35946
S/126/62/013/001/005/018
E021/E580

24,7700

AUTHORS: Palatnik, L.S., Boyko, B.T., Fuks, M.Ya. and
Pariyskiy, V.B.

TITLE: Electron diffraction study of the substructure of
thin films of aluminium, silver and gold, condensed in
vacuo

PERIODICAL: Fizika metallov i metallovedeniye, v.13, no.1, 1962,
71-76

TEXT: The influence of film thickness and substrate tempera-
ture on the mean size of mosaic blocks was investigated in thin
condensed films of aluminium, silver and gold. Aluminium of
99.999% purity and silver and gold of 99.9% purity was used.
Evaporation was carried out from a cone-shaped tungsten spiral at
rates of 4×10^{-4}, 5×10^{-4} and 10^{-4} g/sec for Al, Ag and Au,
respectively. Condensation occurred on a heated glass plate. The
films were separated by immersion in distilled water and caught on
metallic holders of foil containing 0.2-0.4 mm holes. The films
were examined by electron diffraction using the (220) ring. The
effect of heating the films was studied. The true diffraction
broadening was found by harmonic analysis (Ref.6: B.Ya.Pines
Card 1/3   ---.   ine mosaic

Electron diffraction study ...   S/126/62/013/001/005/018
                                   E021/E580

Ostrofokusnyye rentgenovskiye trubki i prikladnoy rentgeno-
strukturnyy analiz (Fine focussing X-ray tubes and applied X-ray
structural analysis), GITTL, 1955). The main contribution to the
broadening arises from the small size of the mosaic blocks. When
there is a marked difference in the coefficients of expansion of
the holder and the film, the latter is subjected to plastic
defor tion in the process of heating which is accompanied by a
refining of the blocks. With rapid heating, recyrstallisation
does not remove this effect. Therefore, thermal coefficients of
the film and holding material should be approximately equal. With
increasing film thickness of aluminium and silver, the broadening
of the lines decreases both in the initial and annealed states.
Continuous heating of aluminium films up to 150°C in 2-3 min leads
to refining of the mosaic blocks, whereas heating to higher than
150°C results in coarsening. Heating silver and gold in the region
20-400°C also results in coarsening. The mean linear dimension of
the blocks in aluminium film is about half that in silver and gold
films, and coarsening during heating takes place less intensively
in aluminium. The probable reason for this difference is the
formation of highly dispersed aluminium oxide. The mosaic
Card 2/3

Electron diffraction study ...   S/126/62/013/001/005/018
                                        E021/E580

structure is more dispersed in condensed films than in ordinary
massive samples after cold deformation. The high dispersion of
the blocks and their strong misorientation can be judged from the
high strength of thin condensed films.   There are 4 tables.

ASSOCIATION: Khar'kovskiy politekhnicheskiy institut im.
               V. I. Lenina
               (Khar'kov Polytechnical Institute imeni V.I.Lenin)

SUBMITTED: May 20, 1961

Card 3/3

24475
S/126/61/011/006/001/011
E021/E306

24.7200

AUTHORS: Palatnik, L.S., Fuks, M.Ya., Boyko, B.T. and
              Pariyskiy, V.B.

TITLE: Electronographic Study of Substructure of Thin
              Condensates of Aluminium by the "Microbeam" Method

PERIODICAL: Fizika metallov i metallovedeniye, 1961, Vol. 11,
              No. 6, pp. 864 - 869 + 1 plate

TEXT: The electron microbeam is suitable for studying
individual reflections from crystallites of dimensions 100 -
300 Å and for evaluating the relative misorientation between
crystallites. Thus the electronographic microbeam is a
direct method of observing the substructure of crystals.
Aluminium films 60 - 200 Å thick condensed in vacuo on a
cold surface were studied by this technique. The films were
transferred to aluminium foil with holes of 20 to 70 μ^2. The
thickness of the film was estimated by a photometric method
with an accuracy of 10%. Photographs were taken in a high-
temperature electronograph with electrostatic focusing. The
films were heated at a rate of 30 $^{\circ}$C/min and electron-diffraction
Card 1/6

24475

S/126/61/011/006/001/011
E021/E306

Electronographic Study ....

patterns were taken at room temperature, 200 300, 400 and
450 °C. The mean linear dimension of a coherent reflecting
region for films heated to 400 °C was 140 - 335 Å. This is
similar to the mean dimensions of mosaic blocks determined
by X-ray investigation of deformed polycrystals.
The Debye ring at 20 and 200 °C appears continuous and diffuse.
Heating to 300 °C results in the appearance of intensive spots
but the general background is still retained. At 400 °C this
background is very weak and at 450 °C it disappears. The
number of spots remains practically unchanged on increasing
the temperature from 300 to 450 °C. Photographs are included
for the (111) and (200) lines taken from a film 125 Å thick
on an area of 20 µ², heated to 300, 450, 400 and 450 °C (X15).
At a magnification of 60, spots of increased blackness can be
seen on the electron-diffraction patterns taken at 20 and 200 °C.
The complete results are tabulated. The mean linear dimension
of the crystallites was calculated from two formulae:

Card 2/6

Electronographic Study ....

S/126/61/011/006/001/011
E021/E306

$$L_{cp} = \sqrt[3]{v_o}$$

(2)

..nd

$$L = \sqrt{v_o/h}$$

(3)

where v_o is the mean volume of the region giving coherent
reflections and
h is the film thickness.
The size of the crystallites increases with increase in
temperature. The degree of misorientation of crystals in
condensed films is somewhat greater than the values for
ordinary crystals. This may explain the high resistance to
plastic deformation and high rate of diffusion of such films.
There are 2 figures, 1 table and 11 references: 7 Soviet
and 4 non-Soviet. The two English-language references
quoted are: Ref. 10. Quarrel, A.G., Roebuck, J.S. Proc. Roy.

Card 3/6

24475

S/126/61/011/006/001/011
E021/E306

Electronographic Study ....

Soc., 1954, A.185, 676; Weaver, C., Hill, R.M. Advances in
Physics, 1959, Vol. 8, 575.

ASSOCIATION: Khar'kovskiy gosudarstvennyy universitet im.
                A.M. Gor'kogo (Khar'kov State University im.
                A.M. Gor'kiy)
                Khar'kovskiy politekhnicheskiy institut
                im. V.I. Lenina (Khar'kov Polytechnical
                Institut im. V.I. Lenin)

SUBMITTED: January 21, 1961

Card 4/6

L. 29986-66   EWT(1)/EWT(m)/T/EWP(t)/ETI   IJP(c)   JD/GG
ACC NR: AP6012490   SOURCE CODE: UR/0181/66/008/004/1227/1238
                                                                                    50
AUTHOR: Pariyskiy, V. B.; Lubenets, S. V.; Startsev, V. I.   B

ORG: Physicotechnical Institute of Low Temperatures, AN UkrSSR, Khar'kov (Fiziko-
tekhnicheskiy institut nizkikh temperatur AN UkrSSR)

TITLE: Mobility of dislocations in single-crystal potassium bromide
                                                                          21
SOURCE: Fizika tverdogo tela, v. 8, no. 4, 1966, 1227-1238

TOPIC TAGS: potassium bromide, single crystal, crystal dislocation phenomenon,
shear stress, crystal deformation

ABSTRACT: In view of the fact that the experimentally observed connection between
the speed of dislocations and the applied voltage in these crystals have not yet
been fully explained theoretically, the authors have attempted to obtain different
information on the character of dislocation motion in single-crystal KBr, in which
the motion of dislocations has not been heretofore investigated. The tests were
made with annealed single crystals with dislocation density 10^3 cm^{-2} and with total
impurity content 2×10^{-2}%. The dislocation structure was exhibited by means of an
etching procedure described by the authors earlier (Kristallografiya v. 7, 328,
1962). The motion of the dislocations was observed by applying mechanical loads in
different manners (compression with a deformation machine, static load producing

