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INTERNATIONAL GEOPHYSICAL COOPERATION PROGRAM -- SOVIET-BLOC ACTIVITIES

Table of Contents

I. ROCKETS AND ARTIFICIAL EARTH SATELLITES

Soviet Scientist Denies "Accidental Success" of Mechta Launching

Striking the Moon was not the reason for the launching of the Soviet cosmic rocket, says M. G. Kroshkin, Candidate of Physicomathematical Sciences, in an article which appears in Nauka i Zhizn'. In refutation of the many references to the "accidental success" in the Western press, Kroshkin presents the following as "proof" of the Soviet intent to launch a rocket which would pass near the Moon and then enter cosmic space.

In impacting the Moon with a rocket under the most favorable conditions it would be possible to measure only the vertical gradients of the intensity of the Moon's magnetic field, its radioactivity, and the intensity of cosmic radiation near it. The passage of a rocket near the Moon can give material not only on the vertical, but also on the latitudinal and longitudinal (depending on the trajectory of the rocket relative to the Moon) variations of all these values. The transformation of a rocket into an artificial satellite of the Moon would be most advantageous, from the viewpoint of scientific significance, for fulfilling preliminary investigations of the Moon.

Consequently, says Kroshkin, the nature of the experiments conducted by the Soviet rocket, its equipment, and the launching and programming of its movement show that it was launched with the aim of investigating a whole series of physical parameters on the path from the Earth to the Moon and the cosmic space beyond it for a distance within the scope of modern means of communication. Incidentally, the great capacity of the rocket made it possible to carry sufficiently powerful transmitting equipment.

The launching of the Soviet cosmic rocket was the first successful attempt at direct penetration in the region of the Moon. Instruments for directly registering the magnetic field and measuring the radioactivity of the Moon were installed on the rocket. The registration of the intensity of cosmic radiation can be of essential value for studying the Moon's magnetic field, since this field, as investigations on artificial earth satellites showed, can retain charged particles and create zones of increased intensity of radiation.

The study of peculiarities of the Moon's magnetic field can yield a great amount of material for checking different hypotheses concerning terrestrial magnetism and the structure of the Moon itself. The Moon is devoid of atmosphere and therefore the possibility of the formation of a magnetic field similar to the Earth's in that part which is caused by the currents of the upper atmosphere is excluded. If it so happens that a magnetic field of the Moon exists, but that the magnetic poles are located far from the geographic poles, then there is basis to conclude that the presence of a magnetic field of the Moon is not connected with its rotation,

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and possibly, will also lead to a reconsideration of certain assumptions concerning the nature of terrestrial magnetism. Such a result can also certainly lead to the conclusion that the Moon is devoid of an internal liquid core. But the recent discovery of traces of volcanic activity on the Moon by N. A. Kozyrev, Soviet scientist, makes this last assumption very unlikely.

The study of the Moon's radioactivity is of great value, not only for ensuring the safety of future cosmonauts, but also for studying the action of the surrounding medium on the Moon. The continuous bombardment of the unprotected air envelope of the Moon's surface, as well as its exposure to cosmic rays, can fully lead to the rise of artificial radioactivity on the surface.

A large part of the apparatus carried by the cosmic rocket was intended for studying the parameters of cosmic space. The study of cosmic rays can be of great value for various cosmogonic hypotheses concerning the origin and life of celestial bodies and stellar systems. A knowledge of their intensity at different points of space and especially near the planets can aid the study of magnetic fields and finally will give an idea of the danger of radiation for the life and well-being of future cosmonauts. The study of meteor streams is also very important for ensuring the safety of space flights. The study of the gaseous component of interplanetary matter will help explain the reason for the polarization of Zodical light, that is, the illumination of the gaseous tail of the Earth. At present there are only suppositions as to whether this is caused by the free electrons of cosmic space or by cosmic dust. The study of the Sun's corpuscular radiation outside the influence of the Earth's magnetic field must also be accomplished with the aid of suitable equipment on board a cosmic rocket.

