

СНИЖАЮЩИЙ ЭФФЕКТИВНОСТЬ РАБОТЫ

Biological properties of the strain of foot-and-mouth disease viruses of the SAT-1 type. Veterinarika 11 no.5:45-7, 1968.

1. Gosudarstvennyy nauchno-kontrol'nyy institut veterinarnykh preparatov.

USSR/Medicine - Higher Nervous Activity

FD-2795

Card 1/1 Pub 154-16/19

Author : Skipin, G. V.; Sharov, A. S.

Title : Method for numerical registration of motor reflexes in dogs

Periodical : Zhur. vys. nerv. deyat. 5, 288-291, Mar-Apr 1955

Abstract : Describes an electrical apparatus, developed by the authors, for numerical registration of motor reflexes, as movements of an extremity, in dogs. Gives schematic of apparatus. Graphs.

Institution : Institute of Higher Nervous Activity of the Academy of Sciences USSR

Submitted : March 7, 1955

KLYUYEVA, A.A.; SHAROV, A.S.

Apparatus for inducing an epileptiform electroconvulsive
seizure in animals. Trudy 1-go MMI 26:409-413 '63.
(MIRA 17:2)

SHAROV, A.S.; ALEKSEYEV, M.A.; ZALKIND, M.S.

Electronic differentiator. Zhur. vys. nerv. deiat. 12 no.4:
762-768 J1-Ag '62. (MIRA 17:11)

1. Institute of Higher Nervous Activity and Neurophysiology,
U.S.S.R. Academy of Sciences, Moscow.

SHIBAKOV, V. A., SHANIN, A. S.

Astronomy - Problems, Exercises, etc.

Sixth competition in astronomy for students of secondary schools. Fiz. v shkole No. 5, 1952.

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

SHAROV, A. S.

USSR/Astronomy - Light Absorption

Jan/Feb 52

"Generalization of Formula Describing Absorption of Light in Interstellar Space," A. S. Sharov, State Astr Inst imeni Shternberg

"Astron Zhur" Vol XXIX, No 1, pp 83-85

The density of a subsystem of the Galactic may be expressed by $D(R,z) = D(0,0)\exp(z/b - R/a)$ which may be applied to density of dark cloud. Derives approx absorption formula taking into account the density gradient of absorbing substance in relation to R and z. Indebted to Prof P. P. Parenago. Received 15 Jun 51.

202F10

SHISHAKOV, V.A.; SHAROV, A.S.

Sixth Competition in Astronomy 1952. Biul.VAGO no.13:41-42 '53.
(MLRA 7:3)

(Astronomy--Problems, exercises, etc.)

SHAROV, A. S.

"Newly Discovered Variable Star BD 67° 922-SPE 1155 Draconis", Peremennyy
Zvezdy, No 1, 1954, pp 55-57

Abs

W-31146, 1 Feb 55

ШАРОВ, А.С.

PARENAGO, P.P.; MASEVICH, A.G.; SHAROV, A.S.

"Study of the mass-luminosity-radius relationship." Parts 1 and 2.
Abstract by A.S.Sharov. Vop.kosm. 3:311-313 '54. (MLRA 8:3)
(Stars)

SHAROV, A. S.

PARENAGO, P.P.: SHAROV, A.S.

"Gravitation potential of the Galaxy." Abstract by A.S.Sharov.
Vop.kosm.3:316-317 '54. (MIRA 8:3)
(Gravitation) (Milky Way)

SHAROV, A.S.

Session of the Astronomical Council of the Academy of Sciences of
the U.S.S.R. and the Astrophysics Institute of the Academy of
Sciences of the Kazakh S.S.R. Astron.zhur.32 no.5:472-474 S-0
'55. (Kazakhstan--Astronomy) (MLRA 9:1)

SHAROV, A. S.

SHAROV, A. S.: "The color-illumination diagram of stars in the vicinity of the sun". Moscow, 1955. Moscow State U imeni M. V. Lomonosov. State Astronomical Inst. imeni P. K. Shternberg. (Dissertation for the Degree of Candidate of PHYSICOMATHEMATICAL Sciences)

SO: Knizhnaya Letopis' No. 51, 10 December 1955

PEROVA, N.B.; SHAROV, A.S.

A possible new star BC Cassiopeiae. Per. zvezdy 11 no.5:388-389
Jl '56. (MIRA 12:1)

1.Gosudarstvennyy astronomicheskiy institut imeni Shternberga.
(Stars, Variable)

SHAROV, A.S.

Using two color diagrams for the study of the law of interstellar
light absorption. Astron.zhur.33 no.3:445-446 My-Je '56.

(MLRA 9:10)

1.Gosudarstvennyy astronomicheskiy institut imeni P.K.Shternberga.
(Stars--Spectra)

AUTHOR: Sharov, A. S.

TITLE: A short account of a numerical method for the determination of the stellar density in spheroidal clusters. (Kratkoye izlozheniye chislennogo metoda opredeleniya zvezdnoy plotnosti v sferoidal'nom skoplenii).

PERIODICAL: Astronomicheskii Zhurnal, 1957, Vol.34, No.1, pp.139-140 (USSR)

ABSTRACT: A brief note giving a version of the method originally given by Wallenquist in 1933 (1) and extended by Kholopov (2) in 1940. 1 figure. 2 references, 1 of which is Russian.

State Astronomical Institute
imeni P. K. Shternberg.

Recd. Oct. 15, 1956.

VORONTSOV-VEL'YAMINOV, B.A.; DOKUCHAYEVA, O.D.; YEFREMOV, Yu.I.;
KOZARENKO, B.I.; KARIMOVA, D.K.; KOSTYAKOVA, Ye.B.; LOZINSKIY, A.M.;
MANOVA, G.A.; TSITSIN, F.A.; SHAROV, A.S.

Observations of Arend-Roland's comet (1956 h). Astron.tsir.
no.180:2-4 My '57. (MIRA 13:4)

1. Gosudarstvennyy astronomicheskiy institut im. P.K.Shernberga,
Moskva.

(Comets--1956)

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PART I BOOK EXPLOITATION

SOV/3939

SOV/51-M-29

Moscow. Universitet. Gosudarstvennyy astronomicheskiy institut imeni P.K. Shternberga

Trudy, tom 29 (Transactions of the State Astronomical Institute imeni P.K. Shternberg, Moscow State University, Vol 29) [Moscow] 1958. 274 p. 500 copies printed.

Resp. Ed.: F.P. Parenago, Corresponding Member, Academy of Sciences USSR; Ed.: Ye.D. Pavlovskaya; Tech. Ed.: M.S. Yermakov.

PURPOSE: The book is intended for astronomers and astrophysicists.

COVERAGE: This is a collection of three monographs on observations of star luminosity in the neighborhood of the sun, stellar observation in the vicinity of S Monoceros, and the photometric study of stars in the region of five large gaseous nebulae: IC 1805, NG 2175, NGC 2237-38, NGC 6618, and IC 1396. Catalogues of stars with additional data appear after each monograph. References accompany each monograph.

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Transactions of the State (Cont.)

SOV/3939

TABLE OF CONTENTS:

Sharov, A.S. Color-Luminosity Diagram of Stars in the Neighborhood
of the Sun

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Sharov A.S.