Card 1/3

L 29986-66

ACC NR: AP6012490

pure flexure in an etchant, pulsed loading of long duration (2×10^{-2} sec and above)
or short duration (10^{-4}-10^{-6} sec)). In addition, a special system was developed,
which made it possible to produce a rectangular loading pulse and measure the mag-
nitude and duration of the applied load directly during the loading, and regulate
the applied load (Fig. 1). The operation of the system is briefly described. The
results show that below a definite shear stress the dislocations hardly move, but
above approximately 80 g/mm^2 the dislocation velocity increases rapidly and then
increases at a slower rate. There was little difference betweed edge and screw
dislocations. The results exhibited a certain similarity with previously observed
data for NaCl and LiF. The obtained experimental dependence of the dislocation
speed on the applied load cannot be described in terms of a single thermal activa-
tion process with a constant activation volume, since this volume decreases by
approximately 400 times on going from small velocities to larger velocities. The
results also confirm the effects proposed by W. G. Johnston and J. J. Gilman (J.
Appl. Phys. v. 30, 128, 1959), wherein the dislocations are first accelerated
within a very short path (smaller than 1.7 μ), after which they move uniformly.
The delay of the dislocation motion following application of pulsed load decreases
exponentially with increasing load. Orig. art. has: 9 figures and 6 formulas.

Card 2/3

L 29986-66

ACC NR: AP5012490

Fig. 1. Pulsed loading
equipment for KBr crystals.
1 - Force relay, 2 - time
relay, 3 - power source,
4 - power supply block,
5 - tension metering equip-
ment, 6 - tension gauge,
7 - dynamotor, 8 - sample,
9 - oscilloscope.
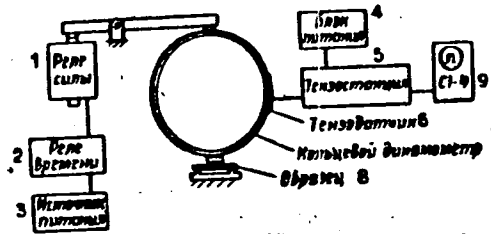
SUB CODE: 20/   SUBM DATE: 26Jul65/   ORIG REF: 008/   OTH REF: 007

Card 3/3

L 13033-63   EWT(1)/EWP(q)/EWT(m)/BDS   AFFTC/ASD/ESD-3   JD/JW/JG
ACCESSION NR: AP3000617   S/0181/63/005/005/1377/1385

AUTHOR: Pariyskiy, V. B.; Landau, A. I.; Startsev, V. I.

TITLE: Jerky motion of dislocations in single crystals of LiF

SOURCE: Fizika tverdogo tela, v. 5, no. 5, 1963, 1377-1385

TOPIC TAGS: dislocation, LiF, barrier, etching test, dislocation loop, annealing, dislocation motion, jerk, irregular motion, dislocation movement, dislocation jump

ABSTRACT: The authors have made a study of jerky movements of dislocations in single crystals of LiF with various impurity contents. The samples were given preliminary annealing treatment for 5 to 24 hours at 750-800C and then etched, either by a weak aqueous solution of Fe ions or by an etchant such as SR-4. No external stress was applied. The etching tests revealed multiple dislocation loops and jerky displacement of the ends of the loops. Time intervals between successive jumps were measured, and the velocity of dislocation motion proved to be on the order of 5 microns per second. The experimental results show that between repeated etchings of a particular crystal the intensity of jerky motion drops very markedly. Hardly a single new jump will occur between two successive etchings within a period of 1-2 minutes. The authors reject a number of possible

Card 1/2

L 13033-63
ACCESSION NR: AP3000617

3

explanations previously proposed, and they conclude that the jerky motion is associated with periodic restraints placed on the dislocations at barriers. Such barriers may be dislocations of other slip systems, packing defects, accumulation of vacancies or impurity atoms, or other flaws. These barriers are removed successively by etching the crystal surface, freeing the end of the dislocation to move till it is pinned at a new barrier. "In conclusion, the authors express their gratitude to L. M. Soyfer for his aid in the work and also to Y. M. Borzhkovskaya for getting the manuscript ready for printing." Orig. art. has: 5 figures, 2 tables, and 2 formules.

ASSOCIATION: Fiziko-tekhnicheskiy institut nizkikh temperatur AN USSR, Khar'kov (Physicotechnical Institute of Low Temperatures, Academy of Sciences, USSR)

SUBMITTED: 27Dec62   DATE ACQ: 11Jun63   ENCL: 00

SUB CODE: 00   NO REF SOV: 004   OTHER: 005

Card 2/2

PARIYSKIY, Yu., starshiy nauchnyy sotrudnik

Radio telescopes listen to the universe. Radio no. 3-4 '55.
(MIRA)

1. Glavnaya astronomicheskaya observatoriya, Pulkovo.

PARIYSKIY, Yu. M., inzh.

Theory of combination drilling. Izv. vys. ucheb. zav.; gor.
zhur. no.9:106-114 '61.   (MIRA 15:10)

1. Leningradskiy ordena Lenina i ordena Trudovogo Krasnogo
Znameni gornyy institut imeni G. V. Plekhanova. Rekomendovana
kafedroy tekhniki razvedki.

(Boring)

PARIYSKIY, Yu. M.

Cand Tech Sci - (diss) "Study of the performance of boring bit
in rotary-impact drilling." Moscow, 1961. 23 pp; (Ministry of
Higher and Secondary Specialist Education RSFSR, Moscow Geological
Surveying Inst imeni S. Ordzhonikidze); 160 copies; price not
given; (KL, 7-61 sup, 243)

PARIYSKIY, Yu.M.

Preparation of steel shot boring pellets by means available
to geological prospecting parties. Sbor.nauch.rab.stud. LGI
no.2:74-85 '57.
                                        (MIRA 13:4)

1. Leningradskiy ordenov Lenina i Trudovogo Krasnogo Znameni
gornyy institut im. G.V.Plekhanova. Predstavlen prof. F.A.
Shapshevym.
          (Prospecting--Equipment and supplies)
          (Boring--Equipment and supplies)

PARIYSKIY   Yu. M.

Breakage of rocks in drilling. Zap. LGI 41 no.2:69-79 '61.
(MIRA 16:5)

(Boring) (Rocks--Testing)

PARIYSKIY, Yu.M.

Developing theoretical principles of vibration and combination
drilling. Zap. LGI 41 no.2:80-90 '61.   (MIRA 16:5)
(Boring)

Translation from: Referativnyy zhurnal. Fizika, 1959, Nr 12, p 247

SOV/58-59-12-28202

AUTHORS: Korol'kov, D.V., Pariyskiy, Yu.N., Soboleva, N.S.

TITLE: On the Measurements of Magnetic Fields and Other Physical Characteristics in Regions Over the Sunspots From Radio-Observations

PERIODICAL: Solnechnyye dannyye, 1958 (1959), Nr 9, pp 65 - 69

ABSTRACT: A method for estimating the magnetic field, kinetic temperature and electronic density from polarization observations of the sun's radio-emission, is given for a sufficiently wide spectral cm band, using instruments with a high resolving power. For purposes of illustration, an example of processed material on the 1959 eclipse is presented. The possibility of regular observations of magnetic fields with the Large Pulkovo radio-telescope, is pointed out.

Card 1/1

SOV/33-35-4-18/25

3(1)
AUTHORS: Salomonovich, A.Ye., Pariyskiy, Yu.N., Khangil'din, U.V.

