L 2932-66

ACCESSION NR: AP5023370

ENCLOSURE: 01

Fig. 1. Influence of the cooling rate on the composition of the axial regions of dendritic branches (C_{ta}). a - Al + 9.6% Mg; b - Al + 13.0% Mg; c - Al + 16.4% Mg; d - Al + 20.5% Mg; $C_M = C_0 k$ where k is the distribution coefficient and C_0 the original composition of the alloy.

Card 3/3

EWT(1)/T/EWA(b) Pa-4 AMD JK

ACCESSION NR: AP5003099 S/0016/64/000/011/0128/0133

AUTHOR: Aleksandrov, N.I.; Gefen, N. Ye.; Yegorova, N.B.; Miroshnichenko, I. V.

TITLE: Immunological activity of lymphoid organs in aerosol and subcutaneous immunization against typhoid fever

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 11, 1964, 128-133

TOPIC TAGS: immunology, bacterial disease, intestinal disease, cytology

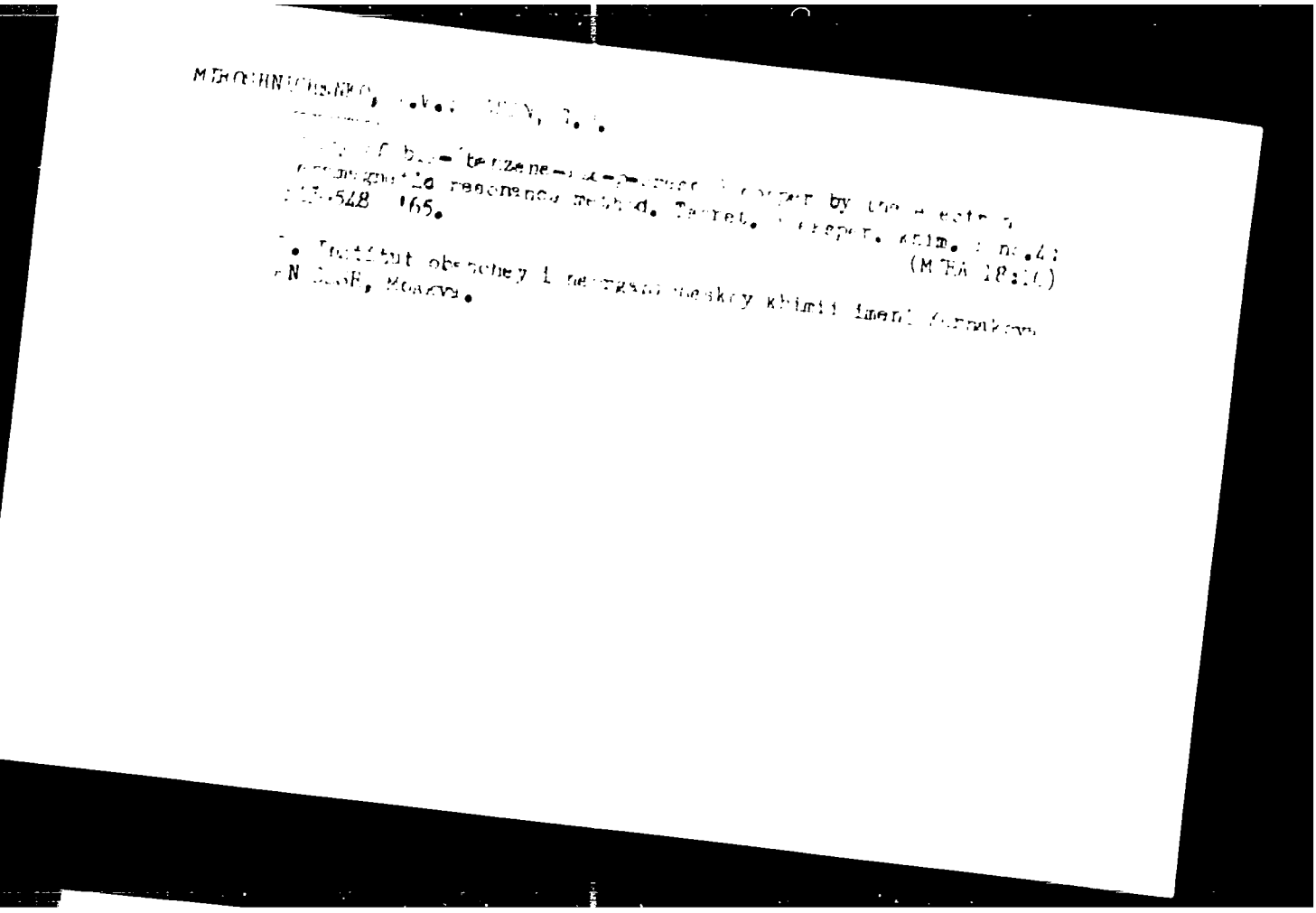
Abstract: The plasmocytic reaction and accumulation of RNA were studied comparatively with single aerosol and subcutaneous immunizations of grown rabbits with whole typhoid antigen. Both methods of immunization caused an increase in the number of RNA-enriched lymphocytes in the peripheral blood and an intense plasmocytic reaction, as manifested by a considerable increase in the number of young plasmatic cells both in the regional and in remote lymph nodes. The study established a correlation of maximum intensity of the plasmocytic reaction and maximum RNA accumulation in lymphocytes of the peripheral blood with serological shifts in rabbits immunized by both methods with whole typhoid antigen. Orig. art. has 1 figure and 2 graphs.

ASSOCIATION: none

SUBMITTED: 28Oct63 ENCL: 00 SUB CODE: LS

NO REF SOV: 005 OTHER: 004 JPRS

Card 1/1



MIROSHNICHENKO, I.V.; LARIN, G.M.; MAKAROV, S.P.; VIDEYKO, A.F.

Electron paramagnetic resonance method of studying a free radical of hexafluorodimethyl nitrogen oxide. Zhur.strukt.khim. 6 no.5:776-777 S-O '65. (MIRA 18:12)

1. Institut obshchey i neorganicheskoy khimii imeni N.S. Kurnakova AN SSSR. Submitted March 22, 1965.

MIROSHNICHENKO, I.Ya.

Our work experience in the mechanization of production processes.
Kons.i ov.prom. 16 no.5:13-15 My '61. (MIRA 14:5)

1. Dubnovskiy ovoshchesushil'no-konservnyy kombinat.
(Dubno--Canning industry--Equipment and supplies)

MIROSHNICHENKO, P. G.

Mbr., Lab. Plant Physiology, Inst. Natural Sci. im P.F. Lesgaft, Leningrad, -1941-cl[illegible]. "Carbohydrate Metabolism in Wheats under Conditions of Insufficient Soil Moisture," Dok. AN, 32, No. 1, 1941; "Exchange of Carbohydrates in Summer Wheats in the Earing Phase under Conditions of Soil Drought (The Problem of the Physiology of the Critical Period in Cereals)," ibid., 59, No. 6 194[illegible]; "The Influence of Ethyl Alcohol on the Growth and Root Formation of Plants," ibid., 60, No. 1, 1948; "Implanting of Slips under the Influence of Water Extraction fro[illegible] the Leaves," ibid., No. 8, 1948

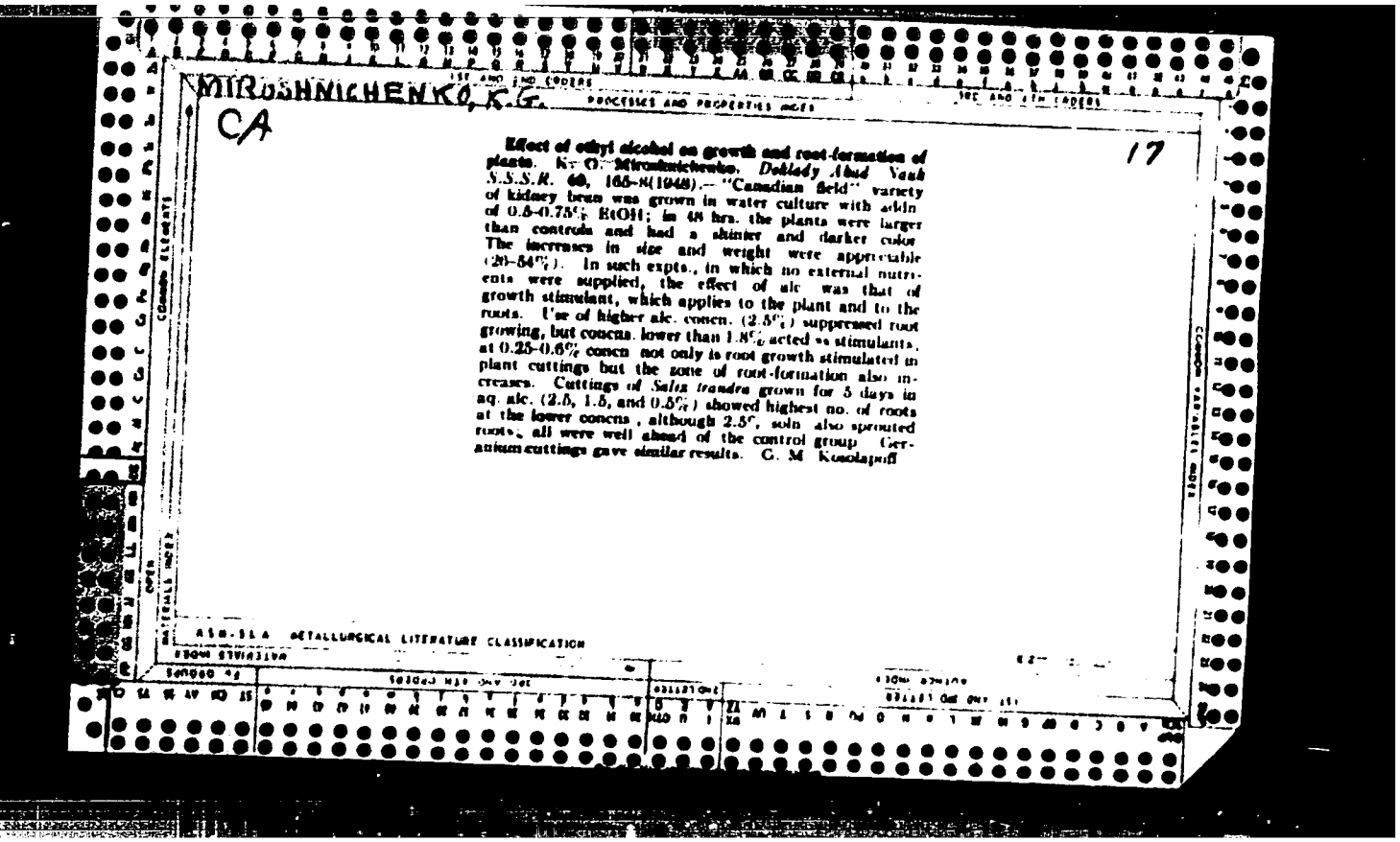
USSR/Medicine - Wheat
Medicine - Carbohydrates 21 Mar 1948

"Exchange of Carbohydrates in Summer Wheats in the Maring Phase under Conditions of Soil Drought (Problem of the Physiology of the Critical Period in Cereals)," K. G. Mirozhnichenko, Lab Plant Physiol, Leningrad Natural Sci Inst imeni Lesgraft, 3½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 9

Presents data collected as result of studies of two types of summer wheat. Determines monosaccharide, saccharose, starch, and semicellulose in the roots, stems, leaves, and heads. Submitted by Academician N. A. Maksimov, 24 Jan 1948.

51T41



MIROSHNICHENKO, K. G.

CA

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Effect of ethyl alcohol on growth and root-formation of plants. K. G. Miroshnichenko. *Doklady Akad. Nauk S.S.S.R.* **60**, 165–8(1948).—"Canadian field" variety of kidney bean was grown in water culture with addn. of 0.6–0.75% EtOH; in 48 hrs. the plants were larger than controls and had a shinier and darker color. The increases in size and weight were appreciable (20–54%). In such expts., in which no external nutrients were supplied, the effect of alc. was that of growth stimulant, which applies to the plant and to the roots. Use of higher alc. concn. (2.5%) suppressed root growing, but concns. lower than 1.8% acted as stimulants, at 0.25–0.6% concn. not only is root growth stimulated in plant cuttings but the zone of root-formation also increases. Cuttings of *Salix trandra* grown for 5 days in aq. alc. (2.5, 1.5, and 0.5%) showed highest no. of roots at the lower concns., although 2.5% soln. also sprouted roots, all were well ahead of the control group. Geranium cuttings gave similar results. G. M. Kosolapoff

A50-51A METALLURGICAL LITERATURE CLASSIFICATION

MIROSHNICHENKO, K. G.

