

Problems in Cosmogony

SOV/1415

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Ruskol, Ye. L. Conference of the Committee on Cosmogony  
Devoted to Examining the Possibilities of the De-  
velopment of Extragalactic Astronomy and Cosmogony  
Tsitsin, F.A. The Sixth Cosmogonical Conference

359  
361

AVAILABLE: Library of Congress

MM/rj  
4-16-59

Card 9/9

LEVIN, B. Yu.

AUTHOR: Krinov, Ye. L.

7-1-11/12

TITLE: Chronicle: International Conference on Interplanetary Matter  
(Khronika: Mezhdunarodnaya Konferentsiya po mezhplanetnoy materii)

PERIODICAL: Geokhimiya, 1958, Nr 1, pp. 96-96 (USSR)

ABSTRACT: The International Congress on Interplanetary Matter took place at Jena, German Democratic Republic from October 7 to October 12, 1957. It was organized by the German Academy of Sciences. About 100 representatives of 11 countries took part in it. The Soviet Union was represented by Ye. L. Krinov, Scientific Secretary of the Committee for Meteorite Science of the AN USSR, by the Scientific Assistant of this committee L. G. Kvasha, and by V. S. Safronov, Scientific Assistant of the Institute for Geophysics of the AN USSR.

The Soviet delegation gave ten of the thirty reports heard there:

V. G. Fesenkov, Member of the AN USSR: The Northern Zodiacal Light

V. G. Fesenkov, Member of the AN USSR: The Pressure Wave at the Fall of the Tunguska Meteor in 1908

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Chronicle: International Conference on Interplanetary Matter 7-1-11/12

- Ye. L. Krinov: The Mechanism of the Destruction of Meteoric Bodies in the Atmosphere, and Their Original Forms
- L. G. Kvasha: Certain Types of Stone Meteors
- B. Yu. Levin: On the History of the Investigation of the Variation of Meteorite Frequency
- B. Yu. Levin: The Origin of Meteors and Comets
- A. P. Vinogradov, Member of the AN USSR, I. K. Zadorozhnyy and K. P. Florenskiy: The Contents of Inert Gases in the Sikhote-Alin Iron Meteor (published in GC, 1957, no. 6)
- N. N. Pariyskiy and L. M. Gindilis: Investigation of the Luminiscence of the Green Band 5577 in the Night Sky in the Counter-Glow Region  
(Issledovaniye svecheniya zelenoy linii 5577 nochnogo neba v oblasti protivosiyaniya)
- I. S. Shklovskiy: The State of Ionization of Interplanetary Gas and Its Significance for Certain Geophysical Problems

The conference decided to publish all reports in special editions of the following periodicals:

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Astronomical reports in: "Die Sterne";

Chronicle: International Conference on Interplanetary Matter 7-1-11/12

Reports on the material consistency of meteorites in:  
'Chemie der Erde".

AVAILABLE: Library of Congress

1. Reports-Bibliography 2. USSR

Card 3/3

LEVIN, B. Yu.

Tenth International Astronomical Congress in August 1958, in  
Moscow. Part 2: Symposium on the origin of the Earth and planets.  
Geokhimiia no.7:691-692 '58. (MIRA 12:2)  
(Earth--Congresses)

LEVIN, B. Yu.

"The History of the Motion of the Moon and about Geological Properties of Its Material."

"Results of the Theoretical Investigation of the Thermal History of Mars and the Moon." B. Yu. Levin, Mayeva, S. V. and Barabashov, N. P.

Report presented at the Plenary Meeting of the Committee of Planetary Physics, Council of Astronomers, Khar'kov, 20-22 May 1958.  
(Vest. Ak Nauk SSSR, 1958, No. 8, p. 113-114)



LEVIN, B.Yu.; SLONIMSKIY, G.L.

Origin of meteorite chondris. Meteoritika no.16:30-36 '58.  
(MIRA 11:8)

(Meteorites)

PHASE I BOOK EXPLOITATION

SOV/4588

Levin, Boris Yul'yevich

Proiskhozhdeniye zemli i planet (Origin of the Earth and Planets) 3d ed., enl. Moscow, Fizmatgiz, 1959. 82 p. (Series: Populyarnyye lektsii po astronomii, vyp. 3) 20,000 copies printed.

Ed.: L.V. Samsonenko; Tech. Ed.: Ye.A. Yermakova.

PURPOSE: The booklet is intended for the general reader interested in astronomy.

COVERAGE: This popular science booklet presents basic data on the structure of the solar system and discusses various theories on the origin of the Earth and planets. The theories of O.Yu. Shmidt on the formation of the circumsolar gas-dust cloud and the origin of planets is expounded in some detail. The compatibility between Shmidt's theory on the origin of the earth and A.I. Oparin's theory on the origin of life on the earth is shown. No personalities are mentioned. There are 3 references, all Soviet.

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LEVIN, B.Yu.