All of these experiments set up in the cosmic rocket indicate the launching's great scientific value for the investigation of interplanetary space. ("New Stage in Studying the Cosmos," by M. G. Kroshkin, Candidate of Physicomathematical Sciences; Moscow, Nauka i Zhizn', No 3, Mar 59, pp 6-11)

Soviet Scientist Discusses Meteor Danger in Space Flight

One of the problems of astronautics consists in studying the circumstances in which the flights of interplanetary rocket craft will be made. Interplanetary space is filled with molecules of an order of 1,000 per cubic centimeter. This space is pierced by flows of cosmic rays, corpuscular radiation, of the Sun and micrometeoritic particles. It is necessary to have a more precise idea of all these cosmic factors and their anticipated effects on interplanetary rockets and space craft. For this reason, the investigation of meteor danger is extremely important.

V. V. Fedynskiy, Doctor of Physicomathematical Sciences, discusses the problem of meteor danger in an article in Nauka i Zhizn', Soviet popular science periodical. Fedynskiy describes meteor bodies as a mass of minute particles of matter which rotates around the Sun in the form of a very fine cloud of dust. The Earth, as it were, is submerged in this cloud.

A very efficient means of studying meteors now, is the use of radar. The trails arising with the passage of a meteor, made of ionized gas, are easily detected by powerful radar at any time of the day or night. During the IGY, the study of meteors is conducted by many stations in different countries. In the USSR, such observations are conducted in Kazan', Khar'kov, Tomsk, and at several other points. Much information on the meteor matter in interplanetary space and the nature of meteor bombardment of the Earth is obtained with the aid of radar and with photographic and visual observations.

The density of meteor matter in interplanetary space is insignificant and consists for meteor bodies with a mass of about one gram, of one particle per cube of space with an edge of 1,000 kilometers. Because of the Earth's great velocity and cross-section, the actual number of such meteors encountered by the Earth is about one million in 24 hours. The number of smaller meteors, visible only with a telescope, is in the tens of billions. In calculating the number of probable meteor impacts on a rocket craft it is also necessary to consider abrupt changes in the density of meteors in space as a result of permanent meteor showers, clusters of meteor particles moving around the Sun in an elliptical orbit.

The radar service of Soviet IGY stations has already given valuable data concerning fluctuations on the number of meteors in different months. In 1957, the average hourly number of meteors observed at Tomsk fluctuated on different days from 72 up to 363. A still greater fluctuation was noted for 24 hours. The Khar'kov station reported the average hourly number in the course of a day as increasing or decreasing by a factor of eight. For example, on 15 March 1958, the Earth unexpectedly encountered a meteor cluster which had not been registered earlier. Some information may be obtained from the meteor dust which settles to the Earth. This dust can be collected in rain water or snow and separated from the dust of terrestrial origin by magnets, inasmuch as it consists of magnetite. The concentration of meteor dust in interplanetary space is probably somewhat less than that found in the atmosphere. A certain part of the dust settling in the atmosphere is the product of the fusion and disintegration of larger meteor bodies during their penetration of the ionosphere.

The intensity of the action of the meteor medium on interplanetary craft is of special interest. The most graphic example of the destructive effect of meteor impact can be seen in the large craters formed by meteorites on the Earth's surface. Meteor particles several hundredths and thousandths as small in mass, but possessing greater velocities, have the same destructive effect on a much smaller scale. As a result, the surface of rockets is covered with pockmark-like dents, the toughest steel undergoes "meteor corrosion," and optical surfaces or the active surface of solar batteries can become tarnished and nontransparent. Also, the larger meteor bodies can penetrate the shell of the rocket craft or damage it heavily.

The first artificial earth satellites were a good experimental means of surveying this danger. The Soviet rocket Mechta also carried equipment similar to that in Sputnik III for recording micrometeorite impacts. The piezoelectric transducers measured impulses acting on their surfaces in the range from 0.1-1,000 grams per centimeter per second, making it possible to detect meteor particles with a mass from 10^{-9} grams and larger, with velocities of about 40 kilometers per second.

The results of the first measurements of the number of micrometeorites conducted with instruments mounted on the artificial earth satellites cannot be considered as conclusive. The number of micrometeorite impacts recorded by Sputnik III, calculated on an area of one square meter, was several tens of thousands per hour. This differed from US findings, which gave them from 150 up to 6,000 impacts per square meter per hour. The difference can be attributed to the apparatus and the method of measurement being used and to the change in the density of the meteor medium through which the Earth moved at the time.

