambda^{\circ}$E | | | | | $Az^{\circ}$ | $\varepsilon^{\circ}$ | Components with respect to strike |
| 9.I* | 02 49 48 | 51,6 | 159,6 | 50 | – | – | 1 | 300 | 50 | 0,545 |
| 10.I* | 02 37 02 | 51,5 | 159,9 | 30 | 4,8 | – | 1 | 311 | 64 | 0,695 |
| 10.I* | 05 18 57 | 51,6 | 159,6 | 50 | 5,4 | – | 1 | 293 | 40 | 0,615 |
| 14.I | 20 31 49 | 48,8 | 155,1 | 40 | 4,9 | – | 2 | 300 | 70 | 0,406 |
| 17.I | 08 39 07 | 43,7 | 147,4 | 70 | 4,6 | – | 5 | 130 | 78 | 0,754 |
| 24.I | 19 12 48 | 42,1 | 144,0 | 30 | 6,1 | – | 6 | 190 | 60 | 0,857 |
| 24.I | 23 38 10 | 42,0 | 144,1 | 50 | 5,0 | – | 6 | 122 | 50 | 0,743 |
| 25.I | 10 04 25 | 41,9 | 144,2 | 40 | 5,4 | – | 6 | 98 | 76 | 0,529 |
| 4.II | 03 23 54 | 45,6 | 141,0 | 160 | 5,0 | – | 7 | 278 | 40 | 0,406 |
| 7.II | 19 04 09 | 43,8 | 156,4 | 70 | 5,0 | – | 1 | 285 | 40 | 0,406 |
| 9.II | 18 22 15 | 50,4 | 157,5 | 60 | 4,8 | – | 1 | 99 | 40 | 0,485 |
| 11.II | 05 38 03 | 42,4 | 142,8 | 110–120 | – | 4,8 | 6 | 101 | 80 | 0,945 |
| 23.II | 04 14 58 | 42,3 | 143,2 | 60–70 | 4,5 | – | 6 | 235 | 64 | 0,981 |
| 25.II | 05 46 29 | 43,9 | 147,9 | 40 | 5,9 | – | 5 | 294 | 46 | 0,707 |
| 6.III | 06 31 42 | 43,2 | 148,4 | 30 | – | 5,0 | 5 | 318 | 70 | 0,766 |
| 11.III | 11 37 32 | 48,1 | 153,2 | 160–170 | – | 5,9 | 2 | 270 | 90 | 0,000 |
| 15.III | 22 11 27 | 49,4 | 158,6 | 25–30 | 4,6 | – | 1 | 330 | 62 | 0,819 |
| 17.III | 01 18 52 | 44,2 | 147,5 | 90 | – | 4,7 | 5 | 292 | 70 | 0,454 |
| 1.IV | 15 34 51 | 43,6 | 145,8 | 80 | – | – | 5 | 241 | 80 | 0,777 |
| 6.IV | 22 07 15 | 43,4 | 146,2 | 75 | – | 4,9 | 5 | 97 | 72 | 0,891 |
| 9.IV | 13 11 26 | 45,8 | 148,1 | 150 | – | 5,5 | 4 | 296 | 42 | 0,732 |
| 11.IV | 21 37 53 | 42,2 | 144,5 | 80 | 4,6 | – | 6 | 251 | 58 | 0,874 |
| 20.IV | 16 02 58 | 42,2 | 143,1 | 60–70 | 4,6 | – | 6 | 250 | 60 | 0,898 |
| 21.IV | 02 08 04 | 46,1 | 145,4 | 25–30 | 4,9 | – | 8 | 283 | 60 | 0,921 |
| 2.V | 22 36 12 | 50,2 | 160,0 | 20 | 4,6 | – | 1 | 247 | 78 | 0,866 |
| 5.V | 19 10 40 | 46,0 | 149,4 | 150 | – | 5,1 | 3 | 251 | 60 | 0,920 |
| 15.V | 18 59 56 | 49,9 | 156,2 | 50 | 6,5 | – | 1 | 323 | 34 | 0,469 |
| 27.V | 04 41 26 | 50,7 | 157,3 | 50 | 5,7 | – | 1 | 293 | 38 | 0,602 |
| 17.VI | 02 18 34 | 48,2 | 154,5 | 40 | 4,7 | – | 2 | 249 | 34 | 0,819 |
| 25.VI | 03 45 56 | 44,4 | 144,6 | 190–195 | – | 4,7 | 8 | 324 | 70 | 0,731 |
| 7.VII | 12 53 22 | 46,7 | 152,7 | 60–70 | 4,5 | – | 3 | 301 | 64 | 0,978 |
| 11.VII | 15 54 08 | 42,0 | 142,3 | 70 | 4,3 | – | 6 | 290 | 60 | 0,809 |
| 14.VII | 16 25 30 | 51,7 | 152,9 | 450 | – | 4,5 | 1 | 322 | 64 | 0,866 |
| 22.VII | 05 34 13 | 52,0 | 151,3 | 500 | – | 4,6 | 8 | 308 | 84 | 0,866 |
| 28.VII | 11 34 58 | 46,5 | 153,2 | 35–40 | 6,9 | – | 3 | 302 | 46 | 0,755 |
| 28.VII | 11 52 50 | 46,4 | 153,3 | 30 | – | 5,0 | 3 | 322 | 60 | 0,819 |
| 28.VII | 11 59 43 | 46,3 | 153,5 | 25 | – | 4,8 | 3 | 288 | 46 | 0,857 |
| 28.VII | 13 04 17 | 46,5 | 152,9 | 25–30 | – | – | 3 | 303 | 56 | 0,777 |
| 28.VII | 13 31 38 | 46,4 | 153,3 | 35–40 | 6,0 | – | 3 | 314 | 64 | 0,529 |
| 28.VII | 13 41 37 | 46,7 | 153,3 | 30 | – | – | 3 | 300 | 40 | 0,292 |
| 28.VII | 16 27 31 | 46,2 | 153,2 | 25–30 | 5,0 | – | 3 | 293 | 44 | 0,587 |
| 28.VII | 18 00 46 | 46,5 | 153,3 | 30 | 5,2 | – | 3 | 216 | 52 | 0,777 |
| 29.VII | 03 15 15 | 46,1 | 153,0 | 20–30 | 6,3 | – | 3 | 289 | 46 | 0,788 |
| 29.VII | 07 16 26 | 46,3 | 153,1 | 30 | 6,4 | – | 3 | 168 | 60 | 0,559 |
| 29.VII | 14 21 16 | 46,2 | 152,8 | 20 | 4,8 | – | 3 | 300 | 46 | 0,719 |
| 30.VII | 22 39 45 | 46,4 | 153,1 | 40 | 5,1 | – | 3 | 288 | 44 | 0,682 |
| 1.VIII | 22 39 22 | 49,7 | 156,1 | 50 | 5,2 | – | 1 | 290 | 60 | 0,798 |
| 6.VIII | 16 49 23 | 46,9 | 150,4 | 170 | – | 5,2 | 3 | 328 | 74 | 0,438 |
| 17.VIII** | 05 13 12 | 54,8 | 144,3 | 10–20 | 5,2 | – | – | 205 | 72 | 0,809 |
| 14.IX | 02 39 25 | 49,3 | 153,5 | 200 | – | 4,6 | 8 | 249 | 80 | 0,875 |
| 16.IX | 20 57 02 | 44,3 | 148,7 | 40–50 | 5,3 | – | 4 | 243 | 62 | 0,927 |
| 16.IX | 21 55 53 | 49,7 | 155,9 | 70–80 | 5,2 | – | 1 | 232 | 60 | 0,656 |

| Plane II | | | | | Stress | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| of movement | | | Components of movement | | compressive | | intermediate | | tensile | |
| with respect to depth | $A_z^0$ | $\epsilon^0$ | with respect to strike | with respect to depth | $A_z^0$ | $\epsilon^0$ | $A_z^0$ | $\epsilon^0$ | $A_z^0$ | $\epsilon^0$ |
| +0,838 | 164 | 50 | 0,838 | +0,545 | 142 | 0 | 232 | 26 | 51 | 65 |
| -0,719 | 196 | 50 | 0,809 | -0,587 | 80 | 50 | 243 | 39 | 341 | 09 |
| +0,789 | 158 | 60 | 0,454 | +0,891 | 139 | 11 | 234 | 24 | 27 | 64 |
| +0,914 | 170 | 30 | 0,732 | +0,682 | 318 | 23 | 217 | 22 | 89 | 58 |
| +0,656 | 230 | 50 | 0,961 | +0,275 | 95 | 18 | 206 | 48 | 352 | 37 |
| +0,515 | 83 | 64 | 0,829 | +0,559 | 46 | 03 | 140 | 47 | 315 | 42 |
| +0,669 | 243 | 60 | 0,643 | +0,766 | 271 | 07 | 177 | 34 | 09 | 55 |
| +0,848 | 210 | 34 | 0,906 | +0,423 | 73 | 25 | 180 | 30 | 312 | 49 |
| -0,914 | 128 | 54 | 0,325 | -0,945 | 02 | 72 | 206 | 15 | 115 | 06 |
| +0,914 | 134 | 54 | 0,325 | +0,945 | 121 | 07 | 213 | 15 | 06 | 74 |
| +0,875 | 245 | 56 | 0,391 | +0,921 | 261 | 09 | 168 | 18 | 12 | 69 |
| +0,325 | 196 | 70 | 0,982 | +0,191 | 59 | 06 | 165 | 67 | 328 | 21 |
| -0,191 | 330 | 80 | 0,891 | -0,454 | 106 | 25 | 261 | 62 | 11 | 11 |
| +0,707 | 168 | 60 | 0,587 | +0,809 | 143 | 07 | 238 | 31 | 40 | 57 |
| +0,643 | 62 | 52 | 0,906 | +0,423 | 283 | 12 | 24 | 46 | 183 | 42 |
| 0,000 | 180 | 90 | 0,000 | 0,000 | 225 | 01 | 180 | 90 | 312 | 02 |
| -0,574 | 78 | 58 | 0,838 | -0,545 | 201 | 44 | 27 | 45 | 295 | 03 |
| -0,891 | 50 | 30 | 0,838 | -0,545 | 143 | 54 | 13 | 25 | 272 | 25 |
| +0,629 | 338 | 50 | 0,978 | +0,207 | 205 | 21 | 319 | 48 | 102 | 34 |
| +0,454 | 359 | 64 | 0,939 | +0,342 | 137 | 05 | 39 | 58 | 229 | 33 |
| +0,682 | 171 | 62 | 0,529 | +0,848 | 148 | 12 | 244 | 29 | 37 | 59 |
| +0,485 | 145 | 66 | 0,809 | +0,587 | 110 | 02 | 205 | 48 | 18 | 41 |
| +0,438 | 146 | 68 | 0,838 | +0,545 | 109 | 06 | 205 | 50 | 14 | 38 |
| -0,391 | 24 | 70 | 0,857 | -0,515 | 156 | 36 | 325 | 52 | 62 | 06 |
| -0,500 | 343 | 58 | 0,970 | -0,242 | 111 | 30 | 318 | 55 | 208 | 13 |
| +0,391 | 149 | 70 | 0,848 | +0,529 | 112 | 07 | 209 | 52 | 17 | 37 |
| +0,883 | 110 | 60 | 0,292 | +0,956 | 123 | 14 | 29 | 24 | 255 | 71 |
| +0,798 | 157 | 60 | 0,423 | +0,906 | 140 | 12 | 233 | 22 | 22 | 64 |
| +0,573 | 10 | 70 | 0,485 | +0,875 | 31 | 21 | 290 | 26 | 154 | 55 |
| +0,682 | 215 | 50 | 0,883 | +0,469 | 356 | 12 | 254 | 43 | 96 | 44 |
| +0,207 | 205 | 80 | 0,891 | +0,454 | 165 | 10 | 276 | 62 | 70 | 26 |
| -0,587 | 179 | 60 | 0,819 | -0,574 | 44 | 49 | 134 | 45 | 144 | 00 |
| +0,500 | 217 | 64 | 0,866 | +0,500 | 00 | 01 | 270 | 52 | 90 | 38 |
| -0,500 | 214 | 60 | 0,993 | -0,105 | 84 | 26 | 228 | 59 | 346 | 16 |
| +0,656 | 179 | 62 | 0,615 | +0,788 | 154 | 10 | 249 | 33 | 50 | 55 |
| +0,573 | 212 | 60 | 0,819 | +0,573 | 177 | 01 | 268 | 45 | 87 | 44 |
| +0,515 | 175 | 68 | 0,669 | +0,743 | 146 | 14 | 246 | 38 | 41 | 50 |
| +0,629 | 187 | 58 | 0,743 | +0,669 | 156 | 02 | 246 | 40 | 66 | 50 |
| -0,848 | 188 | 40 | 0,719 | -0,695 | 90 | 58 | 239 | 28 | 337 | 14 |
| +0,956 | 140 | 52 | 0,225 | +0,974 | 131 | 06 | 221 | 21 | 14 | 78 |
| +0,809 | 158 | 56 | 0,500 | +0,866 | 137 | 07 | 230 | 23 | 33 | 67 |
| +0,629 | 332 | 60 | 0,707 | +0,707 | 02 | 05 | 268 | 38 | 100 | 52 |
| +0,615 | 170 | 64 | 0,629 | +0,777 | 144 | 11 | 241 | 34 | 39 | 53 |
| +0,829 | 40 | 44 | 0,695 | +0,719 | 190 | 09 | 97 | 29 | 296 | 59 |
| -0,695 | 175 | 60 | 0,601 | -0,798 | 46 | 56 | 245 | 31 | 149 | 07 |
| +0,731 | 160 | 60 | 0,545 | +0,838 | 137 | 10 | 231 | 29 | 20 | 60 |
| -0,601 | 40 | 56 | 0,819 | -0,573 | 165 | 46 | 349 | 44 | 257 | 02 |
| -0,898 | 208 | 30 | 0,838 | -0,544 | 116 | 52 | 246 | 25 | 349 | 24 |
| +0,587 | 102 | 56 | 0,927 | +0,374 | 240 | 11 | 138 | 50 | 338 | 38 |
| -0,485 | 153 | 60 | 0,978 | -0,208 | 25 | 27 | 175 | 57 | 289 | 13 |
| -0,374 | 343 | 70 | 0,883 | -0,469 | 115 | 34 | 284 | 55 | 21 | 05 |
| +0,755 | 112 | 50 | 0,754 | +0,656 | 260 | 07 | 165 | 34 | 359 | 54 |

| Date | Time of occurrence hrs., min. sec. | Coordinates of the epicenter | | H, km | M | $m_{PV}$ | No. of region | Plane I | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Components |
| | | $\varphi^0$N | $\lambda^0$E | | | | | $A_1^0$ | $\epsilon^0$ | with respect to strike |
| 20.IX | 00 53 00 | 42,6 | 145,2 | 40-50 | 5,5 | - | 6 | 284 | 70 | 0,933 |
| 29.IX | 23 50 03 | 53,2 | 153,8 | 480 | - | 4,7 | 8 | 260 | 72 | 0,695 |
| 2.X* | 14 56 33 | 51,6 | 158,2 | 60 | - | - | 1 | 337 | 50 | 0,469 |
| 7.X | 09 53 10 | 45,7 | 143,3 | 325 | - | 5,2 | 8 | 292 | 60 | 0,469 |
| 8.X | 02 39 52 | 49,2 | 151,1 | 300 | - | 4,6 | 1 | 267 | 72 | 0,587 |
| 9.X | 07 32 03 | 44,7 | 150,3 | 50 | 6,7 | - | 4 | 303 | 42 | 0,629 |
| 11.X | 18 12 19 | 52,0 | 152,7 | 450 | - | 4,5 | 8 | 265 | 40 | 0,559 |
| 20.X | 11 43 08 | 42,1 | 142,6 | 40 | - | 5,3 | 6 | 282 | 72 | 0,766 |
| 25.X | 15 40 23 | 42,9 | 145,5 | 50-60 | 4,4 | - | 6 | 345 | 58 | 0,574 |
| 27.X | 02 29 24 | 44,9 | 145.0 | 225 | - | 5,1 | 8 | 256 | 70 | 0,573 |
| 2.XI | 19 43 44 | 43,2 | 144,3 | 40 | 5,6 | - | 6 | 295 | 40 | 0,601 |
| 8.XI | 21 23 21 | 42,3 | 141,6 | 135 | - | 6,0 | 6 | 227 | 72 | 0,731 |
| 3.XII | 19 18 56 | 48,1 | 154,1 | 40 | 4,6 | - | 2 | 304 | 70 | 0,559 |
| 5.XII | 22 58 58 | 46,0 | 149,2 | 150 | - | 4,8 | 4 | 243 | 70 | 0,934 |
| 14.XII | 12 31 31 | 47,1 | 154,5 | 30 | 5,0 | - | 3 | 174 | 74 | 0,559 |
| 20.XII | 12 16 50 | 50,8 | 157,1 | 80 | 5,0 | - | 1 | 296 | 40 | 0,615 |
| 20.XII | 16 38 56 | 49,5 | 149,5 | 435 | - | 5,0 | 8 | 247 | 75 | 0,225 |
| 25.XII | 15 03 17 | 52,3 | 152,1 | 530 | - | 4,8 | 8 | 250 | 38 | 0,743 |

* See the Kamchatka Catalog ** See the Sakhalin Catalog

Figure 7 shows a diagram of this earthquake, its aftershocks and also the macroseismic effect on the nearby islands. The theoretical isoseisms of the main shock constructed by the procedure described in reference [1, 2] and oriented with respect to strike of the two possible nodal planes, the data on which were taken from Table 4 are depicted here. The analysis of Figure 7 and also the data on the dynamic parameters of the movement in the center of the earthquake on 28 July indicates that in this case it is possible to take the plane, the strike of which is parallel to the strike of the Kuril Archipelago as the displacer.

The mechanism of the center of the majority of earthquakes of the Simushir-Urup region is similar to the mechanism of the center of the earthquake of 12 October 1963: one of the possible fracture planes has a strike parallel to the strike of the island structures, and a second, latitudinal. As we shall see (see Figure 7), the mechanism of the center of the earthquake of 28 July is similar to that described. For many of the Simushir-Urup earthquakes, the orientations of the principal axes of the active stresses turned out to be analogous, the axes of the compressive stresses are close to horizontal and orthogonal to the strike of the archipelago, the axes of the tensile stresses are oriented more steeply to horizontal and have near latitudinal strikes; the axes of the intermediate stresses are oriented parallel to the island structures and make an angle of approximately 30° with the horizontal.