History of studying variations in meteor numbers. Biul.Kon.po  
komet.i meteor. AN SSSR no.4:3-8 '59. (MIRA 13:4)

1. Institut fiziki Zemli im. O.Yu.Shmidta AN SSSR.  
(Meteors)

SOV/26-59-10-4/51

3(1)

AUTHOR: Levin, B.Yu., Doctor of Physical and Mathematical Sciences

TITLE: The Development of Planetary Cosmogony

PERIODICAL: Priroda, 1959, Nr 10, pp 19-26 (USSR)

ABSTRACT: Cosmogony is no longer limited to the problem of the origin of our planetary system. Cosmogony today embraces the subject of the origin of giant stellar galaxies, planetary systems in general and, finally, the origin of atoms of various chemical elements which constitute the universe. All contemporary scientists are of the opinion that planets were formed of a gaseous dusty and perisolar cloud. However, they differ upon the origin of this cloud. Only American astronomer G.P. Kuiper and Soviet Academician V.G. Fesenkov suppose a decay of the protoplanetary cloud into giant protoplanets. Kuiper who has brought the basic ideas of German physicist C.F. von Weizsäcker into the form of a self-consistent theory, thinks that

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The Development of Planetary Cosmogony

SOV/26-59-10-4/51

the formation of protoplanets took place in darkness. Weizsäcker's hypotheses were supported by Soviet Academician O.Yu. Schmidt (deceased) who stated that the planets were formed of numerous bodies rotating around the sun. Later on it was found out by Soviet scientists L.E. Gurevich and A.I. Lebedinskiy that the bodies were formed of a gaseous and dusty cloud near the sun. Similar to both Soviet scientists, American physicist and chemist H. Urey also starts from the chemical composition of planets. The author also mentions the new theory as propagated by British scientists T. Gold and F. Hoyle, the so-called steady-state cosmology which assumes that progressive dispersal of galaxies does not lead to rarefaction of the space of the universe since their place is taken by younger galaxies. Goldschmidt's statement that stony meteorites probably are an analogous material of the silicate crust was later confirmed by Soviet geochemist A.P. Vinogradov experimentally. Some years ago, the theory of a step-by-step formation of crust was suggested by V.A. Magnitskiy (USSR) and J. T. Wilson ✓

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29662  
S/169/61/000/005/019/049  
A005/A130

3.2440

AUTHOR:

Levin, B.Yu.

TITLE:

The distribution of true radiants of meteoric bodies with a mass up to a definite limit

PERIODICAL:

Referativnyy zhurnal, Geofizika, no. 5, 1961, 7, abstract 5 G 49. (V sb.: Issled. ionosfery i meteorov, no. 2. Moscow, AN SSSR, 1960, 54-60)

TEXT:

In as much as the concept of spatial density of meteoric bodies makes sense only when the bodies are understood to have a mass up to a definite limit, the author emphasizes the necessity of taking into account the physical factor (in addition to the kinematic factor) when determining the said density from radar and visual observations. He shows that the number of particles with direct motion is greater by a hundred times than those with inverse motion. The distribution of the true radiants of meteoric bodies has only one "lobe", which is very stretched out in the direction of the antapex, where the density of true radiants ex-

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LEVIN, B. Yu.

Concerning the Thermal History of the Moon.

report presented at the International Symposium on the moon, held at the Pulkovo Observatory, Leningrad, USSR, 6-8 Dec 1960.



LEVIN, B. Yu.

PHASE I BOOK EXPLOITATION

SOV/4290

SOV/37-S-38

Akademiya nauk SSSR. Komitet po meteoritam

Meteoritika; sbornik statey, vyp. 18 (Meteoritics; Collection of Articles, No. 18)  
Moscow, AN SSSR, 1960. 1,200 copies printed.

Ed.: V.G. Fesenkov, Academician; Deputy Resp. Ed.: Ye.L. Krinov; Ed. of Publishing  
House: I.Ye. Rakhlin; Tech. Ed.: A.P. Guseva.

PURPOSE: This publication is intended for astrophysicists, astronomers, and geologists, particularly those interested in the study of meteorites.

COVERAGE: This collection of 26 articles on problems in meteoritics includes the Transactions of the Eighth Meteoritic Conference which took place in Moscow, June 3 - 5, 1958. An introductory article reviews recent progress in the field, particularly in the matter of determining the age of meteorites. Individual articles discuss the fall, physical and chemical properties, and age of meteorites. The danger presented by meteors to artificial earth satellites is discussed. V.G. Fesenkov describes the theory and adduces computations for

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Meteoritics; Collection of Articles, No. 18

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determining the distribution of ozone in the atmosphere during lunar eclipses.  
References accompany individual articles.

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LEVIN, B.YU.S., MAYTEVA, S. V.

O. Schmidt Inst. of Physics of the Earth, Moscow.

"On The Thermal History Of The Moon."

→ paper presented at IAU Symposium on the Moon, Leningrad, USSR, 6-8 Dec. 60.

Calculations of the heating of the initially cold Moon by radiogenic heat have shown that Moon's interiors must have been completely or partly melted in  $0.5 - 1.5 \times 10^9$  years after its formation, the time interval depending on the assumed content of radioactive elements. If the melting was complete, the solid external layer should break and sink down. In the case of partial melting the impacts of great "planetesimals" were needed for lava flows.

S/049/60/000/02/007/022  
E131/E459

AUTHORS: Levin, B.Yu. and Mayeva, S.V.