Not one of the three Soviet artificial Earth satellites were seriously damaged or deflected from their orbits by the impact of a large meteor body in all of the many months of their existence. Thus, the satellites helped establish the fact of the extreme granulation of meteor matter in interplanetary space. This makes it possible to estimate the possibility of interplanetary travel despite the presence of meteor danger in the cosmos, and to determine the proper design and structure for space craft. ("The Problem of Meteor Danger," by V. V. Fedynskiy; Moscow, Nauka i Zhizn', No 3, Mar 59, pp 17-20)

II. UPPER ATMOSPHERE

New Book on Moon by Academician Barabashov

A new book, Luna (The Moon), by Academician N. P. Barabashov, director of the Khar'kov Astronomical Observatory, Academy of Sciences Ukrainian SSSR, which has been issued by the publishing house "Sovetskaya Rossiya" is reviewed in Nauka i Zhizn' by B. Lyapunov. The book, which contains much information on the Moon, its characteristics, the possibilities of cosmic flight to it, landings on it, etc., while not voluminous, is outstanding because of its scientific level.

The book opens with an account of Soviet successes in the investigation of cosmic space and the prospects for the development of astronautics. The author affirms that the Moon, our nearest celestial neighbor, will be the first cosmic body on which man will land. Flight time to the Moon is given as 53 hours. A preliminary detailed study of the Moon will aid in explaining what the first astronauts will find on landing there, how best to accomplish such a flight, and the future conquest of the Moon. The motion of the Moon and the physical conditions in its different regions are described in detail.

A great deal of attention is devoted to describing lunar relief, its unusualness, and the principal formations of the surface. The volcanic origin of lunar relief is held to be highly probable on the basis of Kozyrev's recent observation of a volcanic eruption in the crater of Alphonsus.

A special section is devoted to the problem of the past and future of the Moon and also to lunar eclipses.

The final chapter presents conclusions of direct interest to future lunar travelers. An illustration shows the first people landing on the Moon, and the technical means by which this must be accomplished are given.

The Moon will be the future cosmic station from which longer flights by interplanetary craft will be made and will become the most important scientific station in the universe.

Lyapunov believes more attention in the book should have been given to the following: the author should have presented his ideas on how lunar flights would be accomplished, what results could be obtained in investigations of the Moon with rockets, and how such a lunar station would be constructed. These are only briefly touched on in the introduction and the final chapter. Also desirable would have been the ideas put forward by A. A. Yakovkin, director of the Main Astronomical Observatory, Academy of Sciences Ukrainian SSR, on the creation of an artificial satellite of the Moon, which would make it possible to study it from a relatively close distance for a long time.

Barabashov's book will be read with interest by all who are interested in the problems of astronomy and astronautics. ("The Moon Cosmic Station," by B. Lyapunov, book review of Luna by Barabashov; Moscow, Nauka i Zhizn', No 3, Mar 59, p 75)

Chinese Stations Report Observation of Auroras

Two items in the May 1958 issue of the T'ien-ch'i Yueh-k'an, a Chinese monthly magazine on weather, published by the Central Weather Bureau, summarize the reports concerning observation of aurora in various parts of China made by Chinese observation stations. The items give the following information:

According to the first item, auroras were seen several times during September 1957 by many stations throughout China. It was, however, on 29-30 September 1957 that the aurora was the strongest. It was during this period that many more stations in various areas throughout China viewed the aurora, including those in areas such as Heilungkiang in the east, Sinkiang in the west, and stations in regions in latitude of 40 degrees N.

The source reports that the auroras seen in various areas appeared mostly at the angular height of 30 degrees or lower; in Wu-lan-hao-t'e and Hu-hao-t'e, however, at one time the aurora appeared at an angular height of up to 60 degrees. The color of the auroras in the comparatively low latitude region (as in the northern part of China) appeared to be a red very similar to that of a fire viewed from a distance; in other areas the color was red, but in various degrees.

A list of the participating stations established during the International Geophysical Year, especially for the observation of the aurora, follows, together with the locations and the dates the aurora appeared.