Table 4 [Continued]

| Plane II | | | | | Stress | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| of movement | | | Components of movement | | compressive | | intermediate | | tensile | |
| with respect to depth | $Az^0$ | $\epsilon^0$ | with respect to strike | with respect to depth | $Az^0$ | $\epsilon^0$ | $Az^0$ | $\epsilon^0$ | $Az^0$ | $\epsilon^0$ |
| -0,358 | 20 | 70 | 0,939 | -0,342 | 151 | 28 | 332 | 61 | 241 | 01 |
| +0,713 | 08 | 46 | 0,906 | +0,422 | 230 | 16 | 334 | 41 | 123 | 45 |
| +0,883 | 195 | 47 | 0,454 | +0,891 | 357 | 01 | 265 | 21 | 83 | 70 |
| +0,883 | 158 | 40 | 0,643 | +0,766 | 312 | 11 | 216 | 24 | 60 | 63 |
| +0,809 | 153 | 39 | 0,875 | +0,485 | 292 | 20 | 189 | 33 | 45 | 50 |
| +0,777 | 75 | 58 | 0,500 | +0,866 | 95 | 10 | 02 | 24 | 203 | 64 |
| -0,829 | 43 | 58 | 0,423 | -0,906 | 173 | 67 | 328 | 20 | 61 | 10 |
| +0,643 | 26 | 50 | 0,921 | +0,391 | 248 | 13 | 352 | 44 | 147 | 41 |
| +0,819 | 216 | 46 | 0,695 | +0,719 | 08 | 08 | 274 | 30 | 111 | 59 |
| +0,819 | 139 | 40 | 0,838 | +0,545 | 281 | 18 | 179 | 33 | 33 | 51 |
| +0,798 | 158 | 60 | 0,454 | +0,891 | 140 | 10 | 234 | 23 | 27 | 65 |
| +0,682 | 121 | 50 | 0,914 | +0,406 | 259 | 14 | 156 | 43 | 02 | 42 |
| +0,829 | 186 | 40 | 0,838 | +0,545 | 329 | 18 | 226 | 31 | 82 | 52 |
| +0,358 | 145 | 03 | 0,939 | +0,342 | 285 | 03 | 195 | 61 | 15 | 27 |
| +0,829 | 288 | 38 | 0,891 | +0,454 | 149 | 21 | 254 | 33 | 34 | 50 |
| +0,788 | 161 | 60 | 0,454 | +0,891 | 143 | 11 | 237 | 23 | 30 | 64 |
| -0,974 | 106 | 20 | 0,602 | -0,798 | 48 | 60 | 160 | 13 | 257 | 28 |
| -0,669 | 14 | 66 | 0,515 | -0,857 | 153 | 58 | 297 | 28 | 37 | 15 |

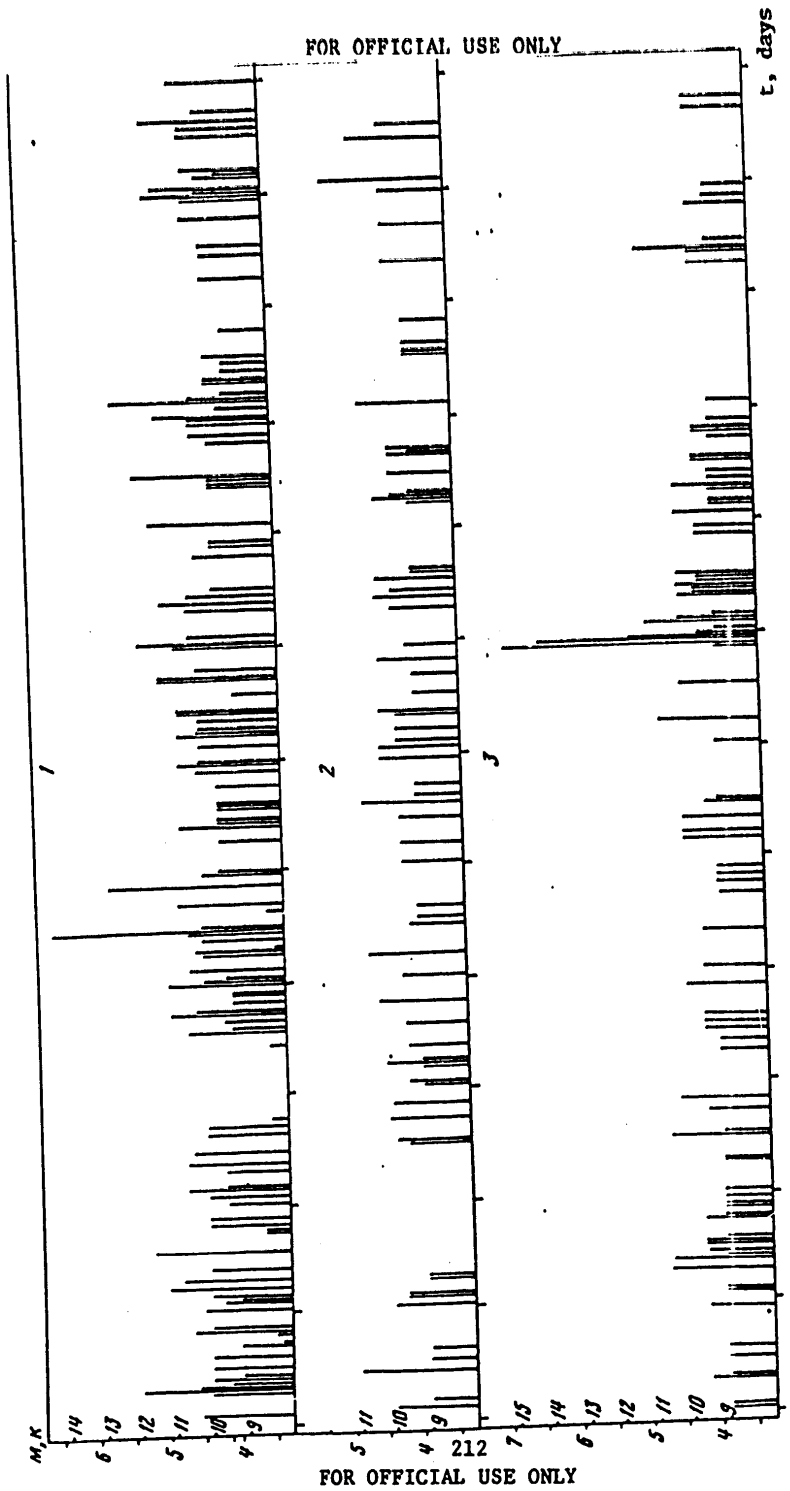
The course of the seismic process in time in 1974 was nonuniform (Figure 5, 6), for in the second half of the year the rate of release of the elastic deformations caused by the occurrence of the earthquake of 28 July and its repeated shocks increased sharply.

The graph of the recurrence rate of the Simushir-Urup earthquakes obtained by the data on the number of recorded seismic shocks with M = 4 to 5.25 has the following form

$$\lg n = 6.77 - 1.20\ M\ (\pm\ 0.05).$$

With respect to the amount of energy released in the depth interval of H = 0 to 80 km, the Simushir-Urup region is at the second location among the other seismic reactive regions of the Kuril-Okhotsk region. Its maximum comes in July to September. The rate of release of elastic energy (Figure 5) was at that time simply that the process of the aftershocks ended in practice in two months, and then in October-December (Figure 6) the Simushir-Urup region was aseismic.

Northern Iturupskiy Rayon. Here a total of 49 shocks were noted during the year at a depth of H = 0. to 80 km, the maximum of which was the shock of 19 October at 0732 hours with M = 6.7 and H = 50 km. The macroseismic manifestation of this earthquake is estimated in the islands of Urup and Iturup



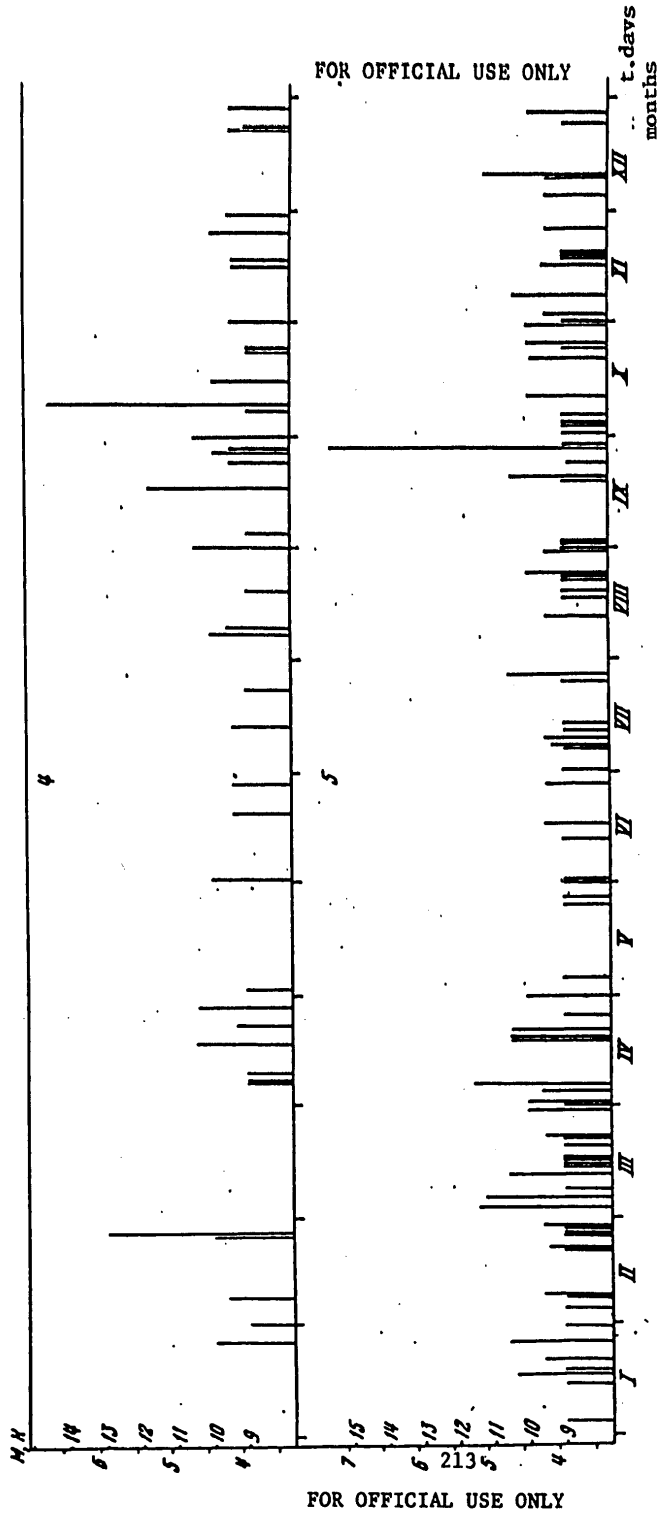



Figure 6. Graph of the behavior and time of the seismic process for regions 1-5 isolated in Figure 1.

at force 6, and on the islands of Kunashir and Matua, to force 3. After the earthquake of 9 October the aftershock activity in practice was absent.

The graph of the recurrence rate of the shallow-focus earthquakes of the Northern Iturupskiy Rayon reflects its low level of activity. The parameters of the graph ($a = 4.89$ and $b = -0.89$) were calculated only for the magnitude range of $M = 4$ to 5.25 every $\Delta M = 0.25$.

For the Simushir-Urup region in 1974 absence of any seismic activity at a depth of $H = 81$ to 300 km is characteristic.

For the four earthquakes of the Northern Iturupskiy Rayon, it was possible to determine the mechanism of the center. The strongest of them described above, the earthquake of 9 October, occured under the conditions of the horizontally oriented compressive stress and the tensile stress deeply oriented to the horizontal. The center was characterized by strike-stress dislocations. One of the possible fracture planes with northeast-southwest strike has a dip to the northwest, and the second, striking from northwest to southeast, dips to the northeast.

Kunashir-Shikotanskiy Rayon. In 1974 the field of the epicenters in the vicinity of the Malaya Kuril'skaya ridge did not by comparison with the preceding year undergo significant alternations. The parameters of the recurrence rate graph for the shallow-focus earthquakes varied insignificantly: $a = 6.53$ and $b = 1.9$.

The strongest of the earthquakes of 1974 was the shock of 28 September at 0547 hours with $M = 7.2$. The macroseismic manifestation of this earthquake at the closest islands of Shikotan and Kunashir did not exceed force 4-5, and on the Ipurep Island, force 3. The distribution of the signs of the shift in the P-wave for this earthquake unfortunately did not make it possible to determine the mechanism of the center. The analysis of the mechanism of the centers of other Kunashir-Shikotan earthquakes demonstrated that their centers were under the conditions of a horizontally oriented compressive stress and the strike-slip dislocations are characteristic of them.

The behavior of the seismisic process in time in this region was nonuniform and was of the nature of a seismic calm for this, as a rule, highly active region. The above-mentioned earthquake of 27 September was not accompanied by repeated shocks, and all of the earthquakes did not exceed $M = 5.2$. The graph of the release of the elastic deformations (Figure 5) for this region was analogous to the graph for Simushir-Urupskiy Region for which a short-term increase in release of the deformations is characteristic.

The Island of Hokkaido, which is located at the intersection of the Kuril-Kamchatka, Japanese and Sakhalin seismic reactive zones, just as the preceding years, was characterized by uniform distribution of the number of earthquakes in the depth range of $H = 81$ to 150 km with a somewhat greater number of shocks as depths of $H = 0$ to 80 km. Here the energy of the earthquakes with intermediate depth of center are exceeded by in order the energy of the shallow-focus earthquakes.

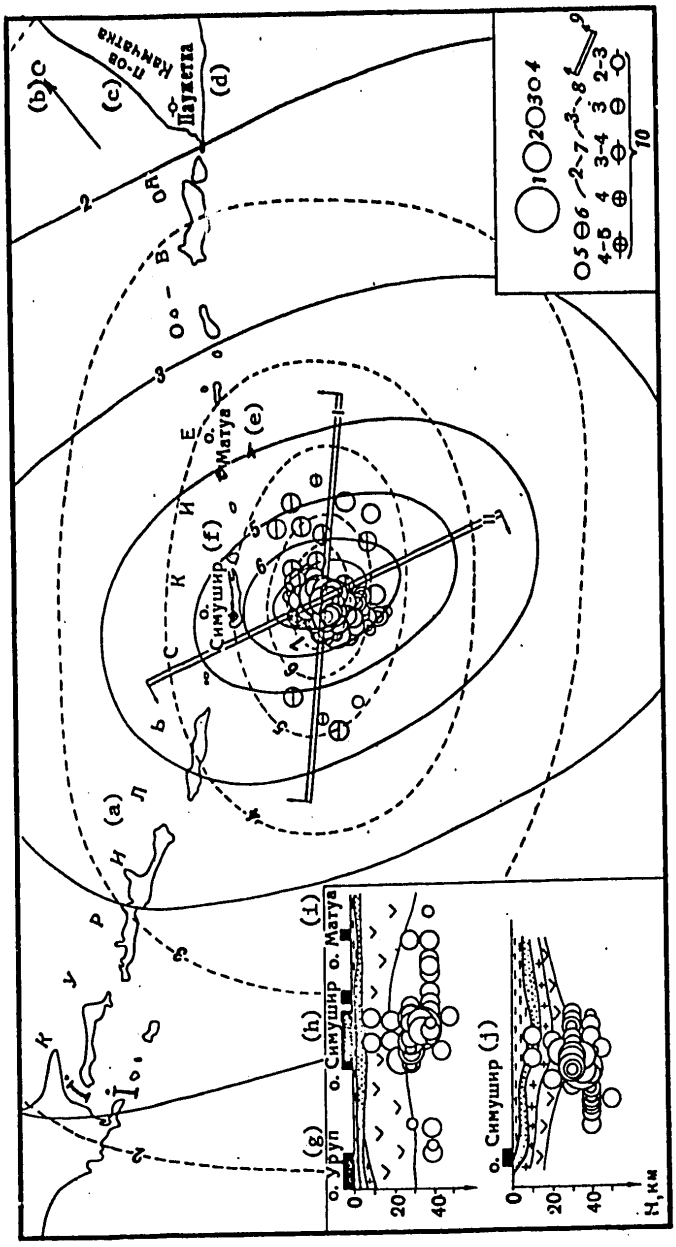



Figure 7. Diagram of the Simushirskoye earthquake of 28 July 1974. 1-6--see the notation in Figure 1; 7, 8 --theoretical isoseisms oriented with respect to the two possible fracture planes, 9--strike and dip of the nodal planes, 10--force. For the provisional notation in the insert see Figure 3.

Key: (a) Kuril Islands (d) Pauzhetka (g) Urup Island (j) Simushir Island
(b) North (e) Matua (h) Simushir Island
(c) Kamchatka Peninsula (f) Simushir (i) Matua Island

A significant event in the seismic life of the region was the shock of 24 January at 1912 hours (M = 6.1, H = 30 km). The two shocks following it in the next 24 hours had M = 5 and 5.4 and were located at somewhat greater depths (50 and 40 km respectively). The data on the mechanism of the centers of these earthquakes turned out to be very similar, just as the nature of the stressed state in their vicinities: their centers were under the effect of the near horizontal compressive stresses and the tensile stress more steeply oriented toward the horizontal. One of the possible fracture planes was oriented submeridionally, and another, sublatitudinally with dips to the east and to the west respectively.

The second strong earthquake following on 8 November at 2123 hours with the epicenter on the south shore of the island of Hokkaido was the strongest in the region and had the greatest macroseismic effect for 1974. According to the data of the Japanese Meteorological Agency, in Hokkaido the earthquake appeared with force 5 according to the Japanese scale which corresponds to force 8 by the MSK-64 scale.

The movements in the center of this earthquake (Table 4) had the strike-step nature. Along one of the possible fracture planes with northwest to southeast strike and dip under the Island Honshu, overthrust of the continental side of the fault on the ocean side was observed. With respect to the second of the possible fracture planes with northeast-southwest strike and dip under the ocean, an uplift of the ocean side of the fault with respect to the continental side with a shift to the south was noted.

The graph of the recurrence rate of the shallow-focus earthquakes of the region calculated on the basis of the information on the number of earthquakes with M = 4 to 5.5 has the parameters a = 4.61 and b = -0.82 and it characterizes the low activity at a depth of H = 0 to 80 km.

In the Sea of Japan seven earthquakes were recorded with a magnitude not exceeding M = 5 at depths of H = 160 to 280 km. The mechanism of the center of the earthquake on 1 February at 0323 hours with H = 160 km and $m_{PV}$ = 5.0, the epicenter of which was located near the northwestern shore of Hokkaido (see Table 4) was determined.

In the Sea of Okhotsk in 1974 it was necessary to determine the coordinates of the hypocenters of 23 earthquakes with $4 \leq M \leq 5.8$. One of these earthquakes which occurred on 21 April at 0208 hours with its epicenter in the western part of the Southern Okhotsk deep basin was shallow-focus: its depth was 25-30 km, magnitude was 4.9. According to the data on the mechanism of the center of this earthquake, one of the possible fracture planes in the center has a strike from northeast to southwest with dip to the northwest, and the second, from southeast to northwest, and it dips to the northeast. The center of the earthquake was under the effect of the horizontally oriented tensile stress and is characterized by strike-slip movement.

Two other earthquakes with hypocenters north of the Island of Hokkaido at depths of H = 192 to 225 km had analogous strike of the fracture planes, but their centers were under the conditions of the horizontally oriented compressive stress, and they were characterized by strike-slip movements.

The center of the earthquake of 20 December at 1638 hours with hypocenter in the midsection of the Sea of Okhotsk was under the effect of the more horizontally oriented tensile stresses and steep compressive stresses. The nature of the movement in the center was strike-slip.

The centers of the earthquakes in the Sea of Okhotsk forming the northeastern group of epicenters were predominantly under the effect of the close to horizontal tensile stresses and steeper compressive stresses. The movements in their centers can be considered as strike-slip. Two other shocks in this group were characterized by movements at the center of opposite sign.

The above-presented description of the manifestations of the seismic activity of the Kuril-Okhotsk region makes it possible to note the following basic features of it.

1. The greatest seismic activity was noted on the flanks of the Kuril Archipelago. However, whereas in the Paramushirskiy Rayon the nature of the seismic activity did not change by comparison with 1973 and was a continuation of the process of the aftershocks of the earthquake of 28 February 1973, in the Kunashir-Shikotan region a significant change was observed in the nature of the seismic activity. The accumulated seismic energy in this area was discharged in the form of a single act--the earthquake of 27 September with M = 7.2 which not accompanied by aftershocks.

2. In 1974 the total seismic energy of the earthquakes with intermediate depth of center was frequently more. In the Onekotan-Matua region it was twice the energy of the shallow-focus earthquakes. In the vicinity of Hokkaido, the energy of the earthquakes with intermediate depths of center was an order higher than the energy of the shocks with H = 0 to 80 km.

3. The field of the tectonic stresses affecting the centers of the Kuril shallow-focus earthquakes was like, for deeper seismically active layers of the Kuril-Okhotsk region, the nature of the tectonic stress field was more uniform.

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2. Oskorbin, L. S., Poplavskaya, L. N., Boychuk, A. N., et al., "June Earthquakes and Tsunami of 1973 in the Vicinity of the Malaya Kuril Ridge," ZEMLETRYASENIYA V SSSR V 1973 G. [Earthquakes in the USSR in 1973], Moscow, Nauka, 1976.