TITLE: On the Thermal History of the Earth, ✓

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya,  
1960, Nr 2, pp 243-252 (USSR)

ABSTRACT: Thermal calculations of the originally cold Earth are given. Models of the Earth were considered which had different radioactive elements, specific heat of the core and thermal radiation. The formation of the crust is assumed to have been a lengthy process lasting  $3 \times 10^9$  years. The calculated effect of the thermal radiation, together with the thermal flow was found to agree with observational data in the case of smaller content of the radioactive elements. A comparison of the theoretical results for both the continental and oceanic regions of the crust showed that the difference between their thermal flows is smaller than that relating to the thickness of the crust. This difference is caused by the flow being affected not only by the crust itself but also by deeper layers. This fact explains why the thermal flows of oceans differ from those of continents. The results of investigations are

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S/555/60/007/000/002/007  
B123/B201

3,1420 (1041, 1080, 1109)

AUTHOR: Levin, B. Yu.

TITLE: Distances and masses of planets

PERIODICAL: Voprosy kosmogonii, v. 7, 1960, 55-58

TEXT: A very important problem of planetary cosmogony is discussed here. Various processes taking place in the protoplanetary cloud are dealt with in connection with mutual distances and masses of the planets. The author wanted to find a correlation between these two quantities. O. Yu. Shmidt held (Dokl. AN SSSR, Vol. 52, p. 673, 1946) that when two evolving planets come too close to each other, they will enter into some sort of competition which will establish the distance between their orbits. He further held that every planet has a sharply defined space of its own from which it drew matter during its evolution, and that mass is uniformly distributed. He used a straightforward formula to represent the distances of terrestrial and even more distant planets. L. E. Gurevich and A. I. Lebedinskiy stated in 1950 that the planets must have formed from the protoplanetary dust cloud around the Sun. At first, they traveled nearly on a orbit, in the

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Distances and masses of planets

plane of the disk from which they had originated, and later entered other orbits. This process is very complicated, and only a few laws have been found for it. The planets caused an extremely violent disturbance in the denser parts of the dust system. The larger planets acquired matter from larger zones. This is the reason why these planets arranged themselves at greater distances from one another than the terrestrial ones. This also explains the correlation between masses and distances to which Kuiper referred in connection with both planets and moons. Since evolving planets were the largest bodies of their respective regions, they caused a great disturbance in the motion of other bodies. Masses decrease from Jupiter to Neptune; these planets have about the largest mass a planet can possibly acquire by absorption of other bodies. Their mass depends only slightly on the original amount of solid matter present in the region. V. S. Safronov has found that the mass of solid bodies and particles distributed in the zones of Uranus and Neptune corresponds to their present masses; the planets needed a time of  $10^{11}$ - $10^{12}$  years for their evolution. Oort's planetary cloud was formed by particles hurled onto a parabolic orbit. Kuiper mentioned a number of facts which, in his opinion, are indicative of the existence of massive protoplanets at an early period. Some of these facts

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Distances and masses of planets

have been explained from an opposed viewpoint, by the assumption of a planetary accumulation. (Among these facts are the chemical composition, the law of planetary distances, regular and irregular satellites, and the existence of asteroids). A decrease of the mass of protojupiter is, however, required in Rabe's calculations to explain inclination and eccentricity of the orbit of Mercury. The author notes that if matter is hurled out to more distant regions from the region of formation of planetary giants, this must necessarily lead to a decrease in mass. There are 1 table and 6 references: 4 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Institut fiziki Zemli im. O. Yu. Shmidta Akademii nauk SSSR  
(Institute of Physics of the Earth imeni O. Yu. Shmidt,  
Academy of Sciences USSR) X

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85540

S/026/60/000/009/005/010  
A166/A029

3.1550 (1057, 1062, 1129)

AUTHOR: Levin, B.Yu.

TITLE: The Origin of Comets 12

PERIODICAL: Priroda, 1960, No. 9, pp. 10 - 13

TEXT: The author discusses various theories on the origin of comets. Oort's theory is that the solar system is surrounded by a cloud of comets, or rather comet nuclei, which serves as a source for the replenishment of all observable comets. Replenishment is needed because the comets tend gradually to disintegrate in their approaches to the sun. Academician O.Yu. Shmidt's cosmogenic theory gives a simple explanation of the formation of comet nuclei and their involvement in Oort's comet cloud. The cloud originated as follows; due to friction against the gases and intercollisions among themselves, the particles settled to the central plane of the cloud, forming an increasingly packed disc. Because of the disc's opacity, only its narrow inner zone was heated by the sun, while the vast outer part remained cold. In the inner zone the solid particles consisted only of fusible non-volatile substances, while in the outer part almost all the gases in the cloud condensed onto such particles (with the exception

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A166/A029

The Origin of Comets

of inert gases and, possibly, also hydrogen). Because of gravitational instability, the disc split up into a multitude of "clots" which then turned into bodies of asteroid dimensions. Collisions between these bodies led to their amalgamation, and sometimes to their disintegration, in which case the fragments were again drawn into the amalgamation process. Amalgamation processes predominated and led to the formation of today's planets from the matter of the intermediate bodies. The differences in the chemical composition of the particles in the packed disc were perpetuated in the form of two groups of planets: planets of the Earth type and the giant planets. The intermediate bodies and their fragments in the giant planet zone must have consisted of mixtures of fusible particles and various "ices", i.e., the same composition as is assumed for the comet nuclei in Whipple's ice model. The orbital divergence mechanism which led to Jupiter's ejection of part of its asteroids into the comet cloud must have been effective for the whole giant planet zone and therefore Jupiter, Saturn, Uranus and Neptune must all have participated in the formation of the comet cloud. In the giant planets' case the escape speed at the surface of the planet was many times greater than the difference between the parabolic and the circular speeds at a corresponding distance from the sun, while in the case of the earth they were

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LEVIN, B. Yu.