TITLE: Observations in the Millimeter Diapason of the Total Solar
             Eclipse of June 30, 1954 (Nablyudeniye polnogo solnechnogo
             zatmeniya 30 iyunya 1954 g. v millimetrovom diapazone voln)

PERIODICAL: Astronomicheskiy zhurnal,1958, Vol 35, Nr 4, pp 659-661(USSR)

ABSTRACT: The observations were carried out in the neighbourhood of
             Novo-Moskovsk (Ukr.SSR) during an expedition of the Physical
             Institute imeni P.N.Lebedev of the Academy of Sciences of the
             USSR. The authors thank Ye.K.Karlova for the preparation of
             the apparatus and for the assistance during the performance
             of the observations.
             The reduction of the eclipse curve enabled the estimation of
             the height of the effective layer of emission above the photo-
             sphere $(6 \cdot 10^{3} km \pm 30\%)$ and the distribution of radio brightness
             on the solar disk. The comparison of the eclipse curve with
             the curves of Troitskiy, Zelinskaya, Rakhlin and Bobrik
             /Ref 4_7 who observed there the solar eclipse in the centi-
             meter range, shows a coincidence of some details.

Card 1/2

Observations in the Millimeter Diapason of the   SOV/33-35-4-18/25
Total Solar Eclipse of June 30, 1954

There are 2 figures, and 4 references, 1 of which is Soviet, and 3 are American.

ASSOCIATION: Fizicheskiy institut imeni P.N.Lebedeva AN SSSR (Physical Institute imeni P.N.Lebedev AS USSR)

SUBMITTED: May 30, 1957

Card 2/2

3(1) 3.1730

68154
SOV/20-129-6-17/69

. AUTHOR: Pariyskiy, Yu.N.

TITLE: High-resolution Observations of the Radio Source Sagittarius-A

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 6, pp 1261-1263
                  (USSR)

ABSTRACT: In April, 1959 radio sources on the wavelengths 3.2 and 9.4 cm
                  were observed by means of the large Pulkovo radiotelescope of
                  the Glavnaya astronomicheskaya observatoriya AN SSSR (Main
                  Astronomical Observatory of the AS USSR). The radiometers
                  used for their measurement have already been described in two
                  earlier papers (Refs 1,2). The author speaks about 4 recorded
                  curves of the passage of the radio wave through the diagram
                  of the antenna on the 3.2-cm wavelength and about 9 curves on
                  the 9.4-cm wavelength. The averaged passage curves shown in
                  figure 1 illustrate the complex structure of the radio source.
                  The high resolution of the radiotelescope made it possible to
                  discover a new bright detail of small angular extension
                  (detail Nr 1), of an extensive region of about $0°5$ in size
                  (detail Nr 3), and, finally, a very extensive radio source on
                  the 9.4-cm wavelength and on larger wavelengths (detail Nr 2).
Card 1/3   Detail Nr 2 comes from the direction $17^h43^m08^s8 \pm 0^s3$ (epoch

68154

High-resolution Observations of the Radio Source   SOV/20-129-6-17/69
Sagittarius-A

1958.0). This is only 15^{s} distant from the coordinates of the galactic center. The flux coming from detail Nr 1 is about $15.10^{-25}w/m^{2}$.cps on both waves of the centimeter band, which indicates a thermal mechanism of radiation and corresponds to the radiation of an ionized gas and a measure of emission of 10^{6} with T_{e} = 10,000°K. This formation may actually be the gaseous core of our Galaxy. Detail Nr 3 is sharply asymmetric with respect to detail Nr 1, which is particularly marked in the 3.2-cm wave, while it is less marked on the 9.4-cm wave, and hardly noticeable on the 33.3-cm wavelength. This effect can be explained only by the complex spectrum of this detail (a combination of the thermal radiation of an ionized gas with a brightness distribution similar to the passage curve at $\lambda 3.2$ cm) and a non-thermal radiation which concentrates considerably towards detail Nr 1. The thermal part of source Nr 3 is apparently connected with the gas nebulae in the inner sleeve of the Galaxy. The non-thermal component is, however, very symmetric with respect to detail Nr 1, which is particularly noticeable on the 33.3-cm wavelength (which was investigated by V.3. Malumyan). Detail Nr 2 is the continuation of the non-thermal

Card 2/3

. High-resolution Observations of the Radio Source   68154
Sagittarius-A   SOV/20-123-6-17/69

            component of detail Nr 3. Without doubt, the entire non-
            thermal component of the radio source is physically interrela-
            ted with detail Nr 1. The results obtained by the present paper
            indicate the following: The bright, dense, gaseous core of the
            Galaxy with a dimension of ~ 6 parsec is immersed into the
            source of a non-thermal radiation, which is highly concentrated
            towards the gaseous core. Further investigations will make it
            possible to form a judgment as to the correctness of this model
            At present, high-resolution observations are being prepared
            at the Glavnaya astronomicheskaya observatoriya of the AS USSR
            on the wave λ 21 cm. This region must be accurately investigated
            also in the optical region in order to be able to study the
            distribution of the absorbing matter. The author thanks S E
            Khaykin and N.L. Kaydanovskiy for their instructions, and N S-
            Soboleva for her help in carrying out observations   There are
            2 figures and 8 references, 3 of which are Soviet

PRESENTED: August 8, 1959, by V.A.Ambartsumyan, Academician

SUBMITTED: July 26, 1959
Card 3/3

3,1710
9,1800

S/058/61/000/002/008/018
A001/A001

Translation from: Referativnyy zhurnal, Fizika, 1961, No. 2, p. 403, # 2Zh493

AUTHORS: Pariyskiy, Yu.N., Khaykin, S.E.

TITLE: On Demands Which Should be Made of Large Radiotelescopes From the
             Viewpoint of Radioastronomical Problems

PERIODICAL: "Izv. Gl. astron. observ. v Pulkove", 1960, Vol. 2, No. 5, pp.
             27 - 44 (Engl. summary)

TEXT: The authors show expediency of using centimeter and decimeter wave- $\sqrt{B}$
length bands in radioastronomical measurements. They discuss comparative charac-
teristics of two types of antenna systems: systems with symmetric diagrams of
directivity and asymmetric systems with diagrams highly extended in vertical
direction. The authors present considerations as to the equivalence of these
systems in resolving power and some other characteristics, if the larger dimen-
sion of the asymmetric antenna is equal to the diameter of the symmetric one.
There are 16 references.

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

8'351

S/035/60/000/012/009/019
A001/A001

3,1730 (1126,1127, 1129)

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1960, No. 12, p. 47, # 12257

AUTHOR: Parivskiy, Yu. N.

TITLE: Observations of Some Galactic RadioEmission Sources With the Great Pulkovo Radiotelescope

PERIODICAL: Izv. Gl. astron. observ. v Pulkove, 1960, Vol. 21, No. 5, pp. 45-53 (English summary)

TEXT: The author presents the results of the first observations of galactic radio sources at the centimeter wavelengths. The observations were carried out with the high resolving power radiotelescope of the Main Astronomical Observatory. The observations of the Crab nebula permitted the determination of the angular dimensions, coordinates of the radio emission gravity center, and the detection of an asymmetry of the source. The observations of the Omega nebula showed that an essential part of the bright emission nucleus was hidden due to a high absorption of light. A fine structure was detected in the Sagittarius A source; evidence is adduced favoring the identification of the brightest part of the source with the

Card 1/2

87351

S/035/60/000/012/009/019
A001/A001

Observations of Some Galactic Raio Emission Sources With the Great Pulkovo Radio-
telescope

galactic nucleus, and considerations are expressed as to the mechanism of the
emission of various components of the radio source. The observations of the 2C
1607 radio source made it possible to discover an interesting peculiarity in the
spectrum of this object radio emission. A conjecture is expressed that this source
is remains of a Supernova of type II. There are 30 references.

From author's summary

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

22094
S/035/61/000/003/021/048
A001/A101

3, 1560

AUTHOR: Parlyskiy, Yu.N.