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| No. | Date | Time of occurrence, hr min, sec. | Coordinates of the epicenter φ°N | λ°E | Depth of center, km | accuracy class | M | K | No. of the region | Macroseismic data |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | January | | | | | | | |
| | 1 | 23 42 39 | 45,3 | 150,4 | 30 | Б | | 9 | 3 | |
| | 2 | 16 35 55 | 45,2 | 151,1 | 40 | А | | 9 | 3 | |
| | | 16 40 15 | 45,1 | 151,1 | 40 | А | | 9 | 3 | |
| | 3 | 00 56 44 | 50,2 | 157,0 | 40 | Б | | 10 | 1 | |
| | | 14 45 36 | 50,2 | 157,0 | 20 | Б | | 10,3 | 1 | |
| | 4 | 00 19 23 | 44,3 | 146,2 | 135 | А | | | 5 | |
| | | 10 04 10 | 42,6 | 145,1 | 40 | | | 9 | 6 | |
| | | 17 40 16 | 43,3 | 146,2 | 40 | | | 9 | 5 | |
| | | 20 41 08 | 48,5 | 154,7 | 30 | А | | 10 | 2 | Matua Island, force 2-3 |
| | 6 | 12 48 46 | 43,6 | 143,0 | 80 | | | 9 | 6 | |
| | | 16 28 58 | 46,8 | 153,6 | 40 | Б | | 9 | 2 | |
| | 7 | 11 23 03 | 47,5 | 147,7 | 410 | Б | | | 8 | |
| | 9 | 03 37 48 | 50,9 | 159,2 | 30 | | | 10 | 1 | |
| | | 20 55 58 | 46,9 | 153,0 | 40 | | | 9,5 | 3 | |
| | 10 | 08 59 05 | 42,9 | 144,5 | 40 | А | | 9,5 | 6 | |
| | | 10 31 48 | 42,1 | 130,9 | 600 | А | | | 7 | |
| | | 19 19 54 | 46,5 | 152,6 | 40 | Б | | 9 | 3 | |
| | 11 | 09 42 16 | 49,6 | 156,4 | 20 | Б | | 9 | 1 | |
| | 13 | 09 22 09 | 49,8 | 156,8 | 40 | | | 10 | 1 | |
| | | 10 44 00 | 49,8 | 156,8 | 40 | | | 9,5 | 1 | |
| | 14 | 17 53 18 | 43,4 | 146,7 | 60 | Б | | 9 | 5 | |
| | | 20 31 49 | 48,8 | 155,1 | 40 | А | 4,9 | 11,5 | 2 | Matua Island, force 2-3 |
| | 15 | 17 07 00 | 46,5 | 153,0 | 40 | Б | | 9 | 3 | |
| | 17 | 08 39 07 | 43,7 | 147,4 | 70 | А | 4,6 | 11,5 | 5 | Yuzhno-Kuril, Burevestnik, force 3; Malokuril'skoye, force 2 |
| | | 11 54 44 | 46,8 | 152,2 | 90 | Б | | | 3 | |
| | | 15 04 14 | 42,1 | 146,5 | 40 | А | | 10 | 5 | |
| | | 16 46 44 | 48,3 | 155,1 | 40 | | | 9 | 2 | |
| | | 20 20 54 | 48,4 | 155,8 | 30 | | | 9 | 2 | |
| | | 20 23 36 | 48,2 | 156,0 | 30 | | | 9 | 2 | |
| | 18 | 15 32 36 | 43,5 | 146,3 | 20 | Б | | 9 | 5 | |
| | | 22 43 20 | 46,6 | 152,7 | 40 | А | | 9 | 3 | |
| | 20 | 05 08 16 | 48,1 | 154,8 | 40 | А | | 9 | 2 | |
| | | 12 51 53 | 48,1 | 154,8 | 40 | | | 9 | 2 | |
| | 21 | 20 02 54 | 42,6 | 147,9 | 30 | Б | | 9,5 | 5 | |
| | 22 | 09 18 12 | 51,0 | 158,0 | 30 | Б | | 8 | 1 | |
| 1 | 24 | 19 12 48 | 42,1 | 144,0 | 30 | А | 6,1 | | 6 | |
| | | 23 38 10 | 42,0 | 144,1 | 50 | А | 5,0 | 11 | 6 | |
| | 25 | 10 04 25 | 41,9 | 144,2 | 40 | А | 5,4 | 10 | 6 | |
| | 26 | 02 04 41 | 45,0 | 149,3 | 40 | | | 10 | 4 | |
| | | 15 52 03 | 49,9 | 156,5 | 40 | А | | 10,5 | 1 | |
| | | 16 24 52 | 42,9 | 147,9 | 30 | А | 4,7 | 10 | 5 | |
| | 27 | 10 59 55 | 43,9 | 146,0 | 120 | А | | | 5 | |
| | 29 | 04 51 45 | 45,0 | 150,5 | 40 | Б | | 9 | 3 | |
| | | 09 41 39 | 46,3 | 152,6 | 40 | Б | | 9,5 | 3 | |
| | 30 | 09 53 58 | 48,2 | 153,6 | 140 | А | | | 2 | |
| | | 17 26 13 | 43,3 | 147,6 | 30 | | | 9 | 5 | |
| | 31 | 03 41 30 | 42,8 | 143,0 | 95 | А | | | 6 | |
| | | 17 43 46 | 44,5 | 148,6 | 80 | А | | 9 | 4 | |

| No. | Date | Time of occurrence, hr min, sec. | Coordinates of the epicenter φ°N | λ°E | Depth of center, km | accuracy class | M | K | No. of the region | Macroseismic data |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | February | | | | | | |
| 1 | | 06 08 35 | 49,9 | 157,2 | 40 | | 4,5 | | 1 | |
| | | 20 11 35 | 42.5 | 145,7 | 30 | | | 9 | 6 | |
| | | 21 11 54 | 46,9 | 153,2 | 30 | Б | | 10 | 2 | |
| 2 | | 23 40 55 | 46,1 | 152,9 | 40 | Б | | 9 | 3 | |
| 3 | | 03 52 49 | 46,0 | 153,0 | 30 | | | 9 | 3 | |
| | | 06 01 08 | 49,8 | 156,5 | 30 | А | | 9,5 | 1 | |
| | | 07 09 53 | 50,2 | 156,9 | 30 | | | 9 | 1 | |
| | | 20 23 49 | 50,1 | 154,0 | 210 | Б | | | 8 | |
| 4 | | 03 23 54 | 43,6 | 141,0 | 160 | А | | | 7 | |
| | | 07 30 29 | 50,5 | 157,1 | 20 | Б | | 8,5 | 1 | |
| | | 12 05 05 | 48,8 | 154,9 | 30 | | | 9 | 2 | |
| | | 13 36 16 | 43,0 | 145,5 | 40 | Б | | 9 | 5 | |
| | | 17 14 59 | 47,2 | 154,3 | 40 | Б | | 9,5 | 2 | |
| | | 19 47 43 | 46,8 | 152,7 | 130 | | | | 3 | |
| | | 20 35 05 | 44,6 | 146,6 | 170 | А | | | 8 | |
| 5 | | 01 06 43 | 50,0 | 156,7 | 30 | Б | | 10 | 1 | |
| 7 | | 02 02 41 | 46,6 | 150,5 | 110–115 | Б | | | 3 | |
| | | 10 49 28 | 49,6 | 156,5 | 30 | | | 9,5 | 1 | |
| | | 12 40 19 | 50,5 | 156,8 | 70 | Б | | 9 | 1 | |
| | | 16 09 10 | 44,3 | 148,9 | 30 | А | | 9,5 | 4 | |
| | | 19 04 09 | 49,8 | 156,4 | 70 | А | 5,0 | | 1 | Severo-Kuril, Cape Vasil'yeva, force 3 |
| | | 20 33 22 | 43,4 | 146,3 | 25 | А | | 9 | 5 | |
| 8 | | 12 00 00 | 42,8 | 147,3 | 30 | Б | | 9,5 | 5 | |
| | | 21 57 53 | 46,1 | 154,4 | 40 | А | | 10,5 | 3 | |
| | | 23 33 05 | 46,7 | 153,7 | 30 | | | 9 | 2 | |
| 9 | | 03 11 29 | 47,0 | 153,0 | 50 | | | 9 | 2 | |
| | | 14 59 09 | 50,3 | 157,5 | 40 | | | 9 | 1 | |
| | | 18 22 12 | 50,5 | 157,8 | 20 | Б | | 11,5 | 1 | Severo-Kuril, force 2-3 |
| | | 18 22 15 | 50,4 | 157,5 | 60 | А | 4,8 | | 1 | |
| 11 | | 05 38 03 | 42,4 | 142,8 | 110–120 | А | | | 6 | |
| | | 17 01 58 | 46,7 | 153,2 | 40 | А | | 10,5 | 3 | Matua Island, force 3-4; Simushir Island force 3 |
| 12 | | 03 12 40 | 50,1 | 157,3 | 40 | | | 10 | 1 | |
| | | 13 56 12 | 46,1 | 153,8 | 40 | Б | | 9 | 3 | |
| 13 | | 09 42 31 | 46,3 | 152,9 | 40 | Б | | 9,5 | 3 | |
| | | 17 02 31 | 42,7 | 143,8 | 40 | | | 9 | 6 | |
| | | 23 19 54 | 42,2 | 143,0 | 50 | А | | 9 | 6 | |
| 15 | | 21 53 30 | 45,3 | 151,9 | 50 | Б | | 9,5 | 3 | |
| | | 23 38 19 | 45,4 | 151,7 | 10 | Б | | 9,5 | 3 | |
| 16 | | 01 46 55 | 46,2 | 153,7 | 20 | Б | | 9,5 | 3 | |
| | | 11 39 13 | 47,8 | 153,5 | 135 | Б | | | 2 | |
| 17 | | 08 34 35 | 50,5 | 156,6 | 80 | А | 4,2 | 11,5 | 1 | Shumshu Island, Severo-Kuril, force 3-4 |
| | | 15 29 15 | 45,4 | 151,4 | 30 | А | | 9 | 3 | |
| 20 | | 19 00 17 | 43,5 | 146,8 | 40 | А | | 9 | 5 | |
| 21 | | 13 31 51 | 43,5 | 146,4 | 50 | А | | 9,5 | 5 | |
| 22 | | 11 04 57 | 50,5 | 156,3 | 90 | Б | | | 1 | |
| | | 22 28 31 | 45,9 | 151,9 | 40 | | | 9,5 | 3 | |
| 23 | | 03 00 33 | 46,3 | 153,2 | 40 | | | 9 | 3 | |
| | | 04 14 58 | 42,3 | 143,2 | 60–70 | А | 4,5 | 11,5 | 6 | |
| | | 11 42 43 | 50,7 | 157,3 | 40–70 | Б | | 10 | 1 | |
| 24 | | 03 05 24 | 44,4 | 148,2 | | | | 9 | 4 | |
| | | 07 28 48 | 43,6 | 146,2 | 60 | Б | | 9 | 5 | |
| | | 12 05 36 | 44,6 | 149,3 | 40 | Б | | 10 | 4 | |

| No. | Date | Time of occurrence, hr min, sec. | Coordinates of the epicenter φ°N | λ°E | Depth of center, km | accuracy class | M | K | No. of the region | Macroseismic data |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 18 32 30 | 50,1 | 156,8 | 25 | Б | | 9 | 1 | |
| | | 20 12 59 | 44,8 | 148,7 | 40 | | | 9 | 4 | |
| 2 | 25 | 05 46 29 | 43,9 | 147,9 | 40 | А | 5,9 | | 4 | Shikotan Island, force 4, Yuzhno-Kuril, Kuril force 3-4 |
| | | 05 53 55 | 44,1 | 147,5 | 40 | Б | | 9 | 5 | |
| | | 07 48 43 | 46,4 | 153,0 | 40 | Б | | 9 | 3 | |
| | | 09 57 51 | 43,4 | 146,2 | | | | 9 | 5 | |
| | 26 | 03 37 47 | 50,0 | 156,7 | 25 | Б | | 10 | 1 | |
| | | 16 08 02 | 45,7 | 150,9 | | | | 9 | 3 | |
| | 27 | 11 14 41 | 43,4 | 146,8 | 70 | Б | | 9,5 | 5 | |
| | 28 | 15 58 28 | 42,2 | 143,1 | 70 | А | | 10,5 | 6 | |
| | | 17 39 10 | 44,3 | 152,0 | | | | 9 | 3 | |
| | | 20 43 54 | 46,3 | 153,6 | | | | 9 | 3 | |
| | | | | | March | | | | | |
| | 1 | 12 38 18 | 45,3 | 152,0 | 40 | | | 9 | 3 | |
| | | 15 07 15 | 50,1 | 155,1 | 105 | | | | 1 | |
| | | 21 59 59 | 50,9 | 158,1 | 30–40 | Б | | 9,5 | 1 | |
| | 3 | 03 03 27 | 50,5 | 157,2 | 50 | Б | | 10 | 1 | |
| | | 11 52 06 | 44,1 | 147,7 | 10 | А | 5,2 | 10,5 | 5 | Burevestnik, Kuril, force 3 |
| | | 21 04 42 | 45,5 | 142,8 | 300? | Б | | | 8 | |
| | 5 | 16 50 57 | 50,1 | 158,8 | 30–40 | А | | 10,5 | 1 | |
| | 6 | 02 29 24 | 50,2 | 156,9 | 40 | Б | | 9,5 | 1 | |
| | | 04 23 08 | 43,1 | 145,4 | 40 | | | 9 | 5 | |
| | | 06 31 42 | 43,2 | 148,4 | 30 | А | | 11 | 5 | |
| | | 13 10 19 | 43,3 | 146,5 | 30 | А | | 9 | 5 | |
| | 8 | 18 32 00 | 43,3 | 147,6 | 30 | Б | | 9 | 5 | |
| | 9 | 08 38 37 | 45,1 | 146,4 | 125 | А | | | 8 | |
| | | 18 10 21 | 45,6 | 151,3 | 40 | | | 9 | 3 | |
| | 10 | 07 37 49 | 50,5 | 156,9 | 10 | Б | | 9,5 | 1 | |
| | | 16 05 30 | 45,4 | 151,2 | 40 | А | | 9 | 3 | |
| 3 | 11 | 11 37 32 | 48,1 | 153,2 | 160–170 | А | | | 2 | Matua Island, force 4; Cape Vasil'yeva, force 3 Shikotan Island, Severo-Kuril, force 2-3 |
| | 12 | 03 42 33 | 50,5 | 156,2 | 130 | А | | | 1 | |
| | | 05 06 27 | 50,6 | 157,6 | 40 | Б | | 10 | 1 | |
| | | 08 31 00 | 43,8 | 148,0 | 30 | А | | 10,5 | 5 | |
| | | 21 20 19 | 49,8 | 156,7 | 40 | Б | | 9,5 | 3 | |
| | | 23 19 09 | 49,5 | 158,5 | 30 | А | | 10,5 | 1 | |
| | 14 | 14 29 54 | 43,4 | 145,7 | 70 | А | | 9 | 5 | |
| | | 21 00 01 | 44,5 | 141,8 | 250–260 | А | | | 7 | |
| | 15 | 05 10 20 | 43,4 | 146,2 | 50 | Б | | 9 | 5 | |
| | | 22 11 27 | 49,4 | 158,6 | 25–30 | А | 4,6 | | 1 | |
| | 16 | 03 17 20 | 48,9 | 154,9 | 40 | Б | | 9,5 | 2 | |
| | | 14 17 28 | 43,2 | 146,5 | 40 | Б | | 9 | 5 | |
| | | 23 52 38 | 45,3 | 150,1 | 40 | А | | 10,5 | 3 | Urup Island, force 2 |
| | 17 | 01 18 52 | 44,2 | 147,5 | 90 | А | | | 5 | |
| | | 02 12 24 | 44,2 | 146,7 | 50 | А | | 9,5 | 5 | |
| | | 02 22 51 | 48,5 | 154,8 | 30 | Б | | 9 | 2 | |
| | | 12 04 04 | 46,8 | 152,6 | 40 | | | 9 | 3 | |
| | 19 | 04 27 32 | 48,2 | 146,6 | 490 | А | | | 8 | |
| | 20 | 15 07 54 | 49,9 | 156,6 | 40 | Б | | 10 | 1 | |
| | | 16 53 38 | 43,2 | 147,0 | 40 | Б | | 9 | 5 | |
| | | 20 46 25 | 49,8 | 156,7 | 40 | Б | | 10 | 1 | |
| | 22 | 00 39 33 | 51,0 | 155,1 | 0–10 | Б | | 9,5 | 1 | |

| No. | Date | Time of occurrence, hr min, sec. | Coordinates of the epicenter φ°N | λ°E | Depth of center, km | accuracy class | M | K | No. of the region | Macroseismic data |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 00 53 25 | 43,2 | 146,3 | 30 | А | | 9 | 5 | |
| | | 05 44 36 | 49,8 | 156,9 | 40 | А | | 9,5 | 1 | |
| | | 08 57 19 | 50,4 | 156,5 | 80 | А | | 10 | 1 | |
| | 23 | 05 39 49 | 46,1 | 152,6 | 40 | | | 9,5 | 3 | |
| | | 06 51 21 | 47,1 | 153,4 | 30 | А | 4,4 | 10 | 2 | |
| | | 19 21 00 | 42,7 | 145,8 | 40 | Б | | 9,5 | 5 | |
| | 24 | 00 08 19 | 42,4 | 143,7 | 100 | Б | | | 6 | |
| | | 14 12 04 | 50,4 | 157,0 | 40 | Б | | 10 | 1 | |
| | 26 | 08 27 42 | 45,8 | 153,8 | 30–40 | Б | | 10 | 3 | |
| | 27 | 22 05 36 | 48,6 | 154,8 | 50 | Б | | 10 | 2 | |
| | 29 | 02 35 33 | 42,6 | 145,0 | 50 | Б | | 9,5 | 6 | |
| | 30 | 08 34 13 | 43,2 | 146,4 | 20 | А | | 10 | 5 | |
| | 31 | 22 51 16 | 43,0 | 146,5 | 40 | А | | 9 | 5 | |
| | | | | | April | | | | | |
| | 1 | 02 29 56 | 49,0 | 156,4 | 40 | А | | 9 | 2 | |
| | | 02 37 02 | 48,7 | 155,9 | 40 | А | | 9 | 2 | |
| | | 13 29 06 | 42,1 | 145,0 | 60 | А | | 10 | 6 | |
| | | 15 34 51 | 43,6 | 145,8 | 80 | А | | 10 | 5 | Malokuril'skoye, force 2 |
| | 1 | 20 09 08 | 46,6 | 154,1 | 40 | А | | 9 | 2 | |
| | 2 | 07 09 42 | 42,1 | 142,6 | 60 | А | | 10,5 | 6 | |
| | | 07 59 08 | 46,9 | 154,2 | 30 | А | | 9,5 | 2 | |
| | 4 | 03 03 08 | 43,0 | 147,6 | 30 | А | 4,0 | 9,5 | 5 | |
| | 6 | 04 15 10 | 47,0 | 153,9 | 40 | А | | 9 | 2 | |
| | | 11 37 26 | 44,1 | 148,7 | 40 | А | | 9 | 4 | |
| | | 14 56 20 | 43,8 | 147,9 | 40 | | | 9 | 5 | |
| | | 22 07 15 | 43,4 | 146,2 | 75 | А | | 11,5 | 5 | Malokuril'skoye, force 3 |
| | 7 | 06 01 58 | 46,7 | 154,0 | 40 | Б | | 9,5 | 2 | |
| | | 06 33 13 | 46,4 | 154,2 | 30 | А | | 10 | 2 | |
| | | 10 04 05 | 44,4 | 149,1 | 40 | А | | 9 | 4 | |
| | 8 | 13 24 25 | 45,9 | 151,7 | 40 | А | | 9 | 3 | |
| | | 20 30 25 | 47,7 | 154,2 | 40 | А | | 9 | 2 | |
| | 9 | 13 11 26 | 45,8 | 148,1 | 150 | А | | | 8 | Kuril, force 3 |
| | | 21 14 13 | 44,6 | 149,5 | 40 | Б | | 9 | 4 | |
| | 11 | 01 23 00 | 46,4 | 153,4 | 40 | | | 9 | 3 | |
| | | 09 34 54 | 42,4 | 143,2 | 40–50 | А | 4,0 | 10,5 | 6 | |
| | | 21 37 53 | 42,2 | 144,5 | 80 | А | 4,6 | 11 | 6 | Shukotan Island, force 3 |
| | 12 | 13 33 16 | 47,0 | 153,4 | 40 | | | 9,5 | 2 | |
| | | 19 39 24 | 42,5 | 144,9 | 80 | А | | 10 | 6 | |
| | 13 | 00 51 41 | 42,7 | 144,6 | 50 | А | | 10 | 6 | |
| | | 14 27 56 | 51,0 | 158,0 | 40–60 | Б | | 10 | 1 | |
| | 14 | 05 30 34 | 46,3 | 152,6 | 40 | А | | 9,5 | 3 | |
| | | 06 53 48 | 46,3 | 153,4 | 10 | А | | 9,5 | 3 | |
| | | 07 42 59 | 46,2 | 153,6 | 40 | Б | | 9 | 3 | |
| | 16 | 11 41 26 | 45,7 | 151,1 | 80 | Б | | 9,5 | 3 | |
| | 17 | 03 38 46 | 44,2 | 148,5 | 40 | А | | 10,5 | 4 | |
| | | 05 45 34 | 49,6 | 157,5 | 20 | А | 4,5 | | 1 | |
| | | 06 10 39 | 49,5 | 157,6 | 40 | Б | | 9,5 | 1 | |
| | | 06 15 27 | 49,8 | 156,9 | 60 | А | | 10,5 | 1 | |
| | | 06 17 37 | 49,6 | 157,3 | 20 | А | 4,1 | | 1 | |
| | | 17 23 04 | 44,2 | 148,6 | 40 | Б | | 9 | 4 | |
| | 18 | 01 46 44 | 47,4 | 154,9 | 40 | Б | | 9,5 | 2 | |
| | | 03 21 44 | 42,9 | 143,3 | 70 | А | | 9,5 | 6 | |
| | | 08 17 23 | 48,7 | 155,3 | 40 | Б | | 9,5 | 2 | |