Artificial earth satellites and meteors. Meteoritika no.18:  
20-25 '60. (MIRA 13:5)  
(Artificial satellites) (Meteors)

KHOLOPOV, P.N., kand.fiziko-matematicheskikh nauk; LEVIN, B.Yu.;  
KOSTYLEV, K.V.

In the Astronomy Council. Vest.AN SSSR 30 no.9 99-102 S '60.  
(Astronomy) (MIRA 13:9)

81715  
S/020/60/133/01/12/070  
B014/B011

3. 1550

AUTHORS: Levin, B. Yu., Mayeva, S. V.  
TITLE: Some Calculations of the Thermal History of the Moon  
PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 1,  
pp. 44-47

TEXT: By the calculations under review the authors try to explain the development of the Moon with the accumulation of cold bodies. The heat balance of the Moon is assumed to be determined by its radioactive elements. In accordance with V. S. Safronov, the Moon is assumed to have originated  $0.23 \cdot 10^9$  years ago, and at its surface, temperature is assumed to be  $0^{\circ}\text{C}$  at all times. In the selection of the content of radioactive elements the authors base on analyses of Meteorites made by A. P. Vinogradov and others. The heat conductivity is assumed to be  $\lambda = 1.2 \cdot 10^{-2}$  cal/cm.sec.grad, and the heat capacity to be 0.2 cal/g.grad. Calculations made under these assumptions and discussed here were carried out with the hydrintegrator devised by V. S. Luk'yanov at the

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Some Calculations of the Thermal History  
of the Moon

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Tsentral'nyy nauchno-issledovatel'skiy institut stroitel'stva Mintransstroy  
(Central Scientific Research Institute for Construction of the Mintransstroy).  
Calculations of the initial heating of the Moon are treated first. For a  
density of  $3.3 \text{ g/cm}^3$  the authors obtain a temperature in the center of  
the Moon, which is  $190^\circ\text{C}$  higher than the surface temperature. The beginning  
of the melting process in the center is approximately obtained at the  
time  $t = 0.5 \cdot 10^9$  (with an age of  $0.23 \cdot 10^9$  years being assumed for the  
Moon) for a variant of the content of radioactive elements and  $t = 0.7 \cdot 10^9$   
for another variant. In a detailed discussion of the processes which  
arose in the melting of the Moon it is shown that a thin solid shell,  
which is denser than the underlying melt, could not exist. Moreover,  
the transition from the heating and melting of the Moon to its cooling  
and solidification was accompanied by a reduction of radioactive elements.  
This reduction was caused by the natural decay and by the surface losses  
of the Moon. In a calculation of the cooling process of the Moon it is  
shown that about 3 - 3.5 billion years after the Moon began to cool, the  
original temperature distribution made itself manifest. Moreover, the  
temperature depends on the distribution of radioactive elements and on

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of the Moon

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B014/B011

heat conductivity. The model of the Moon for which the cooling was calculated is shown. This model features an iron core ( $r = 685$  km) and a shell. The content of radioactive elements is taken from analyses of iron meteorites according to A. G. Starkova (Ref. 2). The authors conclude from the results obtained that the shell has today a thickness of 500 - 700 km, that the layer underneath is not completely molten, and that the iron core has melted to at most 15%. It is finally stated that the temperature distribution today is primarily dependent on the content of radioactive elements, and that the shell is at least 500 - 700 km thick. There are 1 figure and 6 references: 5 Soviet and 1 American.

ASSOCIATION: Institut fiziki Zemli im. O. Yu. Shmidta Akademii nauk SSSR  
(Institute for the Physics of the Earth imeni O. Yu. Shmidt  
of the Academy of Sciences, USSR)

PRESENTED: March 12, 1960, by V. A. Ambartsumyan, Academician

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of the Moon

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B014/B011

SUBMITTED: March 2, 1960

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4

S/169/63/000/002/002/127  
D263/D307AUTHOR: Levin, B. Yu.TITLE: Breakdown of meteoric bodies and meteoric assessments  
of atmospheric densityPERIODICAL: Referativnyy zhurnal, Geofizika, no. 2, 1963, 15, ab-  
stract 2A85 (Byul. Komis. po kometam i meteoram Astron.  
soveta AN SSSR, 1961, no. 6, 3-10 (summary in Eng.))

TEXT: Processes of meteor breakdown play an important part in the observed meteoric phenomena, since they considerably increase the meteor's glow. The author considers four main processes of disintegration: breakdown of the meteor into a few 'permanent' parts; progressive breakdown, i.e. breakdown into parts which split up further; simultaneous separation of fines from the main body of the meteor; and quasi-continuous separation of fines from the main body. It is pointed out that, in practice, cases intermediate between the above 4 main types will be observed. It is shown that calculation of the breakdown index  $\chi$ , introduced by Yakkia, is only effec-

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D263/D307

Breakdown of meteoric ...

tive when the breakdown is of the 'progressive' type; for luminous meteorites  $\chi = 0$ , for weak ones  $\chi = 0.35$ . The problem of meteor density is discussed, in connection with Whipple's views, who considers these densities to be low. It is shown that it is still uncertain just how reliable are densities such as  $5 \times 10^{-2} \text{ g/cm}^3$ ; in every case these densities were invalid for small granules making up the main part of large 'friable' meteors. Assumption of low densities leads in consequence to more precise definition of contemporary views on the structure of the ice cores of comets. In the article, the author shows that in calculating the atmospheric density from meteor data it is convenient to use L. A. Katasev's formula

$$H^* = - \frac{3Mv \cos z}{dM/dt} \left[ 1 - \left( \frac{M_0}{M} \right)^{1/3} \right]$$

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Breakdown of meteoric ...