USSR (600) 600

Growth of Plants

"Effect of the Root System on the Growth of Stems" Dokl. AN, SSSR 8..
No 6, 1952

Rcd. 22 Jan 52

SO: Monthly List of Russian Accessions, Library Of Congress, September, 1952, UNCL

USSR/Plant Physiology - Growth and Development

Abs Jour : Referat Zhur - Biol. No 16, 25 Aug 1957, 68979 H-4

Author : Miroshnichenko, K.G.

Title : The Root Formation of Stalk Graftings in Plants Under the Influence of Ethyl Alcohol and Aqueous Extracts.

Orig Pub : Uch. Zap. Kurskogo gos. ped. in-ta, 1954, 3, 88-101

Abstract : The treatment of bean, willow and geranium cuttings by ethyl alcohol (0.25-1.8%) stimulated root formation. It is assumed that alcohol, like growth substances, increases the flow of nutrient materials to the base of the graft. Aqueous extracts from the leaves of beans, geranium and nettle stimulated the rooting of bean cuttings. A high concentration extract from geranium leaves acted as powerfully as 2,4-D. The weakest action was produced by extracts from willowy leaves, which the author explains by the presence of tannins. In the opinion of the author, the substances present in the extracts are analogous to

Card 1/2

MIROSHNICHENKO, K.G.

Effect of the removal after various lengths of time of the growing point of the main shoot on tillering in wheat and barley. Uch.zap. Kursk.gos.ped.inst. no.4:5-19 '57. (MIRA 12:4)

1. Iz kafedry biologii (zav. - prof. E.R. Geller) Kurskogo gosudarstvennogo pedagogicheskogo instituta.
(Wheat)
(Barley)

MIROSHNICHENKO, K.G.

Formation of roots in sprouts under the influence of some physiologically active substances. Uch. zap. Kurs. gos. ped. inst. no.11: 98-109 '58. (MIA 14:1)

(Corn (Maize)—Fertilizers and manures) (Roots (Botany))

MIROSHNICHENKO, K.G.

Effect of 2,4-D on some growth processes in wheat and barley. Uch. zap. Kursk. gos. ped. inst. no.11:110-124 '58. (MIRA 14:1)

1. Kafedra biologii Kurskogo gosudarstvennogo pedagogicheskogo instituta.
(Barley) (Wheat) (2, 4-D)

AUTHOR: Miroshnichenko, K. I.

TITLE: On the Influence of 2,4-D Upon the Formation of Seedl...
(O vliyanii 2,4-D na formirovaniye kornya ...)

PERIODICAL: Doklady Akademii nauk SSSR, Vol 120, Nr ...
pp 1356 - 1358 (USSR) - 1958

ABSTRACT: One of the specific reactions of the root system of various plants upon the action of the 2,4-dichloro ,phenoxy acetic acid (2,4-D) and several similar substances is the retardation of the longitudinal growth, of thickening, as well as a subsequent and a deformation of the hair roots (Refs 1 - 3). The author in the present paper studied the influence of different concentrations of the sodium salt of the 2,4-D, as well as of boron (as H_3BO_3), heteroauxin, and molybdenum on the root formation of the maize seedlings of the "Voronezhskaya ..." sort. The roots of the seedlings were immersed in corresponding solutions for a period not exceeding 24 hours and then in the water. ... caused (also with boron) a shortening of the ..., especially in the case of a boron concentration of 1 mg/l. The increase of the volume of the roots in the case of seedlings which were ...ated

Card 1/2

On the Influence of 2,4-D Upon the Formation of Seedling Roots

2

to an action of increased concentrations of 2,4-D ... tained by previous or subsequent immersion in boron solution ... + 2,4-D solution. The increased 2,4-D ... the formation of ... roots ... 2,4-D ... the best result. There ... 10 ... references, ... of which is Soviet

ASSOCIATION: Kursk... Gosudarstvennyy pedagogicheskiy institut (... Pedagogical Institute)

PRESENTED: April 1, 195., by A.L. Kursanov, Member, Academy of Sciences USSR

SUBMITTED: December 10, 1957

1. Plants--Growth 2. Boron solutions--... 3. Acetic acid--Physiological effects 4. ... --Physiological effects

Card 2/2

MIROSHNICHENKO, K.G.; BUYANKOVA, R.V.

Disturbances in the vernalization process of winter wheat. Bot. zhur. 45 no.11:1653-1656 N '60. (MIRA 13:11)

1. Kurskiy gosudarstvennyy pedagogicheskiy institut.
(Wheat) (Vernalization)

MIROSHNICHENKO, K.G., ZIMOROY, N.K.

Effect of boron and heteroauxin on the growth and crops of white carrots. Uch.zap.Kursk.gos.ped.inst. [illegible] vyp. [illegible]. (MIRA 17:4)

1. Kafedra botaniki Kurskogo gosudarstvennogo pedagogicheskogo instituta.

MIROSHNICHENKO, K. V.

Material Handling

Electro-mechanical loading machine for silicate bricks. Biul. [illegible], 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHNICHENKO, F.P.

Technology

Our experience in solving the problem of increasing the productivity of labor. Moskva, (Znanie) 1951.

Monthly List of Russian Accessions, Library of Congress, April 195[illegible] unclassified.

MIROSHNICHENKO, K. P.

Reduction of subsidiary time Moskva Profizdat, 1952. 60 p.
(Novatory sotsialisticheskogo proizvodstva) (54-18329)

TJ1160.M59

MIROSHNICHENKO, Klimentiy Petrovich, inzh.; RUBIN, M., red.; MOLCHANOVA, T., tekhn.red.

[Reduction of setup, man, and down time in plants] Sokrashchenie vspomogatel'nogo vremeni na proizvodstve. Odesskoe obl.izd-vo, 1958. 57 p. (MIRA 12:2)
(Machine-shop practice) (Time study)

PHASE I BOOK EXPLOITATION SOV/3579

Miroshnichenko, Klimentiy Petrovich

Novuyu tekhniku - na sluzhbu semiletki (New Technique to Serve the Seven Year Plan) [Odessa] Odesskoye knizhnoye izd-vo, 1959. 54 p. 2,000 copies printed.

Ed.: M. Rubin; Tech. Ed.: T. Molchanova.

PURPOSE: This booklet is intended for the general reader.

COVERAGE: The booklet deals with new machinery and devices built in the Odessa industrial region and with advanced processing methods in the machine industry. The principles of cybernetics and newly developed techniques in industrial operations are discussed. No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

Card 1/2

New Technique to Serve the Seven Year Plan

Advanced Technology -- Plants of the Soviet Economy

Most Significant Trend in Technical Progress

Creators of New Technique

AVAILABLE: Library of Congress (TJ85.M5)

Card 2/2

809/3579

30

41

47

VK/mas
6-29-60

MIROSHNICHENKO, K. T. and Bukreyev, N. V.

"Presence of Glutathione in Healthy Sheep and Its Change During Experimental Brucellosis

Tr. In-Ta Veterinarii Kazakh. Fil. VASKhNIL, [illegible]

Author studied the pathogenesis of brucellosis and carried out biochemical investigations of the blood of healthy and diseased sheep with respect to glutathione and its fractions. An increase of the amount of oxidized glutathione was observed in sheep with experimental brucellosis.

(RZhBiol. No 7, May 1955)

SO: Sum-No 787, 12 Jan 56

MIROSHNICHENKO, K.T.

The content of glutathione in healthy sheep and its change in experimental brucellosis. N. V. Bukreev and K. T. Miroshnichenko. Trudy Inst. Vet. Kazakh. Filiala Vsesoyuz. Akad. Sel'skokhoz. Nauk im. V. I. Lenina 6, 37-42 (1947-1953); Referat. Zhur. Khim., Biol. Khim. 1953, No. 17877.—Detns. were made for total, oxidized, and reduced glutathione (I) in the blood of healthy sheep and in sheep having exptl. brucellosis (method of Woodward and Fry, C.A. 30, 6500). Considerable variations were noted in the content of various fractions of I in normal and sick animals. On the basis of av. values it was concluded that introduction of live *Brucella* into the organism causes an increase in the content of oxidized I in the blood; the introduction of a antireticular serum into the infected animals considerably lowered the content of oxidized I in the blood. B. S. L.

MIROSHNICHENKO, L.A.

Skarns of central Kazakhstan. Izv.AN Kazakh.SSR.Ser.geol. no.20: 115-125 '55. (MLRA 9:8)
(Kazakhstan--Ore deposits)

MIROSHNICHENKO, L.A.

Ore-bearing capacity of Central Kazakhstan skarns of different metallogenic epochs. Izv.AN Kazakh.SSR.Ser.geol. no.21:29-40 '55. (MLRA 9:8)

(Kazakhstan--Ore deposits)

MIROSHNICHENKO, L.A.

Location of skarn deposits in Central Kazakhstan. Izv. AN Kazakh. SSR. Ser. geol. [illegible]. (MIRA [illegible])
(Kazakhstan--Skarns)

MIROSHNICHENKO, L.A.

3(5) PHASE I BOOK EXPLOITATION SOV/1886

Ob"yedinennaya nauchnaya sessiya po metallogenicheskim i prognoznym kartam, Alma-Ata, 1958

Materialy nauchnoy sessii po metallogenicheskim i prognoznym kartam; doklady. (Materials Presented at the Scientific Session on Metallogenetic and Postulated Ore Occurrence Maps; Reports) Alma-Ata, Izd-vo AN Kazakhskoy SSR, 1958. 313 p. Errata slip inserted. 3,850 copies printed.

Ed.: A.S. Pogoshev; Tech. Ed.: P.F. Alferova.

Sponsoring Agencies: (1) Akademiya nauk SSSR, (2) Akademiya nauk Kazakhskoy SSR, Alma-Ata, (3) USSR. Ministerstvo geologii i okhrany nedr, (4) Kazakh SSR. Ministerstvo geologii i okhrany nedr.

PURPOSE: This book is intended for exploration geologists, mining engineers, and cartographers.

Materials Presented (Cont.) SOV/1886

COVERAGE: This collection of reports was presented at the United Scientific Session on Metallogeny and Postulated Ore Occurrence Maps convoked by the Academy of Sciences in Alma-Ata, December, 1958. The reports deal with various aspects of compiling metallogenetic and ore occurrence maps as well as the methodology and techniques of correlating geophysical exploration data. Three other reports deal only with non-ferrous metals. These reports delivered at the conference but not included in this work were read by Ye.Ye. Zakharov, N.S. Shatskiy, and Yu.K. Goretskiy. References accompany each article.

TABLE OF CONTENTS:

Materials Presented (Cont.) SOV/1886

Card 4/6

LYAPICHEV, G.F.; MIROSHNICHENKO, L.A.

Joint scientific commission on the development of mineral resources of central Kazakhstan. Izv. AN Kazakh. SSR. Ser. geol. no.2:101-10 '59. (MIRA 13:2)

(Kazakhstan--Mines and mineral resources)

MIROSHNICHENKO, L.A.

Microbiological principals involved in the use of mineral fertilizers in Irkutsk Province. Izv. Sib. otd. AN SSSR no.6:112-119 '59.
(MIRA 12:12)

1. Irkutskiy godudarstvennyy universitet.
(Irkutsk Province--Fertilizers and manures)

MIROSHNICHENKO, L.A., kand.geol.-mineral.nauk

Joint scientific session on metallogenetic and prognostic maps. Vest.AN Kazakh.SSR 15 no.1:96-100 Ja '59.
(MIRA 12:1)

(Geology--Maps)

MIROSHNICHENKO, L.A.; SOKOLOV, G.Ya.

Effect of various cultivation practices on microbiological processes in turf-carbonaceous soils. Trudy Inst. mikrobiol. no.7:196-204 '60. (MIRA 14:4)

1. Irkutskiy gosudarstvennyy universitet imeni A.A.Zhdanova, kafedra fiziologii i mikrobiologii, Bayandayevskaya sel'skokhozyaystvennaya opytnaya stantsiya.
(SOIL MICRO-ORGANISMS) (TILLAGE)

MIROSHNICHENKO, L.A.

Effect of prolonged cultivation on microbiological processes in gray forest soils of Irkutsk Province. Trudy Inst. mikrobiol. no.7:239-248 '60. (MIRA 14:4)

1. Irkutskiy gosudarstvennyy universitet imeni A.A.Zhdanova, kafedra fiziologii i mikrobiologii.
(IRKUTSK PROVINCE—SOIL MICRO-ORGANISMS) (TILLAGE)

S/031/61/000/001/001/003
A161/A129

AUTHORS: Miroshnichenko, L.A., Candidate of Geological and Mineralogical Science; Veleshina, T.A.