| No. | Date | Time of occurrence, hr min, sec. | Coordinates of the epicenter φ°N | λ°E | Depth of center, km | accuracy class | M | K | No. of the region | Macroseismic data |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 20 26 52 | 50,3 | 156,3 | 70 | A | | 9,5 | 1 | |
| | | 21 00 16 | 44,4 | 147,9 | 70 | A | | 10,5 | 5 | |
| | | 21 24 36 | 46,7 | 153,2 | 40 | A | | 9,5 | 3 | |
| | 19 | 14 31 56 | 44,1 | 147,6 | 70 | A | | 10,5 | 5 | |
| | 20 | 13 42 33 | 50,7 | 157,7 | 10 | Б | | 9,5 | 1 | |
| | | 16 02 58 | 42,2 | 143,1 | 60-70 | A | 4,6 | 11 | 6 | |
| | 21 | 01 24 44 | 43,4 | 146,9 | 50 | A | | 10,5 | 5 | Kuril, force 3 |
| | | 02 08 04 | 46,1 | 145,4 | 25-30 | A | 4,9 | | 8 | |
| | | 23 08 57 | 46,4 | 146,0 | 320 | Б | | | 8 | |
| | 22 | 13 41 51 | 50,2 | 157,2 | 50 | A | | 11 | 1 | Shumshu Island, force 3-4; Severo-Kuril; force 3; Cape Vasil'yeva, force 2-3 |
| | | 15 59 36 | 44,3 | 147,9 | 80 | Б | | 9,5 | 4 | |
| | | 17 23 20 | 49,7 | 156,2 | 40 | Б | | 9 | 1 | |
| | 23 | 09 03 46 | 49,9 | 156,6 | 40 | Б | | 10,5 | 1 | |
| | 24 | 23 56 45 | 47,8 | 154,3 | 50 | A | 4,5 | 10 | 2 | Matua Island, force 3-4 |
| | 25 | 00 51 25 | 43,2 | 146,6 | 40 | Б | | 9 | 5 | |
| | | 20 55 59 | 50,2 | 156,9 | 40 | | | 9 | 1 | |
| | 26 | 02 17 56 | 44,7 | 151,8 | 30 | Б | | 10 | 3 | |
| | 27 | 00 45 46 | 50,3 | 157,0 | 20 | | | 9,5 | 1 | |
| | | 10 36 36 | 49,7 | 156,0 | 50 | Б | | 9,5 | 1 | |
| | | 17 20 50 | 44,5 | 148,3 | 60 | A | | 10,5 | 4 | |
| | 28 | 21 05 06 | 49,5 | 156,6 | 40 | | | 9 | 1 | |
| | 30 | 01 01 28 | 49,7 | 156,1 | 50 | A | | 11 | 1 | Severo-Kuril, force 2 |
| | | 02 27 04 | 42,8 | 145,7 | 50 | Б | | 10 | 5 | |
| | | | | | May | | | | | |
| | 1 | 00 31 52 | 46,2 | 150,0 | 150 | A | | | 8 | |
| | | 06 45 12 | 51,0 | 158,0 | 40 | A | | 9,5 | 1 | |
| | | 09 19 44 | 47,6 | 154,0 | 40 | A | | 9,5 | 2 | |
| | | 09 40 33 | 45,0 | 151,0 | 40 | Б | | 9,5 | 3 | |
| | 2 | 15 17 03 | 44,5 | 149,3 | 40 | A | | 9 | 4 | |
| | | 21 41 24 | 50,6 | 156,9 | 0 | | | 9,5 | 1 | |
| | | 22 36 12 | 50,2 | 160,0 | 20 | A | 4,6 | 11,5 | 1 | |
| | 5 | 16 27 24 | 44,1 | 147,6 | 40 | A | | 9 | 5 | |
| | | 19 10 40 | 46,0 | 149,4 | 150 | A | | | 8 | |
| | 7 | 21 03 43 | 47,6 | 156,0 | 40 | A | 4,1 | 10,5 | 2 | |
| | 8 | 08 53 18 | 42,2 | 143,2 | 70 | A | | 9,5 | 6 | |
| | | 10 59 58 | 47,6 | 145,8 | 460 | A | | | 8 | |
| | 11 | 07 29 53 | 45,2 | 152,4 | 40 | A | | 9,5 | 3 | |
| | 12 | 10 50 12 | 50,4 | 157,2 | 40 | A | | 10 | 1 | |
| | | 12 35 54 | 44,1 | 146,7 | 90 | A | | | 5 | |
| | | 19 11 33 | 43,1 | 143,7 | 110 | Б | | | 6 | |
| | 13 | 01 42 21 | 50,6 | 156,3 | 130 | A | | | 1 | |
| | 14 | 08 10 41 | 50,9 | 151,0 | 500 | A | | | 8 | |
| | 15 | 11 15 41 | 48,4 | 154,0 | 100 | A | | | 2 | |
| | | 15 04 51 | 48,2 | 155,0 | 40 | A | | 9,5 | 2 | |
| | | 17 32 17 | 49,7 | 156,0 | 40 | A | | 9,5 | 1 | |
| 4 | | 18 59 56 | 49,9 | 156,2 | 50 | A | 6,5 | | 1 | Severo-Kuril, Cape Basil'yeva, Shumshu Island, force 5-6; Petropavlovsk-Kamchatskiy, force 2-3 |

| No. | Date | Time of occurrence, hr min, sec. | Coordinates of the epicenter φ°N | λ°E | Depth of center, km | accuracy class | M | K | No. of the region | Macroseismic data |
|---|---|---|---|---|---|---|---|---|---|---|
| | 15 | 19 21 46 | 49,8 | 156,6 | 40 | A | | 9 | 1 | |
| | 16 | 01 56 20 | 50,0 | 156,8 | 40 | A | | 10 | 1 | Shumshu Island, force 2-3 |
| | 17 | 10 18 42 | 46,9 | 153,4 | 40 | A | | 9 | 2 | |
| | 20 | 20 01 36 | 46,7 | 153,7 | 40 | A | | 9 | 2 | |
| | 21 | 04 03 49 | 45,5 | 152,0 | 40 | A | | 9 | 3 | |
| | 22 | 04 17 41 | 50,4 | 157,4 | 40 | A | | 9,5 | 1 | |
| | | 07 08 03 | 50,1 | 160,2 | 25 | Б | | 10,5 | 1 | |
| | | 12 41 54 | 49,6 | 156,7 | 40 | Б | | 9 | 1 | |
| | | 16 27 10 | 42,0 | 145,8 | 40 | | | 9 | 6 | |
| | 24 | 17 52 20 | 42,2 | 143,3 | 60 | A | | 9 | 6 | |
| | | 19 53 50 | 46,8 | 152,8 | 50 | Б | | 9 | 3 | |
| | 25 | 14 28 42 | 44,2 | 147,8 | 50 | A | | 9 | 5 | |
| | | 15 27 11 | 42,2 | 142,7 | 70 | A | | 10 | 6 | |
| | 26 | 13 08 57 | 46,1 | 152,2 | 40 | A | | 9 | 3 | |
| 5 | 27 | 04 41 26 | 50,7 | 157,3 | 50 | A | 5,7 | | 1 | Severo-Kuril, force 5; Matua Island, Cape Basil'yeva, force 2-3 |
| | | 19 40 51 | 42,9 | 148,0 | 40 | | | 9 | 5 | |
| | 28 | 13 59 31 | 46,0 | 152,9 | 40 | | | 9 | 3 | |
| | 30 | 01 05 12 | 48,0 | 154,6 | 40 | A | 4,1 | 10,5 | 2 | Matua Island, force 3 |
| | | 01 08 37 | 50,3 | 157,7 | 40 | | | 10 | 1 | |
| | 31 | 04 39 23 | 50,2 | 157,2 | 40 | A | | 9,5 | 1 | |
| | | 19 46 02 | 43,3 | 146,6 | 40 | | | 9 | 5 | |
| | | | | | June | | | | | |
| | 1 | 18 00 37 | 48,6 | 154,8 | 40 | Б | | 9,5 | 2 | |
| | | 21 56 44 | 44,9 | 149,2 | 80 | A | | 10 | 4 | |
| | | 22 08 22 | 43,3 | 146,6 | 40 | | | 9 | 5 | |
| | 4 | 03 03 52 | 46,6 | 153,4 | 40 | Б | | 10 | 3 | |
| | | 14 49 56 | 42,2 | 144,0 | 60 | A | | 9,5 | 6 | |
| | 6 | 02 12 45 | 44,9 | 140,9 | 275 | A | | | 7 | |
| | | 16 50 48 | 48,1 | 155,3 | 40 | Б | | 9,5 | 2 | |
| | | 17 01 42 | 44,9 | 151,0 | 30 | A | 4,5 | | 3 | |
| | 8 | 03 08 13 | 46,8 | 151,2 | 175 | A | | | 3 | |
| | 8 | 10 20 50 | 50,5 | 157,1 | 40 | | | 9,5 | 1 | |
| | 10 | 08 56 47 | 46,8 | 152,6 | 60 | A | | 10 | 3 | |
| | 12 | 04 49 37 | 50,3 | 158,7 | 40 | A | | 10,5 | 1 | |
| | | 14 29 00 | 44,0 | 146,9 | 80 | A | | 9 | 5 | |
| | 13 | 07 12 58 | 49,9 | 157,1 | 40 | A | | 9,5 | 1 | |
| | | 14 01 58 | 47,1 | 153,1 | 40 | A | | 9,5 | 2 | |
| | 14 | 04 13 59 | 50,6 | 157,1 | 40 | Б | | 9,5 | 1 | |
| | | 06 23 53 | 46,1 | 151,0 | 70 | A | | 9,5 | 3 | |
| | | 13 49 34 | 42,9 | 144,5 | 100 | A | | | 6 | |
| | 15 | 16 44 51 | 46,5 | 152,8 | 40 | | | 9 | 3 | |
| | 16 | 11 03 42 | 43,6 | 147,7 | 50 | A | | 9,5 | 5 | |
| | 17 | 02 00 53 | 48,1 | 154,5 | 40 | A | | 10,5 | 2 | |
| | | 02 18 34 | 48,2 | 154,5 | 40 | A | 4,7 | | 2 | Matua Island, force 4 |
| | | 16 03 29 | 50,2 | 156,9 | 40 | A | | 9,5 | 1 | |
| | | 22 18 16 | 48,3 | 154,4 | 40 | A | | 9,5 | 2 | |
| | 18 | 20 56 45 | 49,0 | 156,7 | 20 | A | | 9,5 | 1 | |
| | 19 | 05 48 22 | 48,0 | 154,8 | 40 | | | 9 | 2 | |
| | | 08 00 50 | 49,1 | 156,6 | 40 | | | 9,5 | 1 | |
| | | 20 20 18 | 44,4 | 148,7 | 40 | A | | 9,5 | 4 | |
| | 22 | 00 12 08 | 44,3 | 147,7 | 90 | A | | | 5 | |
| | | 11 47 36 | 48,2 | 154,6 | 40 | Б | | 9 | 2 | |
| | | 16 06 43 | 42,7 | 144,0 | 75-80 | A | | 10,5 | 6 | |

| No. | Date | Time of occurrence, hr min, sec. | Coordinates of the epicenter φ°N | λ°E | Depth of center, km | accuracy class | M | K | No. of the region | Macroseismic data |
|---|---|---|---|---|---|---|---|---|---|---|
| | 23 | 19 07 14 | 50,8 | 157,3 | 40 | А | | 9,5 | 1 | |
| | 24 | 02 41 56 | 50,0 | 155,7 | 120 | А | | | 1 | |
| | 25 | 02 55 20 | 44,2 | 141,0 | 230 | А | | | 7 | |
| | | 03 45 56 | 44,4 | 144,6 | 190–195 | А | | | 5 | |
| | 27 | 03 29 01 | 42,7 | 142,9 | 115 | А | | | 6 | |
| | | 05 19 16 | 44,1 | 150,5 | 30 | Б | | 9,5 | 4 | |
| | | 14 47 35 | 43,3 | 146,4 | 40 | А | | 9,5 | 5 | |
| | | 18 09 37 | 51,0 | 158,6 | 30 | А | | 10 | 1 | |
| | 28 | 23 36 11 | 42,5 | 144,4 | 40 | А | | 10 | 6 | |
| | 29 | 20 12 12 | 48,3 | 154,5 | 40 | А | | 10 | 2 | |
| | 30 | 15 53 36 | 50,4 | 157,0 | 60 | А | | 9,5 | 1 | |
| | | 16 18 28 | 49,9 | 156,6 | 40 | А | | 9,5 | 1 | |
| | | 19 20 27 | 50,4 | 157,1 | 40 | А | | 9,5 | 1 | |
| | | 22 58 32 | 49,7 | 156,6 | 40 | А | | 10 | 1 | |
| | | | | | July | | | | | |
| | 1 | 03 09 18 | 43,6 | 146,8 | 60 | А | | 9 | 5 | |
| | | 12 43 36 | 45,7 | 150,5 | 50 | | | 9 | 3 | |
| | 2 | 23 21 05 | 48,9 | 155,6 | 40 | А | | 10 | 2 | |
| | 4 | 01 29 36 | 47,5 | 154,2 | 40 | А | | 9,5 | 2 | |
| | | 03 15 37 | 49,5 | 155,9 | 40 | А | | 10 | 1 | Cape Vasil'yeva, force 2-3 |
| | 6 | 00 08 01 | 42,2 | 142,7 | 70 | Б | | 9,5 | 6 | |
| | | 00 57 31 | 43,3 | 146,3 | 40 | | | 9 | 5 | |
| | 7 | 04 55 12 | 48,7 | 155,1 | 50 | Б | | 9,5 | 2 | |
| | | 12 53 22 | 46,7 | 152,7 | 60–70 | А | 4,5 | 10,5 | 3 | Simushir Island, force 3<br>Matua Island, force 2-3 |
| | | 19 37 52 | 44,0 | 146,8 | 50 | А | | 9,5 | 5 | |
| | | 21 38 32 | 51,0 | 157,9 | 40 | Б | | 10,5 | 1 | |
| | 8 | 20 05 07 | 50,5 | 158,0 | 40 | А | | 10 | 1 | |
| | 9 | 03 39 14 | 43,9 | 148,1 | 60 | | | 9,5 | 5 | |
| | | 10 44 34 | 50,5 | 156,9 | 40 | Б | | 10 | 1 | Severo-Kuril, force 1-2 |
| | 11 | 01 31 29 | 43,2 | 146,9 | 50 | Б | | 9 | 5 | |
| | | 03 21 25 | 50,0 | 156,8 | 40 | Б | | 10 | 1 | |
| | | 09 52 48 | 48,4 | 155,3 | 30 | | | 9 | 2 | |
| | | 14 34 38 | 48,8 | 155,7 | 30 | | | 9,5 | 2 | |
| | | 15 54 08 | 42,0 | 142,3 | 70 | А | 4,3 | 10 | 6 | |
| | 12 | 13 47 52 | 48,1 | 154,4 | 50 | А | | 10 | 2 | |
| | 13 | 04 31 07 | 50,4 | 156,9 | 30 | Б | | 10,5 | 1 | |
| | | 05 35 47 | 44,3 | 149,5 | 40 | | | 9,5 | 4 | |
| | | 21 18 23 | 43,9 | 148,0 | 40 | | | 9 | 5 | |
| | 14 | 06 19 35 | 50,9 | 158,1 | 40 | А | | 10,5 | 1 | |
| | | 16 25 30 | 51,7 | 152,9 | 450 | А | | | 8 | |
| | | 18 15 59 | 49,8 | 156,6 | 40 | А | | 9,5 | 1 | |
| | 17 | 05 25 48 | 46,1 | 151,9 | 50 | А | | 10 | 3 | |
| | | 15 35 25 | 48,1 | 155,1 | 40 | | | 9 | 2 | |
| | | 15 38 05 | 46,6 | 153,2 | 40 | А | | 9 | 3 | |
| | 18 | 06 55 02 | 50,2 | 157,0 | 0–40 | А | | 9 | 1 | |
| | | 13 55 10 | 50,3 | 157,0 | 40 | | | 9 | 1 | |
| | 19 | 17 31 10 | 42,2 | 142,8 | 40 | Б | | 9,5 | 6 | |
| | | 18 44 52 | 42,0 | 142,5 | 40 | А | 4,7 | 10,5 | 6 | |
| | 22 | 01 10 49 | 49,5 | 155,7 | 80 | А | | 11 | 1 | |
| | | 05 34 13 | 52,0 | 151,3 | 500 | А | | | 8 | |
| | | 22 48 21 | 48,3 | 154,4 | 30 | А | | 9 | 2 | |
| | 23 | 15 17 45 | 44,8 | 149,4 | 30 | Б | | 9 | 4 | |
| | | 21 50 55 | 49,0 | 156,5 | 30 | А | 4,6 | 11 | 1 | |
| | | 23 19 29 | 48,9 | 156,5 | 40 | Б | | 9 | 1 | |

| No. | Date | Time of occurrence, hr min, sec. | Coordinates of the epicenter φ°N | λ°E | Depth of center, km | accuracy class | M | K | No. of the region | Macroseismic data |
|---|---|---|---|---|---|---|---|---|---|---|
| | 24 | 14 22 36 | 50,1 | 156,0 | 110 | А | | | 1 | |
| | 25 | 03 43 06 | 49,2 | 156,2 | 20 | | | 10 | 1 | |
| | | 05 33 13 | 49,8 | 156,6 | 30 | | | 9 | 1 | |
| | | 15 25 31 | 43,4 | 146,4 | 50 | Б | | 9 | 5 | |
| | | 21 01 10 | 50,3 | 156,6 | 30 | Б | | 9 | 1 | |
| | 26 | 03 51 03 | 48,8 | 155,1 | 50 | Б | | 10 | 2 | |
| | | 16 00 56 | 42,1 | 142,6 | 30 | А | | 10 | 6 | |
| | 27 | 00 56 01 | 43,0 | 147,3 | 30 | А | 4,7 | 10,5 | 5 | Malokuril'skoye, force 2-3 |
| | | 04 54 52 | 46,5 | 153,8 | 30 | Б | | 9 | 3 | |
| | | 09 16 02 | 42,1 | 142,7 | 20 | А | | 9,5 | 6 | |
| | | 13 41 30 | 42,9 | 144,6 | 30 | А | | 9,5 | 6 | |
| 6 | 28 | 11 34 58 | 46,5 | 153,2 | 35–40 | А | 6,9 | | 3 | Simushir Island, force 4-5; Matua Island, force 3, Pauzhetka, force 2-3 |
| | | 11 40 46 | 46,5 | 153,2 | 10 | Б | | 10 | 3 | |
| | | 11 52 50 | 46,4 | 153,3 | 30 | Б | | 10 | 3 | |
| | | 11 59 43 | 46,3 | 153,3 | 25 | А | | 10,5 | 3 | |
| | | 12 07 50 | 46,3 | 153,2 | 30 | А | | 11,5 | 3 | |
| | | 12 19 38 | 46,4 | 153,5 | 10 | А | | 10 | 3 | |
| | | 12 23 32 | 46,3 | 153,1 | 30 | | | 9,5 | 3 | |
| | | 12 25 48 | 46,3 | 153,2 | 30 | | | 9,5 | 3 | |
| | | 12 43 29 | 46,2 | 153,1 | 20 | Б | | 10 | 3 | |
| | | 12 57 44 | 46,3 | 153,4 | | Б | | 9 | 3 | |
| | | 13 04 17 | 46,5 | 152,9 | 25–30 | А | | 10 | 3 | |
| | | 13 07 12 | 46,3 | 153,1 | 30 | | | 9 | 3 | |
| | | 13 18 04 | 46,4 | 153,3 | 30 | Б | | 9,5 | 3 | |
| | | 13 28 46 | 46,5 | 153,0 | 20 | Б | | 9,5 | 3 | |
| | | 13 30 53 | 46,3 | 153,5 | 30 | Б | | 10 | 3 | |
| 7 | | 13 31 38 | 46,4 | 153,3 | 35–40 | А | 6,0 | | 3 | |
| | | 13 41 37 | 46,7 | 153,3 | 30 | А | | 11 | 3 | |
| | | 13 49 03 | 46,3 | 153,5 | 30 | Б | | 9,5 | 3 | |
| | | 13 51 54 | 46,2 | 153,7 | 30 | Б | | 9,5 | 3 | |
| | | 13 57 10 | 46,2 | 153,7 | 30 | А | | 10 | 3 | |
| | | 14 13 33 | 46,3 | 153,5 | 30 | Б | | 9,5 | 3 | |
| | | 14 21 37 | 46,1 | 153,6 | | Б | | 9 | 3 | |
| | | 15 10 34 | 46,2 | 153,0 | 30 | А | 4,8 | 10,5 | 3 | |
| | | 15 57 06 | 46,2 | 153,3 | 20 | А | 4,4 | | 3 | |
| | | 16 22 56 | 46,2 | 153,1 | 40–50 | А | 4,0 | | 3 | |
| | | 16 27 31 | 46,3 | 153,2 | 25–30 | А | 5,0 | | 3 | |
| | | 16 33 55 | 46,4 | 153,2 | 30–35 | А | 5,3 | | 3 | |
| | | 16 55 26 | 45,2 | 150,6 | 40 | | | 9 | 3 | |
| | | 16 56 31 | 46,1 | 153,1 | 20 | А | 4,6 | 10 | 3 | |
| | | 17 05 40 | 46,3 | 153,0 | 30 | А | 4,6 | 10 | 3 | |
| | | 18 00 46 | 46,5 | 153,3 | 30 | А | 5,2 | | 3 | |
| | | 18 19 21 | 46,4 | 153,6 | 30 | Б | | 9,5 | 3 | |