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where  $H^*$  is the height of a uniform atmosphere,  $M$  the mass of the meteor, and  $v$  its velocity. The effect of meteor breakdown into  $n$  parts may be taken into account, since  $dv/dt$ , the observed retardation of separate fragments, is  $n^{1/3}$  times greater than the retardation of a single body. The above formula may be applied in such cases. /-Abstracter's note: Complete translation./

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PHASE I BOOK EXPLOITATION

SOV/5704

Levin, Boris Yul'yevich, Doctor of Physics and Mathematics.

Meteority (Meteorites) 2d rev. ed., Moscow, Izd-vo "Znaniye," 1961. 43 p. (Series: Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy. Seriya IX, 1961: Fizika i khimiya, no. 12) 26,000 copies printed.

Ed.: I. B. Faynboym; Tech. Ed.: I. T. Rakitin.

**PURPOSE:** This booklet is intended for the general reader interested in meteorites.

**COVERAGE:** This is a popular discussion of meteorites. The author traces the history of the scientific study of meteorites, and describes the characteristics and properties of meteorites as well as the physical phenomena accompanying their flight and fall, origin, and age. Several outstanding meteorites such as the Tungus, Sikhote-Alin', and Goba, and the larger meteor craters, such as the Arizona crater, are described. V. I. Vernadsky,

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Meteorites

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A. Ye. Fersman, A. N. Zavaritskiy, and L. A. Kulik are mentioned as the outstanding authorities on meteorites. There are 8 references, all Soviet.

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LEVIN, B. Yu.

Planetary perturbations and the origination of plane meteor swarms.  
Bul.Kom.po komet.i meteor. AN SSSR no.5:3-6 '61.

(MIRA 14:6)

1. Institut fiziki Zemli imeni O. Yu. Shmidta AN SSSR.  
(Meteors)

21741

3,1550 (3105, 1057, 1062, 1129)

S/025/61/000/006/003/007  
D244/D305

AUTHORS: Levin, B. Yu., Doctor of Physico-Mathematical Sciences,  
and Ruskol, Ye. L., Candidate of Physico-Mathematical  
Sciences

TITLE: Stranger from space - on the hypothesis of N. Bonev

PERIODICAL: Nauka i zhizn', <sup>28</sup>no. 6, 1961, 9

TEXT: In the third issue of "Nauka i zhizn'" for 1961 there was a short account of a hypothesis by astronomer N. Bonev on the origin of the moon. The authors state that this hypothesis is groundless. N. Bonev suggests that initially the moon was not an earth satellite but an independent planet which was braked by powerful volcanic eruptions on passing the earth and then went into orbit around it. It is supposed that these eruptions acted on the moon like the motor of a braking-rocket. For the braking effect to be adequate, N. Bonev has to assume that these volcanic eruptions were so strong that the moon lost much of its original mass. The possibility of a planet having great internal energy

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21741  
S/025/61/000/006/003/007  
D244/D305

Stranger from space - ...

is strengthened by reference to the hypothetical planet Phayton, whose explosion is alleged to have given birth to asteroids and meteorites. One of the main reasons, however, for the rejection of this particular hypothesis by astronomers is the fact that they have failed to find the source of energy for such an explosion. In order to leave the moon, matter must have flown out of the volcanoes at a colossal speed (3 - 5 km/sec). One has to completely exclude the possibility of there existing in the moon at that time sufficient reserves of energy for the ejection of most of its original mass. In order to obtain a reaction effect while ejecting matter to one side, the volcanoes must have been operating not over the whole lunar surface but only in a comparatively small area. The authors point out that in Bonev's diagram the explosion is depicted in a direction which is the reverse of that necessary for capture by the earth. Furthermore, such a volcanic "rocket-brake" would have been applied just when it was

Card 2/3

LEVIN, B. (Dr.)  
~~LEVIN, B. (Dr.)~~

"The Modern Form of the Meteoritic Hypothesis of Lunar Relief Formation"

report presented at the 13th Intl. Astronautical Federation Congress (FAI)  
Varna, Bulgaria, 23-29 Sep 1962

LEVIN, Boris Yu.

"Present day forms of the 'Meteorite' hypothesis of the lunar relief formation"

report to be submitted for the 13th Intl. Astronautical Congress, IAF, Varna, Bulgaria, 23-29 Sep 1962.