Station Name	North Latitude	East Longitude	Dates of Appearance (Sep 1957)
Nen-chiang	49° 10'	125° 13'	13-14, 21-22, 29-30
I-ch'un	47° 30'	129° 20'	13-14, 29-30
Wu-lan-hao-t'e	46° 13'	122° 03'	29-30
Chi-hsi	45° 17'	130° 57'	13-14, 29-30
Erh-lien	44° 13'	111° 32'	29-30
Hsi-lin-hao-t'e	43° [illegible]1'	116° 05'	21-22, 22-23
Urumchi	43° 47'	87° 37'	4-5, 22-23,29-30
Tung-liao	43° 40'	122° 15'	29-30
Tun-hua	43° 21'	128° 11'	13-14, 21-22, 29-30
Ha-mi	42° 50'	93° 27'	29-30
Hu-ho-hao-t'e	40° 49'	111° 41'	29-30
Tun-huang	40° 08'	94° 47'	4-5, 29-30
Peiping	39° 57'	116° 19'	29-30

According to the second item, at about 1800 hours on 11 February 1958, an aurora was again observed by many observation stations throughout the nation. The aurora was more radiant this time, and its color was more brilliant but variable. Many stations located south of 40 degrees N Latitude including stations such as Wei-hsien of Hopeh Province, Tung-sheng of Inner Mongolia, and Kao-t'ai of Kansu, also observed the aurora during this period. Following is a list of stations, together with their locations and the time of observation:

Station Name	North Latitude	East Longitude	Time
Hu-ma of Heilungkiang	51°43'	126°39'	1802 hr (Peiping time: 1735 hr)
Pei-an Feng-huang-shan of Heilungkiang	48°22'	126°25'	1823 hr (Peiping time: 1757 hr)
I-ch'un Wu-ying of Heilungkiang	47°30'	129°20'	1835 hr
Kan-nan of Heilungkiang (elevation: 185.2 meters)	47°56'	123°30'	1819 hr (Peiping time: 1805 hr)
Ch'i-ch'i-ha-erh of Heilungkiang	47°15'	123°55'	1810 hr
Lin-hsi of Inner Mongolia (elevation: 809 meters)	43°30'	118°03'	1800 hr
Fou-hsin of Liaoning (elevation: 138 meters)	42°10'	121°38'	1907 (Peiping time)
Tung-sheng of Inner Mongolia (Elevation: 1,452.0 meters)	39°50'	109°59'	1910 hr
Wei-hsien of Hopeh	30°56'	114°41'	1830 hr
Kao-t'ai of Kansu (elevation: 1,355.3 meters)	39°23'	99°43'	1851 hr

(Peiping, T'ien-ch'i Yueh-k'an, 23 May 58, pp 35, 36-37)

Chinese Maps Flow Pattern Over Tibet From 1957 Data

"An Analysis of Circulation Over Vicinity of the Tibetan Plateau," by Chu Ch'ien-ken of the Central Meteorological Institute presents an analysis of flow characteristics over Tibet as indicated by daily 500-millibar charts in May and June 1957. Flow patterns of eastern and western hemispheres are compared. The author gives special attention to the problem of whether one or two rapid currents exist over the plateau. With respect to this problem, he draws the following conclusion:

During May-June 1957, two rapid air currents arrived from the west over the Tibetan Plateau. The one on the south immediately branched off into two streams, blowing across northern and southern parts of the plateau, respectively.

Meanwhile at 70° E, the rapid current on the north also divided into two streams. One stream, blowing northward, weakened and disappeared. The other, blowing southward, combined with the two branches of the south rapid current at 90° E and 120-140° E, respectively. The final confluence became one rapid current of great force. ("An Analysis of Circulation Over Vicinity of the Tibetan Plateau," by Chu Ch'ien-Ken; Peiping, T'ien-ch'i Yueh-K'an, No 9, 1958, pp 20-25)

China Probes Upper Atmosphere

This item gives the following information on China's IGY activities. Five times during the World Meteorological Interval in September 1958, China's upper atmosphere balloons were launched to heights of 46-46.5 miles. At the highest altitude, the atmospheric pressure was less than 2 millibars.

On 29 October, the Central Observatory in Ch'eng-tu launched a balloon which reached a height of 48.8 miles, where the atmospheric pressure was about one millibar. It had passed the isothermal layer and entered the warmer layer.

The article also gives a summary of China's progress in meteorology during the great Leap Forward Movement, meteorological conferences held in 1958, and the current establishment of a nationwide meteorological network. ("News Brief," unsigned article; Peiping, Ch'i-hsiang Hsueh-pao (Acta Meteorologica Sinica), Vol 30, No 1, 1959, pp 119-120)

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III. GRAVIMETRY

Gravimetric Survey of all Chinese Territory Planned for 1959

An abstract in Russian of an article in Acta Geodetica et Cartographica, Sinica, a Chinese scientific periodical, contained the following information.