TITLE: Selenium and tellurium in polymetal deposits of Central Kazakhstan

PERIODICAL: Vestnik Akademii nauk Kazakhskoy SSR, no. 1, 1961, 15-21

TEXT: The work presents preliminary information on the results of wide-scale explorations started in 1955-1957. The explorations' purpose was mainly to determine the minerals collecting selenium and tellurium and the regularities of their distribution in different genetic types and formations. The data for this preliminary information was gathered from the authors' own collections and from the Geological Museum of the AS KazSSR, as well as from single samples from the galenites of the Dzhezkazgan (collected by T.A. Satpayeva) and Gul'shad deposits (K.S. Gazizova). The presence of selenium and tellurium in Kazakhstan has practically not been studied before, though data on other rare earth elements (indium, gallium, etc.) exist in some works. The authors gathered data from 27 deposits in

Card 1/4

Selenium and tellurium ...

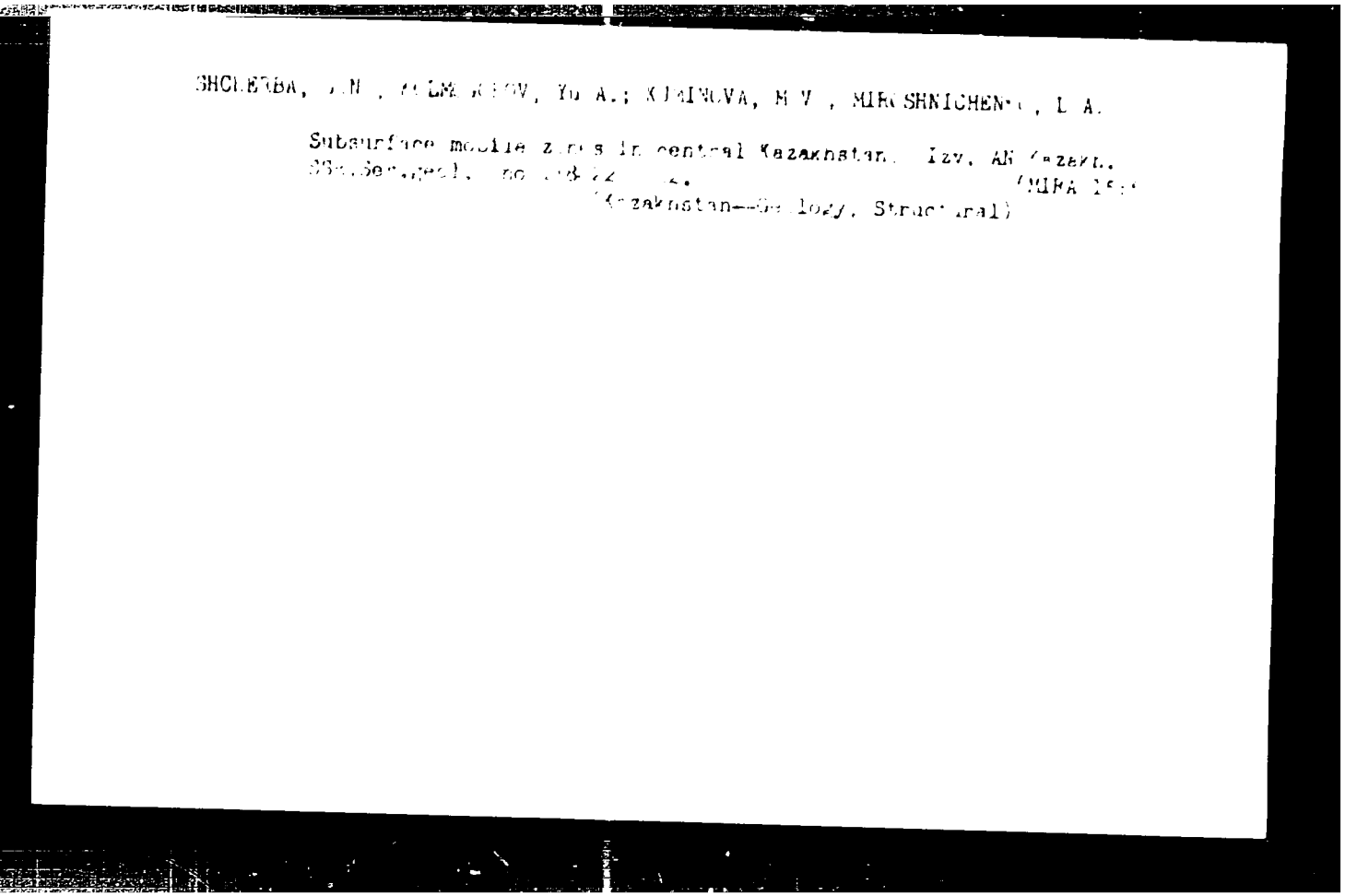
S/031/61/000/001/001/003
A161/A129

all, belonging to the following ore formations: lead-zinc skarn formation with copper and bismuth; lead-zinc skarn; lead-zinc quartz veins; barite with predominant lead content; metasomatic with predominant lead content, and lead zinc. Galenite from other formations was also studied for comparison, viz., from copper, tungsten, molybdenum and gold deposits. A photocolorimetric determination method (developed by staffers of IGN AS KazSSR T A. Valeshina and I.I. Gekht) was used for selenium as it cannot be revealed by the common spectral analysis. [Abstractor's note: No data concerning the method are given]. The investigated minerals were mainly four very common sulfide types: galenite, sphalerite, pyrite and chalcopyrite. Some behavior peculiarities of selenium and tellurium were noted which are possibly indirect indications of the laws of their formation, but the observations do not confirm the view of the majority of Kazakhstan explorers supposing isomorphism of tellurium and selenium with sulfur. They were spread unevenly in the studied sulfides. Individual microscopic inclusions may be supposed, but their determination is not possible at the time being. Natural tellurium compounds are known in single deposits (Kyzylespe), viz., tetradymite in sulfide ores, and montanite (earth crusts on tetradymite). The authors investigated galenites spectroscopically and noted that high

Card 2/4

concentrations of silver and bismuth were always accompanied with increased concentrations of selenium and tellurium. This may be a confirmation of N.D. Sindeyeva's view (who is specialist of the mineralogy and geochemistry of selenium and tellurium) who points out in her works that the two elements tend to form independent minerals in microscopic volumes (about 40 are known). The highest concentration found in the exploration was 0.05 - 0.08% in sulfides (by microchemical determination). Conclusions: 1) the major accumulations of Se and Te are in skarn deposits of lead-zinc ore with copper and bismuth. Polymetallic deposits with higher Se and Te content belong to the early and late Variscean epoch; no higher concentrations are present in Caledonian deposits; 2) all deposits with higher Se and Te content are situated at definite ore centers: Akchagyl, Karagayla, Batystaus and Berkara; 3) the major collector of Se and Te or their compounds with bismuth and silver is galenite of skarn deposits with lead-zinc, copper and bismuth mineralization. Se and Te are rare in sphalerites, pyrites and chalcopyrites; in pyrrhotines and arsenopyrites they are absent; in separate minerals of the oxidization zone increased Se and Te contents are mainly present in deposits where the primary sulfides are enriched with Se and Te; 4) Te predominates over Se in the majority of galenite samples,

in the mean proportion of 1:2; no abrupt variations in Se and Te content with depth was observed; they are present in galenite of a certain deposit type throughout, in variations that do not depend on the depth of sampling; 5) the authors are inclined to explain the higher Se and Te concentration in sulfides (particularly in galenites) by the presence of microscopic inclusions of natural compounds of Se and Te with bismuth (predominantly for tellurium) and silver (for selenium) and only insignificant influence of their isomorphism with sulfur.



SHCHERBA, V.N., KOLMAKOV, Yu.A.; KLAIMOVA, M.V., MIRONICHENKO, L.A.

Subsurface mobile zones in central Kazakhstan. Izv. AN Kazakh. SSR. Ser. geol. no. [illegible] (MIRA 15:
(Kazakhstan—Geology, Structural)

MIROSHNICHENKO, L.A.

New data on the distribution of indium in the ore deposits of central Kazakhstan. Trudy Inst.geol.nauk AN Kazakh.SSR 6:170-180 '62. (MIRA 16:6)
(Kazakhstan—Indium)

SHCHERBA, G.N., doktor geologo-mineralogicheskikh nauk; [illegible] SHEVCHENKO, L.A., kand. geologo-mineralog. nauk

Endogenic ore formations of Siberia and the Far East. Vest. AN Kazakh. SSR 20 no.7:85-86 Jl '64. (MIRA 17:11)

MIROSHNICHENKO, L.D.; YEVSTIGNEYEVA, R.P.; FILIPPOVICH, Ye.I.; PREOBRAZHENSKIY, N.A.

Dipyrrolylmethene series. Part 5: Infrared absorption spectra of meso-substituted dipyrrolylmethenes. Zhur.ob.khim. 31 no.9:2975-2983 S '61. (MIRA 14:9)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni M.V. Lomonosova.

(Methene--Spectra)

MIROSHNICHENKO, L.D.; YEVSTIGNEYEVA, R.P.; PREOBRAZHENSKIY, N.A.

Infrared absorption spectra and structure of some derivatives of β-diketones. Zhur.ob.khim. 30 no.8:2533-2536 Ag '60. (MIRA 13:8)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii.
(Ketones--Spectra)

MIROSHNICHENKO, L.D.; FILIPPOVICH, Ye.I.; YEVSTIGNEYEVA, R.P.; PREOBRAZHEN-SKIY, N.A.

Prototropic rearrangement in the dipyrrylmethene series. Dokl. AN SSSr 134 no.5:1100-1103 O '60. (MIRA 13:10)

1. Moskovskiy institut tonkoy khimicheskiy tekhnologii im. M.V. Lomonosova. Predstavleno akademikom A.N.Nesmeyanovym.
(Methene)

ZOTCHIK, N.V.; MIROSHNICHENKO, L.D.; YEVSTIGNEYEVA, R.P.; [illegible]OBRAZHENSKIY, N.A.

Study of the Claisen condensation of esters of levulinic acid and their conversion products. Zhur.ob.khim. 32 no.9:2823-2828 S '62. (MIRA 15:9)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni M.V. Lomonosova.
(Levulinic acid) (Claisen condensation)

(1)

S/[illegible]/63/027/[illegible]
[illegible]/B186

AUTHORS: Miroshnichenko [illegible]

TITLE: Prototropic re[illegible] dipyrrylmethenes

PERIODICAL: Akademiya n[illegible] Seriya fiz. [illegible]
v. 27, no. [illegible]

TEXT: Important natural [illegible] chlorophyll [illegible] on two dipyrrylmethenes that [illegible] A study of the [illegible] of these substances can give [illegible] the processes [illegible] One group of mesosubstituted [illegible] was investigated

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Prototropic regrouping in ...

$$(I) - R_3 = R_4 \ldots \qquad R_3' = COOC_2H_5;$$
$$(II) - R_4 = R_4' \ldots \qquad R_4' = COOC_2H_5,$$
$$(III) - R_3 = R_4 = \ldots \qquad R_4 = COOC_2H_5.$$
$$(IV) - R_4 = R_5 = R_4 \qquad R_3' = COOC_2H_5$$

Prototropic regroupings were ... these ... Spectrophotometric titration ... grouping ... tion takes place at a certain ... There ... 4 figures.

ASSOCIATION: Moskovskiy ins... M. V. Lomonosov ... Technology im... ... Chemical ... of Fine ...

Card 2/2

CHERKASOVA, Ye.M.; YERKOMAISHVILI, G.S.; MIROSHNICHENKO, L.D.

On the two products of aminomethylation of cyclohexyl methyl ketone.
Zhur.ob.khim. 33 no.4:1244-1246 Ap '63. (MIRA 16:5)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni M.V.Lomonosova.

(Ketone) (Aminomethylation)

L 59353-65 UR/0020/64/157/003/0599/0602

ACCESSION NR: AP5019332

AUTHOR: Baynova, M. S.; Bazilevskaya, G. I.; Miroshnichenko, L. D.; Preobrazhenskiy, N. A.