| No. | Date | Time of occurrence, hr min, sec. | Coordinates of the epicenter φ°N | λ°E | Depth of center, km | accuracy class | M | K | No. of the region | | Macroseismic data |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 28 | 18 29 04 | 46,1 | 153,9 | 30 | Б | | | 9,5 | 3 | |
| | | 20 00 51 | 46,2 | 153,7 | 30 | | | | 9 | 3 | |
| | | 20 24 48 | 46,4 | 153,5 | 30 | | | | 9 | 3 | |
| | | 21 15 12 | 46,2 | 153,6 | 30 | | | | 9,5 | 3 | |
| | | 23 22 20 | 46,1 | 153,0 | 30 | Б | | | 9 | 3 | |
| | 29 | 00 20 50 | 46,2 | 153,4 | 30 | Б | | | 9 | 3 | |
| | | 01 07 15 | 46,3 | 153,3 | 30 | А | | | 9 | 3 | |
| | | 01 14 51 | 46,8 | 153,1 | 40 | А | 4,4 | | 11 | 3 | |
| | | 01 48 15 | 46,6 | 153,2 | 20 | А | 4,4 | | 10,5 | 3 | |
| | | 02 13 48 | 46,4 | 153,2 | 40 | А | 4,9 | | 10,5 | 3 | |
| | 8 | 03 15 15 | 46,1 | 153,0 | 20–30 | А | 6,3 | | | 3 | Simushir Island, force 4 |
| | | 03 44 56 | 45,9 | 153,7 | 30 | | | | 9,5 | 3 | |
| | | 03 46 08 | 46,2 | 153,2 | 30 | | | | 9 | 3 | |
| | | 03 59 28 | 46,2 | 153,2 | 30 | Б | | | 9,5 | 3 | |
| | | 04 25 25 | 46,1 | 153,0 | 30 | | | | 9 | 3 | |
| | 9 | 07 16 26 | 46,3 | 153,1 | 30 | А | 6,4 | | | 3 | |
| | | 08 21 13 | 46,3 | 152,9 | 30 | Б | | | 9,5 | 3 | |
| | | 08 54 21 | 46,0 | 153,3 | 30 | | | | 9,5 | 3 | |
| | | 08 57 30 | 46,1 | 153,1 | 30 | Б | | | 9,5 | 3 | |
| | | 09 23 56 | 46,1 | 153,2 | 30 | Б | | | 10 | 3 | |
| | | 09 28 50 | 46,3 | 153,8 | 50–60 | А | | | 10 | 3 | |
| | | 10 27 20 | 46,3 | 153,5 | 30 | Б | | | 9 | 3 | |
| | | 11 36 00 | 46,4 | 153,2 | 30 | Б | | | 9 | 3 | |
| | | 11 42 33 | 46,1 | 153,4 | 10 | Б | | | 9,5 | 3 | |
| | | 12 18 49 | 46,2 | 152,8 | 30 | Б | | | 9,5 | 3 | |
| | | 12 39 30 | 45,9 | 153,5 | 30 | Б | | | 9 | 3 | |
| | | 13 01 45 | 46,3 | 152,8 | 30 | Б | | | 9 | 3 | |
| | | 13 40 38 | 46,1 | 153,0 | 30 | Б | | | 9 | 3 | |
| | | 14 21 16 | 46,2 | 152,8 | 20 | А | 4,8 | | 10,5 | 3 | |
| | | 14 47 48 | 46,2 | 153,0 | 30 | Б | | | 9 | 3 | |
| | | 14 58 50 | 46,3 | 152,8 | 30 | Б | | | 9 | 3 | |
| | | 15 48 32 | 46,3 | 153,4 | 30 | Б | | | 9,5 | 3 | |
| | | 17 01 16 | 46,3 | 152,9 | 30 | Б | | | 9 | 3 | |
| | | 17 04 31 | 46,4 | 153,5 | 30 | | | | 9 | 3 | |
| | | 17 28 16 | 46,4 | 153,0 | 10 | Б | | | 9 | 3 | |
| | | 19 09 56 | 46,0 | 153,3 | 25–30 | А | 4,3 | | 10 | 3 | |
| | | 19 49 41 | 46,0 | 153,2 | 30 | А | | | 10 | 3 | |
| | | 19 50 43 | 46,1 | 152,9 | 30 | А | 4,4 | | 10 | 3 | |
| | | 20 01 28 | 46,3 | 152,8 | 10–20 | Б | | | 9,5 | 3 | |
| | | 23 08 34 | 46,2 | 152,8 | 30 | | | | 9 | 3 | |
| | 30 | 00 10 36 | 46,1 | 152,9 | 20 | Б | | | 9,5 | 3 | |
| | | 00 25 41 | 46,2 | 152,7 | 30 | | | | 9 | 3 | |
| | | 02 36 10 | 46,2 | 153,0 | 30 | | | | 9 | 3 | |
| | | 06 07 31 | 46,3 | 153,0 | 20–30 | | | | 9 | 3 | |
| | | 06 29 05 | 46,1 | 153,2 | 30 | Б | | | 9,5 | 3 | |
| | | 07 46 25 | 46,1 | 153,6 | 20 | | | | 9 | 3 | |
| | | 08 55 46 | 46,1 | 153,5 | 20–30 | | | | 9 | 3 | |
| | | 09 47 30 | 46,2 | 153,1 | 30 | | | | 9,5 | 3 | |
| | | 10 55 21 | 46,2 | 152,9 | 30 | Б | | | 9,5 | 3 | |
| | | 10 56 47 | 46,3 | 152,9 | 30 | | | | 9 | 3 | |
| | | 11 30 01 | 46,4 | 152,7 | 30 | | | | 9 | 3 | |
| | | 22 39 45 | 46,4 | 153,1 | 40 | А | 5,1 | | 11 | 3 | |
| | | 23 22 02 | 49,1 | 155,7 | 30 | | | | 9 | 2 | |

| No. | Date | Time of occurrence, hr min, sec. | Coordinates of the epicenter φ°N | λ°E | Depth of center, km | accuracy class | M | K | No. of the region | Macroseismic data |
|---|---|---|---|---|---|---|---|---|---|---|
| | 31 | 00 34 29 | 46,2 | 152,9 | 30 | | | 9 | 3 | |
| | | 06 13 03 | 46,1 | 153,5 | 30 | | | 9,5 | 3 | |
| | | 07 37 07 | 46,1 | 153,3 | 30 | | | 9 | 3 | |
| | | 11 59 17 | 50,1 | 157,0 | 30 | | | 9 | 1 | |
| | | 21 13 40 | 46,2 | 153,2 | 30 | Б | | 9,5 | 3 | |
| | | 21 16 53 | 45,9 | 153,5 | 30 | | | 9 | 3 | |
| | | 21 19 11 | 46,0 | 153,6 | 30 | Б | | 9,5 | 3 | |
| | | 22 15 57 | 50,3 | 157,4 | 40 | А | | 10,5 | 1 | |
| | | | | | August | | | | | |
| | 1 | 12 32 55 | 45,4 | 150,9 | 40 | Б | | 9 | 3 | |
| | | 22 39 22 | 49,7 | 156,1 | 50 | А | 5,2 | 12 | 1 | Vasil'yeva Cape, Severo-Kuril, force 3 |
| | 3 | 07 00 35 | 49,8 | 156,1 | 70 | А | | 10,5 | 1 | |
| | | 08 48 41 | 46,8 | 153,0 | 50 | А | | 10 | 3 | Simushir Island, force 3 |
| | | 12 32 08 | 46,8 | 153,0 | 50–60 | А | | 11 | 3 | |
| | | 13 54 28 | 45,6 | 150,0 | 140 | А | | | 3 | |
| | 4 | 00 33 53 | 46,2 | 153,4 | 20 | А | 4,1 | 10 | 3 | |
| | | 05 21 01 | 46,2 | 153,6 | 30 | | | 9 | 3 | |
| | 5 | 08 13 16 | 46,5 | 152,9 | 40 | Б | | 9 | 3 | |
| | 6 | 00 17 32 | 50,1 | 156,9 | 0 | Б | | 9,5 | 1 | |
| | | 16 49 23 | 46,9 | 150,4 | 170 | А | | | 3 | |
| | 7 | 00 16 56 | 44,3 | 149,1 | 40 | | | 9 | 4 | |
| | | 10 12 18 | 44,3 | 148,2 | 30 | Б | | 9 | 4 | |
| | | 15 23 10 | 44,3 | 149,2 | 30 | А | | 10 | 4 | |
| | 9 | 15 52 55 | 44,0 | 148,0 | 40 | А | | 9,5 | 4 | |
| | | 17 20 29 | 48,7 | 155,2 | 40 | Б | | 9,5 | 2 | |
| | 10 | 17 06 46 | 49,8 | 156,2 | 40 | А | | 10,5 | 1 | |
| | | 19 26 38 | 46,2 | 153,3 | 30 | А | | 10 | 3 | |
| | 11 | 18 53 29 | 46,6 | 153,1 | 40 | А | | 9,5 | 3 | |
| | | 23 59 40 | 42,3 | 143,3 | 40 | | | 9,5 | 6 | |
| | 12 | 10 01 04 | 48,0 | 155,0 | 30 | А | | 10 | 2 | |
| | | 10 48 06 | 45,4 | 152,0 | 40 | А | | 9 | 3 | |
| | | 13 50 24 | 43,1 | 146,1 | 40–50 | А | | 9,5 | 5 | |
| | | 20 51 15 | 46,5 | 153,2 | 40 | А | | 9,5 | 3 | |
| | | 22 04 57 | 49,5 | 156,2 | 40 | А | | 11 | 1 | |
| | 13 | 02 53 20 | 46,3 | 153,5 | 40 | | | 9 | 3 | |
| | | 14 31 23 | 46,3 | 153,1 | 25 | А | | 10 | 3 | |
| | 14 | 05 32 49 | 45,8 | 151,8 | 40 | А | | 9,5 | 3 | |
| | | 06 16 31 | 48,8 | 155,8 | 40 | А | | 9,5 | 2 | |
| | | 12 02 50 | 46,8 | 153,3 | 40 | | | 9 | 3 | |
| | | 13 49 28 | 50,1 | 156,9 | 40 | | | 9 | 1 | |
| | | 17 37 21 | 49,0 | 156,5 | 40 | А | | 10,5 | 1 | |
| | 15 | 09 21 42 | 46,3 | 153,0 | 40 | А | | 9,5 | 3 | |
| | | 20 58 47 | 46,7 | 153,0 | 40 | А | | 9 | 3 | |
| | 16 | 01 47 33 | 46,3 | 153,5 | 30 | А | | 10 | 3 | |
| | | 14 15 40 | 50,2 | 157,1 | 30 | Б | | 9,5 | 1 | |
| | 17 | 19 04 08 | 43,2 | 146,0 | 30 | Б | | 9 | 5 | |
| | | 20 43 32 | 48,6 | 155,0 | 40 | А | | 10 | 2 | |
| | 19 | 15 41 47 | 49,0 | 155,9 | 40 | | | 9 | 2 | |
| | | 18 50 42 | 44,8 | 149,2 | 40 | А | | 9 | 4 | |
| | | 21 52 03 | 43,7 | 146,8 | 55 | Б | | 9 | 5 | |
| | 20 | 06 51 57 | 48,9 | 155,2 | 40 | | | 9 | 2 | |
| | 22 | 07 18 38 | 43,9 | 146,7 | 30–40 | А | | 9 | 5 | |
| | | 12 37 10 | 43,7 | 146,8 | 50 | | | 9 | 5 | |
| | 23 | 08 15 57 | 42,0 | 140,4 | 165–175 | А | | | 7 | |
| | | 08 35 37 | 42,9 | 146,8 | 40 | | | 9 | 5 | Malokuril'skoye, force 2-3 |

| No. | Date | Time of occurrence, hr min, sec. | Coordinates of the epicenter φ°N | λ°E | Depth of center, km | accuracy class | M | K | No. of the region | Macroseismic data |
|---|---|---|---|---|---|---|---|---|---|---|
| | 24 | 06 01 22 | 42,8 | 145,9 | 40 | | | 9 | 6 | |
| | | 22 11 05 | 43,1 | 146,1 | 40–50 | A | | 10 | 5 | |
| | 25 | 17 35 57 | 49,5 | 156,2 | 40 | A | | 10 | 1 | |
| | 27 | 13 01 00 | 42,1 | 143,1 | 60 | A | | 10 | 6 | |
| | | 17 11 27 | 42,7 | 145,0 | 40–50 | | | 9 | 6 | |
| | | 20 30 31 | 46,5 | 153,0 | 40 | A | | 9,5 | 3 | |
| | 28 | 12 46 57 | 50,8 | 157,9 | 40 | | | 9,5 | 1 | |
| | 29 | 17 25 05 | 46,6 | 154,4 | 40 | A | | 9,5 | 3 | |
| | | 22 28 54 | 42,9 | 145,6 | 40–50 | | | 9,5 | 5 | |
| | 30 | 11 28 20 | 43,7 | 148,0 | 40 | | | 9 | 5 | |
| | 31 | 09 38 07 | 44,3 | 149,3 | 40 | A | | 10,5 | 4 | |
| | | | | September | | | | | | |
| | 1 | 14 20 04 | 43,1 | 147,2 | 40 | | | 9 | 5 | |
| | 2 | 01 34 44 | 43,0 | 147,0 | 40 | | | 9 | 5 | |
| | | 23 21 23 | 46,6 | 152,9 | 40 | A | | 10 | 3 | |
| | 3 | 01 46 02 | 49,5 | 156,1 | 40 | A | | 11,5 | 1 | Matua Island, force 3-4; Severo-Kuril, force 2-3 |
| | | 02 01 54 | 50,4 | 157,9 | 40 | | | 9,5 | 1 | |
| | 4 | 06 02 31 | 46,2 | 153,4 | 30 | A | | 9 | 3 | |
| | | 07 01 19 | 44,1 | 149,8 | 40 | | | 9 | 4 | |
| | 5 | 09 05 56 | 46,7 | 152,8 | 40 | | | 9 | 3 | |
| | | 14 21 12 | 44,9 | 151,9 | 40 | A | | 9 | 3 | |
| | 7 | 04 09 59 | 43,8 | 140,3 | 230–240 | A | | | 7 | |
| | | 11 45 08 | 47,9 | 155,5 | 40 | Б | | 9 | 2 | |
| | 8 | 05 34 58 | 46,5 | 153,6 | 40 | A | | 9 | 3 | |
| | | 10 33 09 | 47,9 | 155,5 | 40 | A | | 10 | 2 | |
| | 9 | 04 51 10 | 46,3 | 152,9 | 40 | | | 9 | 3 | |
| | | 16 20 25 | 46,9 | 153,1 | 40 | A | | 10 | 3 | |
| | | 21 43 00 | 47,9 | 155,3 | 40 | A | | 9,5 | 2 | |
| | | 21 44 48 | 48,1 | 154,9 | 40 | A | | 9 | 2 | |
| | 10 | 11 34 31 | 47,5 | 154,4 | 40 | | | 9 | 2 | |
| | 11 | 17 39 53 | 46,0 | 153,7 | 30 | A | | 9 | 3 | |
| | 13 | 16 38 41 | 49,4 | 156,2 | 40 | Б | | 9,5 | 1 | |
| | | 18 24 25 | 47,5 | 152,8 | 125 | A | | | 2 | |
| | | 19 04 46 | 45,3 | 152,1 | 40 | | | 9 | 3 | |
| | 14 | 02 39 25 | 49,3 | 153,6 | 200 | A | | | 2 | |
| | | 18 11 04 | 49,4 | 156,5 | 40 | Б | | 9,5 | 1 | |
| | 15 | 15 46 04 | 48,0 | 154,8 | 40 | Б | | 9,5 | 2 | |
| | | 16 46 58 | 51,0 | 158,3 | 40 | A | | 9,5 | 1 | |
| | 16 | 03 42 28 | 46,3 | 153,7 | 20 | Б | | 9 | 3 | |
| | | 12 02 58 | 45,8 | 150,8 | 50 | A | | 9,5 | 3 | Kuril, force 2-3 |
| | | 20 57 02 | 44,3 | 148,7 | 40–50 | A | 5,3 | | 4 | |
| 10 | | 21 55 53 | 49,7 | 155,9 | 70–80 | A | 5,2 | 12 | 1 | Cape Vasil'yeva, Matua Island, force 3-4 |
| | 17 | 17 31 33 | 46,1 | 152,9 | 40 | A | | 9,5 | 3 | |
| | 18 | 06 20 22 | 43,7 | 146,5 | 120 | A | | | 5 | |
| | | 15 27 47 | 43,3 | 147,0 | 40 | A | | 9 | 5 | |
| | 19 | 01 49 14 | 43,2 | 147,6 | 30 | A | 4,4 | 10,5 | 5 | |
| 11 | 20 | 00 53 00 | 42,6 | 145,2 | 40–50 | A | 5,5 | | 6 | Shikotan, force 2-3 |
| | | 08 42 18 | 48,6 | 154,8 | 40 | A | | 9 | 2 | |
| | | 16 47 37 | 48,7 | 155,7 | 40 | Б | | 9,5 | 2 | |
| | 21 | 13 48 01 | 48,1 | 155,2 | 40 | A | | 9 | 2 | |
| 12 | | 15 55 00 | 51,9 | 158,1 | 110 | Б | 5,8 | | 1 | |
| | 22 | 08 56 20 | 47,2 | 153,7 | 40 | A | | 9,5 | 2 | |
| | | 10 52 20 | 46,1 | 153,6 | 40 | A | | 9 | 3 | |
| | | 17 12 08 | 47,0 | 153,9 | 40 | A | | 9,5 | 2 | |

| No. | Date | Time of occurrence, hr min, sec. | Coordinates of the epicenter φ°N | λ°E | Depth of center, km | accuracy class | M | K | No. of the region | Macroseismic data |
|---|---|---|---|---|---|---|---|---|---|---|
| | 23 | 01 21 28 | 44,3 | 147,8 | 60 | A | | 9,5 | 5 | |
| | | 02 28 03 | 44,3 | 148,7 | 50 | A | | 9,5 | 4 | |
| | 24 | 12 15 41 | 46,5 | 152,7 | 40 | A | | 9,5 | 3 | |
| | 25 | 05 03 23 | 50,8 | 157,4 | 30 | | | 9,5 | 1 | |
| | | 05 38 08 | 46,8 | 153,5 | 40 | A | | 9,5 | 3 | |
| | 26 | 10 23 43 | 42,4 | 145,5 | 50 | A | | 10 | 6 | |
| | | 16 39 36 | 43,9 | 149,8 | 40 | A | | 10 | 4 | |
| | | 21 18 21 | 44,1 | 149,5 | 30 | A | | 10 | 4 | |
| | | 22 21 36 | 44,1 | 149,5 | 40 | A | | 9,5 | 4 | |
| | 27 | 00 17 30 | 44,3 | 148,5 | 40 | A | | 9,5 | 4 | |
| 13 | | 05 47 29 | 43,1 | 146,7 | 40–50 | A | 7,2 | | 5 | Shikotan Island, Yuzhno-Kuril, force 4-5; Kuril, force 3-2 |
| | | 06 17 20 | 43,1 | 149,7 | 40 | A | | 9,5 | 5 | |
| | | 06 54 37 | 42,9 | 147,2 | 30–40 | A | | 9 | 5 | |
| | | 07 39 17 | 42,9 | 146,9 | 40 | A | | 9,5 | 5 | |
| | 27 | 08 12 58 | 42,9 | 146,4 | 50 | A | | 10 | 5 | |
| | | 09 31 52 | 43,0 | 147,0 | 30 | A | | 9,5 | 5 | |
| | | 10 18 20 | 46,6 | 152,7 | 40 | A | | 9 | 3 | |
| | | 12 09 55 | 42,9 | 146,5 | 60 | A | 4,4 | 10,5 | 5 | |
| | | 13 47 07 | 50,1 | 157,0 | 20 | Б | | 10 | 1 | |
| | | 15 27 41 | 42,9 | 146,6 | 40 | A | | 10 | 5 | |
| | | 19 12 00 | 42,8 | 147,2 | 40 | A | | 9,5 | 5 | |
| | | 20 24 24 | 42,9 | 146,9 | 40 | A | | 9 | 5 | |
| | 28 | 00 49 26 | 42,9 | 146,9 | 40 | A | | 9 | 5 | |
| | 29 | 23 50 03 | 53,2 | 153,8 | 480 | A | | | 8 | |
| | 30 | 07 56 24 | 44,5 | 148,0 | 60–70 | A | | 10,5 | 4 | |
| | | 13 09 42 | 49,7 | 156,1 | 30 | A | | 10 | 1 | |
| | | 19 34 10 | 49,7 | 155,7 | 30 | A | | 9,5 | 1 | |
| | | 21 05 34 | 43,3 | 143,3 | 140 | A | | 6 | | |
| | | | | October | | | | | | |
| | 1 | 06 24 59 | 42,9 | 146,9 | 40 | | | 9 | 5 | |
| | | 16 23 10 | 50,8 | 159,2 | 40 | | | 9,5 | 1 | |
| | | 20 57 08 | 49,5 | 156,1 | 30 | | | 10 | 1 | |
| | 2 | 02 43 09 | 50,2 | 156,8 | 40 | | | 9 | 1 | |
| | | 18 05 26 | 45,3 | 152,6 | 30 | | | 9 | 3 | |
| | | 19 44 55 | 50,9 | 158,2 | 40 | | | 9 | 1 | |
| | 3 | 02 48 03 | 42,9 | 146,8 | 40 | | | 9 | 5 | |
| | | 10 13 48 | 43,7 | 147,0 | 40 | A | | 9 | 5 | |
| | 4 | 05 07 45 | 44,0 | 148,0 | 40 | Б | | 9 | 5 | |
| | | 18 42 49 | 47,0 | 153,8 | 60 | A | | 10,5 | 2 | |
| | | 19 38 13 | 49,7 | 155,7 | 50 | Б | | 9 | 1 | |
| 14 | 6 | 01 23 03 | 49,9 | 156,5 | 60 | A | | 12 | 1 | Severo-Kuril, force 2-3 |
| | | 06 33 37 | 43,5 | 146,8 | 50 | A | | 9 | 5 | |
| | | 14 29 01 | 49,7 | 155,9 | 40 | Б | | 9,5 | 1 | |
| | | 15 06 01 | 49,9 | 156,5 | 30–50 | Б | | 10 | 1 | |
| | 7 | 02 37 22 | 49,8 | 157,0 | 40 | | | 9,5 | 1 | |
| | | 05 56 18 | 45,3 | 149,9 | 40 | Б | | 9 | 4 | |
| 15 | | 09 53 10 | 45,7 | 143,3 | 325 | A | | | 8 | Hokkaido Island, Kusiro |
| | | 17 38 48 | 49,6 | 156,2 | 40 | Б | | 10 | 1 | Kusiro, force 2 |
| | 8 | 02 39 52 | 49,2 | 151,1 | 300 | A | | | 8 | |
| | | 08 27 24 | 50,4 | 156,4 | 80 | Б | | 9 | 1 | |
| 16 | 9 | 07 32 03 | 44,7 | 150,3 | 50 | A | 6,7 | | 4 | Cape Kastrikum (Urup Island) Kiril, force 6; Kuy Byshevo, force 5, Malokuril'skoye, force 4-5; |