81815

S/035/60/000/01/03/008

3.1560

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1960, No. 1, p. 36, # 313

AUTHOR: Sharov, A. S.

TITLE: Color-Magnitude Diagram of Stars [✓] in the Vicinity of the Sun

PERIODICAL: Izv. Gos. astron. in-ta im. P. K. Shternberga, 1958, Vol. 29, pp. 3-70

TEXT: The aim of the present investigation was studying the structure of the main sequence, and in particular, the solution of the problem, whether its division into two parts exists in reality. Precise photoelectric observations served as material. The observational program included stars up to $8^m.5$ with declinations $\delta > 8^\circ$, and known trigonometric parallaxes (relative probable error was not higher than 0.1), and several sub-giants and sub-dwarfs whose selection was made with less strict requirements to the accuracy. Almost all the stars were located at distances not exceeding 20 parsec from the Sun. Deficiencies of the standard luminophor of the electric photometer of the Astronomical Observatory imeni Engel'gardt, which was used for the study, did not permit determinations of precise stellar magnitudes; therefore, only color indices were determined in the

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✓

81815

S/035/60/000/01/03/008

Color-Magnitude Diagram of Stars in the Vicinity of the Sun

study. The methods of securing observational material and its processing are described in detail. Two variants of the method, developed by V. B. Nikonov, of taking into account atmospheric transparency were analyzed. It was found that equations of V. B. Nikonov's method have specific features making it impossible to obtain simultaneously two unknowns: 1) a correction to the approximate extra-atmospheric value of the color index of the standard star, and 2) gradient η which shows the dependence of the factor of selective atmospheric light attenuation on the color index of the star. The value of η -gradient should be sought for from special observations. A fundamental catalogue of photoelectric color indices of 150 stars in the Sun's close vicinities was compiled. The color-magnitude diagram, plotted on the basis of these observations, warrants the conclusion that the main sequence has no fine structure which was earlier discovered by Eggen. No relations were detected between the position of the star within the width of the main sequence and space velocity, fine spectral peculiarities found by Roman, and axial rotation speed. There are 89 references.

T. S. Kirillova

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4

3(1)

AUTHOR: Sharov, A.S.

SOV/33-35-2-17/21

TITLE: On the Question of the Formula of the Coefficient of Proportionality Between the General and Selective Absorption of the Light and the Neutral Absorption of the Light in the Galaxy (K voprosu o formule dlya koeffitsiyenta proporsional'nosti mezhdru obshchim i selektivnym pogloshcheniyem sveta i o neytral'nom pogloshchenii sveta v galaktike)

PERIODICAL: Astronomicheskij zhurnal, 1958, Vol 35, Nr 2, pp 295-296 (USSR)

ABSTRACT: It is shown that the formulas derived by M.A.Vashakidze [Ref 1,2] for the coefficient χ combining the excess of colour of the stars with the total absorption of light, were based on a misunderstanding. The quantitative evaluation of the neutral absorption of the light in the galaxy basing on these formulas leads to errors. This error was also found by Ye.K.Kharadze (Abastumari Observatory).
There are 2 Soviet references.

ASSOCIATION: Gosudarstvennyy astronomicheskij institut imeni P.K.Shternberga
(State Astronomical Institute imeni P.K.Shternberg)

SUBMITTED: October 1, 1957

Card 1/1

3(1)

AUTHOR: Sharov, A.S.

SOV/33-36-1-13/31

TITLE: On the Nature of the Relation Between the Stellar Colour Excess and the Brightness of the Milky Way

PERIODICAL: Astronomicheskiy zhurnal, 1959, Vol 36, Nr 1, pp 106-113 (USSR)

ABSTRACT: In two figures the author represents the relation between the stellar colour excess and the brightness of the Milky Way, the so-called paradox of G.A.Shayn. The interpretation of the appearance was given by V.A.Ambartsumyan, Sh.G.Gordeladze, B.V. Kukarkin, and V.B.Nikonov. In his investigation the author uses new results of observations and explains the considered appearance by the fact that the apparent structure of the Milky Way is determined by the dark nebulae, projected on the stellar background of various brightness. The author uses results of P.P.Parenago, I.M.Kopylov, and N.F.Florya, while an estimation of M.A.Vashakidze is not used because it is not founded. Then

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On the Nature of the Relation Between the Stellar Colour Excess and the Brightness of the Milky Way SOV/33-36-1-13/31

it is shown that the earlier explanations of B.V.Kukarkin etc. essentially agree with the new theory of the author. The author mentions a paper of R.A.Bartaya. There are 6 figures and 20 references, 11 of which are Soviet, 6 American 2 Dutch, and 1 German.

ASSOCIATION: Gosudarstvennyy astronomicheskiy institut imeni P.K.Shternberga (State Astronomical Institute imeni P.K.Shternberg)

SUBMITTED: December 20, 1957

Card 2/2

S/033/60/037004/004/012

AUTHOR: Dibay, E.A., Tsitsin, F.A. and Sharov, A.S.

TITLE: On the Application of the Virial Theorem to the Dynamics of Stellar Clusters

PERIODICAL: Astronomicheskii zhurnal, 1960, Vol. 37, No. 4, pp 659 - 664

TEXT: The so-called virial theorem, which connects the potential and kinetic energies of a stationary cluster, can be expressed in the form:

$$2T + \Omega = 0 \tag{1}$$

For a stellar cluster, the kinetic energy is given by Eq (2), where m_i is the mass of a star, v_i is the velocity and r_{ik} the distance between stars i and k . Assuming, for simplicity, that the stellar masses in the cluster are the same, the potential energy is given by Eq (3), where $M = \sum m_n$ and represents the total mass of the cluster and R is a mean of the distances between the various stars and is given by Eq (4).

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S/033/60/037,004/004/012

E032/E314

On the Application of the Virial Theorem to the Dynamics of Stellar Clusters

According to Ambartsumyan (Ref.1), \tilde{R} should be of the order of the radius of the cluster. Using Eq.(3), \tilde{R} can be written in the form given by Eq.(5). In order to calculate the potential energy, it is convenient to replace the discrete mass distribution by a continuous one and this does not introduce a large error if the number of stars is not too low. If the potential energy is defined as the energy necessary to remove all the stars to infinity, then the potential energy of spherically symmetric configurations is of the form given by Eq. (6) and hence the required expression for \tilde{R} is of the form given by Eq. (7). This formula can be used to calculate \tilde{R} for various models of stellar clusters. In the present paper, only those models are considered in which the density is finite in the centre and does not increase in the outward direction. For a uniform sphere in which the density is constant and independent of radius, $\tilde{R} = (5/6)a$, where a is the radius of the sphere. If the density varies according to

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S/033/60/037004/004/012

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On the Application of the Virial Theorem to the Dynamics of Stellar Clusters

the law:

$$\rho(r) = \rho_0 (1 + r^2)^{-5/2}$$

then \bar{R} is given by Eq.(9). Finally, if the density falls off exponentially with distance, then \bar{R} is given by Eq.(10). \bar{R}/a is plotted as a function of a in Fig. 1 for the last two models, respectively. The analysis is then applied to multi-layer distributions. For a two-layer distribution defined by:

$$\frac{a}{b} = \frac{\rho}{\rho_0} \leq 1 \quad \frac{\delta}{\rho} = \eta \leq 1$$

where a and b are the radii and ρ and δ are the densities of the inner and outer zones. \bar{R} is given by Eq. (11). Numerical calculations based on this formula are



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On the Application of the Virial Theorem to the Dynamics of Stellar Clusters

given in Fig. 2 and Table 2. In the case of a three-layer model, defined by:

$$\frac{b}{c} = m \leq 1 \quad \frac{e}{\rho} = \gamma \leq 1$$

where c and e are the radius and the density of the third zone, respectively, \tilde{R} is given by Eq. (12) and the corresponding numerical calculations are given in Table 3 and Fig. 3. It is concluded from these calculations that the quantity \tilde{R} is usually 0.5 - 0.6 of the radius. Since it is usually assumed in the dynamics of stellar clusters that \tilde{R} is equal to the radius of the cluster, the characteristics of clusters obtained from the Virial theorem must be altered in the light of the present results. The applicability of the Virial theorem to stellar clusters still remains an open question.