TITLE: Conformational investigation in the cocaine series

SOURCE: AN SSSR. Doklady, v. 157, no. 3, 1964, 599-602

TOPIC TAGS: isomer, ester, IR spectrum

ABSTRACT: The infrared adsorption spectra of four stereoisomeric methyl esters of ecgonin, differing in the configuration of the substituents in the 2- and 3-positions, were studied to refine their absolute configurations. In two of these stereoisomers, the OH group forms an intramolecular hydrogen bond with the neighboring carbomethoxy group; a cis-configuration is the most favorable for the appearance of an intramolecular hydrogen bridge. In the other two isomers, the hydroxyl group is included in an intermolecular hydrogen bond, which breaks down upon dilution of the solution, analogously to tropine and pseudotropine. Other features of the adsorption spectra of the isomers, in particular, the region of the valence vibrations of the C-OH

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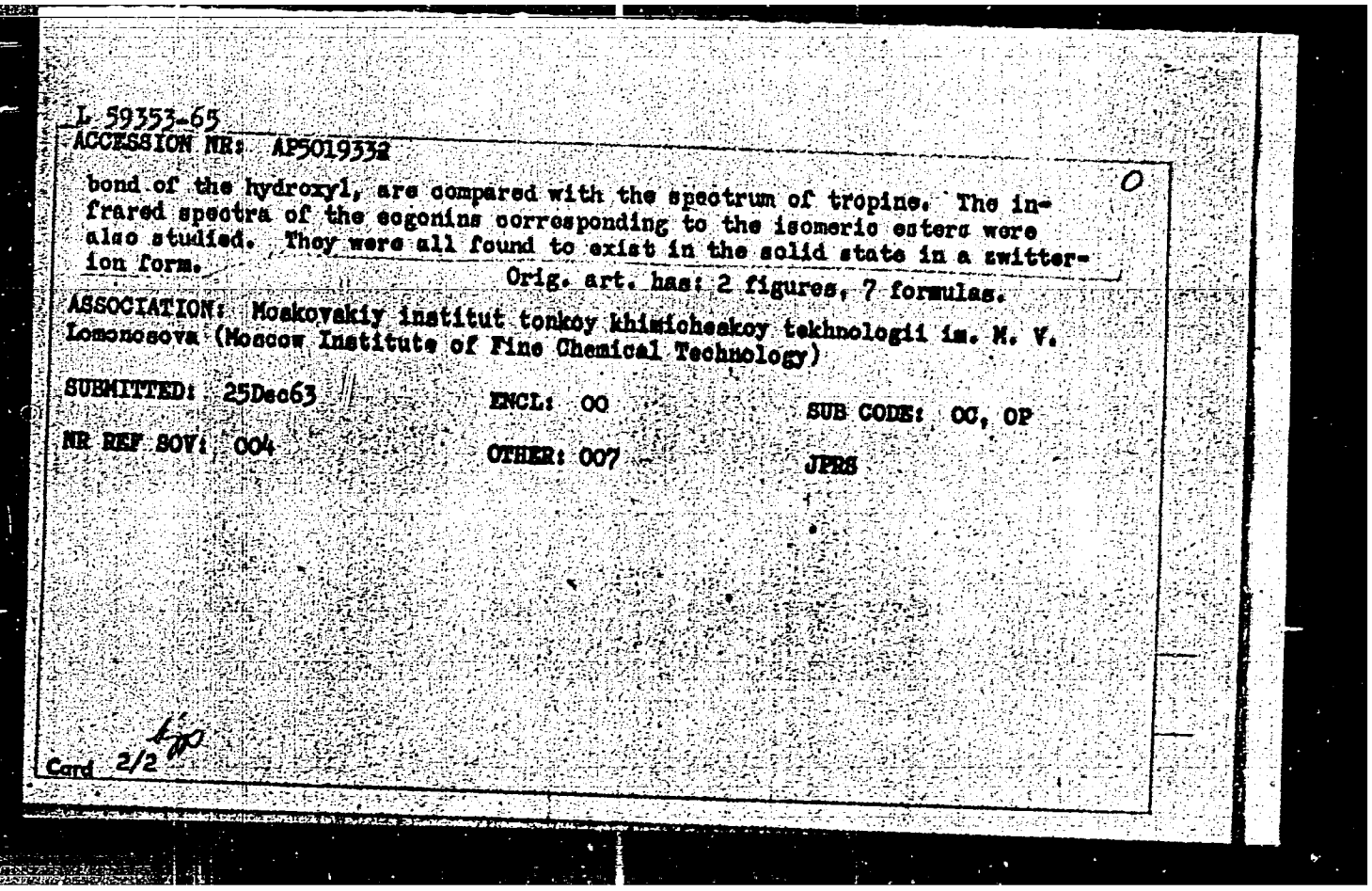

L 59353-65
ACCESSION NR: AP5019332

bond of the hydroxyl, are compared with the spectrum of tropine. The infrared spectra of the ecgonins corresponding to the isomeric esters were also studied. They were all found to exist in the solid state in a zwitterion form.

Orig. art. has: 2 figures, 7 formulas.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology)

SUBMITTED: 25Dec63 ENCL: 00 SUB CODE: OC, OP

NR REF SOV: 004 OTHER: 007 JPRS

Card 2/2

MIROSHNICHENKO, L. I.

BUDILOV, L. I. DORMAN, V. I. IVANOV, Ye. V. KOLMEYETS, L. I. MIROSHN

...Flare, and the Propagation of Solar Cosmic Rays in Interplanetary Spa...

...port submitted for the 8th Intl. Conf. on Cosmic Rays (IUPAP), Jaipur India, 2-14 Dec 1963

S/0203/64/004/001/0168/0170

ACCESSION NR: AP4013148

AUTHORS: Dorman, L. I.; Miroshnichenko, L. I.

TITLE: The dependence of the diffusion coefficient of solar cosmic rays on their energy

SOURCE: Geomagnetizm i aeronomiya, v. 4, no. 1, 1964, 168-170

TOPIC TAGS: cosmic ray, solar cosmic ray, diffusion coefficient, solar particle, scattering, uniform distribution, scattering center, magnetic cloud, magnetic inhomogeneity, heavy nucleus, magnetic field, proton

ABSTRACT: The authors started from an equation for isotropic spherical diffusion as a first approximation for propagation of solar particles in interplanetary space. They found an expression to define the density of solar cosmic rays on the earth. For a maximum value, this expression is written $t_{max} = R^2/6d$, where R is the radius of the earth's orbit about the sun and d is the diffusion coefficient (a function of the kinetic energy of the particle; its possible dependence on distance to the sun is neglected). It is noted that in making calculations by this formula scattering is significant only for protons and for uniform distribution of scattering centers in the solar system. Consideration of inhomogeneities

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ACCESSION NR: AP4013148

in the distribution of magnetic clouds and of their movement in interplanetary space leads to the conclusion that the diffusion coefficient and scattering depend on the distance from the sun and that the time in which the maximum is achieved depends on the velocity of the magnetic inhomogeneity. It is noted that conclusion that the method based on using the indicated formula contains the basic possibility of distinguishing streams of solar protons from streams of heavier nuclei, because of the lower velocities of nuclei with $z > 1$ in any interplanetary magnetic field (approximately half in a nonrelativistic field) than protons having the same hardness factor. Orig. art. has: 2 figures and 8 formulas.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery* i rasprostraneniya radiovoln AN SSSR (Institute of Terrestrial Magnetism, Ionosphere, and Propagation of Radio Waves AN SSSR)

SUBMITTED: 14Aug63 DATE ACQ: 02Mar64

SUB CODE: AS, PH NO REF SOV: 004 ENCL: 00

OTHER: 003

Card 2/2

L 11354-65 EWT(l)/EWG(v)/FCC/EEC-4/EEC(t)/EWA(h) Pc-4/Pe-5/Pq-4/Pae-2/Peb/Pi-4
Pb-4/SSD/ESD(t)/AFWL/AFETR/AFMDC GW/MS
ACCESSION NR: AP4046291 S/0203/64/004/005/0940/0944

AUTHOR: Dorman, L. I., Miroshnichenko, L. I.

TITLE: Character of the spatial and temporal distribution of solar cosmic rays in interplanetary space

SOURCE: Geomagnetizm i aeronomiya, v. 4, no. 5, 1964, 940-944

TOPIC TAGS: sun, solar cosmic ray, cosmic ray, interplanetary space, cosmic ray anisotropy

ABSTRACT: Under certain assumptions, the rate of decrease in the intensity of solar particles in interplanetary space will be related to various factors. Thus, the decrease in intensity will be accelerated if there is an effective boundary of the region of diffusion. The effective radius of the region of diffusion depends essentially on particle energy, decreasing with increasing energy. The decrease in intensity will also be accelerated if the diffusion coefficient depends on the distance to the sun; or if the diffusion coefficient is quite strongly dependent on particle energy, as well as by the movement of magnetic nonuniformities away from the sun. The authors give the results of computations of the density

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L 11154-65

ACCESSION NR: 4046291

of solar cosmic rays as a function of time and distance from the sun for χ (diffusion coefficient) = 10^{20}, 10^{21}, 10^{22}, 10^{23} $cm^2 \cdot sec^{-1}$ (which is equivalent to investigation of four different energy values); u = 0, 10^7, $3.16 \cdot 10^7$, 10^8, $3.16 \cdot 10^8$ $cm \cdot sec^{-1}$; r = 0.1, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0 a.u.; and t = 10^3, $3.16 \cdot 10^6$, 10^7, $3.16 \cdot 10^7$ sec. The results are shown in Figures 1-4 of the Enclosure. Fig. 1 of the Enclosure shows the dependence of the density of solar particles in the earth's orbit on χ (that is, on their energy) for u = 0 (solid curves) and $3.16 \cdot 10^7$ $cm \cdot sec^{-1}$ (dashed curve). For these same values of u the solid and dot-dash curves in Fig. 2 of the Enclosure represent the spatial-temporal distribution of solar cosmic rays of identical energy ($\chi = 10^{22}$ $cm^2 \cdot sec^{-1}$). Fig. 3 of the Enclosure shows the temporal change in the density of solar particles of different energies in the earth's orbit; the solid curves were drawn without taking into account the movement of magnetic nonuniformities (u = 0) and the dashed curves with an allowance for such movement ($u = 3.16 \cdot 10^7$ $cm \cdot sec^{-1}$). For particles of identical energy ($\chi = 10^{22}$ $cm^2 \cdot sec^{-1}$) the change in their density for different velocities of these nonuniformities will occur in conformity to Fig. 4 of the Enclosure; the solid curves apply to the earth's orbit and the dashed curve to r = 3 a.u. The computations apparently give no basis for concluding that the decrease in intensity of solar particles has an exponential character, but it is shown that as a result of the radial movement of magnetic nonuniformities away from the sun the intensity of particles of a burst is incident on the earth more rapidly than indicated by the

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ACCESSION NR: AP4046291

2

$\sim t^{-3/2}$, especially for low-energy particles and for sufficiently large values of t. It is also shown that the degree of anisotropy of solar cosmic rays decreases with time. "The authors wish to thank N.S. Kaminer for useful discussion". Orig. art. has: 15 formulas and 4 figures.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery*i rasprostraneniya radiovoln AN SSSR (Institute of Terrestrial Magnetism, the Ionosphere and Radio Wave Propagation, AN SSSR)

SUBMITTED: 04Jan64 ENCL: 04 SUB CODE: AA

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Card 3/7

L 11354-65

ACCESSION NR: AP4046291

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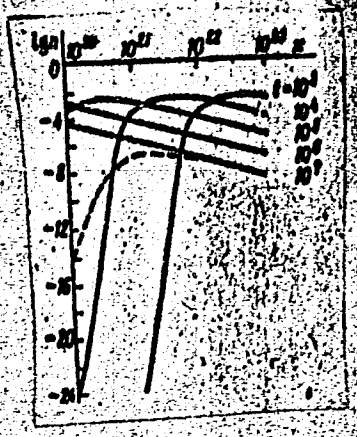

Fig. 1. Relationship between the density and energy of solar particles in the earth's orbit.