TITLE: On the relation between emission of gaseous nebulae in hydrogen lines
               and that in radio band. A new method of determining distances to
               nebulae

PERIODICAL: Referativnyy zhurnal. Astronomiya i Geodeziya, no. 3, 1961, 47, ab-
               stract 3A410 ("Izv. Gl. astron. observ. / Pulkove", 1960, v. 21,
               no. 5, 54 - 61, Engl. summary)

TEXT: The author derives basic relation to determine intensity of radio
emission from gaseous nebulae. Numerical coefficients are determined more precise-
ly. A correlation between intensity of radio emission and emission in Balmer
lines is discussed. A new method of determining distances to nebulae is proposed,
which is based on comparison of radio brightness with brightness in $H\alpha$. By means
of this method the author determines distances to 32 nebulae, using the known ex-
perimental data, as well as their linear dimensions, electronic densities and
masses. There are 25 references.   A. K.
[Abstracter's note: Complete translation]

Card 1/1

3.1710
6.4400

S/058/61/000/002/009/018
A001/A001

Translation from: Referativnyy zhurnal, Fizika, 1961, No. 2, p. 404, # 2Zh501

AUTHORS: Bol'shakov, N.A., Parlyskiy, Yu.N.

TITLE: Receivers of Decimeter Band for Radioastronomical Measurements

PERIODICAL: "Izv. о͞ аstron оbsеrv v Pulkove", 1960, Vol. 21, No. 5,
             pp. 162 - 164 (Engl. summary)

TEXT: The authors describe briefly radiometers of 10-cm band constructed
at the Glavnaya astronomicheskaya observatoriya (Main Astronomical Observatory)
of the AS USSR in 1956-1957. Their fluctuation characteristics are presented.
Measurements of sensitivity and noise factor were performed with a neon calibrat-
ed noise tube. Experimental characteristics agree very closely with calculated
ones. The best results were showed by the straight amplification circuit with
three traveling-wave tubes.

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

PARITSKIY, Yu.N.

New information on the nucleus of our Galaxy. Priroda
49 no.7:81-82 Jl '60.   (MIRA 13:7)

1. Glavnaya astronomicheskaya observatoriya AN SSSR, Pulkovo.
         (Milky Way)

3.1710
3.1720

.37942
S/035/62/000/005/037/098
AC55/A101

AUTHORS: Kuznetsova, G. V., Pariyskiy, Yu. N., Soboleva, N. S., Khanberdyyev,
              A.

TITLE: Observations of solar radio emission during the eclipse of February
              15, 1961, on the 9-cm wavelength

PERIODICAL: Referativnyy zhurnal. Astronomiya i Geodeziya, no. 5, 1962, 42,
              abstract 5A326 ("Solnechnyye dannyye", 1961, no. 4, 65-67)

TEXT: The results of observations of the solar eclipse of February 15,
              1961, are described. The observations were carried out with the
aid of a paraboloid (D = 4 m) with azimuthal mounting. The open end of a round
waveguide, into which were inserted a quarter-wave plate and a ferrite modulator
with 30 cps modulation frequency, was used as primary exciter. The half-power
directional pattern was $1^{\circ}.5$. As radiometer, was used a three-traveling-wave-
tube straight amplification receiver with an equivalent input noise temperature
of $4,500^{\circ}$K and with a passband of 300 Mc. The circularly polarized component of
the radio emission and the nonpolarized radiation of the Sun were recorded. The
recording was effected on an ЭПП -09 (EPP-09). The antenna temperature of the

Card 1/2

Observations of solar radio emission ...

S/035/62/000/005/037/098
AC55/A101

Sun outside of the eclipse was $5,500^\circ K$. The Moon was used for the absolute calibration. The flux from the Sun on the day of the eclipse was $125 \cdot 10^{-22}$ watt/m^2cps. The opening of the coronal condensation from $8^h17^{min}.5$ to 8^h20^{min} (universal time) was ascertained from the examination of the eclipse curve. Under the assumption that the source has a round shape $(D \sim 1.2)$ and that the condensation has the shape of an ellipse with semiaxes 0.5×1.14, the brightness temperature was calculated and proved to be $3.1 \cdot 10^6 \, ^\circ K$ and $2.75 \cdot 10^6 \, ^\circ K$ respectively; i.e. it proved to be higher than the temperature of the undisturbed corona. No polarization of radiation from the condensation was detected, which is indicative of a sharp directivity of the polarized radiation, this directivity being related to the radial direction of the magnetic field over the spots. The residual flux during the maximum phase of the eclipse was $40 - 50\%$.

M. Gorelova

[Abstracter's note: Complete translation]

Card 2/2

PARIYSKIY, Yu. N.

Structure of the nucleus of the Galaxy. Astron.,zhur. 38
no.2:242-246 Mr-Ap '61.   (MIRA 14:4)

1. Glavnaya astronomicheskaya observatoriya AN SSSR.
(Milky Way)

20886

S/033/61/C38/CC2/C1C/C11
r032/E314

3.1570 (1062,1072,1182)

AUTHOR: Iariyskiy, Yu. N.

TITLE: On the Interchange of Gas Between the Nucleus and
           the Corona of the Galaxy

PERIODICAL: Astronomicheskiy zhurnal, 1961, Vol. 38, No. 2,
               pp. 377 - 379

TEXT: According to 21 cm observations of neutral hydrogen
(van Woerden et al - Ref. 1), the gas at the centre of the
Galaxy moves in the peripheral direction. The spiral arm at
a distance of 3 kpc from the centre is moving with a radial
velocity of about 50 km/sec. On the other side of the centre
there are fragments of this arm which move with radial
velocities between 75 and 150 km/sec. The total amount of
gas leaving the region $R \leq 3$ kpc is about $1.5\ M_\odot$. With a

continuous escape of gas with this velocity the central
region should become empty in about 10^7 years. In this
connection, Oort and Rougoor (Ref. 2) have suggested that
there is a continuous influx of gas into the central region of

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S/033/61/036/002/010/011
.032/E314

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the Galaxy from the "halo". The gas is guided by the
magnetic field, flows into the region of the nucleus of the
Galaxy and then leaves the centre in the plane of the Galaxy.
The present author considers the consequences of this
hypothesis. Suppose that the mass of gas entering the plane
of the Galaxy through a cross-section πR^2 at the velocity
v during a time dt is dM, then the density of the gas in
the halo above the section πR^2 is given by:

$$ \zeta = \frac{dM/dt}{\pi R^2 v} $$

if the gas is neutral, then provided the density is
sufficiently high, it should be seen in the 21 cm line.
If, on the other hand, it is ionised, then a continuous
thermal radio emission will be observed on high frequencies,
the low-frequency non-thermal emission will be absorbed and
the H_α line will appear in the optical region. In the

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; the Interchange ....

first and second cases, one should have $v^2/2 = \ldots$, since otherwise the magnetic field cannot control the gas. Pikel'ner has shown that σ may reach ~ 10. On the other hand, a small increase in the magnetic field above the previous should lead to a rapid increase in the intensity of the non-thermal radio emission since l is proportional to .

Thus, it follows that 21 cm observations of the thermal and non-thermal radio emission should provide information about the physical state of the outflowing gas and also about the values of v and R. Analysis of 21 cm observations led to the conclusion (Erieson - Ref. 3) that the main mass of the emitting hydrogen is associated with the gas surrounding the sun. The present author assumed that

$$H1_{max} \cdot 2R \leq 6.6 \cdot 10^{20}, \quad H11_{max} \cdot 2R = NE_{max} \leq 10^2$$

(C.A. Shain - Ref. 4), while the guiding field is assumed to

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be not very different from $H_{halo} = 3 \times 10^{-6}$ Oe . The
velocities must satisfy the following inequalities:

$$(I) \begin{cases} v_{HI_{min}} > \dfrac{dM/dt}{\pi R^2 \cdot \rho_{HI_{Manc}}} = \dfrac{2dM/dt}{\pi (2R\rho_{HI_{Manc}})} \cdot \dfrac{1}{R} \\[2ex] v_{HII_{min}} > \dfrac{dM/dt}{\pi R^2 \rho_{HII_{Manc}}} = \dfrac{\sqrt{2}dM/dt}{\pi \sqrt{MB}} \cdot R^{-1} \\[2ex] v_{Manc} \leqslant \alpha \dfrac{2H^2_{Manc}}{8\pi\rho} = \alpha \dfrac{H^2_{Manc}}{4} \dfrac{R^3}{dM/dt} \end{cases} \tag{I}$$