It is necessary to make a general gravimetric survey with astronometric leveling in all the territories of the country. In addition, it is necessary to perform a first-order concentrated gravimetric survey around the astronomical points for each triangulation series. This detailed work will be begun in all the country's territories in 1959. Certain experimental work was conducted last year as a means of ensuring the success of this year's operations.

The article presents some of the experience acquired in this preliminary work and discusses the following problems: the location of the gravimetric points of the concentrated survey, the methods of typing in gravimetric points, the determination of the coordinates and the heights of the points, and, finally, certain suggestions are introduced on the execution of the concentrated gravimetric survey. ("Some Problems in Concentrated Gravimetric Surveying," Gravimetric Branch of the Institute of Geodesy and Cartography, Academia Sinica, China; Peking, Acta Geodetica et Cartographica Sinica, Vol 3, No 1, 1959, pp 25-28)

IV. SEISMOLOGY

Study of Effect of Microfluctuations of Atmospheric Pressure on Seismograph Recordings

In the study of the effects on seismic recordings by microfluctuations of atmospheric pressure, with periods of several seconds to several hundred seconds, it has been observed that before the onset of the rain of thunderstorms (usually during calm, windless summer weather), long-period (several minutes) air waves with the characteristic form of oscillations are produced. More than once, these waves have been observed on the recordings of sensitive microbarographs (sensitivity of 20-25 bar/mm/m [bar-dyne/cm^2] and wave periods of 600-800 seconds) at a number of seismic stations in the USSR (Pasechnik and Fedoseyenko, Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, No 1, 1958). These recordings indicate such waves as relatively short series of oscillations of the atmospheric pressure of a quasisinusoidal form, with three to four extremes: oscillation periods of 4-12 minutes, maximum amplitudes of 100-200 bars (500-600 bar in some cases); the total duration of the recordings usually does not exceed 20-30 minutes.

For the solution of the problem of the nature of the origin of air waves of this type, simultaneous observations must be made at a number of stations, located hundreds of kilometers from one another, in conjunction with a simultaneous study of all meteorological conditions prevailing at the time. The problem is one which must be solved by meteorologists. Observations at a number of stations should provide an accurate determination of the moment of excitation of the oscillations at their sources, their coordinates, and, on the basis of this data, a calculation of the rate of propagation of various groups of such air waves.

The study of air waves of this type will also throw light on various aspects of the physics of the atmosphere, particularly on the nature and thickness of the channels which transmit such waves. The air waves produced during the eruption of volcanos can also be studied for the same purpose. ("Long-Period Air Waves Originating Before Thunderstorms," by I. P. Pasechnik, Institute of the Physics of the Earth, Academy of Sciences USSR; Moscow, Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, No 3, Mar 59, pp 471-475)

Theory on Temperature Deformation of Earth's Surface

The theory of the thermoelastic deformation of the earth depends on a number of simplified assumptions, namely, that the temperature of the earth's surface changes in accordance with a harmonic principle, that the heterogeneous heating of the earth has a sinusoidal character, that the thermoelastic property of the earth varies in stages and only to a certain depth, and that the surface of the earth is a plane surface.

In spite of the conditionality of these assumptions, the theory satisfactorily explains the principal characteristics of the phenomena.

The analysis of the theory made in this article permits the following conclusions. The daily (24-hour) variations of the inclinations and linear deformations of the earth's surface have a common origin, namely, the nonuniformity of its heating. The observed daily temperature deformation of the earth is a narrowly confined local process involving only the uppermost layer. The delay of the 24-hour temperature gradients of the earth's surface is explained by the presence of a layer of loose heat-insulating material at the surface. ("On the Theory of the Temperature Deformation of the Earth's Surface," by S. N. Kabuzenko, Povolzhskiy Forestry-Engineering Institute imeni M Gor'kiy; Moscow, Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, No 3, Mar 59, pp 445-449)

V. ARCTIC AND ANTARCTIC

Activities at Polar Stations

The northernmost point of the USSR is located within 800 kilometers of the North Pole. This is the high-latitude polar station on Ostrov Rudol'fa. During the polar night, at the time of the 21st Congress of the CPSU, the staff at this station began to compete for the title of "Collective of Communist Labor." To start with, each of the staff members mastered a second specialty. This is important to be able to interchange workers and, consequently, to enable them to help each other. A Ignatkin, station chief, who is the senior radio technician and has acquired the specialty of hydrometeorologist, decided that this was not sufficient for him, as a supervisor, and, therefore, he also learned to be a mechanic. V. Izhikov, hydrometeorologist, decided not to lag behind the chief, so he began to learn the job of a radioman. A. Kolachev, the cook, decided to learn two specialties at the same time, i.e., radio technician and hydrometeorologist.