S/555/62/008/000/002/003  
I023/I242

AUTHORS: Levin, B. Yu., and Ruskol, Ye. L.  
TITLE: Review of present data on the moon  
SOURCE: Akademiya nauk SSSR. Voprosy. Kosmogonii. v.8.  
Moscow, 1962, 109-144

TEXT: The present review is based on Soviet and Western sources and covers the period up to 1962. The following topics are discussed: 1) orbital motion, rotation, and libration; 2) atmosphere; 3) photometric data; 4) radio location data; 5) surface temperature; 6) structure of the surface layer (micro-relief); 7) surface relief; 8) origin, internal structure, and thermal history. There are 2 tables and 117 references. ✓

Card 1/1

S/O30/62/000/011/004/005  
D218/D308

**AUTHORS:** Levin, B.Yu., Doctor of Physical and  
Mathematical Sciences, and Rudich, Ye.M.

**TITLE:** The fourth conference on astrogeology

**PERIODICAL:** Akademiya nauk SSSR. Vestnik. no. 11, 1962,  
131 - 134

**TEXT:** The conference took place on May 7 - 12 in  
Leningrad. The present authors report that some of the papers  
read at the conference, and indeed "astrogeology" itself as  
defined by the participants in this conference, must be treated  
with some reservation, since there is some doubt as to their  
scientific validity. Among the papers read at the conference  
were the following: P.S. Voronov "Main contemporary problems  
in astrogeology" G.N. Katterfel'd, "Astrogeology, its content,  
problems and place in the sciences" B.L. Lichkov, "Interaction  
between the earth's shells and the conditions of its rotation  
as the cause of all the geological phenomena on the planet"

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S/030/62/000/011/004/005  
D218/D308

The fourth conference ...

B.L. Lichkov and I.I. Shafranovskiy, "The universal importance of some angular quantities characteristic for the earth" G.N. Katterfel'd, "Pregeological era in the history of the earth and its effect on the evolution of the geoid" P.S. Voronov, "On the rotational causes of tangential stresses in the lithosphere and some of their geostructural consequences." M.V. Stovas, "The effect of external factors on the seismicity of the earth." A.V. Shnitnikov, "Tidal force as a factor in landscape dynamics." Papers were also read by F.P. Krendelev, I.G. Klushin, A.A. Khlobustov, R.I. Burtman, V.S. Vasil'yev, A.V. Volin, V.S. Voropinov, A.V. Dolitskiy, O.I. Islamov and G.G. Tamrazyan, but the present authors find themselves unable to take them seriously. The remaining papers were: G.G. Khizanishvili and M.V. Klenova, "The origin of submarine terraces in the light of the rotational dynamics of the earth." V.A. Bunin, "Recent problems in gravitation in the light of classical physics." B.V. Timofeyev, "On the discovery of organic residues in stony meteorites". G.U. Lindberg, "On geocratic oscillations in the ocean level." V.A. Zubakov, "Absolute dating of glaciation in the last 70,000 years." V.V. Kochegur, "Paleomagnetic

Card 2/3

The fourth conference ...

S/O30/62/000/011/004/005  
D218/D308

studies of basalts in the Soviet Far East." V.S. Lebedev, "Formation of chemical elements in meteorites under the action of cosmic rays." V.F. Derpgol'ts, "The 'hydrochlorosphere' as a planetary source of all natural water in the outer shells of the earth." V.I. Vul'fson, "Free oxygen in the earth's crust." The resolution of the conference noted that the conclusions reached in many of the papers were not sufficiently well argued, but nevertheless, it was recommended that the proceedings of the conference should be published. The present authors are highly sceptical about the entire venture.

Card 3/3

S/556/62/000/030/001/005  
D218/D308

3.2500

AUTHOR: Levin, B. Yu.

TITLE: The present form of meteor hypothesis regarding the formation of the lunar relief

SOURCE: Vsesoyuznoye astronomo - geodezicheskoye obshchestvo. Byulleten'. no. 30 (37). Moscow, 1962, 6-19

TEXT: This is a review paper showing the present state of the theory according to which lunar craters were produced by meteors. The following problems are discussed: 1) Is there an agreement between the history of bombardment of the lunar surface and the thermal history of the lunar interior? 2) Why are there so few meteor craters on the earth? 3) Is a random distribution of craters to be expected? 4) Is there a superposition of large craters on small ones? 5) Is there an agreement between the distribution of crater and planetesimal sizes? 6) Do the craters and maria form a single sequence? 7) Does Schröter's rule hold? 8) Are there currently active volcanoes on the moon? 9) Are there apertures in the central

✓B

Ca. Card 1/2



S/030/62/000/002/001/008  
B105/B110

AUTHOR: Levin, B. Yu., Doctor of Physics and Mathematics

TITLE: Origin of the earth and problems of its structure and composition

PERIODICAL: Akademiya nauk SSSR. Vestnik, <sup>32</sup>no. 2, 1962, 9 - 16

TEXT: The author discusses the processes of the formation of the earth on the basis of the hypotheses of O. Yu. Shmidt (formation of the planets from an originally cold protoplanetary cloud) and the hypothesis of Ramsay. He mentions the approximately equal composition of Venus, Earth, Mars, and the moon, the composition of the meteorites (P. N. Chirvinskiy (1919) is mentioned), the heating of the formed body by radioactivity, the problems of the formation of the terrestrial crust (reference to geological and seismological results) the tides of the solid terrestrial mass, the deformation of the spheroid of the earth, and the participation of the comets in the formation of the terrestrial hydrosphere and atmosphere. At the Institut fiziki Zemli im. O. Yu. Shmidta (Institute of Physics of the Earth im. O. Yu. Shmidt) the phase transitions for magnesium were theoret  
Card 1/2

Origin of the earth ...

S/O30/62/000/002/001/008  
B105/B110

cally calculated and experiments were made with impact compression of du  
nite. At a pressure of  $1.4 \cdot 10^6$  atm no phase transition was observed. At  
present three main directions can be distinguished in the research work  
on planetary cosmogeny: (1) study of the physicochemical development of  
the planetary matter; (2) study of the accumulation process of the planets;  
(3) comparative study of the planets of the terrestrial group and of the  
moon. The development of the theory of the origin of the earth is one of  
the most promising methods for solving geophysical problems.