The figure shows the values of $v_{HI_{min}}$, $v_{HII_{min}}$ and
v_{max} as functions of the radius R in kpc (the velocities
are given in cm/sec). It is concluded that: 1) the gas
can flow in only in an ionised state; 2) the inflow
velocity is of the order of a few tens of km/sec;
3) the inflow radius is not less than 1.5 kpc for the
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0052/E314

Likel'ner-Shklovskiy corona and not less than 1 kpc for the
Spitzer corona; 4) the "dynamic" model of the nucleus
of the Galaxy put forward by Drake (Ref. 3) cannot be
correct since, for an inflow radius of about 100 pc the
equations in Eq. (1) are not consistent. It may be considered
that the outflow of gas from the centre of our Galaxy and
from the nucleus of M31 is of the same nature. When applied
to M31, Gort's mechanism leads to a figure of about

10^{-4} for the magnetic field in the halo of M31. This appears
to be unacceptable. Acknowledgments to S.L. likel'ner for
valuable discussions and suggestions.
There are 1 figure and 5 non-Soviet references.

ASSOCIATION: Glavnaya astronomicheskaya observatoriya
                Akademii nauk SSSR (Main Astronomical Observatory,
                Academy of Sciences, USSR)

SUBMITTED: June 24, 1960

Card 5/6

PARIYSKIY, Yu.N.

Distribution of optical and radio emission in M 17.   Astron.zhur.
38 no.3:483-486 My-Je '61.   (MIRA 14:6)

1. Glavnaya astronomicheskaya observatoriya AN SSSR.
              (Nebulae)   (Radio astronomy)

3, 1700 (*also* 1166, 1172)

AUTHOR: Pariyskiy, Yu.N.

TITLE: A model of the Orion nebula from radio observations

PERIODICAL: Astronomicheskiy zhurnal, v.38, no.5, 1961, 798-808

TEXT: The large Pulkovo radio-telescope at GAO AN SSSR was used during 1959-60 to study the Orion nebula. The first series of observations (autumn 1959) were made at 9.4 cm, using a super-heterodyne radiometer with a bandwidth of 20 Mc. The coordinates of the brightest part of the nebula were thus determined. The result is compared with other values in Table 1. A further series of observations (February 1960) were made at 8.25 cm with a more sensitive radiometer (passband 500 Mc). The scans were corrected for the time constant of the apparatus and for the directional pattern of the antenna (half-power width = 3'). To determine the kinetic temperature of the nebula, the author develops a method proposed by C.M.Wade (Ref.18: Austral. J. Phys., v.2, 388, 1958). The brightness temperature is connected with the kinetics temperature by

$$T_B = \overline{T}_e (1 - e^{-\tau(x,y)}) \qquad (1)$$

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A model of the Orion nebula ...   E133/E435

$\overline{T}_e$ being the equivalent kinetic temperature, and with the integral flux by

$$P = \frac{2kf^2}{c^2} \iint T_B(x, y) \, dx dy = \frac{2kf^2}{c^2} \overline{T}_e \iint (1 - e^{-\tau(x,y)} dx dy). \qquad (2)$$

Assuming $\tau(x,y) = \tau_0 \varphi(x,y)$, this reduces to

$$T_L = \int_{-\infty}^{\cdot} T_B(x, y) \, dy, \qquad (3)$$

$Y(\tau_0)$ can be calculated numerically from the observed distribution of brightness temperature. If the values of the integral flux are known at two frequencies, an average value for T_e can be derived from the expression for the optical depth

$$\tau = 3.08 \cdot 10^{28} \zeta \varepsilon / f^2 T_e^{3/2}.$$

which can now be written as the ratio of the optical depths at the two frequencies in the form

$$\frac{\tau_{01}}{\tau_{02}} = \frac{\zeta_1 f_2^2}{\zeta_2 f_1^2}. \qquad (4)$$

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A model of the Orion nebula

The two frequencies were chosen to be 9.4 cm (Ref.3 F T Haddock
C.M.Mayer, R.M.Sloanaker, Astrophys. J. v.119, 456 1954) and
75 cm (Ref.8 C.L Seeger G.Westerhout H.C.van de Halst.
Bull. Astron. Inst. Netherl., v.13. 89, 1956). The flux at
9.4 cm was reduced by 11% to agree with absolute measures made at
9.6 cm (Ref.12 N.W.Broten, W.J.Medd Astron. J., v.64, 324 1959)
On the other hand, when allowance was made for the directional
pattern of the antenna it was found that the flux should be
increased by 10%. The flux at 75 cm was not corrected. The
fluxes used were

$$\lambda_1 = 9.4 \text{ cm}, \qquad P_1 = 450 \times 10^{-26} \text{ W/m}^2 \text{ c.p.s.}$$

$$\lambda_2 = 75 \text{ cm} \qquad P_2 = 230 \times 10^{-26} \text{ W/m}^2 \text{ c.p.s.}$$

The average kinetic temperature is $11750\,^\circ\text{K} \pm 1000\,^\circ\text{K}$. The data
are now sufficient to calculate the flux from the nebula at any
wavelength (Fig.7). As can be seen from Fig.7, agreement with
observation is good except at 3.5 m. This latter may be due to
the presence of gas outside the region considered. The author
now works out the distribution of ionized particles inside a
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A model of the Orion nebula

sphere of radius 10^4.   The total mass is 116 $M_\odot$ about 6 $M_\odot$ being concentrated in its brightest central part having a diameter of 3'.   The smallness of the deviation at 3.5 m indicates that there is not more than 40 $M_\odot$ outside the 10 sphere   A distance of 450 pcs is assumed.   The optical observations give 10^4 'K for the kinetic temperature.   Extensive work on the $\lambda 3726/\lambda 3729$ lines (Ref.19 D.Osterbrock E.Flather Astrophys. J. 129 1 1960) gives similar dimensions for the region concentrated round the trapezium   The electron density determined by optical methods approximates to the maximum in the line of sight.   Radio methods give the mean square density   Differences in the two are interpreted as due to a cloud structure in the nebula   The density fluctuations appear to increase with distance from the trapezium   1/14th of the volume is occupied by clouds at the centre of the region and 1/36th towards the edge   The radio emission is smaller than would be expected on the basis of the H_β flux.   Observations indicate the possible presence of fast moving clouds in the nebula   It is possible therefore that the discrepancy in flux is due to ignoring collisional processes

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A model of the Orion nebula   E133/E435

initiated by shock waves.   Acknowledgments are expressed to
V.A.Stupin and R.E.Burv for assistance.   S.I.Gopasyuk,
N.N.Mikhel'son, S.B.Pikel'ner and S.A.Kaplan are mentioned in the
article in connection with their studies of nebulae.   There are
10 figures, 1 table and 39 references: 10 Soviet-bloc,
2 Russian translations of non-Soviet publications and
27 non-Soviet-bloc.   The four most recent references to English
language publications read as follows:
Ref.9: D.O.Edge, J.R.Shakeshaft, W.B.McAdam, J.E.Baldwin,
S.Archer, Mem. Roy. Astron. Soc., v.68, 37, 1959;
Ref.12: as quoted in text;
Ref.19: as quoted in text;
Ref.37: T.K.Menon, Astrophys. J., v.127, 38, 1958;   H. van Woerden,
Paris Symposium on Radio Astronomy, ed. Bracewell. Stanford,
California, 1959, paper 71.

ASSOCIATION: Glavnaya astronomicheskaya observatoriya Akademii
             nauk SSSR (Main Astronomical Observatory, AS USSR)

SUBMITTED: December 24, 1960

Card 5/6

20317
S/020/61/137/001/007/021
B104/B209

3.1700

AUTHOR: Pariyskiy, Yu. N.