| No. | Date | Time of occurrence, hr min, sec. | Coordinates of the epicenter φ°N | λ°E | Depth of center, km | accuracy class | M | K | No. of the region | Macroseismic data |
|---|---|---|---|---|---|---|---|---|---|---|
| | 11 | 11 10 29 | 43,6 | 146,8 | 50 | А | | 10 | 5 | |
| | | 12 56 07 | 50,5 | 157,6 | 40 | | | 9,5 | 1 | |
| | | 18 12 19 | 52,0 | 152,7 | 450 | А | | | 8 | |
| | 12 | 22 29 34 | 49,1 | 156,4 | 20 | А | | 9,5 | 1 | |
| | 14 | 19 18 52 | 50,2 | 157,0 | 40 | Б | | 9 | 1 | |
| | 15 | 03 04 13 | 44,3 | 148,7 | 60 | А | | 10 | 4 | |
| | 16 | 00 48 50 | 50,0 | 156,7 | 40 | Б | | 9 | 1 | |
| | 17 | 14 01 33 | 44,7 | 147,5 | 130 | А | | | 5 | |
| | | 15 16 39 | 49,0 | 155,2 | 30 | | | 9 | 2 | |
| | 18 | 01 07 02 | 50,6 | 157,9 | 40 | Б | | 9,5 | 1 | |
| | | 07 33 45 | 48,8 | 155,7 | 40 | | | 9 | 2 | |
| | | 12 27 29 | 50,1 | 157,2 | 40 | | | 9 | 1 | |
| | 19 | 09 40 29 | 47,1 | 152,3 | 140 | А | | | 3 | |
| | 20 | 11 43 08 | 42,1 | 142,6 | 40 | А | 5,1 | 11,5 | 6 | |
| | 20 | 13 49 15 | 48,8 | 155,0 | 40 | | | 9 | 2 | |
| | 21 | 09 47 33 | 42,5 | 147,1 | 20 | | | 9,5 | 5 | |
| | | 11 11 13 | 44,6 | 147,2 | 135 | А | | | 5 | |
| | | 11 49 25 | 44,1 | 148,2 | 40 | А | | 10 | 5 | |
| | 22 | 20 40 40 | 42,4 | 145,0 | 90 | Б | | | 6 | |
| | 23 | 22 43 27 | 44,6 | 149,5 | 40 | | | 9 | 4 | |
| | 24 | 01 47 44 | 44,1 | 148,4 | 30 | | | 9 | 4 | |
| | | 19 19 17 | 43,7 | 146,6 | 30 | | | 9 | 5 | |
| | 25 | 15 40 23 | 42,9 | 145,5 | 50–60 | А | 4,4 | | 5 | Hokkaido Island; Nemuro force 5; Kusiro, Obikhiro, force 2; Malokuril'skoye, force 2 |
| | | 17 00 52 | 50,4 | 158,0 | 30 | | | 9 | 1 | |
| | 26 | 19 34 30 | 44,9 | 146,3 | 150 | А | | | 5 | |
| | | 23 32 55 | 47,8 | 156,1 | 30 | | | 9 | 2 | |
| | 27 | 02 29 24 | 44,9 | 145,0 | 225 | А | | | 5 | Hokkaido Island; Khiroo |
| | 29 | 22 07 36 | 42,6 | 145,4 | 30 | | | 9,5 | 6 | Kusiro, force 2 |
| | 30 | 10 33 48 | 44,6 | 143,3 | 10–20 | А | 4,7 | | 6 | Hokkaido Island, Abasiri |
| | | 12 42 28 | 43,9 | 147,5 | 70 | Б | | 9,5 | 5 | Asakhigava, force 2 |
| | | 13 57 03 | 44,1 | 147,1 | 75 | Б | | 9,5 | 5 | |
| | | 18 50 44 | 43,4 | 146,2 | 60 | А | | 10 | 5 | |
| | 31 | 05 49 18 | 44,3 | 148,9 | 30 | Б | | 9,5 | 4 | Malokuril'skoye, force 3 |
| | | 15 19 18 | 42,9 | 145,7 | 30 | | | 9 | 5 | |
| | | | | November | | | | | | |
| | 2 | 00 25 31 | 44,2 | 148,0 | 40 | | | 9,5 | 5 | |
| 17 | | 19 43 44 | 43,2 | 144,3 | 40 | | 5,6 | 11 | 6 | |
| | 3 | 12 00 13 | 42,4 | 142,5 | 70 | А | | 10 | 6 | Hokkaido Island; Khiroo |
| | 7 | 00 02 20 | 44,2 | 148,0 | 30 | А | | 10,5 | 5 | Kusiro, force 2-3 |
| | | 04 59 09 | 43,3 | 146,2 | 50 | А | 4,2 | 10 | 5 | |
| | | 15 01 29 | 50,5 | 156,9 | 40 | А | 4,7 | 11,5 | 5 | |
| | | 21 04 35 | 43,5 | 147,5 | 10–20 | Б | | 9 | 5 | |
| | 8 | 03 18 02 | 45,4 | 150,8 | 40 | | | 9,5 | 3 | |
| 18 | | 21 23 21 | 42,3 | 141,6 | 135 | А | | | 6 | Hokkaido Island, force 8; Honshu Island, force 2-3 |

| No. | Date | Time of occurrence, hr min, sec. | Coordinates of the epicenter φ°N | λ°E | Depth of center, km | accuracy class | M | K | No. of the region | Macroseismic data |
|---|---|---|---|---|---|---|---|---|---|---|
| | 9 | 05 46 24 | 48,1 | 152,8 | 145 | А | | | 2 | |
| | 11 | 04 26 15 | 49,3 | 155,3 | 40 | | | 9,5 | 2 | |
| | | 12 05 26 | 45,3 | 150,7 | 40 | | | 9,5 | 3 | |
| | 12 | 03 16 35 | 45,1 | 150,8 | 55 | А | 4,9 | 11 | 3 | |
| | 14 | 06 25 27 | 45,9 | 153,9 | 30 | Б | | 9 | 3 | |
| | | 09 44 05 | 50,2 | 156,6 | 40 | | | 9,5 | 1 | |
| | 15 | 02 14 07 | 43,9 | 148,5 | 40 | | | 9,5 | 5 | |
| | | 08 22 07 | 42,7 | 146,7 | 40 | | | 9,5 | 5 | |
| | | 21 18 32 | 44,4 | 148,2 | 40 | | | 9,5 | 4 | |
| | 17 | 01 20 02 | 44,4 | 149,0 | 40 | | | 9,5 | 4 | |
| | | 06 29 06 | 50,6 | 158,1 | 40 | | | 9,5 | 1 | |
| | | 15 08 10 | 44,7 | 150,1 | 40 | | | 9 | 4 | |
| | | 15 40 26 | 43,4 | 146,5 | 40 | | | 9 | 5 | |
| | | 22 25 18 | 49,9 | 156,4 | 40 | Б | | 9 | 1 | |
| | 18 | 14 05 49 | 43,3 | 146,5 | 40 | | | 9 | 5 | |
| | | 19 47 29 | 42,5 | 145,0 | 40 | | | 9,5 | 6 | |
| | 19 | 06 47 38 | 43,4 | 146,0 | 40 | | | 9 | 5 | |
| | | 21 21 37 | 43,3 | 146,4 | 40 | | | 9 | 5 | |
| | 20 | 13 23 51 | 43,9 | 147,1 | 90 | А | | | 5 | |
| | 21 | 17 20 41 | 48,4 | 155,8 | 40 | | | 9,5 | 2 | |
| | | 18 01 57 | 48,1 | 156,3 | 40 | | | 9,5 | 2 | |
| | 22 | 14 28 24 | 47,2 | 152,7 | 120 | Б | | | 3 | |
| | 24 | 10 16 07 | 50,5 | 157,1 | 0–10 | Б | | 10 | 1 | |
| | | 16 16 00 | 45,2 | 152,1 | 40 | | | 9,5 | 3 | |
| | | 16 19 31 | 44,1 | 148,9 | 30 | А | 4,3 | 10 | 4 | |
| | 25 | 13 28 37 | 42,9 | 145,7 | 40 | | | 9,5 | 5 | |
| | 26 | 12 04 28 | 46,0 | 153,7 | 40 | | | 9 | 3 | |
| | 29 | 04 55 39 | 50,5 | 156,9 | 0–10 | Б | | 10 | 1 | |
| | | 14 02 31 | 46,1 | 151,6 | 40 | Б | | 9 | 3 | |
| | | 23 27 12 | 44,0 | 148,6 | 40 | | | 9,5 | 4 | |
| | 30 | 05 59 03 | 47,5 | 153,8 | 40 | | | 9,5 | 2 | |
| | | 10 30 32 | 51,0 | 158,2 | 20–30 | Б | | 11 | 1 | |
| | | | | | December | | | | | |
| | 1 | 14 51 16 | 49,7 | 156,0 | 40 | | | 9,5 | 1 | |
| | 2 | 00 51 01 | 50,8 | 157,5 | 40 | Б | | 11 | 1 | |
| | | 18 44 15 | 47,6 | 148,5 | 375 | А | | | 8 | |
| | | 20 55 40 | 49,7 | 156,2 | 40 | | | 9 | 1 | |
| | 3 | 19 18 56 | 48,1 | 154,1 | 40 | А | 4,6 | 11 | 2 | Matua Island, force 4 |
| | 4 | 10 00 20 | 44,1 | 147,8 | 80 | А | | 9,5 | 5 | |
| | | 23 12 56 | 43,0 | 145,6 | 40 | | | 9 | 5 | |
| | 5 | 10 19 59 | 43,4 | 140,8 | 150 | Б | | | 6 | |
| | | 12 47 21 | 50,1 | 156,1 | 40 | | | 9,5 | 1 | |
| | | 22 58 58 | 46,0 | 149,2 | 150 | А | | | 3 | |
| | 6 | 20 17 01 | 51,0 | 157,0 | 20 | | | 9 | 1 | |
| | 7 | 03 37 37 | 50,4 | 157,0 | 30 | | 4,4 | 11,5 | 1 | Shumshu Island, force 2-3 |
| | | 20 03 15 | 49,2 | 157,7 | 30 | Б | | 9,5 | 1 | |
| | 9 | 01 05 06 | 43,3 | 148,0 | 40 | | | 9,5 | 5 | |
| | | 20 28 40 | 50,4 | 157,6 | 40 | | | 9,5 | 1 | |
| | 10 | 08 22 55 | 42,3 | 146,6 | 40 | Б | | 9,5 | 5 | |
| | | 12 59 00 | 42,5 | 146,5 | 30 | Б | | 9,5 | 5 | |
| | | 13 02 38 | 42,5 | 146,6 | 35 | А | 5,0 | | 5 | |
| | | 15 20 41 | 42,4 | 146,6 | 30 | А | | 9,5 | 5 | |
| | 11 | 01 02 05 | 42,1 | 144,5 | 30 | | | 9,5 | 6 | |

| No. | Date | Time of occurrence, hr min, sec. | Coordinates of the epicenter φ°N | λ°E | Depth of center, km | accuracy class | M | K | No. of the region | Macroseismic data |
|---|---|---|---|---|---|---|---|---|---|---|
| | 14 | 10 22 25 | 46,8 | 154,7 | 30 | Б | | 10 | 2 | |
| | | 12 31 31 | 47,1 | 154,5 | 30 | А | 5,0 | | 2 | |
| | 16 | 10 35 51 | 49,5 | 156,2 | 30 | А | | 10 | 1 | |
| | 18 | 00 58 08 | 50,4 | 156,9 | 20 | А | | 10 | 1 | |
| | | 22 51 19 | 47,4 | 153,3 | 40 | | | 9,5 | 2 | |
| | 20 | 02 05 53 | 45,4 | 151,6 | 40 | | | 9,5 | 3 | |
| | | 12 16 50 | 50,8 | 157,1 | 80 | А | 5,0 | 11 | 1 | Shumshu Island, force 3-4; Severo-Kuril; force 3 |
| | | 16 38 56 | 49,5 | 149,5 | 435 | А | | | 8 | |
| | 22 | 20 15 55 | 44,5 | 148,5 | 90 | Б | | | 4 | |
| | | 22 50 31 | 45,5 | 151,5 | 40 | | | 9,5 | 4 | |
| | 23 | 06 16 06 | 46,2 | 152,5 | 40 | | | 9,5 | 3 | |
| | | 12 39 24 | 45,0 | 150,1 | 40 | | | 9 | 4 | |
| | | 13 54 24 | 49,5 | 156,9 | 40 | | | 9,5 | 1 | Severo-Kuril, force 2-3 |
| | 24 | 04 11 10 | 42,5 | 146,2 | 40 | | | 9 | 5 | |
| | 25 | 15 03 17 | 52,3 | 152,1 | 510 | А | | | 8 | |
| | 26 | 03 35 53 | 43,3 | 142,5 | 150 | Б | | | 6 | |
| | | 08 49 52 | 50,4 | 157,0 | 40 | Б | | 10,5 | 1 | |
| | 27 | 10 51 52 | 43,1 | 149,6 | 30 | А | | 10 | 5 | |
| | | 20 58 44 | 45,7 | 142,4 | 315 | А | | | 8 | |
| | 28 | 17 12 40 | 44,5 | 148,2 | 40 | | | 9,5 | 4 | |
| | 29 | 09 56 46 | 42,3 | 138,6 | 220 | А | | | 7 | |
| | 30 | 15 49 24 | 48,4 | 153,2 | 190 | | | | 2 | |
| | 31 | 02 24 00 | 42,7 | 143,2 | 130 | А | | | 6 | |
| | | 02 45 35 | 50,8 | 157,5 | 40 | Б | | 10,5 | 1 | |

# STRONG EARTHQUAKES OF THE WORLD

[Article by A. I. Zakharova, A. M. Kondratenko, L. S. Chepkunas]

In 1974, the traditional survey of the earthquakes of the world was performed with respect to the earthquakes with $M_{LH}$, $m_{PV} \geq 6.0$, and it was supplemented by the estimates of the dynamic parameters of the centers of the earthquakes with $M_{LH} \geq 7.0$: the seismic event $M_0$, length of fracture L, magnitude of the movement $\bar{u}$, decrease in stress $\Delta\sigma$. The seismic moment is the force characteristic of the center which can be defined as the amount of energy required for relative displacement of the edges of the fracture a distance u for a frictional stress equal to the magnitude of the modulus of shearing elasticity $\mu$. The decrease in stress $\Delta\sigma$ is the difference between the magnitude of the stress in the center region before the earthquake and after it.

## 1. General Survey

The survey of strong earthquakes of the world in 1974 was made in accordance with the materials of the United System for Seismic Observations of the USSR and the National Seismologic Center of the United States (NEIS) [1].

The geographic distribution of strong earthquakes of the world in 1974 is illustrated in Figure 1.

The distribution of the number of strong earthquakes of the world with $M \geq 5.8$ as a function of their magnitude is presented in Table 1 where the results of 1974 are compared with the corresponding average values for the ten preceding years.

From the table it is obvious that in 1974 the recurrence rate of the earthquakes of different magnitude differ somewhat from their average recurrence rate for the preceding years primarily as a result of the earthquakes with $5.8 \leq M < 6.8$.

The magnitude instruments of the strong earthquakes made it possible to estimate the seismic energy released from their centers by the recalculation formulas [2]:

$$E = 10^{11.8 + 1.5M} = 10^{5.8 + 2.5m} \text{ ergs.} \qquad (1)$$

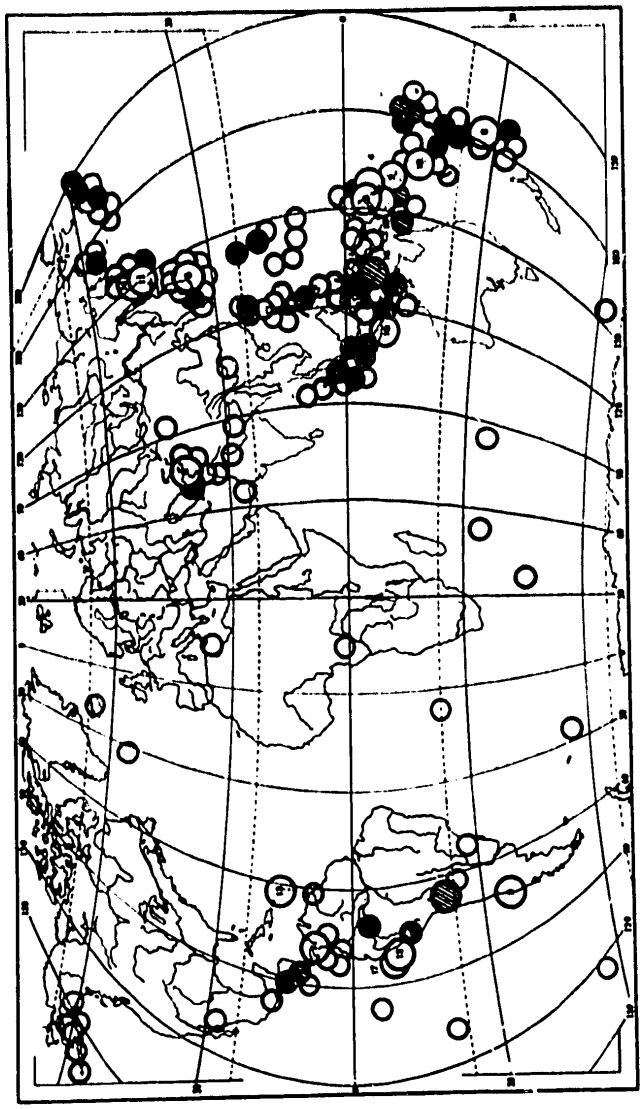

Figure 1. Map of the epicenters of the earthquakes of the world with M ($m_{PV}$) $\geq$ 6 for 1974.

1-- magnitude; 2--depth of center, km.

Table 2 shows the distribution of the total seismic energy released from the centers of the strong earthquakes in 1974.

The total seismic energy from the centers of the largest earthquakes in 1974 is 97.4 percent of the corresponding mean for the preceding 18 years.

The strongest earthquake in 1974 with M = 7.8 occurred west of Peru on 3 October at 1421 hours under the east side of the Atakamskaya Basin west of Lima. Its aftershock with M = 7.1 was recorded at the same place 37 days later (9 November, 125950 hours). According to the report of the MOSKOVSKAYA PRAVDA newspaper on 6 October 1974, 15,000 houses were damaged and destroyed, and there were victims.