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S/053/60/057/004/004/012
E032/E314

On the Application of the Virial Theorem to the Dynamics of
Stellar Clusters

There are 3 figures, 3 tables and 5 references: 4 Soviet and
1 English.

ASSOCIATION: Gos. astronomicheskiy in-t im. P.K. Shternberga
(State Astronomical Institute im. P.H. Shternberg)

SUBMITTED: November 16, 1959

Card 5/5

SHAROV, A.S.

Variation of brightness of bright members of the Pleiades. Per.
zvezdy 12 no.6:391-397 Je '59. (MIRA 13:9)

1. Gosudarstvennyy astronomicheskiy institut im. P.K.Shternberga.
(Pleiades)

*Astronomical Observatory imeni V. P. ENGEI -
 GARDTA i Gosudarstvennyy astronomicheskiy
 Institut imeni P. K. Shternberga* S/035/61/000/001/004019
 A001/A001

Translation from: Referativnyy zhurnal, *Astronomiya i Geodeziya*, 1961, No. 1,
 pp. 21 - 22, # 1A194

AUTHORS: Botsula, R.A., Sharov, A.S.

TITLE: Correlation of Changes in Brightness and Spectrum of Pleione

PERIODICAL: "Peremennyye zvezdy", 1959, Vol. 12, No. 6, pp. 398 - 409

TEXT: The luminosity curve of Pleione was plotted from 108 observations of different authors during the period from 1879 to 1959. All stellar magnitudes are given in the B system of Johnson-Morgan. Reduction of the Pleione observations taken from different sources to a single system is described in detail. The luminosity curve is presented graphically. During the interval from 1900 to 1936, the star maintained a constant brightness. By the end of 1939 Pleione became less luminous by more than $0^m.4$, then a rapid increase was set in, and in 1942 its luminosity was only slightly lower than the maximum one. In 1943 the luminosity dropped again. The second minimum was observed in 1945 - 1946. By 1957 the star came back to its initial luminosity ($B \approx 4^m.94$). The change in the luminosity of

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S/035/61/000/001/004/019
A001/A001

Correlation of Changes in Brightness and Spectrum of Pleione

the star was accompanied by changes in its color. From 1950 to 1959 the color index of Pleione ($B-V=0^m08$) was constant. In 1930 the color was the same, in 1939 color excess amounted to $+0^m08$; at the end of 1942 and in the beginning of 1943 it was $+0^m02$ to $+0^m03$, in 1948-1949 $+0^m03$. The spectrum and luminosity of Pleione were correlated. Prior to 1935 at the maximum brightness, Pleione was a normal rapidly rotating star of spectral class B8. In 1938 a strong emission in $H\alpha$ was noted for the first time. Emission in hydrogen lines appears the latest in the spectrograms. Variations of emission intensity and its individual components have some correlation with the course of the luminosity curve. In 1938, at the epoch of the first minimum, were noticed absorption lines of hydrogen and metals - the lines of the envelope. The intensity of the lines in the Pleione spectrum was varying all the time. A graph of ionization variation in the envelope was presented according to data obtained by O.Struve. Probably in 1938-1940 ionization increased, from 1940 it was decreasing and became the lowest during the second minimum, then began to grow again. Fluctuations of radial velocity are considered. Measurements of the spectrograms in 1941-1942 showed oscillations of the velocity of the envelope with a period of about 4 months and an amplitude of 10 km/sec. The comparison of variations of various Pleione characteristics shows that the

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S/035/61/000/001/004/049
A001/A001

Correlation of Changes in Brightness and Spectrum of Pleione

maximum intensification of absorption lines, minimum ionization, weakening of emission, and the beginning of a noticeably stratification of the envelope by velocities occurred during the years of the second minimum, which possibly was due to an increase in the amount and density of matter in the envelope. The end of the second minimum is connected with the dispersion of the envelope. For the first minimum is characteristic a strongly asymmetric emission; no characteristic, except symmetry of emission, is connected with the increase between the minima. The origin of the first minimum and the central growth of luminosity remains as yet unclear. In 1884 occurred apparently a weakening of luminosity, analogous to the second minimum, as can be concluded from photometric and spectral data. There are 42 references. ✓

N. Perova

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

Card 3/3

SKIPIN, G.V.; SHAROV, A.S.

Current stabilizer for electrocutaneous excitations. Zhur. vys.
nerv. deiat 10 no. 4:634-636 J1-Ag '60. (MIRA 14:2)

1. Institute of the Higher Nervous Activity, U.S.S.R. Academy
of Sciences, Moscow.
(CONDITIONED RESPONSE) (SKIN)

22072

S/35/61/000/03/A.19/048
A001/A101

3,1560

AUTHOR: Sharov, A.S.

TITLE: On the problem of variability of luminosity of bright members in the Pleiad cluster

PERIODICAL: Referativnyy zhurnal. Astronomiya i Geodeziya, no. 3, 1961, 43, abstract 3A376 ("Peremennyye zvezdy", 1960, v. 12, no. 6, 301 - 397, Engl. summary)

TEXT: The author analyzes the possible variability of Pleiad cluster members on the basis of all published, sufficiently accurate observations. All original catalogues are reduced to the system of Johnson and Morgan; reduction was made to stellar magnitudes B which were obtained by addition of color index B-V to published values of V. The graphic method was employed in reduction to the B system; the color equation was not taken into account, because color indices of stars considered were very similar and varied smoothly in transition to weaker stars. In most cases relation between photometric systems proved to be linear. The results of measuring luminosity of Pleiades are tabulated. The mean error was obtained on the basis of deviations from B magnitudes determined by H.L. Johnson.

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S 19/01/00/013/019/0-8
A001/A101

On the problem of variability ...

son and W.W. Morgan ("Astrophys. J.", 1951, v. 114, 522). Notes on individual stars are cited. It is concluded that no significant variability of brightness was noticed in the stars of the cluster. The detailed analysis of photometric observations published with sufficient details by H. Smeoller ("Kleinere Veroeff. Sternwarte Berlin-Babelsberg", 1936, v. 5, no. 17, 12), W.A. Galter ("Harvard Ann.", 1937, v. 105, 453) and Johnson and Morgan show also the absence of short-periodical variables with small amplitude. It is noted that stars of spectral class A also do not show a definite variability of brightness. There are 43 references.

M. Savel'eva

[Abstracter's note: Complete translation]

Card 2/2

BOTSULA, R.A.; SHAROV, A.S.