TITLE: The particulars of NGC 4486 radio emission

PERIODICAL: Doklady Akademii nauk SSSR, v. 137, no. 1, 1961, 49-50

TEXT: In December 1959, radio emission from Virgo-A (NGC 4486; M 87)
was detected by the radio telescope of the Pulkovo Observatory.
Measurements showed that the angular dimensions of the source as measur-
ed on 9.4-cm waves are considerably smaller than those determined by
Mills (Ref. 1: B. Y. Mills, Nature, 170, 1063 (1952)) on 3.5-m waves.
Pariyskiy repeated the measurements with a sensitive radiometer on
8.7-m waves. One of the graphs taken is shown in Fig. 1. A checking of
several graphs showed that they practically agreed with the theoretical
directional diagrams of antennas. This allows to conclude that the
angular dimensions of the source do not exceed one arc minute. Observa-
tions on 3.5-m waves gave an angular dimension of 6'. Using these and
other results published earlier and taking into account measurements
made at Nancy (France), in which the angular dimensions of this source

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The particulars of NGC 4486 ...

on 8.7-cm waves were found to be 1.5', one may conclude that the size of the source depends largely on the frequency used. The emission center of the 8.7-cm waves was determined in order to clarify whether the source is located in the center of the Galaxy or is due to an ejection. Highest accuracy of the measurements was warranted by the use of a stationary antenna. This was done after the Moon and the source had passed across the directional diagram of the antenna on the same day. The coordinates of the source were found to be:

$\alpha_{1960,0} = 12^{hr}28^{m}15^{s} \pm 1^{s}$. This means that the radio emission comes from a region 45" $\pm$ 15" west of the center of the spherical Galaxy, in the direction of ejection. These measurements were conducted by O. N. Shivris and V. Prasolova. Further investigations on the exact position of the source are intended. There are 1 figure and 2 non-Soviet-bloc references.

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S/020/61/13''/001/007/02'
B104/B209

The particulars of NGC 4486 ...

ASSOCIATION: Glavnaya astronomicheskaya observatoriya Akademii nauk
                SSSR (Main Astronomical Observatory of the Academy of
                Sciences USSR)

PRESENTED: September 28, 1960, by V. A. Ambartsumyan, Academician

SUBMITTED: September 18, 1960

Card 3/4

SOBOLEVA, N. S.; PROZOROV, V. A.; PARIYSKIY, Yu. N.

Distribution of polarized and nonpolarized radio emission in
the Crab nebula. Astron. zhur. 40 no.1:3-11 J.-F '63.
(MIRA 16:1)

1. Glavnaya astronomicheskaya observatoriya AN SSSR.

(Radio astronomy) (Nebulae)

20736

S/02 /6 /137/ 2/ 7/
B104/B212

3,1730 (1126, 1127, 1129)
6.9417

AUTHOR: Pariyskiy. Yu. N.

TITLE: A new source of radio emission in centimeter waves

PERIODICAL: Doklady Akademii nauk SSSR, v. 137, no. 2, 1961, 307-309

TEXT: In March 1959 observations have been made with the giant radiotelescope in Pulkovo of the 9.4 cm radio emission background of a galaxy which is located in a certain region of the Milky Way. A new source of a radio emission has been established at an inclination of $ = {}^{0} $, which is located in the plane of the Milky Way. The following coordinates are given for the source. $\alpha_{1950} = 18^{hr}53^{m}38^{s}$, $\delta_{1950} = {}^{0} 5$, and the angular dimension of the source is given as $f_j = 31',5$. These coordinates agree with source no. 44 of the Westerhout Catalogue, with source 2C1407 of the second Cambridge Catalogue and with source 18 + 011 of Mills. The flux of the 9.4 cm radio emission amounts to $(200 \pm 20) \cdot 10^{-26}$ w/m^2 cycles, that of the 22 cm radio emission to

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A new source of radio emission ...

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B104/B212

$185 \cdot 10^{-26}$ w/m. cycles and that of the 3.5 m radio emission to $1500 \cdot 10^{26}$ w/m cycles. The spectrum described here, does not have any components in the shortwave range which is contrary to the spectra of radio sources of II kind. Therefore, the author is convinced that, here, a thermal component is present which is dominating in the centimeter range. G. A. Shayn and V. F. Gaz have not been able to identify photographically any visible emission, even though long exposure has been used. i.e. the visible portion of emission does not exceed 400 [Abstracter's note: dimension not given]. The author concludes from known absorption data from this direction that the source might be a galactic object. The spectrum of the described object in the meter range is typical for that of a magnetic bremsstrahlung. Furthermore, the opinion is pointed out which has been held quite often at the present time, that galactic sources of a non-thermal radio emission are residues from exploded supernovae. Considering the magnitude of the minimum energy necessary to prove a new radio source, the author is able to show that the energy which at present is in a radio nebula is

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A new source of radio emission ...

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B104/B212

much larger than the energy which is released from a supernova of the
I. kind. The radio emission, in question, might be explained by
compression of the magnetic field in an expanding nebula shell at usual
density of the primary cosmic particles in the interstellar space.
The supernovae are taken as the origin of primary cosmic particles;
this agrees with I. S. Shklovskiy. The author thanks S. E. Khaykin and
N. L. Kaydanovskiy for their interest in his work, and the collective
of the Simeizkaya astrofizicheskaya observatoriya (Simeiz Astrophysical
Observatory) for making available unpublished material. There are
1 figure, 1 table, and 10 references: 4 Soviet-bloc and 6 non-Soviet-
bloc.

ASSOCIATION: Glavnaya astronomicheskaya observatoriya Akademii nauk SSSR
               (Main Astronomical Observatory, Academy of Sciences USSR)

PRESENTED: September 28, 1960, by V. A. Ambartsumyan, Academician

SUBMITTED: September 28, 1960

Card 3/3

ZAKHARENKOV, V.F.; KAYDANOVSKIY, N.L.; PARIYSKIY, Yu.N.; PROZOROV, V.A.

Observations of discrete radio sources at 3.2 cm. wave length
at Pulkovo. Astron.zhur. 40 no.2:216-222 Mr-Ap '63. (MIRA 16:3)

1. Glavnaya astronomicheskaya observatoriya AN SSSR.
                                    (Radio astronomy)

KOROL'KOV, D.V.; PARIYSKIY, Yu.N.; TIMOFEYEVA, G.M.; KHAYKIN, S.E.

High-resolution radio-astronomical observations of Venus.
Dokl.AN SSSR 149 no.1:65-67 Mr '63.   (MIRA 16:2)

1. Glavnaya astronomicheskaya observatoriya AN SSSR.
Predstavleno akademikom V.A.Kotel'nikovym.
          (Radio astronomy)   (Venus (Planet))

PARIYSKIY, Yu. N.

"The Structure of the Nucleus of the Galaxy."

report presented at the IAU/URSI Symposium on Galaxy and Magellanic Clouds, Symposium No. 20, Canberra and Sydney Australia, 18-28 March 1963.

Pulkovo Observatory

PARIYSKIY Yu. N.

KOROLKOV, D.V., PARIYSKIY, YU.N., TIMOFEYEVA, G.M., KHAYKIN, S.E.

High Resolution Radio Observations of Venus and Jupiter at the Pulkovo Observatory.

Report to be submitted for the 4th International Space Science Symposium (COSPAR) Warsaw, 2-12 June 63

S/0033/64/041./001/0003/0006

ACCESSION NR: AP4017609

AUTHOR: Pariyskiy, Yu. N.; Timofeyevc, G. M.