According to the report of the PRAVDA newspaper of 14 May 1974, the earthquake in China with M = 6.7 on 10 May at 1926 hours was felt in the provinces of Yun'anan' and Sychuan'. Material losses were caused by the earthquake, and there were victims.

Enormous destruction was caused by the earthquake on 28 December at 1214 hours with M = 6.3 in the Karakorum Mountains in Pakistan. The maximum damage was noted in a zone 80 km wide along the Karakorum Highway (TRUD [Labor], 1 January 1975). According to the report of the IZVESTIYA newspaper of 9 January 1975, the "death belt encompassed 150 km region."

Table 1. Annual Frequency of Occurrence of Earthquakes of Fixed Magnitude

| Year | Number of earthquakes in the M range | | | Total |
|---|---|---|---|---|
| | $5,8 \leqslant M < 6,8$ | $6,8 \leqslant M < 7,8$ | $M \geqslant 7,8$ | |
| 1964 | 103 | 19 | 1 | 123 |
| 1965 | 87 | 46 | 1 | 134 |
| 1966 | 74 | 11 | 2 | 87 |
| 1967 | 79 | 13 | – | 92 |
| 1968 | 125 | 26 | 1 | 152 |
| 1969 | 100 | 23 | 2 | 125 |
| 1970 | 105 | 30 | – | 135 |
| 1971 | 99 | 19 | 3 | 121 |
| 1972 | 108 | 20 | 2 | 130 |
| 1973 | 142 | 9 | 2 | 153 |
| Mean for 10 years | 102,3±21,8 | 18,6±10,3 | 1,4±0,9 | 122,7±22,0 |
| 1974 | 211 | 25 | 1 | 237 |

Spatial Distribution of the Total Seismic Energy in 1974

| Seismic Belt | Number of earthquakes with magnitude M | | $E \cdot 10^{22}$, эрг | In % for the earth as a whole |
|---|---|---|---|---|
| | $5,8 \leqslant M < 6,8$ | $M \geqslant 6,8$ | | |
| Pacific Ocean | 191 | 21 | 210,9 | 77,04 |
| Transasian | 9 | 3 | 37,0 | 13,5 |
| Antarctic | 2 | - | 0,9 | 0,35 |
| Atlantic | 5 | 2 | 23,0 | 8,4 |
| Other Seismic zones | 4 | - | 1,8 | 0,71 |

2. Dynamic Parameters of the Centers

The determination of the dynamic parameters was made by the spectra of the longitudinal waves recorded at the TsSO in Obninsk using the broad frequency band equipment for 13 earthquakes with $M \geq 7.0$ (Table 3) using the Brune procedure [3] in the Hanks and Wyss version [4].

According to this procedure, the model of the fracture is represented as a horizontal movement in the vertical plane with respect to a circular area of radius r. Here the parameters of the earthquake center $M_0$, $\Delta\sigma$, r, u are found with respect to the amplitude spectrum of the shift of the longitudinal seismic waves which in the far zone ($\Delta \gg \lambda$) can be simply represented by two straight lines. One of them parallel to the frequency axis corresponds to the long-period level of spectral density $\Omega$, and the other, with a slope of $\lambda$, to the frequency axis--the high-frequency branch of the spectrum. The intersection point of the straight lines determines the value of the angle of frequency $f_0$. The corresponding calculation formulas are in the form:

$$M_0 = \frac{\Omega(p)}{R_{\theta\varphi} c(\omega)} 4\pi\rho R V_P^3, \tag{2}$$

$$r(p) = \frac{2{,}34 V_P}{2\pi f_0(p)}, \qquad \Delta\sigma = \frac{7M_0}{16r^3}, \qquad \bar{u} = \frac{M_0}{\rho A}, \tag{3}$$

where $R_{\phi,\varphi}$ is the correction for directionalness of the radiation, $V_0$, $\rho$ are the velocity of the P-waves and the density of the rock in the center region, R is the correction for divergence of the P-wave front, A is the area of the fracture, c ($\omega$) is the frequency characteristic of the crust under the station.

When determining the dynamic parameters for the analyzed interval $\tau$, a section of the recording between the projection of the P and PP waves or PKIKP, was used. The numbering interval was selected equal to 0.1 second for SKM, 0.2 seconds for SK, SKD, and 0.8 seconds for SD (P-Yu).

The records of the P-waves by the different instruments were used to obtain the spectra in the broadest po-sible frequency band (0.01 to 2 hertz). A good comparison of the spectra obtained for different equipment in identical frequency bands indicates, on the one hand, the reliability of the calculated spectral curves, and on the other, it permits construction of the summary spectra for the indicated frequency interval using the recordings of only two instrumnets, the long-period SD (P-Yu) and the short-period (SKM or SK). The summary spectra of the P-waves were calculated in the same way for earthquakes with an upper central distance of $\Delta < 103°$. For long distances, basically recordings were used only by the SD (P-Yu) instruments, for at these distances the P-wave, being irised, can be recorded in the first projections, as a rule, only by the long-period equipment. An example of the summary spectra of the earthquakes of 8 May and 27 September 1974 is presented in Figure 2.

The calculated Fourier amplitude spectra corrected for the effect of the frequency-amplitude characteristics of the instruments were approximated by two straight lines to obtain the spectral parameters $\Omega_0$, $f_0$.

In order to find the dynamic parameters of the centers by the formulas (2), (3) corrections were introduced into the spectra for the absorption of [5], the divergence [6, 7] of the P-waves on the center-station path, for the structure of the crust under the station [8]. It is necessary to note that for large distances ($\Delta > 103°$) corrections were introduced for the divergence corresponding to $\Delta \approx 100°$, since for $\Delta > 103°$ similar corrections are not available. The consideration of the directionalness of the radiation from the center was made only by introducing the average value of $R_{\theta\Phi} = 0.4$ [9], since for the given earthquakes we had no information available about the mechanism of the centers.

The calculated values of the dynamic parameters $M_0$, r, $\Delta\sigma$, $\bar{u}$ are presented in Table 3. Here an estimate is presented of the energy E calculated by the magnitude M in the surface waves (1), and $E_S$, by the dislocation in the center and the stress released during formation of the fracture [10]:

$$E_S = \frac{1}{2}\Delta\sigma\bar{u}A. \qquad (4)$$

A comparison of the energies $E_S$ and E indicates that for all of the earthquakes $E_S$ is less than E on the average by one or two orders. Obviously this difference is connected with the fact that in formula (4) a significant part of the energy released as a result of the rupture and sliding along the fracture during the earthquake is not taken into account.

In conclusion, let us note that the values obtained for the dynamic parameters must be considered only as estimates, for they are determined by the data from one station considering the mean value of the directionalness function of the radiation from the center.

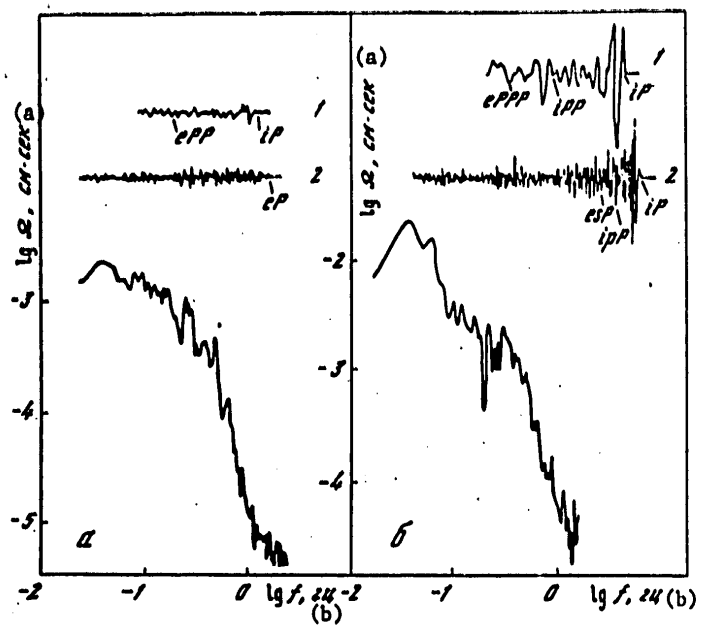


Figure 2. Recordings of longitudinal waves and amplitude spectra of earthquakes. a--8 May 1974 with M = 7.0, Δ = 67.9°; b--27 September 1974 with M = 7.2, Δ = 65.5°. 1--P-Yu, 2--SKM.

Key: (a) cm-sec (b) hertz

In addition, for the earthquakes with Δ > 103° in the calculations of $M_0$, approximate values of the corrections for the divergence of the P-wave front were used. However, satisfactory agreement of the data obtained with the similar estimates of other authors is noted [11].

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Table 3. Dynamic Parameters of the Centers of the Earthquakes of 1974

| Nos. with respect to the catalog | Date | Time in the center, hrs.min.sec | $M$ | Numbering interval, $\tau$, sec | Type of equip-ment | $\Delta^\circ$ |
|---|---|---|---|---|---|---|
| 1 | 2.I | 10 42 28 | 7,0 | 196 | P-Yu | 116,5 |
| 2 | 10.I | 08 51 14 | 7,1 | 204 | P-Yu | 124,2 |
| 3 | 31.I | 23 30 05 | 7,0 | 284 | P-Yu | 114,2 |
| 4 | 1.II | 03 12 33 | 7,0 | 283 | P-Yu | 112,6 |
| 5 | 8.V | 23 33 35 | 7,0 | 160 | SKM,P-Yu | 67,9 |
| 7 | 13.VII | 01 18 23 | 7,2 | 233 | SKM,P-Yu | 97,2 |
| 8 | 11.VIII | 01 13 55 | 7,3 | 57 | SKM, SK<br>SKD, SK | 29,3 |
| 9 | 18.VIII | 10 44 13 | 7,2 | 159 | P-Yu | 132,2 |
| 11 | 27.IX | 05 47 26 | 7,2 | 138 | SKM,P-Yu | 65,5 |
| 12 | 3.X | 14 21 29 | 7,8 | 224 | SK,SK | 114,4 |
| 13 | 8.X | 09 50 58 | 7,1 | 174 | SKM,SK<br>P-Yu | 80,1 |
| 15 | 23.X | 06 14 54 | 7,2 | 264 | P-Yu | 112,7 |
| 17 | 9.XI | 12 59 50 | 7,1 | 231 | P-Yu | 114,3 |

Catalog of Earthquakes of the World with $M(m_{PV}) \geq 6$, 1974

| No. with $M>7$ | Date | Time of occurrence, hr.min.sec | Coordinates of the epi-center, $\varphi^\circ$ | $\lambda^\circ$ | Depth of center, km | $M_{LH}$ | $m_{PV}$ CKM | $m_{PV}$ CK | Region |
|---|---|---|---|---|---|---|---|---|---|
| | | | January | | | | | | |
| 1 | 2 | 10 42 28 | 68,0W | 22,6S | 80 | 7,0 | | | Chile-Bolivia |
| | | 14 41 42 | 124,4E | 26,1N | 150 | | 6,0 | 6,2 | East China Sea |
| | 5 | 08 33 51 | 76,1W | 12,4S | 100 | | 6,0 | | Peru |
| | 8 | 21 47 22 | 46,4E | 39,0S | 25 | 5,9 | 6,1 | 6,7 | West Indian Ridge |
| 2 | 10 | 08 51 13 | 166,9E | 14,3S | 34 | 7,1 | 6,6 | 7,0 | New Hebrides Islands |
| | 11 | 05 36 31 | 166,6E | 14,2S | 15 | 6,2 | 5,7 | 6,4 | " " " |
| | 22 | 13 28 23 | 161,8E | 55,1N | 70 | 6,0 | 5,7 | 5,9 | Kamchatka Peninsula |
| | 24 | 19 12 48 | 144,0E | 42,1N | 30 | 6,4 | 6,4 | 6,6 | Hokkaido |
| | 25 | 20 28 11 | 145,6E | 18,9N | 130 | | 5,9 | 6,1 | Marianas Islands |
| | 26 | 05 35 33,1 | 103,4W | 18,6N | | 6,6 | 5,6 | | Mexico |
| 2 | 29 | 18 57 13 | 7,4S | 128,6E | 154 | | 5,9 | 6,0 | Indonesia |
| | | 22 37 25 | 7,3S | 128,5E | 154 | | 5,9 | 6,0 | Japan |
| | 30 | 09 53 12 | 5,2S | 134,1E | 50 | 6,2 | 6,5 | 6,7 | Solomon Islands |
| | 31 | 07 04 00 | 32,2N | 131,5E | 33 | 6,1 | 5,6 | 6,2 | " " |
| | | 20 16 23 | 7,5S | 156,0E | 62 | 5,8 | 5,9 | 6,3 | " " |
| 3 | | 23 30 05 | 7,5S | 155,9E | 34 | 7,0 | 6,5 | 7,0 | " " |
| | | | February | | | | | | |
| 4 | 1 | 03 12 33 | 7,4S | 155,6E | 40 | 7,0 | 6,5 | 6,8 | Solomon Islands |
| | 4 | 20 10 42 | 7,3S | 155,8E | 55 | 6,1 | 6,0 | 6,5 | " " |
| | 6 | 04 04 07 | 53,8N | 166,7W | 2 | 6,6 | 6,0 | 6,6 | Lisi Islands |
| | 16 | 01 53 46 | 11,5N | 92,6E | 33 | 6,0 | 5,9 | 6,5 | Andaman Islands |
| | 19 | 03 30 25 | 14,3N | 122,2E | 33 | 6,5 | 6,1 | 6,4 | Philippines |
| | 22 | 00 36 55 | 33,4N | 136,9E | 390 | | 6,4 | 6,2 | Japan |
| | 27 | 18 01 56 | 1,3N | 97,6E | 90 | | 6,0 | 6,3 | Southwest Islands |
| | 28 | 13 59 18 | 36,8S | 176,9E | 15 | 6,3 | 6,3 | 6,8 | Kermadek |

Table 3

| $\Omega_0 \cdot 10^{-2}$, cm-sec | $f_0 \cdot 10^{-2}$, hertz | $M_0 \cdot 10^{26}$, dyne-cm | r, km | $\Delta\sigma$, bars | u, cm | lg E, ergs | lg $E_S$, ergs |
|---|---|---|---|---|---|---|---|
| 1,0 | 4,0 | 4,5 | 56 | 1,1 | 15 | 22,3 | 20,9 |
| 0,4 | 3,6 | 1,5 | 61 | 0,3 | 4 | 22,4 | 19,8 |
| 0,3 | 3,2 | 1,3 | 70 | 0,2 | 3 | 22,3 | 19,7 |
| 0,4 | 4,0 | 2,0 | 56 | 0,5 | 7 | 22,3 | 20,3 |
| 0,2 | 9,1 | 0,3 | 25 | 0,8 | 5 | 22,3 | 19,6 |
| 0,5 | 6,3 | 1,6 | 35 | 1,6 | 14 | 22,6 | 19,6 |
| 2,3 | 5,6 | 1,3 | 40 | 0,9 | 9 | 22,7 | 20,3 |
| 0,2 | 4,0 | 0,8 | 56 | 0,2 | 3 | 22,6 | 20,0 |
| 1,6 | 5,6 | 2,1 | 40 | 1,4 | 14 | 22,6 | 20,7 |
| 6,3 | 2,1 | 28,8 | 107 | 1,0 | 29 | 23,5 | 21,7 |
| 2,6 | 7,2 | 4,3 | 31 | 6,3 | 47 | 22,4 | 21,7 |
| 0,2 | 8,0 | 0,8 | 28 | 1,6 | 11 | 22,6 | 20,3 |
| 0,4 | 5,7 | 1,8 | 39 | 1,3 | 13 | 22,4 | 20,5 |

Catalog of Earthquakes [Continued]

| No. with $M \geq 7$ | Date | Time of occurrence hr.min.sec | Coordinates of the epicenter $\varphi^\circ$ | $\lambda^\circ$ | Depth of center km | $M_{LH}$ | $m_{PV}$ CKM | $m_{PV}$ CK | Region |
|---|---|---|---|---|---|---|---|---|---|
| | | | March | | | | | | |
| | 3 | 04 50 52 | 36,1N | 140,2E | 40 | 6,0 | 5,9 | 6,0 | Japan |
| | | 14 22 38 | 20,1S | 169,7E | 17 | 6,1 | 6,1 | 6,0 | New Hebrides Islands |
| | 6 | 01 40 26,4 | 12,3N | 86,4W | 110 | | 5,8 | 6,2 | West of Nicaragua |
| | | 19 29 08 | 6,6S | 129,0E | 26 | 6,2 | 6,1 | 6,6 | Indonesia |
| | 9 | 20 14 28 | 7,5S | 156,2E | 50 | 6,3 | 6,3 | 6,6 | Solomon Islands |
| | 23 | 14 28 35 | 23,9S | 179,8W | 535 | | 5,9 | 6,2 | Southwest Islands |
| | | | April | | | | | | Tonga |
| | 9 | 13 11 25 | 45,9N | 148,1E | 150 | | 5,8 | 6,5 | Kuril Islands |
| | 16 | 11 22 48 | 13,6N | 120,9E | 100 | | 5,6 | 6,0 | Philippines |
| | 27 | 07 24 54 | 26,2S | 175,9W | 45 | 6,0 | 6,4 | 6,6 | Tonga |
| | | | May | | | | | | |
| | 4 | 12 47 28 | 13,9S | 172,6E | 602 | | 5,6 | 6,1 | New Hebrides Islands |
| | 7 | 02 25 11 | 16,7S | 177,3W | | 6,1 | 5,7 | 6,2 | Fiji |
| 5 | 8 | 23 33 35 | 35,4N | 138,5E | 33 | 7,0 | 6,1 | 6,6 | Japan |
| | 9 | 23 56 38 | 46,0S | 35,3E | | 6,1 | 5,5 | 6,2 | African-Arctic Uplift |
| | 10 | 08 12 05 | 4,4S | 102,1W | | 6,0 | | | East Pacific Ocean Uplift |
| | | 19 25 19 | 28,4N | 104,1E | 33 | 6,7 | 6,2 | 6,4 | China |
| | 11 | 00 43 45 | 1,7N | 126,4E | 33 | 6,0 | 6,4 | 6,6 | Indonesia |
| | | 06 14 15 | 19,9N | 147,4E | 45 | 6,0 | 6,4 | 6,6 | East of the Marianas Islands |
| | 15 | 18 59 53 | 50,1N | 156,2E | | 6,7 | 6,0 | 6,4 | Kuril Islands |
| | 16 | 19 59 58 | 26,9N | 140,4E | 450 | | 5,8 | 6,1 | Nampo Islands |
| | 17 | 17 11 49 | 25,3N | 125,5E | 15 | 6,1 | 5,7 | 6,1 | Japan |
| | | 20 55 11 | 6,5S | 106,8E | 131 | | 6,1 | 6,5 | Indonesia |
| | 26 | 01 32 11 | 17,7S | 167,8E | 13 | 6,1 | 6,2 | | New Hebrides |
| | 27 | 04 41 26 | 50,7N | 157,4E | 55 | 6,0 | 5,5 | 6,2 | South of the Kamchatka |
| | 31 | 14 05 00 | 27,7N | 111,2W | | 6,3 | 5,6 | 6,0 | Mexico |