Searching for variable stars in open stellar clusters and associations. Per.zvezdy 13 no.2:101-111 N '60. (MIRA 14:10)

1. Astronomicheskaya observatoriya imeni V.P.Engel'gardta i Gosudarstvennyy astronomicheskiy institut imeni P.K.Shternberga.
(Stars, Variable)

SHAROV, A.S.

Combined light curve of AG Draconis. Per zvezdy 13 no.1:54-57 Ap '61.
(MIRA 14:3)

1. Gosudarstvennyy astronomicheskiy institut im. P.K. Shternberga.
(Stars, Variable)

SHAROV, A.S., kand.fiz.-matem.nauk

Problems in the photometry of stars. Vest. AN SSSR 31 no.11:
110 N '61. (MIRA 14:11)
(Photometry, Astronomical)

SHAROV, A.S.

Comparison of several theoretical laws of galactic rotation
with observational data. Astron.zhur. 38 no.2:287-292 Mr-Apr
'61. (MIRA 14:4)

1. Gosudarstvennyy astronomicheskiy institut im. P.K. Shternberga.
(Milky Way)
(Cepheids)

DIBAY, E.A.; TSITSIN, F.A.; SHAROV, A.S.

Letter to the editor. Astron.zhur. 38 no.3:566 My-Je '61.
(MIRA 14:6)

1. Gosudarstvennyy astronomicheskiy institut imeni P.K.Shternberga.
(Stars—Clusters)

SHAROV, A.S.; PAVLOVSKAYA, Ye.D.

Kinematics of globular clusters. Astron.zhur. 38 no.5:939-945
S-O '61. (MIRA 14:9)

1. Gosudarstvennyy astronomicheskiy institut im. P.K.Shternberga.
(Stars--Clusters)

Estimation of the optical semi-thickness ...

S/035/62/000/006/008/064
A001/A101

$$\lg w = (1.88 \pm 0.04) + (-2.35 \pm 0.16) \cdot E$$

$$E = (0.^m83 \pm 0.^m03) + (-0.^m43 \pm 0.^m03) \lg w$$

Similar results are obtained when using other counts of galaxies. Reduction to galactic pole was made, which permitted the estimation of absorption in direction to the pole to be expressed by $0.^m35 \pm 0.^m04$. There are 13 references.

T. Agekyan

[Abstracter's note: Complete translation]

Card 2/2

SHAROV, A.S.

Photoelectric observations of β Canis Majoris. Astron. tsir.
no.229:21 Je '62. (MIRA 16:6)

1. Gosudarstvennyy astronomicheskiy institut im. Shternberga.
(Stars, Variable)

SHAROV, A.S.

Brightness variations in small amplitude stars. Astron.zhur. 40
no.4:754-756 J1-Ag '63. (MIRA 16:8)

1. Gosudarstvennyy astronomicheskiy institut im. P.K.Shternberga.
(Stars) (Atmospheric transparency)

SHAROV, A.S.

Fluctuations of the brightness of Pleione. Per.zvezdy 13 no.6:
434-435 '61. (MIRA 16:9)

I. Gosudarstvennyy astronomicheskiy institut imeni Shternberga.
(Stars, Variable)

SHAROV, A.S.

Revision of interstellar light absorption in the Galaxy.
Astron. zhur. 40 no.5:900-911 S-0 '63. (MIRA 16:11)

1. Gosudarstvennyy astronomicheskiy institut im. P.K. Shternberga.

SHAROV, A.S.; YEFREMOV, Yu.N.

Brightness variation of the object identified with the radio
source ZS 273. Astron. zhur. 40 no.5:950-952 S-0 '63.

(MIRA 16:11)

1. Gosudarstvennyy astronomicheskiy institut im. P.K. Shternberga.

SHAROV, A.S.; YEFREMOV, Yu.N.

Brightness variations of the object identified with the radio
source 3C 273. Astron. tsir. no.240:1 Ap '63. (MIRA 17:6)

1. Gosudarstvennyy astronomicheskiy institut imeni Shternberga
i Astronomicheskiy Sovet AN SSSR.

AKHIEV VA, V.P.; KOSYAROVA, Ye.B.; SHAROV, A.S.

Spectrometry of the object 3C-273. Astron. zar. no. 251:2-4
11 '63. (MIRA 17:5)

1. Gosudarstvennyy astronomicheskiy institut imeni Shternberga.

SHAROV, A.S.

Apparent and space structure of the star cluster NGC 188. Astron.
zhur. 41 no.2:387-395 Mr-Apr '64. (MIRA 17:4)

1. Gosudarstvennyy astronomicheskiy institut im. P.K.Shternberga.

SHAROV, A.L.

Apparent structure of the cluster NGC 1118. In: *Astronomicheskii zhurnal*, 1978, no. 3: 374-378. 5 p. 16L.

1. Gosudarsstvennyy astronomicheskij institut im. P.K. Shternberga.
1118, 1118

L 04053-67 EWT(1)/FCC GW

ACC NR: AT6026560

(N)

SOURCE CODE: UR/2623/65/000/139/0003/0010

AUTHOR: Sharov, A. S.

. 30

ORG: none

TITLE: Certain characteristics of atmospheric transparency¹² in the region of the Alpine station of the Shternberg Astronomical Institute

SOURCE: Moscow. Universitet. Gosudarstvennyy astronomicheskiy institut. Soobshcheniya, no. 139, 1965, 3-10

TOPIC TAGS: atmospheric transparency, ^{meteorologic instrument,} ~~mean-square error~~, meteorologic observation

ABSTRACT: Photoelectric observations of stars carried out at the Alpine station of the Shternberg Astronomical Institute (Vysokogornaya ekspeditsiya GAISH) showed that the overall changes of atmospheric transparency are apparently associated with local meteorological conditions. The observations were carried out with and without a blue filter. The results of the measurements are given in a table where the extra-atmospheric stellar magnitudes, their mean square errors, errors of one observation, and number of observations are indicated. The errors of the results average $\pm 0^m.005$ both in the observations with and without the filter. Noticeable inhomogeneities of atmospheric transparency which encompassed appreciable areas of the sky

Card 1/2

L 04053-67

ACC NR: AT6026560

0
were noted. The investigation once again emphasized, when compiling catalogs, the need for extreme caution in selecting places for carrying out precision electrophotometric measurements when an extremely high accuracy is required of each individual measurement. The overall change of transparency in the blue filter was about 1.5%, whereas the transparency in the long-wave region of the spectrum changed somewhat more (about 3%). Thus, the curve of the spectral transparency of the atmosphere did not remain constant during the observational season and the changes largely concerned its long-wave region. Orig. art. has: 3 formulas, 2 tables, and 3 figures.

SUB CODE: 0304/ SUBM DATE: 00Apr64/ ORIG REF: 003/ OTH REF: 002

kh

Card 2/2

11.11.1954

1. "Voprosy fiziki i khimii atmosfery", Moskva, 1954, no. 5:1045-
1050, 1054, 1055. (MIRA 18:10)

2. Gossumitvennyy astronomicheskiy institut im. P.K. Shternberga.

L 16024-66 EWT(1) GW
ACC NR: AP6006770

SOURCE CODE: UR/0033/66/043/001/0040/0045

AUTHOR: Pavlovskaya, Ye. D.; Sharov, A. S.