Card 2/2

S/169/62/000/012/002/095  
D228/D307

AUTHOR: Levin, B.Yu.

TITLE: Origin of the earth (70th anniversary of the birthday of O.Yu. Shmidt) (author's paper read on November 21, 1961)

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 12, 1962, 4-5, abstract 12/10 (Byul. Mosk. o-va ispyt. prirody, Utd. geol., 37, no. 2, 1962, 159-160).

TEXT: At present the best developed theory for the origin of the earth is the one worked out by Academician O.Yu. Shmidt and his colleagues. The formation of the planet occurred as a result of the evolution of a protoplanetary cloud of gas and dust that once surrounded the sun. In the first stage the dust component accumulated into a flat disk, which then broke up into numerous condensations that afterwards served as the nuclei of planets. According to O.Yu. Shmidt's theory the earth can be considered as a primarily cold body, and the present hot state of its interior

Card 1/2

LEVIN, B.Yu.

Constitution of icy cometary nuclei. *Astron.zhur.* 39 no.4:763-765  
Jl-Ag '62. (MIRA 15:7)

1. Institut fiziki Zemli imeni O.Yu.Shmidta AN SSSR.  
(Comets)

LEVIN, B.Yu., doktor fiz.-matem.nauk; RUDICH, Ye.M.

Fourth conference on astrogeology. Vest. AN SSSR 32  
no.11:131-134 N '62. (MIRA 15:11)  
(Earth)

LEVIN, B.Yu.

Structure of icy cometary nuclei. Astron. tsir. no.229:8-10  
Je '62. (MIRA 16:6)

1. Institut fiziki Zemli im. O.Yu. Shmidta AN SSSR.  
(Comets)

LEVIN, B. Yu.

Origin of comets. Vop.kosm. 9:215-231 '63. (MIRA 17:5)

LEVIN, B.YU.

Moon.

Report submitted at the XIIIth International Congress on Astronautics in Varna,  
Bulgaria

P. Tekhnika Molodshi, #1, 1963, pp.24-25



LEVIN, B.Yu.; SAFRONOV, V.S.

Comments on D.D. Ivanenko and M.U. Sagitov's article "On the hypothesis of the expansion of the earth." Vest. Mosk. un. Ser. 3: Fiz., astron. 18 no.4:84-85 J1-Ag '63. (MIRA 16:8)

1. Institut fiziki Zemli AN SSSR imeni O.Yu. Shmidta.  
(Cosmology)

S/033/63/040/002/014/021  
E001/E120

**AUTHOR:** Levin, B.Yu.

**TITLE:** On the fragmentation of meteoric bodies

**PERIODICAL:** Astronomicheskii zhurnal, v.40, no.2, 1963, 304-311

**TEXT:** Observational evidence accumulated in past years has shown that fragmentation is one of the main processes determining the course of meteor phenomena. The purpose of the present paper is to take into account the fragmentation process in deriving the formulas for maximum stellar magnitudes of meteors. The data published by G.S. Hawkins and R.B. Southward (Smiths. Contrib. Astrophys., v.2, 1958, 349) contain the range of variations of stellar magnitudes from the appearance and disappearance points of meteors to the maximum. The analysis of their photometric data for 360 meteors, taken with super-Schmidt cameras, has shown that the observed lengths of meteor paths are shorter than the theoretical. This discrepancy can be naturally explained by assuming fragmentation of meteoric bodies rather than by adopting a different luminosity coefficient, as is done in an ad hoc hypothesis by R. Ananthakrishnan (Nature, v.187, 1960, 675; v.190, Card 1/3

On the fragmentation of meteoric ...

S/033/63/040/002/014/021  
E001/E120

1961, 896). The effect of fragmentation is manifested in an increase of the maximum brightness which is inversely proportional to the path length. In stellar magnitudes this looks as follows:

$$m = m_0 + 2.5 \lg f \quad (5)$$

where  $f = L/L_0$  is the ratio of path lengths. The author introduces a parameter  $F$ , characterizing the fragmentation process which does not differ, according to observational data, from the  $f$ -values. Using data on the masses of meteors, supplied by Hawkins and Southward, the author reduced the values of maximum absolute photographic stellar magnitudes  $m_M$  to the mass value equal to 1 g, and the values of  $m_M^*$  thus obtained correlated with  $F$  by the relation:

$$m_M^* = +1.60 + 2.5 \lg F \quad (8)$$

which is analogous to formula (5). This relation shows good agreement with experimental data. It is concluded from this that fragmentation proceeds so intensely in 90% of meteor bodies that

Card 2/3

On the fragmentation of meteoric ... S/033/63/040/002/014/021  
E001/E120

there is a noticeable shortening of path lengths of meteors. Observations also indicate that the distribution of meteors over fragmentation parameter  $F$  depends on their masses. It follows hence, that the determination of the exponent  $s$  in the law of mass distribution of meteoric bodies leads to false results, if the effect of fragmentation is not taken into account. Therefore, all previous estimations of  $s$ , based on the luminosity function of meteors and on radar observations, should be reconsidered. There are 3 figures.