Catalog of Earthquakes [Continued]

| No. with M≥7 | Date | Time of occurrence hr.min.sec | Coordinates of the epicenter φ° | λ° | Depth of center KM | $M_{LH}$ | $m_{PV}$ CKM | CK | Region |
|---|---|---|---|---|---|---|---|---|---|
| | | | June | | | | | | |
| | 4 | 04 14 16 | 15,8S | 175,1W | 276 | | 6,2 | 6,3 | Tonga |
| | 7 | 06 47 36 | 15,4S | 175,3W | | 6,1 | 5,5 | | Tonga |
| | | 22 48 49 | 5,7S | 82,6W | | 6,0 | 5,5 | | South of Panama |
| | 12 | 16 25 48 | 10,6N | 63,4W | 34 | 6,0 | 5,9 | 6,4 | Venezuela |
| | 15 | 02 37 13 | 52,4N | 178,6E | 120–140 | | 5,2 | 6,1 | Aleution Islands |
| | 24 | 20 34 35 | 55,8S | 27,5W | 80 | 5,7 | 6,6 | | West of the Southern Sandwich Islands |
| 5 | 25 | 17 22 19 | 26,1S | 84,3E | | 6,7 | 6,2 | 6,7 | East Indian Ridge |
| | 27 | 01 49 13 | 34,3N | 139,1E | 30 | 6,5 | 5,9 | 6,4 | Japan |
| | | | July | | | | | | |
| 6 | 2 | 23 26 27 | 29,1S | 176,0W | | 7,1 | 6,2 | 6,9 | Kermadek Islands |
| | 3 | 23 25 09 | 29,1S | 176,1W | 80 | 6,2 | 6,2 | 6,7 | " " |
| | 4 | 19 30 37 | 45,1N | 93,9E | 33 | 6,9 | 6,2 | 6,4 | Mongolia |
| | 8 | 05 45 38 | 36,7N | 141,1E | 33 | 6,5 | 6,1 | 6,7 | Japan |
| 7 | 13 | 01 18 23 | 7,7N | 77,7W | 12 | 7,2 | 6,6 | 7,2 | Panama |
| | 14 | 09 37 37 | 8,7S | 122,6E | 123 | | 5,7 | 6,0 | Indonesia |
| | 19 | 17 45 44 | 6,1S | 154,9E | 157 | | 5,9 | 6,1 | Solomon Islands |
| | 28 | 11 34 56 | 46,7N | 152,9E | | 6,9 | 6,5 | 6,8 | Kuril Islands |
| | 29 | 03 15 15 | 46,9N | 152,4E | | 6,5 | 5,9 | 6,5 | " " |
| | | 07 16 21 | 46,3N | 153,1E | | 6,6 | 6,0 | 6,8 | " " |
| | 30 | 05 12 41 | 36,5N | 70,8E | 210 | | 6,4 | 6,9 | Gindukush |
| | | | August | | | | | | |
| | 1 | 05 07 59 | 56,5N | 152,3W | 10 | 6,2 | 5,7 | 6,4 | Southeast of Kodiak Island |
| | | 05 55 38,2 | 56,7N | 152,1W | | 6,3 | 6,1 | 6,5 | " " |
| | 8 | 19 16 49 | 25,0N | 122,6E | | 6,4 | 5,7 | 6,2 | Northeast of Taiwan |
| 8 | 11 | 01 13 55 | 39,4N | 73,9E | 5 | 7,3 | 6,4 | 6,9 | Zaalayskiy Ridge |
| | | 21 21 34 | 39,5N | 73,6E | 15 | 6,3 | 6,1 | 6,6 | " " |
| | 13 | 03 46 20 | 51,5N | 178,1W | 52 | 6,1 | 5,8 | 6,5 | Aleutian Islands |
| | | 15 03 15 | 5,3S | 150,8E | 100 | 5,1 | 5,7 | 6,2 | New Britain Islands |
| 9 | 18 | 10 44 13 | 38,5S | 73,4W | 36 | 7,2 | | | West of Chile |
| | 20 | 20 44 59 | 52,2N | 174,8W | 45 | 5,5 | 6,4 | 6,5 | Aleutian Islands |
| | 23 | 04 50 35 | 7,5S | 127,5E | 136 | | 5,9 | 6,2 | Indonesia |
| | 25 | 01 18 35 | 32,2N | 142,5E | 33 | 6,0 | 6,1 | 6,1 | Japan |
| | 27 | 12 56 00 | 39,6N | 73,8E | 15 | 6,0 | 5,6 | 6,2 | Zaalayskiy Ridge |
| | | 15 20 50 | 27,9S | 66,7W | 147 | 6,0 | 6,4 | | Argentina |
| 30 | | 23 29 22 | 30,8N | 141,9E | 33 | 6,0 | 5,7 | 6,3 | Japan |
| | | | September | | | | | | |
| 10 | 7 | 20 43 12 | 9,8S | 108,4E | | 6,7 | 6,5 | 7,2 | South of Java |
| | 8 | 05 17 28 | 3,7S | 153,9E | 449 | | 6,0 | 6,2 | East of New Island |
| | 20 | 21 20 12 | 6,2S | 146,1E | 111 | | 5,9 | 6,3 | New Guinea |
| | 21 | 12 40 22 | 23,7S | 176,0W | | 6,2 | | 5,9 | Fiji |
| | 23 | 19 28 17 | 0,3S | 12,9W | | 6,2 | 6,4 | 6,7 | Equatorial Africa |
| | 27 | 03 10 08 | 34,0N | 141,0E | | 6,2 | 6,1 | 6,5 | Southeast of Honshu |
| 11 | | 05 47 26 | 43,0N | 146,1E | | 7,2 | 6,3 | 6,8 | Kuril Islands |

Catalog of Earthquakes [Continued]

| No. with M>7 | Date | Time of occurrence hr.min.sec | Coordinates of the epicenter φ° | λ° | Depth of center KM | $M_{LH}$ | $m_{PV}$ CKM | $m_{PV}$ CK | Region |
|---|---|---|---|---|---|---|---|---|---|
| | | | October | | | | | | |
| | 1 | 04 07 27 | 12,3N | 141,3E | 33 | 6,0 | 5,9 | 6,3 | North of the Carolina Islands |
| 12 | 3 | 14 21 29 | 12,3S | 77,8W | 13 | 7,8 | 6,6 | | West of Peru |
| | 4 | 22 24 27 | 26,3N | 66,5E | | 6,0 | 6,2 | 6,5 | Pakistan |
| 13 | 8 | 09 50 58 | 17,3N | 62,0W | 47 | 7,1 | 6,7 | 7,2 | Lesser Antilles |
| 14 | 9 | 07 32 06 | 45,6N | 149,5E | | 6,7 | 6,6 | 7,0 | Kuril Islands |
| | 10 | 06 48 14 | 41,0N | 143,2E | | 6,5 | 6,4 | 6,6 | Japan |
| | | 06 56 44 | 40,9N | 143,4E | 25 | 6,8 | 6,3 | 6,9 | " |
| | 12 | 06 14 48 | 40,6N | 143,6E | 5 | 6,3 | 6,0 | 6,4 | " |
| | 14 | 11 38 | 40,7N | 143,8E | 5 | 5,9 | 6,0 | 6,3 | " |
| | 16 | 05 45 10 | 52,6N | 32,1W | | 6,9 | 6,0 | 6,7 | North of the North Atlantic Ridge |
| 15 | 23 | 06 14 54 | 8,4S | 154,0E | 48 | 7,2 | 6,5 | 7,1 | West of the Solomon Islands |
| 16 | 29 | 03 14 15 | 6,9S | 129,5E | 117 | | 6,8 | 7,0 | Indonesia |
| | 30 | 16 07 34 | 30,2N | 130,5E | 33 | 6,0 | 5,5 | | Japan |
| | | | November | | | | | | |
| | 8 | 21 23 21 | 42,3N | 141,6E | 135 | | 6,2 | 6,6 | Japan |
| 17 | 9 | 12 59 50 | 12,5S | 77,8W | 6 | 7,1 | 6,4 | | Coast of Peru |
| | | 19 10 55 | 6,5S | 105,3E | 51 | 6,1 | 6,5 | 6,9 | Indonesia |
| | 10 | 04 25 32 | 15,9S | 178,5W | | 6,0 | 5,7 | | Fiji |
| | 19 | 04 58 23 | 3,2S | 150,6E | 18 | 6,1 | 6,0 | 6,4 | North of New Island |
| 18 | 20 | 04 14 47 | 15,0S | 167,1E | | 6,9 | 6,7 | 7,1 | New Herbides |
| | 29 | 22 05 22 | 30,7N | 138,4E | 420 | | 6,4 | 6,7 | Japan |
| | | | December | | | | | | |
| | 3 | 03 06 35,2 | 5,0S | 129,8E | | 6,3 | 6,4 | 6,6 | Indonesia |
| | 4 | 03 07 51 | 0,6N | 97,7E | 50 | 6,7 | 6,5 | 6,7 | " |
| | 5 | 11 57 31 | 7,7S | 74,5W | 162 | | 6,1 | | Peru-Bolivia |
| | 7 | 07 34 11 | 51,9N | 170,8W | 33 | 6,0 | 5,8 | 6,1 | Aleutian Islands |
| | 21 | 08 28 56 | 14,6S | 175,2E | | 6,0 | 5,6 | | North of Tonga |
| | 24 | 06 55 47 | 2,3S | 99,0E | | 6,5 | 6,4 | 6,7 | Indonesia |
| | 25 | 02 49 48 | 51,7N | 174,4E | 33 | 6,1 | 6,0 | 6,3 | Aleutian Islands |
| | 28 | 12 11 43 | 34,9N | 72,8E | 33 | 6,3 | 6,4 | 6,6 | Pakistan |

UDC 550.341-550.34:91

Strong Earthquakes in the USSR, Gorbunova, I. V., ZEMLETRYASENIYA V SSSR V 1974 GODU, Moscow, Nauka, 1977, pp 5-15

A brief survey is presented of the seismicity of the territory of the USSR with respect to the earthquakes with M ~ 4.5. It is noted that the most active this year were the zones of the Far East and Central Asia. One of the strongest earthquakes in recent years with M ~ 7.3 occurred in Central Asia in Northern Pamir. The article is accompanied by an earthquake catalog.

UDC 550.341-550.34:91

Earthquakes of Carpathia, Kostyuk, O. L., Rudenskaya, I. M., Pronishin, R. S. ZEMLETRYASENIYA V SSSR V 1974 GODU, Moscow, Nauka, 1977, pp 16-20

This article is devoted to a description of the seismicity of the Carpathians. The most active regions in the Carpathian zone in 1974 were two regions: The northwestern region and Vrancha. Procedures are described which were used when determining the parameters of the centers of the earthquakes, and a table is presented of the basic parameters of the equipment installed at the Carpathian Seismological Stations of the Ukrainian SSR, the data on which were used when determining the coordinates of the hypocenters. For the force-5 Transcarpathian earthquake in the vicinity of Irwava there are detailed macroseismic data. An earthquake catalog is presented.

There are 2 illustrations and one reference.

UDC 550.341-550.34:91

Earthquakes of the Crimea, Dubinskiy, I. B., Kapitanova, S. A., Popov, I. I., ZEMLETRYASENIYA V SSSR V 1974 GODU, Moscow, Nauka, 1977, pp 21-22

A characteristic is presented of the seismic activity of the Crimea for the year. The parameters of the earthquakes and the methods by which they were determined are presented. An earthquake catalog is proposed.

There is one illustration and three references.

UDC 550.341-550.34:91

Earthquakes of the Caucasus, Papalashvili, V. G., Bagramyan, A. Kh., Sultanova, Z. Z., Lebedeva, T. M., Darakhvelidze, L. K., Tabutsadze, Ts. A., Kakhiyani, L. A., Labadze, L. B., Bikashnili, L. A., Shalamberdze, N. I., Kaziyev, S.G., Petrosyan, M. D., Sarkisyan, G. V., ZEMLETRYASENIYA V SSSR V 1974 GODU, Moscow, Nauka, 1977, pp 23-29

A survey is presented of the seismicity of the Caucasus by the two large zones: the Eastern Caucasus and the Dzhavakhetskoye Highland and also information on the seismic stations, the data from which were used when determining the parameters of the earthquakes. A description is presented of the methods of obtaining these parameters. A map of the epicenters is constructed. Macroseismic data are presented for the strongest earthquakes of this year. An earthquake catalog is given.

There are 2 illustrations and 4 references.

UDC 550.341-550.34:91

Earthquakes of Kopetdag and Adjacent Regions. Golinskiy, G. L., Rakhimov, A. R., Gorodkova, T. N., Lagutochkina, K. D., Nurmamedov, D., ZEMLETRYASENIYA V SSSR V 1974 GODU, Moscow, Nauka, 1977, pp 30-48.

An analysis is presented of the seismicity of Turkmenia and the adjacent territories of Northern Iran which make up the Kopetdag zone. A description is given of the methods used to determine the basic parameters of the earthquakes. A precision analysis is made beginning with the location of the stations with respect to the epicenter. For the strongest earthquakes ($M \geq 3.0$) the depth of the centers is determined by the macroseismic data. A brief description is presented of the nature of the manifestation of the perceived earthquakes, the recurrence rate graphs and the deep distribution of the earthquake centers with respect to profiles. The article is accompanied by an earthquake catalog.

There are illustrations, 5 tables and 9 references.

UDC 550.341-550.34:91

Earthquakes of Central Asia, Ulomov, V. I., Fadina, R. P., Katak, A. P., Actaf'yeva, Ye. G., Shakirzhanova, G. N., Dzhanuzakov, K. D., Matasova, L. M., Ospanov, A. B., Kilyapina, T. A., Iodko, V. K., Dzhurayev, A., Yakovlev, V. I., Kon'kov, A. A., Kurmanaliyev, R. K., Mikhaylova, N. N., Zav'yalova, A. V., Ulubeyeva, T. R., Krasnova, A. F., Kasymov, S. M., Nurmagambetov, A. Dosymov, A., Sadykov, A., ZEMLETRYASENIYA V SSSR V 1974 GODU, Moscow, Nauka, 1977, pp 49-98.

Data are presented on the variation of the network of seismic stations by comparison with 1973. Epicenter maps are compiled, and an analysis is made of the seismicity of Central Asia with respect to four large seismically active regions. A comparison is made with the seismicity of these regions in recent years. Detailed macroseismic data are presented on the strong earthquake of 11 August at 0113 hours accompanied by 1,000 repeated shocks and 10 earthquakes of less force. An earthquake catalog is included.

There are 11 illustrations, 12 tables and 4 references.

UDC 550.341-550.34:91

Earthquakes of Northern Tyan'-Shan'. Urazayev, B. M., Ospanov, A. B., Mikhaylova, N. N., ZEMLETRYASENIYA V SSSR V 1974 GODU, Moscow, Nauka, 1977, pp 99-105

An analysis is presented of the seismicity of earthquakes with $K \geq 8$. Information is presented on a network of seismic stations and the methods of determining the earthquake parameters. Graphs are constructed of the recurrence rate of the map of the spicenters, the density of the epicenters and the seismic activity in two versions: using circular and elliptic patterns. A comparative analysis is performed among them. An earthquake catalog is quoted.

There are 5 illustrations and 4 references.

UDC 550.341-550.34:91

Earthquakes of Altay and Sayan. Tsibul'chik, I. D., Filina, A. G., ZEMLETRYASENIYA V SSSR V 1974 GODU, Moscow, Nauka, 1977, pp 106-113

A study is made of the seismicity of Altay and Sayan for 1974. It is noted that the seismic activity is approximately at the 1973 level. The most active are the regions of the Shapshal'skiy massif, Northeastern Tuva and Mongolian Altay. In the vicinity of the Ureg-Nurskoye earthquake on 15 May 1970, the continuation of a series of aftershocks is observed. A study is made of the behavior of the seismic activity in the given area for the period from 1963 to 1974. It is noted that the seismic activity in 1974 still exceeds the background observed for 7 years before the main shock. For the regions of the earthquakes of 5 September (K = 12) and 29 November (K = 14) a study is made of the behavior of the seismic process in time and in space. For the earthquake of 5 September the mechanism of the center was determined and an analysis was made of it. The article is accompanied by an earthquake catalog.

There are 7 illustrations.

Earthquakes of Pribaykal'ye [The Baykal Region], Golenetskiy, S. I., ZEMLETRYASENIYA V SSSR V 1974 GODU, Moscow, Nauka, 1977, pp 114-127.

The seismicity of the Baykal region was studied in 1974 by the observations of the regional network of 18 seismic stations: 2,365 epicenters of earthquakes were established, of them 14 were shocks of the energy classes 12 to 14. A description is presented of the elements of the modification of the procedure for summary processing of the seismic observations. The graphs of the recurrence rate of the earthquakes are calculated for the entire zone, the rift region and separately for the northeastern and southwestern parts of it. A study is made of the development of the seismic process in time. For analysis of the seismicity, maps of the epicenters, the seismic activity, the time-space graph of the earthquake distribution are used. For the extraordinary earthquake of 8 October 1974 with the epicenter near the northeastern boundary of the zone, a map of the isoseims and the table of macroseismic manifestations are presented. The mechanism of the centers is determined for three earthquakes. There is an earthquake catalog.

There are 5 illustrations, 5 tables and 6 references.

UDC 550.341-550.34:91

Earthquakes of Yakutia and the North-East. Koz'min, B. M., Andreyev, T. A., Dareshkina, N. M., ZEMLETRYASENIYA V SSSR V 1974 GODU, Moscow, Nauka, 1977, pp 128-136.

Earthquakes were recorded at 13 seismic stations (permanent and temporary) for which the parameters of the recording instruments are presented. A study is made of the procedure for determining the parameters of the centers of the earthquakes. On the basis of analyzing the seismicity, the most seismically active regions were discovered: the southern part of Yakutia, the system of the Cherskiy Ridge, the north shore of the Sea of Okhotsk. A macroseismic description of the two strong earthquakes of 19 July in the Cherskiy Ridge system and 8 October in the Olekminsk region is included. A total of 309 shocks with K = 8 were recorded. The distribution of the number of earthquakes with respect to energy classes in 12 provisionally isolated regions is given. An earthquake catalog is included.

There is 1 illustration, 2 tables and 3 references.

UDC 550.341-550.34:91

Earthquakes of Priamur'ya [The Amur Region], Koz'min, B. M., Oskorbin, L. S., Volkova, L. F., Nagornykh, T. V., ZEMLETRYASENIYA V SSSR V 1974 GODU, Moscow, Nauka, 1977, pp 137-142

The seismicity of Priamur'ye with respect to earthquakes with $K \geq 6$ is described for the first time on the basis of instrument observations. The earthquakes with $K \geq 10$ are representative. An analysis is made of the distribution of the earthquake epicenters with the tectonic situation of the region. An earthquake catalog is presented.

There is 1 illustration, 1 table and 4 references.

UDC 550.341-550.34:91

Earthquakes of the Arctic. Lavareva, A. P., ZEMLETRYASENIYA V SSSR V 1974 GODU, Moscow, Nauka, 1977, pp 143-144.

A survey is presented of the seismicity of the Soviet sector of the Arctic in 1974 on the basis of the instrument data borrowed from the operative Bulletin of the Network of Seismic Stations of the USSR. The parameters of the earthquakes with $K < 11$ were determined by the data from only one station. An analysis of the seismicity of the Arctic indicates that its activity decreased in the central Arctic basin by comparison with 1973, and an increase somewhat in the meridional parts of the Arctic. The epicenter

was recorded for the first time in the vicinity of $\varphi = 60°$ N, $\lambda = 118°$ E. A table of the distribution of weak earthquakes noted only by the stations in Yul'tin and Tiksi is presented. An earthquake catalog is included.

There is one illustration, one table and two references.

UDC: 550-341-550.34:91

Earthquakes of Kamchatka and the Komandorskiye Islands. Fedotov, S. A., Simbireva, I. G., Feofilaktov, V. D., Matviyenko, Yu. D., ZEMLETRYASENIYA V SSSR V 1974 GODU, Moscow, Nauka, 1977, pp 145-156.

The seismicity of Kamchatka and the Komandorskiye Islands is characterized on the basis of the map of the epicenters, the map of the activity and the vertical section across the volcanic arc; 1,463 earthquakes were recorded. Descriptions are presented of the changes in the Kamchatka station network. In 1974, an increase in seismic activity was observed in the Avachinskiy Gulf and on the Komandorskiye Islands, but the region east of the Parmushir and Shumshu Islands remained the most active. An earthquake catalog is proposed.

There are 3 illustrations and 3 references.

Earthquakes of Sakhalin. Oskorbin, L. S., Volkova, L. F. ZEMLETRYASENIYA V SSSR V 1974 GODU, Moscow, Nauka, 1977, pp 157-161.

An analysis is presented of the seismicity of Sakhalin. The underground shocks are recorded by the permanently active and expeditionary seismic stations. The parameters are defined for 115 earthquakes. A detailed study is made of the seismicity of the individual, provisionally isolated regions. The shock of 17 August at 0513 hours with M = 5.2 in Sakhalin is of interest. A recurrence rate graph was constructed. An earthquake catalog is included.

There are 3 illustrations, 1 table and 7 references.

UDC 550.341-550.34:91

Earthquakes of the Kuril-Okhotsk Region. Boychuk, A. N., Poplavskaya, L. N., Rudik, M. I., ZEMLETRYASENIYA V SSSR V 1974 GODU, Moscow, Nauka, 1977, pp 162-189

The following are presented in the article: a catalog of 724 Kuril-Okhotsk earthquakes with M =4, maps of the epicenters and the densities of the epicenters reduced to the M = 4 level using the graph of the recurrence rate, the projection of the centers on the vertical planes parallel and orthagonal to the strike of the archipelago. A detailed characteristic is presented of the seismic activity in the individual seismically active regions. Values of the basic parameters of the seismic regime are presented.

There are 7 illustrations, 4 tables and 2 references.

UDC 550.341-550.34:91

STRONG EARTHQUAKES OF THE WORLD. Zakharova, A. I., Kondratenko, A. M., Chepkunas, L. S., ZEMLETRYASENIYA V SSSR V 1974 GODU, Moscow, Nauka, 1977, pp 190-198.

A survey is presented of the seismicity of the earth with $M \geq 6$ in 1974 by the materials from the integrated system of seismic observations of the USSR and the National Seismology Center of the United States. For the 13 largest earthquakes with $M \geq 7$, the dynamic parameters of the centers are defined by the spectra of the longitudinal waves recorded at the Obninsk TsSO, the seismic moment, the length of the fracture, the magnitude of the movement, and the decrease in stress.

There are 2 illustrations, 3 tables and 11 references.



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