TITLE: Structure of the Cyg-A and Vir-A radiosources

SOURCE: Astronomicheskiy zhurnal, v. 41, no. 1, 1964, 3-6

TOPIC TAGS: Cyg A, Vir A, radiotelescope, stellar ratiation, NGC 4486

ABSTRACT: Observations on the Cyg-A and Vir-A radiosources at a wavelength of 3.02 cm were conducted in January and February of 1963 using the large Pulkovo radiotelescope, which has a resolution of about 1'. The results were essentially as follows: Cyg-A. The source is asymmetric and the angular magnitude of its western component is as low as 15". The positional angle of the axis linking both components is 125° ± 15°, which is higher than that found at wavelengths of 10 mm, 21 mm and 1 meter, and agrees with previous Pulkovo observations indicating a marked dependence of the intercomponent distance, the component effective magnitudes and the intercomponent radiation intensity on the wave length. The absence of intercomponent radiation at 3.02 cm is very likely. Vir-A. The radiation of the principal body of the NGC 4486 galaxy, observed at 3.02 cm, is considerably less than that found in the decimeter and meter bands. Conversely, the contribution of the central source, whose angular dimension is <1', is inversely propor-

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ACCESSION NR: AP4017609

tional to the wavelength.. The character of the radiotelescope image suggests a
significant deviation of the genuine shape of the central source from the Gaussian
curve, which may be explained by a possible existence of two minor sources 20-30"
apart. "The authors would like to thank S. E. Khaykin for his interest in the
work, A. B. Berlin for his help in making the observations and designing the ap-
paratus, and D. V. Korol'kov for his criticism of the manuscript." Orig. art.
has: 3 graphs.

ASSOCIATION: Glavnaya astronomicheskaya observatoriya Akademii nauk SSSR
(Main Astronomical Observatory, Academy of Sciences SSSR)

SUBMITTED: 24May63   DATE ACQ: 18Mar64   ENCL: 00

SUB CODE: AS   NO REF SOV: 004   OTHER: 001

Card   2/2

ZALIKIN, V.V.; Yu.K.

ACCESSION NR: AP4032729   S/0033/64/041/002/0362/0365

AUTHOR: Soboleva, N. S.; Pariyskiy, Yu. N.

TITLE: Possibility of observing polarization . of thermal radio
emission from planets

SOURCE: Astronomicheskiy zhurnal, v. 41, no. 2, 1964, 362-365

TOPIC TAGS: thermal radio emission, effective radio emission, planet,
refraction, asteroid, planet satellite, radio astronomical instru-
ment, radar reflection coefficient, permeability, polarization,
integral polarization, terminator, ionosphere, planetary atmosphere

ABSTRACT: The moon is a dielectric, but the emission layer in the
centimeter and decimeter wave ranges is beneath its surface. The
emission beam passing the surface is subjected to refraction. Recently
this effect was detected in Pulkovo by experiments on waves of 3.2
and 6.4 cm. It can be assumed that the radio emission of Venus on
the 3-cm wave length is caused by the rigid surface of the planet.
Radar data obtained from Mercury, Venus, and Mars showed that the

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ACCESSION NR: AP4032729

reflection coefficient of these planets is equal to 0.1 and the
permeability is about 4. Polarization of planetary radio emission
is possible when the planetary atmosphere contains an ionosphere
within a dipole magnetic field. The rotation of the polarization
plane is greater near the magnetic poles than in the equatorial plane.
No integral polarization exists at very high frequencies, but it
appears at the terminator, where the difference in brightness temp-
atures of the illuminated and the dark surfaces is great. Orig. art.
has: 3 figures

ASSOCIATION: Glavnaya astronomicheskaya observatoriya Akademii
nauk SSSR(Main Astronomical Observatory, Academy of Sciences SSSR)

SUBMITTED: 24May63   DATE ACQ: 11May64   ENCL: 00

SUB CODE: AS   NO REF SOV: 005   OTHER: 005

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L 8831-65   FBD/EWT(1)/EWG(v)/EEC-4/EEC(t)/EWA(h)   Pm-4/Pe-5/Pae-2/Peb
Pi-4   SSD/AFWL   GW/WS
ACCESSION NR: AP4042785   S/0020/64/157/003/0554/0556

AUTHOR: Gol'nev, V. Ya.; Lipovka, N. M.; Pariyskiy, Yu. N.

TITLE: Observation of the radio emission of Jupiter on the 6.5-cm wavelength at Pulkovo

SOURCE: AN SSSR, Doklady, v. 157, no. 3, 1964, 554-556

TOPIC TAGS: Jupiter, Jupiter radio emission, Jupiter brightness temperature

ABSTRACT: The radio emission of Jupiter on the 6.5-cm wavelength was observed in October and November 1963 with the large Pulkovo radio telescope. A wideband direct-amplification receiver with a parametric amplifier at its input was used as the radiometer. Its sensitivity, at a time constant of 3 sec, was 0.05K. Under the assumption that the flux from radiation source 3C 273 was 27.4×10^{-26} w/m^2 cps at the 6.5-cm wavelength, it was found that the flux from Jupiter was $8.15 \pm 0.8 \times 10^{-26}$ w/m^2 cps, which corresponds to a disk brightness temperature of 324 ± 30K. This is 196K greater than the disk tempera-

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ACCESSION NR: AP4042785

ture from infrared observations (128K). The antenna radiation pattern was determined on the basis of sources 3C 48, 3C 268 and 3C 273, and the results of observations at the 6.5-cm wavelength were compared with the theoretical values of pattern expansion for various models of the radio emission region. It was found that at a distance of $1.5R_{Jupiter}$ from the center of Jupiter, radio emission is virtually nonexistent. On the 75—21-cm band, the dimension of the increased radio emission region is equal to $3D_{Jupiter}$ and remains almost unchanged. At the 6.5-cm wavelength, it is approximately (1.3 plus or minus 0.2)$D_{Jupiter}$, and at the 3.02-cm wavelength, the increased radio emission region nearly coincides with the visible disk of the planet. It is also stated that it may now be considered as established that in the decimetric band the increased radio emission emanates from radiation belts surrounding the planet. Moreover, the measurements of Jupiter's dimensions have shown that with an increase in frequency, the radio emission maxima of the belts shift toward the surface of the planet. Under the assumption that the position of Jupiter's magnetic pole is $L_{111} = 195°$, B = 80°, it was found that the upper amplitude limit of the flux variation with latitude observed at the 6.5-cm wavelength was about 2%, and that after taking into account the black body

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ACCESSION NR: AP4042785

emission at 128K, the polarization of "excess" radiation is lower than 18% at this wavelength. Orig. art. has: 4 figures.

ASSOCIATION: Glavnaya astronomicheskaya observatoriya Akademii nauk SSSR (Main Astronomical Observatory, Academy of Sciences SSSR)

SUBMITTED: 13Mar64   ATD PRESS: 3106   ENCL: 00

SUB CODE: AA   NO REF SOV: 003   OTHER: 006

Card 3/3

PARIYSKIY, Yu. N.

"Galactic radio sources at 6.4 centimeters."

paper presented at 12th Gen Assembly, Intl Astronomical Union, Hamburg, Aug-3 Sep 64.

L 47354-65   EEC-4/EWG(v)/EWT(1)/EEC(t)/FBD   Pe-5/P1-4/Pae 2   GW/WS-4
UR/0056/65/000/002/H044/H044

ACCESSION NR: AR5009723

SOURCE: Ref. zh. Fizika, Abs. 22h301

AUTHOR: Korol'kov, D. V.; Pariyskiy, Yu.N.; Timofeyeva, G.M.

TITLE: Radioastronomical observations of Jupiter with high resolution

CITED SOURCE: Astron. tsirkulyar, no. 283, 18 fevr., 1964

TOPIC TAGS: Jupiter planet, radioastronomic observation, radio emission, radio
brightness, radiation belt

TRANSLATION: Results are reported of observation of radio emission from Jupiter
at 3.02 cm, wavelength carried out with the aid of the large Pulkovo radio tele-
scope with an antenna of variable profile. It turned out that 95% of the emission
comes from a region with radius < 1.1 R_{Jup} and that the distribution of the radio
brightness over the disc is close to uniform. The expected flux density of therm-
al radiation belts of the planet is ~ 4 x 10^{-26} W/m^2 cps (λ = 3 cm). It is indicated
that the excess radiation at 3 cm wavelength cannot be attributed to radiation
from the belts. I. P.