Three men are working on the ice-covered cupola of Ostrov Ushakova, which is not even indicated on ordinary maps, I. Nedzvetskiy, Hero of the Soviet Union, who is senior mechanic, senior hydrometeorologist, and radio technician; P. Svirnenko, an experienced polar specialist; and N. Malkov, senior radio technician and hydrometeorologist, who has worked in the Arctic for more than 15 years. It would be impossible to work at this station without interchanging jobs. That is why each polar worker has two, or even three, specialties. They are successfully handling the extensive program of scientific observations.

The observatory on Ostrov Kheysa, Zemlya Frantsa Iosifa, on the 81st parallel N latitude, is operating for the second year in a well-organized settlement. It is equipped with radio, telephone, and electric water-heating facilities. The observatory staff, headed by V. Gerasimenko, has successfully completed all the observations under the IGY program. The scientists state that the work at the observatory on Ostrov Kheysa has given them a feeling of great satisfaction. The laboratories are equipped with modern instruments and devices. There is a large amount of equipment especially designed for this observatory.

Specialists of the ionospheric group recently installed a complex apparatus and are beginning to study the propagation of radio waves in the Arctic, including ultrashort waves.

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Not long ago a census of the population was taken on Ostrov Kheysa. This census reflected the cultural development and "maturity" of the Arctic. The census indicated that 70 percent of the observatory workers were young people under 25 years of age. The same percentage of polar workers has secondary and higher education.

Not far from Severnaya Zemlya, several miles from Ostrov Pioner, the smallest island of this archipelago, there is another, even smaller island, called Golomyannyy, on the 80th degree N latitude. A high-latitude polar station has been in operation on this island since 1930. V. Beschastnykh, chief of this station, recently received a communication from the Arctic and Antarctic Institute stating that the observations made by the polar workers [of this station] had been conducted in an excellent manner and were of great interest.

There are still many hardships and difficulties connected with life at the polar stations. For example, just the procurement of fresh water, especially during the summer, is equal to obtaining water in the desert. The procurement of fuel and the lighting of stoves still presents difficulties. So far, unfortunately, there are more problems than solutions at the stations. However, the polar workers are bravely and successfully striving to overcome the hardships.

Ostrov Ayon is located in the ice of the East Siberian Sea, on the 70th degree N latitude. The staff of this polar station, headed by V. Korneyev, has very friendly relations with the local population. The station workers are willing to undertake any kind of work which they are able to do. V. Korneyev, the station chief, who is an experienced mechanic, handles many jobs in the Chukchi reindeer **kolkhoz**. A communications office has been set up on Ostrov Ayon for the reindeer breeders. Radiomen of the polar station dispatch radiograms sent by the local population and handle radiotelephone conversations with the rayon center at Pevek. When Etta Rul'tina, a Chukchi girl, expressed an interest in learning the job of radio operator, the radiomen at the station were willing to teach her.

Ostrov Ratmanova in Bering Strait is the easternmost point of the Soviet Union. The boundary between the USSR and the US is near this station. As at other stations, the staff members here have been working during the polar night to acquire a second specialty. V. Koshurin, a Komsomol, has learned to be a hydrometeorologist, and A. Danchenko, hydrometeorologist, is studying to be a radioman. On their own, the polar workers have expanded the radio station and installed new equipment. The young radiomen are full of creative plans. As soon as the atomic icebreaker Lenin begins to operate on the Northern Sea Route, they want to establish two-way, long-distance radio contact with the icebreaker and maintain such contact until the vessel arrives in Bering Strait. ("Dawn over the Arctic"; Moscow, Vodnyy Transport, 2 Apr 59)

Severnyy Polyus-7 To Be Discontinued

The station Severnyy Polyus-7 has been drifting in the Arctic for about 23 months. During this period it has traveled from the east to the coast of Greenland, covering a distance of almost 3,500 kilometers. When the present staff of the station is removed from the ice floe, a long-term automatic radiometeorological station is to be installed in its place. ("High-Latitude Arctic Expedition"; Moscow, Sovetskiy Flot, 18 Mar 59)

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