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ACCESSION NR: AP4046291

ENCLOSURE: 02

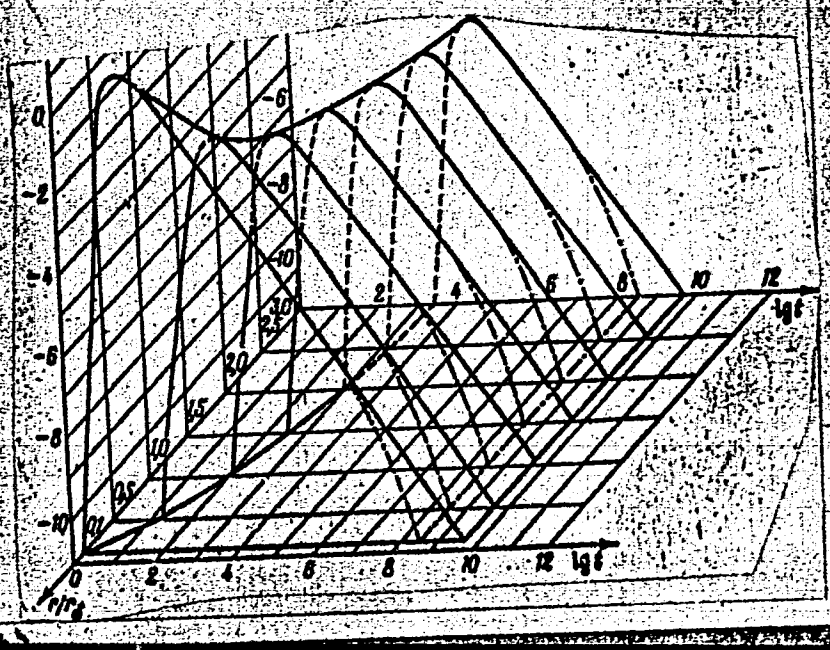

Fig. 2. Spatial and temporal distribution of solar cosmic rays of identical energy

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ACCESSION NR: AP4046291 ENCLOSURE: 03

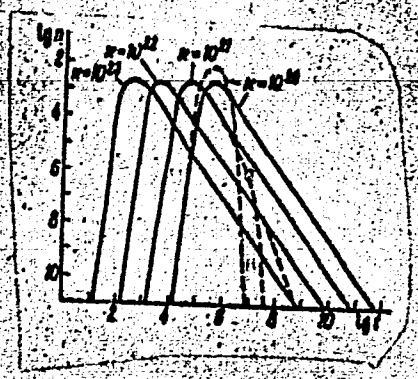

Fig. 3. Temporal distribution of the density of solar particles of varying energy in the earth's orbit.

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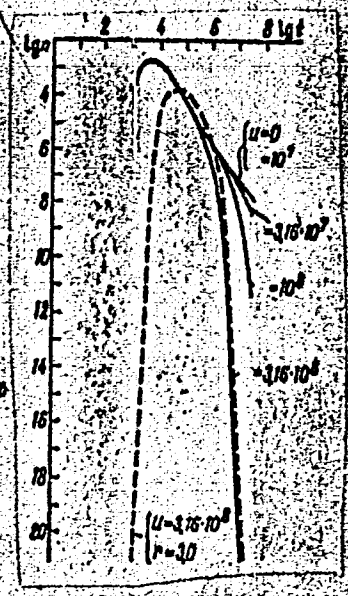

Fig. 4. Relationship between the velocity of nonuniformities and the density of particles with identical energy.

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L 21190-65 EEC-4/EWG(v)/EWA(h)/EWG(a)-2/EWT(1)/EEC(t)/FS(v)-3/FCC/FSF(h)/EWA(d)/
FSS-2/ Pe-5 Pi-4/Pt-4/Pq-4/Pae-2/Peb AFWL/SSD/ESD(t) TT/GW-2/WS S/0048/64/028/012/1978/1984
ACCESSION NR: AP5002099

AUTHOR: Dorman, L.I.; Miroshnichenko, L.I. 17 B

TITLE: Concerning the character of propagation of solar cosmic rays in interplanetary space /Report, All-Union Conference on the Physics of Cosmic Rays held in Moscow 4-10 Oct 1963/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.28, no.12, 1964, 1978-1984

TOPIC TAGS: cosmic ray burst, cosmic radiation

ABSTRACT: The present analysis of some recent experimental (satellite and other) data on solar cosmic rays was undertaken in view of the increasing interest in the nature of propagation of solar cosmic radiation. On the basis of the now commonly accepted diffusion model the density of solar cosmic ray particles is described by an inhomogeneous equation of the type:

$$\frac{\partial n}{\partial t} = \varkappa \nabla^2 n + F(r, t); \quad n(r, 0) = 0; \quad -\infty < r < +\infty; \quad t > 0,$$

where n is the density of solar particles, $\varkappa$ is the diffusion coefficient, and

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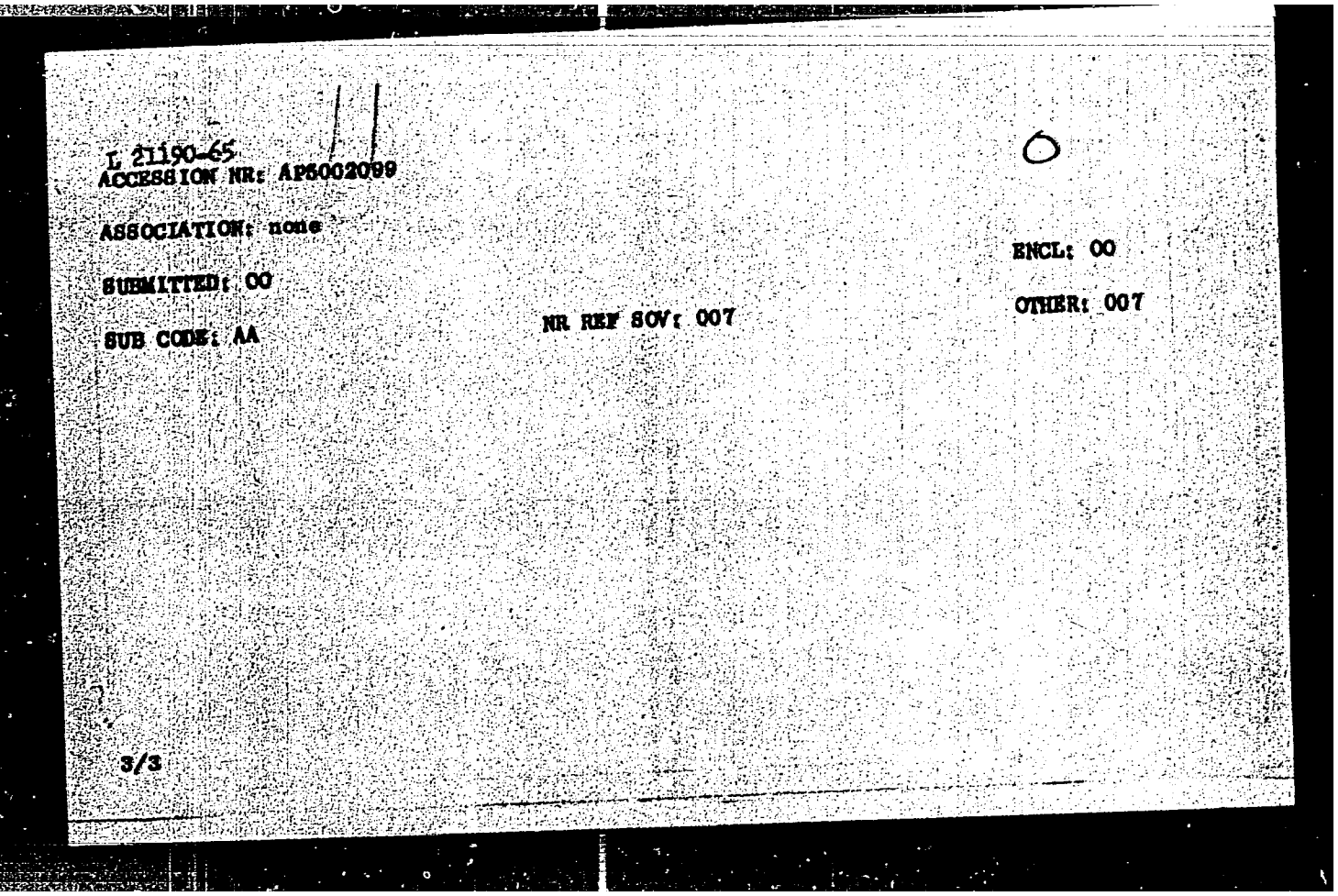
F(r,t) is the density of the particle source. Analysis indicates that the density n should have a maximum at $t = r^2/6\chi$, and the density should fall off according to the $t^{-3/2}$ law (at a fixed r: for example, the radius of the Earth's orbit). Some data are consistent with this (the solar c.r. burst of 23 Feb 1956), but some more recent data are better described by an exponential law: $n = ae^{-t/T}$, where T is a time constant that initially is of the order of tens of minutes and later of the order of hours. Further analysis of the data indicates that the coefficient of diffusion may depend not only on the energy of the particles but also on the distance from the Sun and the azimuthal angle of emission of the particles. The adduced formulas are used for an approximate analysis of some recent data, including the data from Explorer XII. The analysis indicates that the diffusion coefficient is a power function of the energy. Consideration is given to evaluation of the anisotropy of the solar c.r. flux; mathematical analysis shows that the anisotropy may vary with time, which is borne out by the available data on large solar c.r.bursts. Orig. art.has: 14 formulas and 6 figures.



L 21190-65
ACCESSION NR: AP5002099

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00

SUB CODE: AA NR REF SOV: 007 OTHER: 007

3/3

MIROSHNICHENKO, L.I.

School on cosmic physics at Alma-Ata. Vest. AN SSSR 34 no.5: 139-141 My '64. (MIRA 17:6)

BR

ACCESSION NR: AP4033779 S/0026/64/000/004/0109/0111

AUTHOR: Miroshnichenko, L. I.

TITLE: First All-Union School of Space Physicists

SOURCE: Priroda, 53, no. 4, 1964, 109-111

TOPIC TAGS: space physics, astronomy, superstar, radio galaxy, radio emission, gravitational collapse, Galaxy, interstellar space, solar physics, solar flare, magnetic field, magnetosphere, solar corpuscular stream

ABSTRACT: The First All-Union School of Space Physicists was held during the period 22 January-7 February 1964 and was attended by 50 young scientists from 16 observatories and physics institutes of the USSR; the school was held in Alma-Ata at the observatory of the Astrophysical Institute of the Academy of Sciences of the Kazakh SSR. I. S. Shklovskiy discussed superstars and the origin of radio galaxies. Great interest was evoked by a report of discovery of objects of variable radiation in the optical range with small linear dimensions in comparison with galaxies. This discovery appears to confirm the postulated existence of superstars with a mass of 10^8-10^9 solar masses and the theory of gravitational

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ACCESSION NR: AP4033779

collapse. The latter theory was advanced in the 1930's when it became clear that the degenerate gas within a star could not withstand the pressure of the outer layers, thus leading to a process of catastrophic compression (gravitational collapse). Gravitational collapse possibly is only a catalyst, leading to powerful electromagnetic mechanisms of acceleration of particles and emission of radio waves. The possibility that cosmic rays escape from the Galaxy as a result of an increase in the diffusion coefficient with an increase in particle energy was discussed. Among the topics discussed were solar X- and UV-radiation, the mechanism of chromospheric flares, solar radio emission, solar magnetic fields and generation of low-energy cosmic rays on the sun. The latter problem is of importance for predicting solar flare activity and estimating the radiation danger in interplanetary space. Special attention was given to interaction between a solar corpuscular stream and the earth's magnetosphere. It is important to know the mechanism of this energy transfer; it is assumed by some that the transfer is by shock waves arising in the earth's magnetosphere at the time of interaction with the nonuniform magnetic field of a stream. About one-third of the reports dealt with cosmic ray variations. It was noted that cosmic rays may

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ACCESSION NR: AP4033779

accumulate in interplanetary space and in certain cases collectively overcome magnetic fields with a strength up to 10^{-4} gauss. Orig. art. has: 1 figure.