ORG: State Astronomical Institute im. P. K. Shternberg. (Gosudarstvennyy astronomicheskiy institut)

TITLE: Spiral structure of the Galaxy ^{12,55}

SOURCE: Astronomicheskiy zhurnal, v. 43, no. 1, 1966, 40-45

TOPIC TAGS: spiral galaxy, neutral hydrogen, radio astronomy, logarithmic spiral, characteristic angle

ABSTRACT: The spiral structure of our Galaxy was studied, based on neutral hydrogen, by radioastronomic methods, and the wavelength of 21cm. The total spiral structure was not discovered by radioastronomic methods and the distribution of hydrogen in the Galaxy was unexpected. The neutral hydrogen forms a complicated ring in the vicinity of the sun, which does not resemble a spiral arm. Investigations by Soviet scientists of the 21-cm line showed a probable winding angle of the spiral arm from 83° in the central part to 85° in the outer part. If it is possible to accept the existence of spiral arms in the vicinity of the sun, then

UDC: 523.854

Card 1/2

31
B

Z

ACC NR: AR6028752

SOURCE CODE: UR/0269/66/000/006/0031/0031

AUTHOR: Sharov, A. S.

TITLE: Some characteristics of atmospheric transparency in the region of the high-mountain expedition of the State Astronomical Institute im. P. K. Shternberg

SOURCE: Ref. zh. Astronomiya, Abs. 6.51.256

REF SOURCE: Soobshch. gos. astron. in-ta im. P. K. Shternberga, no. 139, 1965, 3-10

TOPIC TAGS: atmospheric transparency, astronomic observatory

ABSTRACT: Photoelectrical observations of the stars carried out by the State Astronomical Institute im. P. K. Shternberg have shown that general changes in atmospheric transparency are apparently connected with local meteorological conditions. Marked inhomogeneities of atmospheric transparency involving significant sections of the sky have been detected. Bibliography of 5 titles.

[Translation of abstract]

[NT]

SUB CODE: 03/

Card 1/1

UDC: 525.7

SVIRIDENKO, F.F., inzhener; SHAROV, B.A., inzhener; FETISOV, L.G.,
inzhener.

High-speed smelting of steel from high-phosphorus pig iron.
Metallurg no.3:28-32 Mr '56. (MLRA 9:9)

1. Zavod "Azovstal'."
(Zhdanov--Metallurgical plants) (Smelting)

DERFEL', A.G.; KRAVTSOVA, I.P.; DYUBIN, N.P.; SVIRIDENKO, F.F.; POPOVA, A.N.;
DOLINENKO, O.V.; SHAROV, B.A.; Primalni uchastiye: DYUBINA, A.V.;
TARASOVA, L.P.; LESENKO, I.I.; LEVCHENKO, N.D.; BONDARENKO, A.V.

Using ferrotitanium for the deoxidation of rail steel and
its properties. Sbor. trud. UNIM no.11:365-378 '65.
(MIRA 18:11)

GERSHGOEN, M.A.; SVIPIIENKO, F.F.; KAZARNOVSKIY, P.S.; KIATSOVA, I.P.;
POFGVA, A.N.; FRADINA, M.G.; Primalni uchastiy: IUKASHOV, G.G.;
KUDGL'SKIY, H.L.; SLEPKANOV, H.P.; PLISKANOVSKIY, S.T.; SHABALOV,
Ya.S.; BUL'SKIY, M.T. [deceased]; ARKHANGEL'SKIY, Ya.N.; SHAROV,
B.A.; VISTOROVSKIY, N.T.; BAKHANSKIY, B.I.; SAPOZHKOV, V.Ye.;
RYABININ, H.G.; KARAKULINA, R.R.; FADEYEVA, A.M.; ZVEREV, B.A.

Improving the production of high-strength rails by alloying
them with granulated ferrochromium in the ladle. Stal' 25
no.5:408-411 My '65. (MIRA 18:6)

1. Ukrainskiy nauchno-issledovatel'skiy institut metallov i zavod
"Azovstal'".

SHAROV, B.K.

Rare case of hepar mobile (wandering liver). Vest.rent.1 rad.
35 no.1:63-64 Ja-F '60. (MIRA 13:6)

1. Iz rentgenologicheskogo otdeleniya mediko-sanitarnoy chasti
Chelyabinskogo traktornogo zavoda (nachal'nik L.L. Krimshteyn).
(LIVER abnorm.)

SHAROV, B.K.

Problem of nomenclature for the bronchi. Probl.tub. no.5:112.
113 '61. (MIRA 15:1)

1. Iz rentgenovskogo otdeleniya mediko-sanitarnoy chasti (nach. -
L.L. Seredinina) Chelyabinskogo traktornogo zavoda.
(BRONCHI) ^{if} (MEDICINE--TERMINOLOGY)

SHAROV, B.K.

Bronchography with barium iodol. Vest. rent. i rad. 36 no. 1:66-68
Ja-F '61. (MIRA 14:4)

1. Iz mediko-sanitarnoy chasti Chelyabinskogo traktornogo zavoda
(nachal'nik L.L. Seredinina).
(BRONCHI--RADIOGRAPHY) (CONTRAST MEDIA)

RATNER, G.L., dotsent (Chelyabinsk, pr. Lenina , d.61, kv.31);
SHAROV, B.K.

Surgery for a rare variety of the "vascular ring." Vest.khir.
86 no.3:70-72 Mr '61. (MIRA 14:3)

1. Iz fakul'tetskoy khirurgicheskoy kliniki (zav. - prof. I.D.
Korabel'nikov) Chelyabinskogo meditsinskogo instituta na baze
mediko-sanitarnoy chasti Chelyabinskogo traktornogo zavoda (gl.
vrach - L.L. Seredinina).
(AORTA--ABNORMITIES AND DEFORMITIES)

SHAROV, B.K.

Aspiration bronchography. Khirurgiia no.1:131-132 '62. (MIRA 15:11)

1. Iz mediko-sanitarnoy chasti Chelyabinskogo traktornogo zavoda (nach. L.L. Seradinina).
(BRONCHI—RADIOGRAPHY)

SHAROV, B. K.

Anesthesia in bronchography. Grud. khir. no.2:72-74 '62.
(MIRA 15:4)

1. Iz otdeleniya grudnoy khirurgii (zav. - dotsent G. L. Ratner)
mediko-sanitarnoy chasti Chelyabinskogo traktornogo zavoda.

(BRONCHI—RADIOGRAPHY) (LOCAL ANESTHESIA)

SHAROV, B.K.

Some problems in the X-ray diagnostic evaluation of round shadows in the lung. Vop.onk. 8 no.8:8-13 '62. (MIRA 15:9)

1. Iz otdeleniya grudnoy khirurgii (zav. - dots. G.L. Ratner) mediko-sanitarnoy chasti Chelyabinskogo traktornogo zavoda (nach. - L.L. Seredinina).
(LUNGS—CANCER) (DIAGNOSIS, RADIOSCOPIC)

SHAROV, B.K.

1/2
Significance of the contrast medium viscosity for contour
bronchography. Vest. rent. i rad. 37 no.1:57-58 Ja-F '62.
(MIRA 15:3)

1. Iz fakul'tetskoy khirurgicheskoy kliniki (zav. - prof.
I.D. Korab'nikov) Chelyabinskogo meditsinskogo instituta i
otdeleniya grudnoy khirurgii (zav. - dotsent G.L. Ratner)
mediko-sanitarnoy chasti Chelyabinskogo traktornogo zavoda
(nachal'nik L.L. Seredinina).