SUB CODE: AA, EC

Card 1/1 CA

ENCL: 00

GOL'NEV, V.Ya.; PARIYSKIY, Yu.N.

Right ascensions, structure, and spectra of 20 extragalactic
sources from observations at Pulkovo at the wavelength of 6.4 cm.
Astron.zhur. 42 no.2:305-315 Mr-Ap '65.   (MIRA 18:4)

1. Glavnaya astronomicheskaya observatoriya AN SSSR.

PARIYSKIY, Yu.N.; PROROT, N.A.

    Fine structure of radio sources at 3.2 cm. wave in Pulkovo.
    Izv. GAO 23 no.3:4-15 '62.

                                                        MIRA 2 :12)

GOL'NEV, V.Ya.; PARIYSKIY, Yu.N.; SOROLAVA, N.S.

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Determining the declinations of certain extragalactic radio sources by means of the large radio telescope at Pulkovo. Izv.vys.ucheb. zav.; radiofiz. 8 no.1:183-185 '65.   (MIRA 18:6)

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L 7933-66   FBD/EWT(1)/FCS(k)   GW/WS-2/WR

ACC NR: AP5025670   SOURCE CODE: UR/0107/65/000/009/0003/0004

AUTHOR: Pariyskiy, Yu. (Senior research associate)

ORG: Chief Astronomical Observatory (Glavnaya astronomicheskaya observatoriya)

TITLE: Radio telescopes observe the Universe

SOURCE: Radio, no. 9, 1965, 3-4

TOPIC TAGS: radio telescope, radio telescope antenna

ABSTRACT: The work of S. E. Khaykin and N. L. Kaydanovskiy in inventing a new type of reflector radio-astronomic antenna whose "accuracy is determined not by metal structures but rather by the accuracy of astronomic-geodesic measurements" is briefly noted. An experimental model of such an antenna was built at Pulkovo in 1956; its size is 130x3 m. The reflecting surface comprises

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ACC NR: AP5025670

90 elements so arranged that the incident radio wave is focused into a point; this is aided by a small secondary mirror. It is claimed that "this small and cheap model has so far been the largest reflector system for cm waves in the world." [Abstracter's note: The Ohio State University tiltable reflector telescope, US NBS Observatory in Lima, Peru, or the 1000'-diameter fixed reflector at Arecibo, Puerto Rico, are not mentioned.] Orig. art. has: 1 figure.

SUB CODE: 03 / SUBM DATE: 00

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Vol. 8, no. 3, 1958

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Uncl.

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Karlova Universita v Hradse Kralove.

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Influence of denervation on the growth of kidneys after a high-protein intake in the food. J. Parízek and O. Poupa (Research Inst. Human Nutrition, Prague). Physiol. Bohemoslov. 3, 148-52(1954)(in English).—The expts. were performed on male and female rats of approx. 180 g. wt. The contents of the diets used in the expts. are given in detail. The rats were killed and their kidneys weighed at the end of the expt. It was found that a large intake of protein leads to an increase in the parenchyma of the kidneys. The renotropic influence of proteins in the diet is intensified in male rats by a complete denervation of the kidneys. This finding can not be shown when the kidneys are weighed at a time when it can be assumed that a regeneration of the nerve network has taken place. The influence of denervation was not demonstrated in female rats.

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2213. PAŘÍZEK J. Czechoslovak Acad. of Scis, Lab. of Physiol. and Pathophysiol. of Metab., Prague. *The destructive effect of cadmium ion on testicular tissue and its prevention by zinc J.ENDOCR. 1957, 15/1 (56-63) Graphs 2 Tables 3 Illus. 10

The s.c. administration of cadmium salts (cadmium chloride or lactate) to rats and mice leads to acute destruction of the testes, with destruction of the semi-niferous epithelium and interstitial tissue. These changes in turn evoke castration phenomena, but the atrophied accessory sex organs retain the ability to react to testosterone propionate. Within 20 days after the injection of cadmium, prolifera-tion of fibroblasts in the interstitial spaces under the albuginea begins and is ac-companied by an extensive formation of new blood vessels. Later, new Leydig cells appear; this is followed by a gradual return of the endocrine function of the testes. The spermatogenic epithelium of the seminiferous tubules, on the other hand, does not regenerate even 133 days after the injection of cadmium. The simultaneous administration of a large dose of zinc salts protects the testes com-pletely against cadmium damage.   (III, 5)

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Rats were X-irradiated with doses up to 600 r. to the whole body. Their urine was
collected for 24 hr. following irradiation, and examined for deoxyribose using
Dische's reaction. Increase in elimination was found. The substance responsible
is deoxycytidine. The amount of this substance in the urine is a prompt and sensi-
tive indicator or irradiation. The normal value of about 1 mg. per 24 hr. is raised
to about 1.5 mg. by only 10 r., to about 7 mg. by 600 r. This effect is not due to a
renal factor (tested in nephrectomized animals). It could be due to release of the
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Charles University, and Institute of Physiology, Czechoslovak
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            (VITAMIN A)

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(BRAIN NEOPLASMS)   (GLIOBLASTOMA MULTIFORME)
(OPTIC NERVE)   (CEREBELLAR NEOPLASMS)
(INTRACRANIAL PRESSURE)   (BLINDNESS)

CZECHOSLOVAKIA

PANALEK, J., BALLEK, S., and TANHOTA, I., Clinic of Neurosurgery
(Neurochirurgicka klinika), Faculty of Medicine (Lekarska fakulta),
Charles University, Hradec Kralove, Prof. Dr. R. Petr, director; and
Pediatric Clinic (Detska klinika), Faculty of Medicine, Charles Uni-
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affiliations cannot be determined].

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Abstract [authors' English summary]: The case is described of a girl
of four with two angioblastomas, one of the optic nerve and another
in the cerebellum. The child underwent operation. The tumor in the
cerebellum caused clinical symptoms much later and for its uncharacter-
istic symptoms remained hidden by the clinical picture of intracranial
hypertension causing blindness in the second eye as well. Such a com-
bination of intracranial tumors is rare. When new neurological signs
appeared a relapse of the tumor of the optic nerve was therefore assumed
in the region of the third ventricle, instead of the appearance of a new
tumor. Twelve references, including 3 Czech.

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Czechoslovakia
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KAS, Vaclav, dopisulici chlen; KOSIL, Vladimir, dopisujici chlen; KALANDRA,
     Augustin, akademik; PARIZEK, Miroslav, dr.; TOMSIK, Boleslav, prof.;
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1. Vysoka skola zemedelska a lesnicka, Brno (for Kas, Parizek,
Tomsik, Chury). 2. Vysoka skola zemedelska, Praha (for Kosil).
3. Predseda VI. odboru Ceskoslovenske akademie zemedelskych ved
(for Kalandra). 4. Vyskumny ustav lesneho hospodarstva, Banska
Stiavnica (for Patocka). 5. Vyzkumny ustav lesniho hospodarstvi a
myslivosti Ceskoslovenske akademie zemedelskych ved, Zbraslav (for
Pav, Janda, Kanak, Zavadil).
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PARIZFK, Miroslav
SURNAME, Given Names

Country: Czechoslovakia

Academic Degree: cent, DVM

Affiliation: Zoot nical Institute, Veterinary Faculty Veterinary College (Ustav
zootec ky veterinarni fakulty VSZ) Brno
Source:Prague, Sbo n k CSAZV Veterinarni Medicina, Vol 6(34), No 7, July 61; pp 579-5

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GPO 981643

GDOVIN, Tomas; PARIZEK, M.

In commemoration of the 65th birthday of Emil Pribyl, correspondent
member of the Czechoslovak Academy of Agricultural Sciences.
Vestnik CSAZV 8 no.8/9:544 '61.

1. Dopisujici clen Ceskoslovenske akademie zemedelskych ved. 2. Clen
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Gdovin)

(Pribyl, Emil) (Czechoslovakia—Agriculture)