ASSOCIATION: Institut zemnogo magnetizma i radiatsii AN SSSR (Institute of Terrestrial Magnetism and Radiation, Academy of Sciences SSSR)

SUBMITTED: 00 DATE ACQ: 07May64 ENCL: 00

SUB CODE: AS NO REF SOV: 000 OTHER: 000

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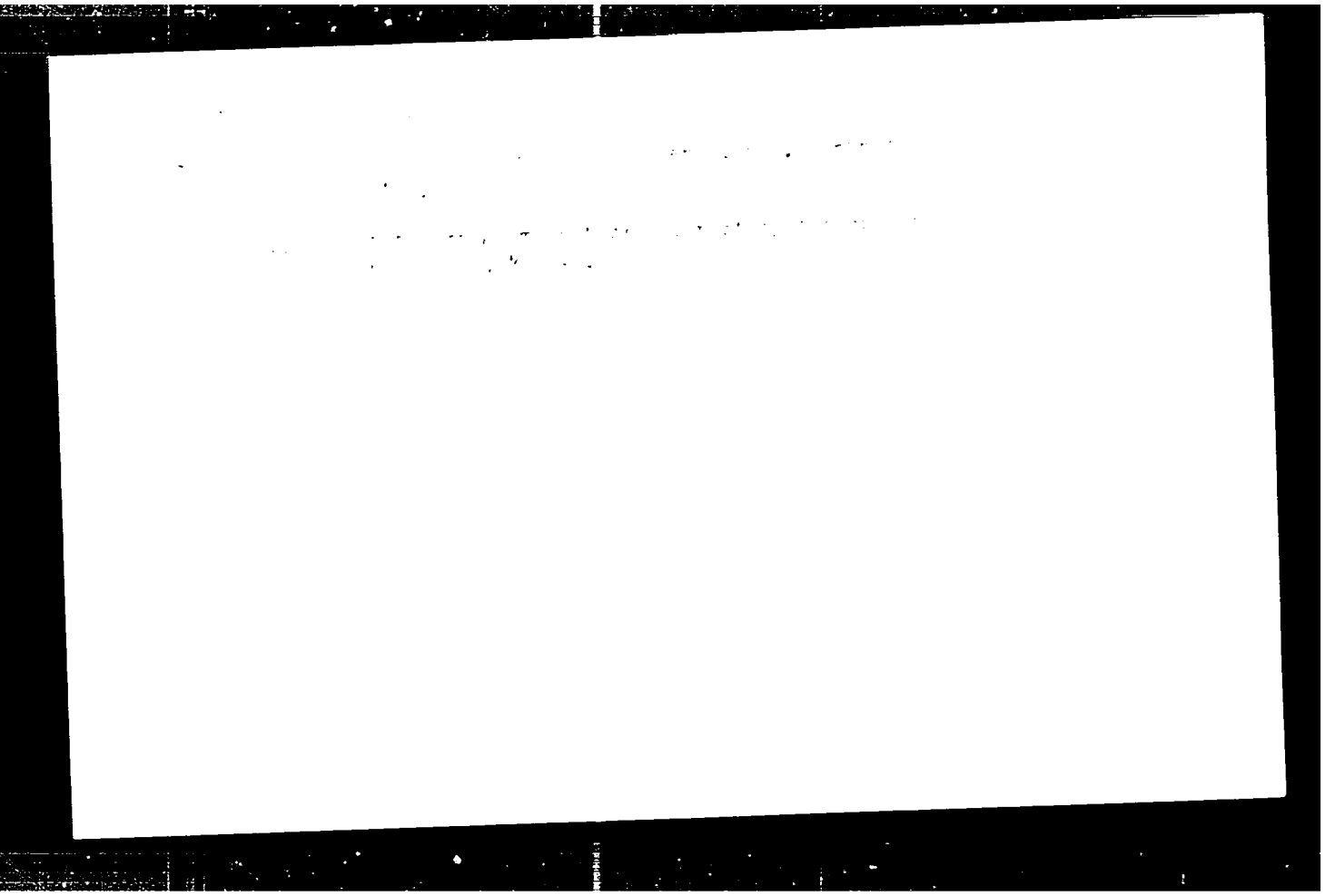

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Peb AFWL/ASD(a)-5/SSD/AFETR/ESD(t) GW/WS
ACCESSION NR: AP4000[illegible] S/0026/64/000/011/0135/0136

AUTHOR: Miroshnichenko, L. I.

TITLE: Anomalies in the magnetic field and the radiation belts of the earth B

SOURCE: Priroda, no. 11, 1964, 135-136

TOPIC TAGS: earth magnetic field, radiation belt

ABSTRACT: This article is a response to a letter to the editor of Priroda (Nature) requesting a discussion of the Brazilian magnetic anomaly and an explanation of the high level of radiation in that region. The author explains how the earth's magnetic field has been represented by a dipole, but that there are several areas on earth where the actual field differs appreciably from the theoretical. The largest is in Asia, extending its effect over Asia and Europe. The "Brazilian" anomaly is mainly over the South Atlantic, extending from the coast of Brazil almost to the southern tip of Africa. It is best called the South Atlantic anomaly. The field here is lower than normal, in contrast to Asia, where it is higher than normal. There is another anomaly to the south, near Antarctica, and three other smaller ones: North America, northern part of the Pacific Ocean, and the region of Spain. The exact cause of the anomalies is not known. Continental anomalies are possibly

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L 14734-65

ACCESSION NR: AP5000139

caused by large masses of magnetic rocks (or by eddy currents) disturbing the magnetic field. There is no consensus of opinion concerning the dimensions of such rock masses or of depths of such eddy currents. Some propose great depths, some shallow. The radiation belts are due to zones of charged particles. These particles do not reach the earth, but are trapped in the geomagnetic field, which acts on them like a magnetic analyzer, causing them to change path according to their energy (velocity). The South Atlantic magnetic low is precisely where the intensity of charged particles is greatest, through this magnetic deviation. The zones of charged particles, and hence the radiation belts, are a function of irregularities in the geomagnetic field. Orig. art. has: 2 figures.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery* i rasprostraneniya radiovoln AN SSSR, Moscow (Institute of Terrestrial Magnetism, Ionosphere, and Propagation of Radio Waves, AN SSSR)

SUBMITTED: 00 ENCL: 00

SUB CODE: ES NO REF SOV: 000 OTHER: 000

Card 2/2

L 20473-66 FBD/EWT(1) GW/WS-2

ACC NR: AP6012060 SOURCE CODE: UR/0384/65/000/006/0015/0015

22
B

AUTHOR: Miroshnichenko, L. I.

ORG: none

TITLE: The youngest source of cosmic radio waves

SOURCE: Zemlya i vselennaya, no. 6, 1965, 15

TOPIC TAGS: star, variable star, stellar radiation

ABSTRACT: This article is a detailed discussion of the radio source 1934-63. This object was investigated by Prof. I. S. Shklovskiy in 1965, who computed the secular change of the flux and the radio emission spectrum. This information was reported in Astronomicheskiy Zhurnal (Astronomical Journal), Vol. XLII, No. 1, 1965). Shklovskiy believes that the age of the source is scarcely more than 100 years. The indications are that the linear and angular dimensions of the source are varying rather rapidly. He also believes that the source represents an extremely early stage in the development of quasars appearing after explosions of enormous intensity. The absence of optical radiation in sources of this type probably can be attributed to light absorption in the expanding, very dense gas envelope ejected together with relativistic particles at the time of the explosion. When in the course of expansion of the envelope it becomes sufficiently thin, the optical radiation of the central region begins to pass through it and the quasar becomes observable. Orig. art. has: 11 figures. [JPRS]

SUB CODE: 03 / SUBM DATE: none

Card 1/1 Lfc

L 53661-65 EWT(l)/EWG(v)/FCC/EEC-4/EEC(t)/EWA(h) Po-4/Pe-5/Pq-4/Pae-2/Peb/
P1-4 GW

ACCESSION NR: AP5014099 UR/0203/65/005/003/0377/0383
523.877

46
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B

AUTHOR: Dorman, L. I.; Miroshnichenko, L. I.

TITLE: On the solar cosmic rays in the flare on 28 September 1961

SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 3, 1965, 377-383

TOPIC TAGS: chromospheric flare, solar active region, solar cosmic ray, magnetic storm, differential spectrum, proton, diffusion coefficient

ABSTRACT: A chromospheric flare in an active solar region occurred on 28 September 1961 and was recorded in Honolulu. This flare was accompanied by x-radiation and solar cosmic rays. A magnetic storm started 46 hr after the flare. An artificial satellite at a distance of 80,000 km from the earth measured the differential spectrum of protons with an energy more than 2 Mev for two days after the flare. Many experimental data and theoretical computations testify that the diffusion coefficient increases with increasing particle energy. A comparison of the theoretical curve of the diffusion coefficient with curves obtained by experiments shows good agreement. The diffusion coefficient of particles with an energy of 500 Mev was equal to that obtained in the atratosphere, measuring solar cosmic particles of another flare.

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ACCESSION NR: AP5014099

The size of magnetic nonhomogeneities, distances between them, and the field intensity depend upon the distance of the particles from the sun. One can assume that the translocation on scattering and the diffusion coefficient increase with the departure from the sun. The intensity of solar cosmic rays decreases by the exponential law after the maximum has been attained. The number of particles of various energies leaving the sun may be determined graphically from the dependence of the number of particles upon the particle energy, and from this the differential spectrum of particles may be found. A deformation of the particle spectrum takes place because of the energy decrease. Orig. art. has: 4 figures and 3 formulas. [EG]

ASSOCIATION: Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR (Institute of Terrestrial Magnetism, Ionosphere, and Propagation of Radio Waves, AN SSSR)

SUBMITTED: 02Jun64 ENCL: 00 SUB CODE: AA

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L 20464-66 EWT(1)/FCC/EWA(h) GW

ACC NR: AP6012057 SOURCE CODE: UR/0203/65/005/005/0910/0913

AUTHOR: Dorman, L. I.; Miroshnichenko, L. I.

ORG: Institute of Terrestrial Magnetism, the Ionosphere and Radio Wave Propagation

TITLE: Determination of the duration of emission of solar cosmic rays from the generation region

SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 5, 1965, 910-913

TOPIC TAGS: cosmic ray, solar radiation, solar corona, solar chromosphere

ABSTRACT: A diffusion model usually is used in the investigation of the propagation of solar cosmic rays in interplanetary space. The density change of solar particles in space and change with time is described approximately by a nonhomogeneous equation of the parabolic type. A solution is easily obtained. Source density is the quantity of particles emitted from the source (from the region of generation) in a unit time and in general is a function of ε_{kin} and t. It is determined by the character of generation of particles on the sun and their propagation in the solar corona and supercorona. At present there is no detailed information on the character of the dependence of f on ε_{kin} and t (f is source density); it is only known that $f(\varepsilon_{kin}, t)$ rapidly attains a maximum after the onset of a chromospheric flare and then drops off steeply approximately exponentially. In the case of low energies

Card 1/2 UDC: 523.165

L 20464-66
ACC NR: AP6012057

4

f(ε kin, t) can be drawn out considerably in time, which is partly responsible for the considerable lag of low-energy particles. Expressions are derived for approximating f. Since recent data indicate the possibility of accumulation of low-energy solar particles in interplanetary space in years of high solar activity, the authors have investigated the nonhomogeneous parabolic diffusion model equation in combination with their proposed expression for f for the case when emission occurs uniformly over a finite interval of time. With an increase of T (emission period) the maximum of the density curve is displaced in the direction of larger values t. The density increase occurs quite smoothly and the decrease after the maximum is quite steep. When $t \gg T$ the density decrease conforms to the diffusion law $\sim t^{-3/2}$; this is applicable to an instantaneous source. In the case of prolonged emission density increases to a maximum more slowly and then begins to decrease much more rapidly. The results make it possible to use the temporal variation of intensity change of solar cosmic rays to determine the duration of their emission from the region of generation. They also show that for study of the duration of emission of solar cosmic rays it is most important to have detailed measurements of the particle flux near the increase maximum, where the influence of T is manifested most strongly.

The authors thank Ye. A. Kornitskaya, T. L. Vinnikovaya, T. N. Utkinaya, and D. I. Fishchuk for carrying out the calculation. Orig. art. has: 7 figures, 8 formulas, and 1 table. [JPRS]

SUB CODE: 03, 04 / SUBM DATE: 29Dec64 / ORIG REF: 004 / OTH REF: 001

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ACCESSION NR: AP5003585 S/0026/65/000/001/0025/0034

53
34
B

AUTHOR: Miroshnichenko, L. I.

TITLE: Cosmic rays from the sun

SOURCE: Priroda, no. 1, 1965, 25-34

TOPIC TAGS: solar radiation, solar ultraviolet radiation, solar spectrum, solar energy, space radiation

ABSTRACT: A broad discussion of the effect of solar radiation upon the earth and in the regions of space between the earth and the sun is given. A great many geophysical occurrences upon the earth are, to a large extent, the direct results of ultraviolet, roentgen, and corpuscular radiation emanating from the sun. Two classes of corpuscular radiation are defined according to their characteristic energies; radiation of the second class (having energy greater than 10^6 electron volts) is discussed with respect to the density of its bombardment of the earth and its intensity. Methods of registering solar cosmic radiation are reviewed, including the basic Compton chamber and later developments such as the world-wide radiation observation network established during the International Geophysical Year. A plot is given of a typical radiation recording at nine geographical locations on 23

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L 27288-65

ACCESSION NR: AP5003585

February 1956; the radiation was measured by neutron monitors. Further discussion is presented of acceleration and emission of radiation from particular regions of the sun and of the chromatic and energy consistency of radiation from solar storms. The diffusion of solar cosmic rays was plotted relative to a scale of interplanetary distance (see Fig. 1 on the Enclosure), from measurements made by means of a diffusion model. The author comments on the possibilities of forecasting levels and types of solar radiation, denoting areas where coordinated research is needed in order to solve some of the complex problems involved. Orig. art. has: 7 figures.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery, i rasprostraneniya radiovoln AN SSSR (Institute of Earth Magnetism, Ionosphere and Propagation of Radio Waves, AN SSSR)

SUBMITTED: 00 ENCL: 01 SUB CODE: AA, ES

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Card 2/3

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ACCESSION NR: AP5003585

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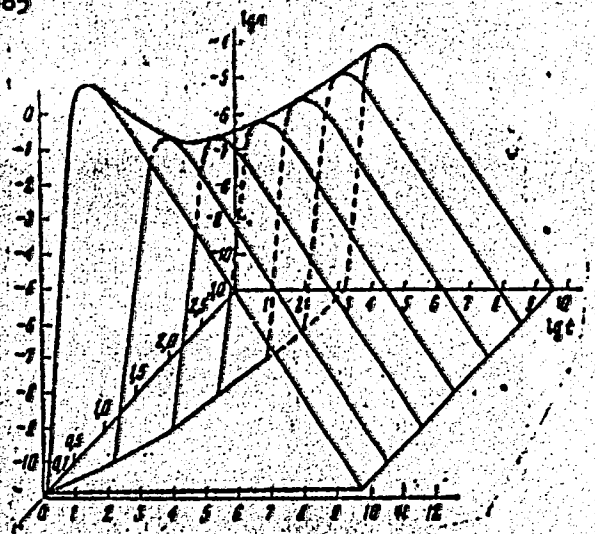

Fig. 1. Distribution of solar cosmic rays in interplanetary space, as calculated by diffusion model for various distances from the sun

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L 62988-65 EEC-4/EWG(v)/EWT(1) GW

ACCESSION NR: AP5016940 UR/0026/65/000/006/0080/0081

AUTHOR: Miroshnichenko, L. I.