(BRONCHI--RADIOGRAPHY)
(CONTRAST MEDIA)

BAYANDIN, P.A. (Murmansk); SHVETSOV, I.M.; TIMOFEYEVA, N.V.; KOVAL', V.P.; KOZLOVA, E.Z.; TRET'YAKOV, N.I. (Kaliningrad); MAMEDOV, E.Sh. (Poselok Martuni, AzerSSR); BOROVYY, Ye.M.; DULAYEV, S.G. (Grodno); GERASIMOV, B.A. (Lugansk); MEL'NIK, L.A. (Chernovtsy); MIGAL', L.A.; GUBANOV, A.G.; GOROVENKO, G.G. (Kiyev); SHAROV, B.K. (Chelyabinsk); SHUVALOVA, Z.A. (Sverdlovsk) NEYMARK, I.I.; ARYAYEV, L.N. (Odessa); KABANOV, A.N.; KONOVALOV, Yu.S.; ZAK, V.I. (Orenburg); MIKHAYLOV, M.M.; SEZ'KO, A.D. (Voronezh); SHALAYEV, M.I.; DONIN, V.I. (Saratov).

Abstracts. Grudn. khir. 5 no.3:110-126 My-Je'63 (MIRA 17:1)

1. Iz kafedry normal'noy anatomii Ryazanskogo meditsinskogo instituta imeni akademika I.P.Pavlova (for Shevtsov). 2. Iz Sochinskogo nauchno-issledovatel'skogo instituta kurortologii i fizioterapii Ministerstva zdravookhraneniya RSFSR (for Timofeyeva). 3. Iz khirurgicheskogo otdeleniya Ternopol'skoy klinicheskoy gorodskoy bol'nitsy (for Koval'). 4. Iz kafedry topograficheskoy anatomii i operativnoy khirurgii (zav. - prof. A.P. Sokolov). Permskogo meditsinskogo instituta (for Kozlova). 5. Iz khirurgicheskogo otdeleniya (zav. - Ye. M. Borovyy) Rovenskoy oblastnoy bol'nitsy (glavnyy vrach - UkrSSR V.M. Vel'skiy) (for Borovyy).

(Continued on next card)

BAYANDIN, P.A.--- (continued) Card 2.

6. Iz fakul'tetskoy khirurgicheskoy kliniki (dir. - prof. I.M. Popov'yan) i gospital noy terapevticheskoy kliniki (dir. - prof. L.S.Shvarts) lechebnogo fakul'teta Saratovskogo meditsinskogo instituta (for Migal'). 7. Iz kafedry fakul'tetskoy khirurgii (zav. - prof. I.I.Neymark) Altayskogo meditsinskogo instituta (for Neymark). 8. Iz Novosibirskogo gorodskogo protivotuberkuleznogo dispansera (for Kabanov). 9. Iz kafedry fakul'tetskoy khirurgii (zav. - prof. I.A.Ivanov) Permskogo meditsinskogo instituta (for Shalayev).

RATNER, G.L., dotsent; SHAROV.B.K.

Clinical roentgenological symptoms of regional metastases in lung cancer. Vop.onk. 9 no.1:63-69 '63. (MIRA 16:5)

1. Iz otdeleniya grudnoy khirurgii (zav.-dotsent G.L.Ratner) kliniki fakul'tetskoy khirurgii (zav.-prof.I.D.Korabel'nikov) Chelyabinskogo meditsinskogo instituta na baze mediko-sanitarnoy chasti Chelyabinskogo traktornogo zavoda (glavnyy vrach L.L.Seredinina).

(LUNGS —CANCER)

(METASTASIS)

SHAROV, B.K.

Variations of the development of the tracheobronchial tree.
Vest. rent.i rad. 28 no.2:60-61 Mr-Ap'63. (MIRA 16:9)

1. Iz otdeleniya grudnoy khirurgii mediko-sanitarnoy (na-
chal'nik L.L.Seredinina) Chelyabinskogo traktornogo zavoda.
(TRACHEA) (BRONCHI)

KORABEL'NIKOV, I.D., prof. ; SHAROV, B.K. (Chelyabinsk)

Review of E. Bernard and B. Gamain's book "Clinical broncho-
graphy". Vest. rent. i rad. 38 no.1: 81-83 Ja-D'63.
(MIRA 16:10)

*

SHAROV, B.K.

Experience in aspiration bronchography in the diagnosis of
central lung cancer. Vest. rent i rad. 38 no.5:64-65 S-0'63
(MIRA 16:12)

1. Iz otdeleniya grudnoy khirurgii (zav. - dotsent G.L.Ratner)
fakul'tetskoy khirurgicheskoy kliniki (zav. - prof. I.D. Ko-
rabel'nikov) i mediko-sanitarnoy chasti (nachal'nik L.L.
Seredinina) traktornogo zavoda, Chelyabinsk.

SHAROV, B.K. (Chelyabinsk)

Can dilatation of ducts of the bronchial mucous glands be considered a disease entity? Klin. med. 41 no.4:141-144
Ap '63. (MIRA 17:2)

1. Iz otdeleniya grudnoy khirurgii (zav. - dotsent G.L. Ratner) fakul'tetskoy khirurgicheskoy kliniki (zav. - prof. I.D. Korabel'nikov) i mediko-sanitarnoy chasti Chelyabinskogo traktornogo zavoda (nachal'nik L.L. Seredinina).

SHAROV, B.K. (Chelyabinsk, ul. TSvillinga, d.43, kv.11)

Characteristics in the clinical course and diagnosis of lung
cancer in silicosis patients. Vop. onk. 10 no.23-24 '64.

(MIRA 17:7)

1. Iz otdeleniya grudnoy khirurgii fakul'tetskoy khirurgicheskoy
kliniki (zav.- prof. I.D. Korobal'nikov) i rentgenologskogo otdeleniya
mediko-sanitarnoy chasti Chelyabinskogo traktornogo zavoda (glavnyy
vrach - I.L. Seredinina.

SHAROV, B.K. (Chelyabinsk, ul. Tsviliuga, 43, kv.1); YERMOLYUK, R.S.

Metastelial cyst of the diaphragm. Vest. khir. 92 no.1:77-79
Ja '64. (MIRA 17:11)

1. Iz otdeleniya grudnoy khirurgii fakul'tetskoy khirurgicheskoy
kliniki (zav. - prof. I.D. Korabel'nikov) na baze mediko-sanitar-
noy chasti Chelyabinskogo traktornogo zavoda (glavnyy vrach - L.L.
Seredina).

SHAROV, B.K. (Chelyabinsk, ul. TSvillinga, d.43, kv.1); ZASLAVSKIY, V.K.

Azygography. Grud. khir. 6 no.1:61-68 Ja-F '64.

(MIRA 18:11)

1. Otdeleniye grudnoy khirurgii (zav. - dotsent G.L. Ratner)
fakul'tetskoy khirurgicheskoy kliniki (zav. - prof. I.D.
Korabel'nikov) i mediko-sanitarnaya chast' (nachal'nik L.L.
Seredinina) Chelyabinskogo traktornogo zavoda. Submitted
June 5, 1962.

SHAROV, B.K.

X-ray diagnosis of echinococcus of the spleen. Vest. rent.
i rad. 39 no.3:67-68 My-Je '64.

(MIRA 18:11)

1. Mediko-sanitarnaya chast' Chelyabinskogo traktornogo
zavoda.

1. [Illegible text]

2. [Illegible text] (NDA 18:4)

3. [Illegible text]

SHAW, H.K.

X-ray diagnosis of benign tumor of the stomach. Vest. rent. i
rad. 39 no.5:53-54 S-O 104. (MIRA 18:3)

1. Onkologicheskoye otdeleniye mediko-sanitarnoy chasti Chelya-
binskogo traktornogo zavoda.

SHAROV, G.E. BISHILOV, A.K., NAROVLYANSKAYA, L.I.

Hamartomas of the lungs. Vop. onk. 11 no.4:3-7 '65.

(MIRA 18:8)

1. Iz rentgenovskikh otdeleniy bol'nitsy traktornogo zavoda
(glavnyy vrach L.I.Seredinina), oblastnoy bol'nitsy (glavnyy vrach
N.S.Klyukov), oblenkodispensera (glavnyy vrach N.M.D'yachkova),
g. Chelyabinsk.

SHAROV, B. V.

"Electrocerebrographic Studies During Circular Psychosis (Manic-Depressive)."
Cand Med Sci, Kiev Medical Inst, Kiev Psychoneurological Hospital imeni Academician
I. P. Pavlov, Kiev, 1954. (RZhBiol, No 2, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher
Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

BATENIN, I.V.; SHAROV, B.V.

X-ray apparatus for the structural analysis of radioactive materials.
Prib. i tekhn. eksp. no. 3:59-65 N-D '56. (MLRA 10:2)
(X-ray spectroscopy) (Radioactive substances)

INSTRUMENTATION: SPECTROMETERS

"X-Ray Apparatus for Structural Investigation of Radioactive Materials"
by I.V. Batenin and B.V. Sharov, Pribory i Tekhnika Eksperimenta, No 3,
November-December 1956, pp 59-65.

The principal distinguishing feature of the apparatus, which is based on a double diffraction spectrometer scheme, is the use of small counters for the recording of X-ray quanta in conjunction with two photomultipliers, operating in a coincidence circuit. The apparatus permits X-ray diffraction patterns of uranium specimens with activity 100-200 millicurie with automatic recording of the diffraction pattern. Introducing into the branches of the coincidence circuit two single-channel differential discriminators, especially redesigned for coincidence operation, has made it possible to obtain X-ray photographs of uranium specimens with activity 500-800 millicurie under the same conditions.

Card 1/1

AUTHOR: BATENIN, I.V., SHAROV, B.V. 89-9-16/32
TITLE: X-Ray Examination of Irradiated Uranium when Studying its Growth
under Irradiation. (Rentgenograficheskoye izucheniye urana v svyazi
s yavleniyem ros'ta pri obluchenii)
PERIODICAL: Atomnaya Energiya, 1957, Vol 3, Nr 9, pp 261-262 (U.S.S.R.)
ABSTRACT: A larger number of samples of natural uranium and of 2% enriched
U²³⁵, which had been irradiated in the reactor for a longer
period at the same temperature, are subjected to an X-ray examina-
tion. It was shown that the samples investigated were not homo-
geneous as a result of the fluctuations occurring in the course
of the process of their production. Only the different degree of
texture in the casting, even at different points of one and the
same casting, can serve as a measure for the different growth
values during irradiation. (With 2 Tables, 2 Illustrations, and
3 Slavic References).
ASSOCIATION: Not given
PRESENTED BY:
SUBMITTED: 23.4.1957
AVAILABLE: Library of Congress
Card 1/1

SHAROV, B.V., kand.med.nauk; VOROKOV, G.L.; AKACOVSKAYA, L.F.; BLEYKHER,
V.M.; FRUMKIN, Ya.P., prof.

Electroencephalographic studies of some psychical diseases. Vop.
klin. nevr. i psikh. no.2:235-267 '58. (MIRA 14:10)
(ELECTROENCEPHALOGRAPHY) (MENTAL ILLNESS)

SHAROV, B.V.

Camera for diffraction microradiography. Zav. lab. 24 no.5:648
'58. (MIRA 11:6)

(Radiography)

SOV/180-59-3-31/43

AUTHOR: Sharov, B.V. (Moscow)

TITLE: The Structure of the Surface Layer of Uranium
Iroduced by an Electric Spark Treatment

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh
nauk, Metallurgiya i toplivo, 1959, Nr 3, pp 148-150(USSR)

ABSTRACT: On electric spark treatment of uranium, a layer is
formed with a specific structure. Rods of technically
pure uranium 4 mm in diameter and 20 mm long were
used for the investigation. Some specimens possessed
an isotropic structure, the others a sharply pronounced
texture (010) along the rod axis. All specimens were
of such fine grain structure that X-ray (CuK α)
photographs showed continuous lines. The X-ray
and the surface treated by electric sparking as well
as the surface subsequently etched showed the clearly
pronounced redistribution of intensities (Fig 1). The
appearance of the surface treated with electric sparking
is shown in Figures 2 and 3. Factors affecting the
structure of the "sparked" surface could be melting with
subsequent recrystallisation and phase transformations

Card 1/2

SOV/180-59-3-31/43

The Structure of the Surface Layer of Uranium Produced by an
Electric Spark Treatment

as well as only phase transformations if the
temperature of the layer did not reach melting point.
The impact character of the spark should also be taken
into consideration. There are 3 figures and 5 Soviet
references.

SUBMITTED: February 2, 1959

Card 2/2

21(1), 18(7)

SOV/89-6-5-11/33

AUTHORS: Batenin, I. V., Rudenko, A. N., Sharov, B. V.

TITLE: Dilatometric Investigation of Rolled Uranium Rods (Dilatometricheskiye issledovaniya prokatannykh sterzhney urana)

PERIODICAL: Atomnaya energiya, 1959, Vol 6, Nr 5, pp 565-567 (USSR)

ABSTRACT: Technically pure uranium which was rolled into rods of 4 mm diameter at $\sim 300^{\circ}\text{C}$ and at high pressure, was investigated in a vacuum dilatometer, and the course of the dilatometric curves for the first thermal cycle was found to be anomalous. After heating up to 525°C and subsequent cooling the dilatometric curves correspond to the known curves for rods with saturated axial structure $[010]$. An anomalous course of the curves is found in the case of cooling down also if heating during the first cycle ranged between 200 and 500°C . If the uranium is heated up to $\sim 180^{\circ}\text{C}$, the curve for cooling coincides with that for heating, whereas in the case of heating up to more than 180°C the curves do not coincide. Heating up to temperatures of from 250° to 520°C shortens the rods. The rods shortened by the first thermal cycle are characterized by a noticeable shift of the inversion point (up to $\sim 400^{\circ}\text{C}$). In the case of cooling down to $\sim 600^{\circ}\text{C}$ the inversion point is again shifted down to a temperature of $\sim 200^{\circ}\text{C}$. If, during

Card 1/2

Dilatometric Investigation of Rolled Uranium Rods SOV/89-6-5-11/33

the second thermal cycle, the temperatures which correspond to inversion point are not exceeded, the curve for cooling practically coincides with that for heating. The results obtained by measurements are shown by diagrams; the measuring methods employed are not dealt with in detail. The anomalous course taken by the dilatometric curves during the first heating of an uranium rod may possibly be connected with the diffusion of the impurities still existing in the technically pure uranium. It is possible that the said anomaly does not occur in the case of uranium of an especially high degree of purity. There are 3 figures and 2 references, 1 of which is Soviet.