TITLE: Solar flares and interplanetary space

SOURCE: Priroda, no. 6, 1965, 80-81

TOPIC TAGS: astronomy, astrophysics, space radiation, solar flare, solar radiation, solar particle, space magnetic field, solar radiation scattering/ Explorer 12 satellite

ABSTRACT: The solar flare of Sep. 28, 1961 registered by the American satellite Explorer-12 was described approximately with the aid of the diffusion model (explained in "Priroda", 1965, No. 1, p. 25-34) designed for the study of cosmic ray movements in space. Under certain conditions it is possible to determine the undistorted spectrum of solar particles. The particle scattering in the diffusion model is characterized by the mean free path Λ - a distance which a particle travels in the interplanetary magnetic field before its deviation from the initial course by a considerable angle. Λ was determined by the particle energy, the strength of field in the magnetic nonhomogeneities, their sizes, and distances

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ACCESSION NR: AP5016940

2

between them. The interpretation of data provided by measurements of the solar flare revealed that the nonhomogeneities of an interplanetary magnetic field can be imagined as huge magnetized clouds of solar matter. This conclusion resembles the hypothesis of the so-called forceless magnetic fields advocated by E. I. Mogilevskiy, according to which closed magnetic formations move from sun to earth with velocities varying from several hundreds to 2000 km per second. Their movement does not affect the propagation of high-energy solar particles moving with much greater velocities; i.e., scattering occurred on the nonhomogeneities, which may be considered stationary.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR (Institute of Earth Magnetism, Ionosphere, and Radio Wave Propagation, AN SSSR)

SUBMITTED: 00 ENCL: 00 SUB CODE: AA

NO REF SOV: 002 OTHER: 000

Card 2/2

L 6944-66 EWT(1)/FCC/EWA(h) GW

ACC NR: AP 5026223 SOURCE CODE: UR/0048/65/029/010/1810/1812

37

AUTHOR: Dorman, L.I.; Miroshnichenko, L.I. B

ORG: none

TITLE: Solar cosmic rays from the flare of 28 September 1961 and the properties of interplanetary space (Report, All-Union Conference on Cosmic Ray Physics held at Apatity 24-31 August 1964)

SOURCE: An SSSR. Izvestiya, Seriya fizicheskaya, v.29 no.10, 1965, 1810-1812

TOPIC TAGS: cosmic ray, solar flare, physical diffusion, interplanetary space, non-homogeneous magnetic field

ABSTRACT: The measurements with Explorer 12 of the cosmic ray intensity during the 28 Sept. 1961 Solar flare were compared with the predictions of the author's diffusion theory of cosmic ray propagation (Geomagnetism i aeronomiya, 5, No.3,337 (1965). Agreement could be obtained by assuming that the particles began to be emitted when the x-ray burst reached its maximum some 15 minutes after the onset of the solar flare. The scattering mean free path was almost independent of particle energy for energies from 10 to 500 MeV, and was approximately 7.5×10^{11} cm. The differential emission spectrum was found to be $5.6 \times 10^{34} E^{-2}$ protons/MeV. where E is the kinetic energy. A lower limit of 5×10^{-6} G was found for the strength of the magnetic field inhomo-

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L 6944-66

ACC NR: AP 5026223 O

geneities. If one assumes on the basis of measurements with Mariner 2 that the strength of the magnetic field inhomogeneities is 10^{-4} G one finds that a linear dimension of such an inhomogeneity is approximately 4×10^{10} cm, which is about half the distance between the inhomogeneities. Orig. art. has: 8 formulas.

SUB CODE: AA/ SUBM DATE: 00/Oct 65 ORIG. REF: 001 OTH REF: 001

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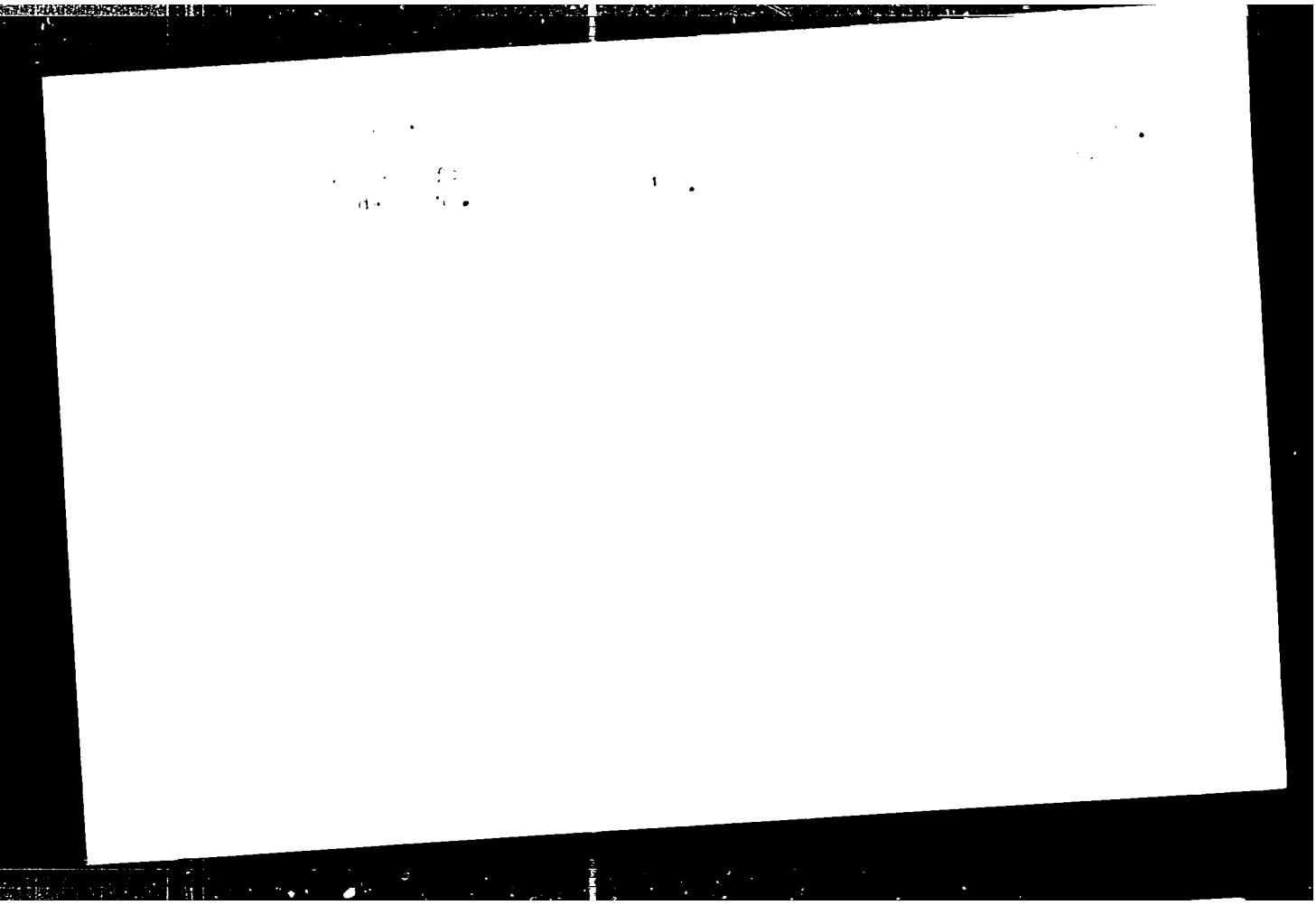
Card 2/2



MIROSHNICHENKO, L.I. (Moskva)

Sun as a "broom" for cosmic rays. Priroda 54 no.9:118-119 S '65.
(MIRA 18:

L 39895-66 EWT(1)/EWA(h)/FCC GW/GD-2
ACC NR: AP6018097 SOURCE CODE: UR/0203/66/006/002/0215/0222

AUTHOR: Dorman, L. I.; Miroshnichenko, L. I.

ORG: Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation, AN SSSR (Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln)

TITLE: Method for determining the spectrum of solar cosmic rays in the high-energy region

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 2, 1966, 215-222

TOPIC TAGS: cosmic ray, cosmic ray shower, cosmic ray measurement, solar radiation, ionization chamber, solar spectrum

ABSTRACT: This paper presents the results of computations of the integral multiplicity of generation for a neutron monitor and an ionization chamber. The computations for the neutron monitor were made using the latitude effect of the neutron component at sea level. The integral multiplicity of generation for the ionization chamber was computed on the basis of the latitude effect of the burst of 23 February 1956. On the basis of the computed generation multiplicities the authors determined the spectrum of solar cosmic rays at the boundary of the atmosphere for the burst of 23 February 1956 in the region of rigidities 1-15 Bv. The orig. art. has: 3 figures and 27 formulas. [JPRS]

SUB CODE: 03, 04 / SUBM DATE: 04Jan65/ ORIG REF: 005/ OTH REF:

Card 1/1

SOURCE CODE: UR/0030/66/000/010/0085/0086

ACC NR: AT7007603

AUTHOR: [illegible]

ORG: none

TITLE: International summer school on cosmic radiation

SOURCE: Akademiya nauk. Vestnik, no. 10, 1966, 85-86

TOPIC TAGS: cosmic ray, radiation belt, solar wind

SUB CODE: 03,04

ABSTRACT:

An international summer school on the problems of cosmic radiation, organized by the Bulgarian Academy of Sciences, was held at Varna during the period 25 May-15 June. It was attended by scientists of Bulgaria, Hungary, East Germany, Poland, USSR and Czechoslovakia. About 40 lectures were presented and discussed. There also were two special discussions on the generation and propagation of solar cosmic rays and the origin of cosmic rays. S. N. Vernov made a report on the problems involved in study of cosmic radiation. Study of the radiation belts has introduced much clarity into a variety of geophysical phenomena and into the mechanism of acceleration of charged particles -- protons and electrons. The betatron mechanism successfully describes the acceleration of protons, but for electrons it is necessary to find some mechanism of their leakage from the radiation belts. Quarks should be accelerated quite effectively in space due to the smallness of ionization losses for a particle with a 1/3 charge. L. I. Dorman presented a new classification of cosmic ray variations which takes into account their complex