SUBMITTED: November 25, 1958

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SOV/126-7-2-12/39

24(2), 21(7)

AUTHORS: Batenin, I. V., Il'ina, V.A., Kritskaya, V.K. and Sharov, B.V.

TITLE: On the Effect of Neutron Irradiation on the Fine Crystalline Structure of Metals and Alloys (K voprosu o vliyaniy neytronnogo oblucheniya na tonkuyu kristallicheskuyu strukturu metallov i splavov)

PERIODICAL: Fizika Metallov i Metallovedeniye, 1959, Vol 7, Nr 2, pp 243-246 (USSR)

ABSTRACT: The metals investigated were Fe, Cr, Ni and Cu and the solid solutions were Fe-Ni, Fe-Cr, Fe-Mn, and Fe-W. Specimens were made up of each of these materials, their size being 20 x 10 x 2 mm. As a preliminary step before the irradiation all the specimens were annealed at the following temperatures: Ni and Cu at 400°C (30 minutes), Fe and the alloys Fe-Ni and Fe-Mn at 600°C (2 hours), Fe-Cr and Fe-W at 650°C (2 hours) and Cr at 900°C (2 hours). The specimens thus treated were placed in hermetically sealed aluminium containers and were then irradiated by neutrons. The temperature of the specimens during irradiation did not exceed 80°C. The neutron flux was 10²⁰ neutrons/cm². The structure of the irradiated

Card 1/2

SOV/126-7-2-12/39
On the Effect of Neutron Irradiation on the Fine Crystalline
Structure of Metals and Alloys

metals and alloys was studied by X-ray analysis. It was found that in the majority of specimens the interference lines become broadened after neutron irradiation. Table 2 gives the line widths of the interference lines before and after irradiation. Figs 1 and 2 show the corresponding lines before and after irradiation. These figures refer to copper (Figs 1 and 2) and Fe-Ni respectively. There are 2 tables, 3 figures and 19 references, 5 of which are Soviet, 14 English.

ASSOCIATIONS: ITEF AN SSSR and Institut metallovedeniya i fiziki metallov TsNIICHM (Institute of Metallography and the Physics of Metals TsNIICHM)

SUBMITTED: September 6, 1957

Card 2/2

5.2200(A)
18.9200

67711

AUTHORS: Ryabkina, V.V. and Sharov, B.V. SOV/126-7-3-7/44

TITLE: On the Fine Structure¹ of Crystalline Grains of Uranium²
(O tonkoj strukture kristallicheskikh zeren urana)

PERIODICAL: Fizika metallov i metallovedeniye, Vol 7, Nr 3, pp 360-362
(USSR), 1959

ABSTRACT: The existence of a fine mosaic structure¹ of uranium grains has been convincingly confirmed in the present work by a structure-sensitive diffraction micro-X-ray photography method. The method is based on decaying X-ray pictures of a portion of the specimen lying very close to the surface under investigation, the distance being of the order of 0.1 mm. Each point on the X-ray picture corresponds to a point of the investigated specimen surface. X-ray exposure was carried out in a special chamber (Ref.3). The most important part of the chamber, the specimen holder, is shown in Fig.1. The specimen (2) is pressed against the supports of the holder (1), as indicated by arrow A. The photographic plate (3) is placed from above on the holder in such a way that one of its ends is kept raised by pretrusions B, and the ribs

Card 1/3

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67711

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On the Fine Structure of Crystalline Grains of Uranium

lean against the vertical surfaces of the holder. The X-ray beam is directed into the narrow gap between the specimen and the photographic plate (as indicated by arrow C) in such a manner as not to illuminate the photo-emulsion. Simultaneous metallographic and X-ray exposures are possible because of the fixed position of the specimen and photographic plate. The arrangement used for observation is shown in Fig.2. By moving the microscope tube it is possible to carry out observations in reflected light, focusing consecutively the picture on the exposed photographic plate and the portion of the metallic surface below it. Natural high purity uranium which had been re-melted in a vacuum of 10^{-4} mm Hg was used for the investigation. Specimens of the required dimensions were cut out by an electric sparking method. The surface under investigation was ground mechanically, after which it was treated electrolytically, removing a deep layer. After thorough washing with water the specimen surface clearly showed granular structure. In Fig.3 the scheme for "direct" reflection of (131) and (112) for a Cr K_α -irradiation is shown. All X-ray pictures of uranium specimens showed that reflections from crystalline grains are fragmented. This

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proves that a grain of cast uranium consists of blocks which are slightly displaced with respect to one another. The reflecting atomic surfaces determine the fragmented nature of the X-ray reflections because of their mosaic structure. As an illustration a microphotograph of a uranium specimen is shown in Fig.4, and its corresponding diffraction micro-X-ray picture in Fig.5. An investigation of finely grained rolled uranium rods proved to be unsuccessful because of the insufficient resolving power of the method. The mosaic structure of the grains becomes evident after quenching these specimens from the β -phase. There are 5 figures and 3 references, of which 1 is Soviet and 2 French.

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AUTHORS:

Matenin, I. B., Rudenko, A. N.,
Sharov, B. V.

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The Growth of Uranium Rods in an Aggressive Gaseous Medium

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ABSTRACT:

The authors investigate rods made from technically pure uranium (diameter 2 to 4 mm, length up to 100 mm), the deformation texture of which had been removed by quenching. The extension of the rods was determined from the variation of the distances between the front surfaces of these rods, which had previously been polished until metallic luster was attained, or also from the variation of the distance between the marks previously made on the cylindrical surface. In some cases the extension was measured directly from the duration of the experiment by means of an indicator system. The gas pressure in the measuring apparatus could be varied between 10^{-2} mm and atmospheric pressure. The temperature of the samples was controlled by means of a thermocouple. Heating of the samples with 4 mm diameter at atmospheric pressure led to a change of length. The first 3 diagrams illustrate the dependence of the growth of the rods on pressure at the temperatures of the

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α -, β -, and γ -phase. The fourth diagram gives data concerning the dependence of the rate of increase of the rods on their diameter. Conditions otherwise remaining the same, samples, which have a thin oxide film on their surface, increase in length more rapidly than such as have a pure surface. The rate of increase at 500° C somewhat exceeds the rate of increase of the quenched rods. At normal pressure and at temperatures corresponding to the β - and γ -phase, the samples extend when heated in nitrogen. Experiments carried out at atmospheric pressure in carbon monoxide gas prove the increase of the size of the rods at temperatures corresponding to the γ -, β -, and α -phase. The density of the metal after the increase of volume is practically the same as the initial density. The increase in rod volume at the temperatures of the β - and α -phase does not change the density of the sample. The surface of a uranium rod which has grown in volume when heated in air has a cubic face-centered lattice with the parameter 5.31 Å. This lattice corresponds to the structure of UO₂. In conclusion, the volume increase of copper wires is dealt with. A copper

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