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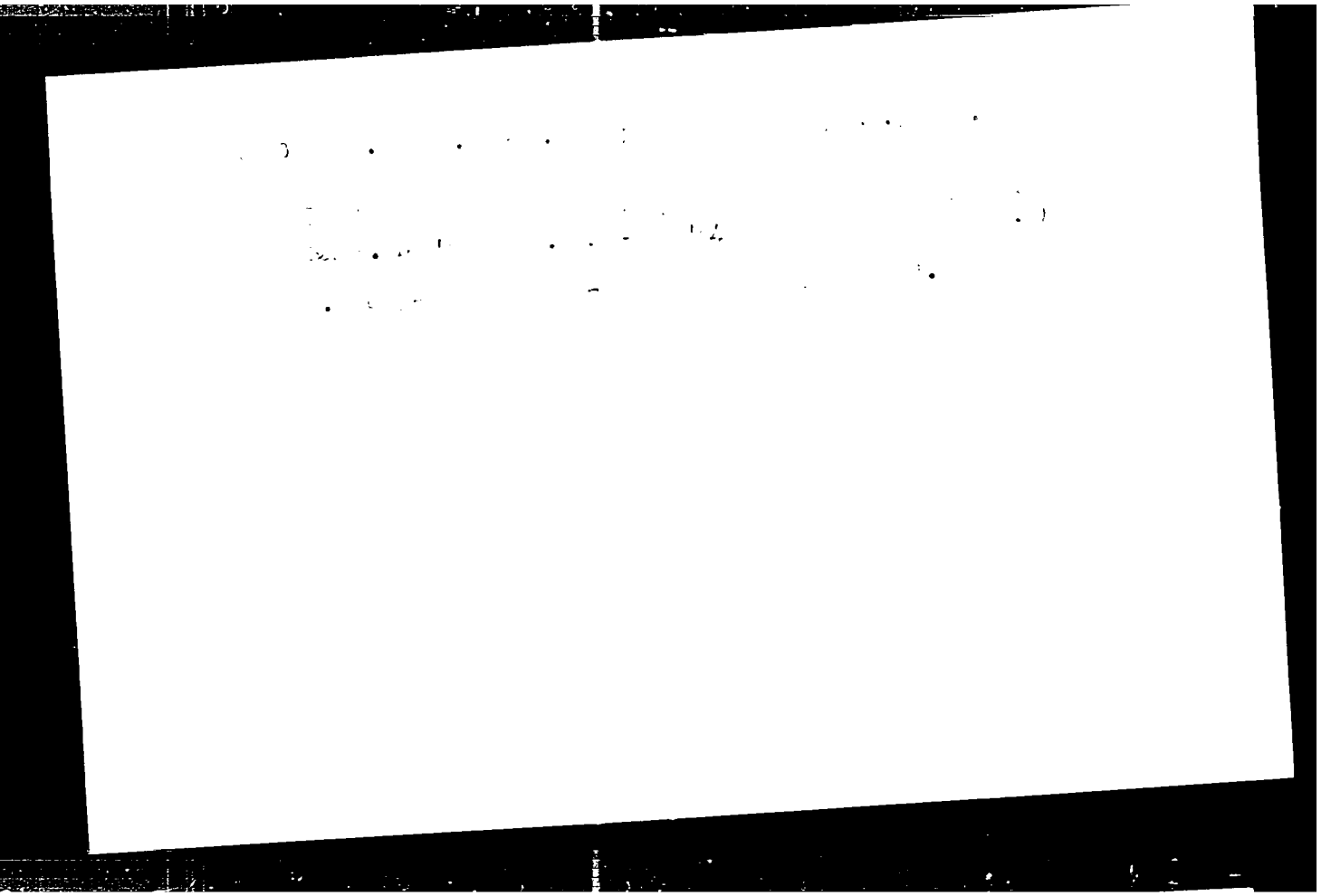
ACC NR: AP7007605

mutual interference. He also presented a general theory of modulation effects in the approximation of anisotropic diffusion, in particular discussing the 11-year, 27-day and solar-diurnal variations. The modulation amplitude is essentially dependent on the size of the modulating region, diffusion coefficient and velocity of the solar wind. In the case of the 11-year variati... the modulation process can be considered stationary for particles with a high magnetic rigidity and with a sufficiently great radius of the diffuse region (about 100 astronomical units). Since the diffusion coefficient in the nonrelativistic region is essentially dependent on the hardness of the particles the amplitude will be different for particles with different charges. S. N. Vernov told of the dependence of the intensity of low-energy cosmic rays on solar activity and distance to the sun. Cosmic ray intensity changes irregularly with the cycle of solar activity and correlates with the jump in sunspot number (this conclusion was drawn on the basis of stratospheric measurements). The existence of a radial gradient of cosmic rays in interplanetary space can be masked by temporary intensity variations during the measurement period. G. M. Idlis presented present-day ideas on the structure and evolution of the Metagalaxy. G. Ye. Kocharov gave a report on neutrino astrophysics and noted that the break in the primary cosmic ray spectrum in the region of energies 10^{15}-10^{16} eV can be attributed to the interaction of neutrinos and protons of superhigh energies. V. L. Ginzburg emphasized the need for work in the fields of X-ray and gamma-ray astronomy. [JPRS: 39,180]

Card 2/2



MIROSHNICHENKO, L.P.

Biology of wild fodder vetches under cultivation. Ukr.bot.zhur. 17 no.2:43-49 '60. (MIRA 13:11)

1. TSentral'naya Sinel'nikovskaya selektsionno-issledovatel'skaya stantsiya Vsesoyuznogo nauchno-issledovatel'skogo instituta kukuruzy. (Vetch)

BORZYAK, P.G. [Borziak, P.H.]; MIROSHNICHENKO, L.S. [Myroshnychenko, L.S.]; SARBEY, O.G. [Sarbei, O.H.]

Photoelectron emission of germanium and silicon in the amorphous and crystalline states. Ukr.fiz.zhur. 4 no.4:524-525 Jl-Ag '59. (MIRA 13:4)

1. Institut fiziki AN USSR.
(Germanium) (Silicon) (Photoelectricity)

81778

S/181/60/002/02/22/033
B006/B067

9.3120

AUTHORS: Borzyak, P G., Miroshnichenko, L. S., Sarbey, O G

TITLE: Photoelectronic Emission of Germanium and Silicon in the Amorphous and Crystalline States

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 2, pp. 314-318

TEXT: The germanium and silicon samples examined by the authors were produced by vaporizing films onto metallic backings. The germanium films were sputtered onto tungsten backings, cold as well as at T = 450°C. Electron diffraction studies showed that the films sputtered at room temperature were amorphous, and crystalline at increased temperature An investigation of the contact potential differences between the amorphous and crystalline films produced under otherwise equal conditions showed that the thermoelectronic work function of the latter was some ten electronvolts smaller than that of the former. Fig. 1 shows the change of the work function $\Delta\varphi(t)$ with time of simultaneously sputtered BaO for crystalline (Curve 1) and amorphous (Curve 2) films. The values of the primary photoelectronic work function of crystalline germanium films are

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Photoelectronic Emission of Germanium and Silicon in the Amorphous and Crystalline States

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lower than those of amorphous ones. Experiments were also made with monocrystalline p- and n-type germanium samples. The preparation of these samples is described; the pure surfaces of the single-crystal samples were obtained in such an evacuated tube as shown in Fig. 2. Fig. 3 shows the spectral characteristics of the photoelectronic emission of three crystalline germanium samples with reduced work function. Curve 1 refers to high-resistance single-crystal germanium, Curve 2 to n-type Ge single crystals with 3 ohm cm, and Curve 3 to a crystalline film. Fig. 4 gives a comparison of the spectral characteristics of amorphous and crystalline germanium. Similar investigations were also made with silicon. The amorphous films were obtained by sputtering onto a backing at room temperature, the crystalline ones were obtained from a p-type single crystal in high vacuum. The spectral characteristics of these samples are also shown in Fig. 4. For comparison, this diagram also shows the characteristics of the spectral sensitivity of W - BaO photocathodes and two Cs-Sb samples. In contrast to amorphous germanium, crystalline germanium shows a weak minimum in the short-wave region which corresponds to the maximum of the spectral characteristic of the optical

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Photoelectronic Emission of Germanium and Silicon in the Amorphous and Crystalline States

S/181/60/002/02/22/033
B006/B067

reflection of crystalline germanium. Amorphous samples do not even have this maximum. Since optical absorption in silicon is weaker than in germanium, the photoelectronic sensitivity of silicon is also lower. Such a parallel cannot be observed in a comparison of germanium and Cs,Sb. In conclusion, the authors thank Prof. D. N. Nasledov for the preparation of the Si single crystals, Ye. I. Miselyuk and A. N. Kvasnitskaya for the supply of the germanium single crystals, and R. M. Klaykina for the conduction of the electron diffraction studies. There are 4 figures and 4 references: 3 Soviet and 1 American.

ASSOCIATION: Institut fiziki AN USSR Kiyev (Institute of Physics of the AS UkrSSR Kiyev)

SUBMITTED: April 2[illegible] 1959

Card 3/3

BIDULYA, P.N.; SHUL'TE, G.Yu.; PELIKH, V.N.; MLADOVA, A.A.; SHERSTYUK, A.A.; MIROSHNICHENKO, L.S.

Nonmetallic inclusions in malleable cast iron. Lit. proizv. no.1: 25-27 Ja '61. (MIRA 14:1)
(Cast iron--Defects) (Nonmetallic materials)

9.4175
24.3950

24919

AUTHORS: Borzyak, P. G., Mir [illegible]

TITLE: Optical properties and [illegible]

PERIODICAL: Fizika tverdogo tela, v [illegible]

TEXT: Mn_3Si_2, the intermetallic [illegible] thoroughly heretofore, has been [illegible] tric and optical properties. The Mn_3Si_2 [illegible] were prepared in different ways from pure [illegible] initial substances had been supplied [illegible] neorganicheskoy khimii AN USSR (Institute [illegible] AS UkrSSR) by V. P. Zosimovich. The [illegible] prepared in three different ways were the [illegible] viously (FTT, II, p. 45 and p. 42 [illegible] optical constants: the measurement [illegible] coefficents of light under extinction from [illegible]

Card 1/4

Optical properties and photoele

of an СФ-4 (SF-4) spectrophotometer
254 - 578 mμ spectral range, while
the 450 - 1100 mμ range. An ИСК-
λ > 1000 mμ. Since absorption is
were used for different spectral
light scattering was already
the experiments was set at
of self-absorption, only the
interference method. Films
the self-absorption region the
tric constant at high frequencies
grams (1-R) = f(hν), light with
in layers of 5 mμ. The
emission (with SF-4 and ИСП-28
lamp of the type ПРК- (PRK-4 ;
chromator was determined by means
were measured by a d-c amplifier
compared with those of Na,Sb

Card 2/4

24919

Optical properties and [illegible]

Characteristic [ev]	Na_2KSb	Na_2CsSb
φ_{photo}		
ΔE		
E'_{affin}		
$\Delta\varphi$		
E'_{affin}		
φ'_{photo}		

The data for Na_2KSb are taken from Y. F. [illegible] laboratory as the author[illegible] of the initial surfaces, E'_{affin} [illegible] duced by $\Delta\varphi$, ΔE is the forbidden-band width. A. F. [illegible] Yesel'son are mentioned. [illegible] 10 Soviet-bloc and 4 non-Soviet-bloc [illegible]

Card 1/4

24919

Optical properties ...

Publications read as follows: ... P. Görlich. Recent Advances in ... "Advances ... Electron Physics", Acad. Press ... 114, 1958.

ASSOCIATION: Institut fiziki AN UkrSSR ... UkrSSR Kiyev

SUBMITTED: October ... revision.

Card 4/4

S/109/61/006/004/024/025
E140/E135

9,3120

AUTHOR: Miroshnichenko, L.S.

TITLE: Photoelectronic emission of LaB_6

PERIODICAL: Radiotekhnika i elektronika, Vol.6, No.4, 1961, p. 673

TEXT: The results given in this paper have been presented at the All-Union Conference on Cathode Electronics, Moscow, 1959. The author studied the photoemission characteristics of specimens with various surface states. The specimens were inside sealed tubes, heating was by electron bombardment to a temperature of 1200 °C for a duration of about 20 hours. The results are plotted in the figure. Curve 1 applies to specimens with the surface in the initial state and placed for a long period in an atmosphere of residual gases with a pressure of about 10^{-8} mm Hg. Curves 2 and 3 apply to surfaces which have been purified to different degrees (by heating to about 1100 °C) (dashed line curves represent the results of Lafferty, Ref.3). The work function values determined by the method of Fauler were respectively 3.55, 2.89 and 2.77 eV. Optimal coatings of the initial surfaces with molecules of

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E140/E135

Photoelectronic emission of LaB_6

barium oxide leads to a shift in the spectral characteristics to the positions of the curves 1', 2' and 3' and to changes in the work function values: 2.07, 2.12 and 2.24 eV. Surfaces that have been most purified showed the smallest optimal reduction in the work function, 0.53 eV, which is very small compared to the reduction of the work function of ordinary metals (tungsten, gold, tantalum, etc). Results obtained with GdB_6 specimens contradict data given in the literature; the spectral characteristic for the surface in the purified state is shown by the dashed line curve. The work function is approximately 4.6 eV as compared to 2.1 eV quoted by G.V. Samsonov (Ref.1). By means of BaO the work function of the specimen was reduced to slightly over 2 eV.

Acknowledgements are expressed to P.G. Borzyak, G.V. Samsonov and Yu.B. Paderno for their assistance.

There are 1 figure and 4 references: 2 Soviet and 2 English.

ASSOCIATION: Institut fiziki AN USSR
(Institute of Physics, Ukr.SSR)

SUBMITTED: November 9, 1960

Card 2/3