ASSOCIATION: Institut fiziki Zemli im. O.Yu. Shmidta Akademii nauk  
SSSR  
(Institute of Physics of the Earth imeni O.Yu.Schmidt,  
AS USSR)

SUBMITTED: March 24, 1962

Card 3/3

LEVIN, B. Yu.

Nature of the moon's surface layer. Astron.zhur. , 40 no.6:  
1071-1075 N-D '63. (MIRA 1 :12)

1. Institut fiziki Zemli AN SSSR.

LEVIN, Boris Yul'yevich; RAKHLIN, I.Ye., red.

[Origin of the Earth and planets] Proiskhozhdenie Zemli i  
planet. Izd.4., dop. Moskva, Izd-vo "Nauka," 1964. 113 p.  
(Populiarnye lektsii po astronomii, no.3) (MIRA 17:9)

LEVIN, B.Yu.

Some actual problems of meteoritics. Meteoritika no.24:  
16-21 '64. (MIRA 17:5)

LEVIN, B.Yu.; MAYEVA, S.V.

Answer to O.I.Ornatskaia's letter. Astron.zhur. 41 no.5:977-  
998 S-0 '64. (MIRA 17:10)



LEVIN, B.Yu., doktor fiz.-matemat. nauk

Moon from a close range. Priroda 53 no.10:115-118 '64.  
(MIRA 17:11)

1. Institut fiziki Zemli im. O.Yu. Shmidta AN SSSR, Moskva.

L 62697-65 ENT(1)/EWG(v)/EEC-4/EEC(t)/EWA(d) CW

ACCESSION NR: AP5013401

UR/0053/65/086/001/0041/0069  
523.51

AUTHOR: Levin, B. Yu.

22  
B

TITLE: The origin of meteorites ✓

SOURCE: Uspekhi fizicheskikh nauk, v. 86, no. 1, 1965, 41-69

TOPIC TAGS: meteorite, meteorite composition, meteorite origin, asteroid, solar system, cosmogony

ABSTRACT: This is a review article reporting on the changes that have occurred in the scientific explanations of the origin and nature of meteorites during the last decades, making use of recent information on the abundance of elements and their isotopic ratios from the point of view of nuclear physics. The various hypotheses advanced concerning the nature of meteorites are outlined and the experimental and cosmogonical evidence in their favor or against them are briefly discussed. The main points of view of Urey and Ringwood, Anders, Wood, Mason, and the author of the paper are described in detail. The

Cord 1/2

L 62697-65

ACCESSION NR: AT5013401

section headings are: 1. Introduction. 2. Meteorites and asteroids.  
3. Atmospheric selection. 4. Cosmogonical considerations. 5. Some  
properties of meteorites. 6. Hypotheses of the 'fire liquid' origin  
of meteorites. 7. Hypotheses of primordial nature of chondrules.  
8. Hypothesis of unmolten parent bodies. 9. Some conclusions. Orig.  
art. has: 9 figures

ASSOCIATION: None

SUBMITTED: 00

ENCL: 00

SUB CODE: ES, AA

NR REF SOV: 029

OTHER: 105

*dm*  
Card 2/2

L 42314-66 EWT(1) WVH/GW  
ACC NR: AP6019674

SOURCE CODE: UR/0033/66/043/003/0606/0621

AUTHOR: Levin, B. Yu.

ORG: Institute of Geophysics, Academy of Sciences, SSSR (In-t fiziki Zemli, Akademi nauk SSSR)

TITLE: The structure of the moon ✓

SOURCE: Astronomicheskij zhurnal, v. 43, no. 3, 1966, 606-621

TOPIC TAGS: moon, lunar surface, lunar atmosphere

ABSTRACT: This report was presented at the Conference on the Moon and Planets, sponsored by the California Institute of Technology and the Jet Propulsion Laboratory in Pasadena, September 1965. It reviews three theories on the origin of the moon and Gerstenkorn's theory of the tidal evolution of the earth-moon system. The author favors the idea of the common formation of the earth and moon about 5 billion years ago, which is compatible with the Schmidt-Ruskol theory of lunar origin. Three basic stages of lunar bombardment are described as follows: 1) the period of the final stage of the moon's accumulation; 2) the period of the radial expansion of the lunar orbit when collisions occurred at a speed of 2--4 km/sec; 3) the subsequent period when bodies in solar orbit collided at 10--15 km/sec. Various factors and theories for determining the thermal properties of the moon are presented. The author supports Mayeva's work showing that the moon has a semi-molten interior and solid exterior

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UDC: 523.36

L 42314-66

ACC NR: AP6019674

(see Table 1).

Table 1

$n$	0.2		0.8	
$\mu, \text{cm}^{-1}$	10	40	10	40
$\Delta l, \text{mm}$	700	500	600	450

Mean content of radioactive elements in moon as a whole:

uranium--  $n \cdot 10^{-8}$  g/g; thorium--  $4n \cdot 10^{-8}$  g/g; potassium--

$8 \cdot 10^{-4}$  g/g. Data for  $n = 2$  are reduced. Content of radioactive elements in interior of moon after their

differentiation: uranium--  $n_H \cdot 10^{-8}$  g/g; thorium--  $4n_H \cdot 10^{-8}$

g/g; potassium--  $2.5 \cdot 10^{-4}$  g/g.  $\epsilon$  - absorption coefficient.

Thermal stresses and meteorite collisions are cited as possible causes of lunar seismic activity. Theories on the shape of the moon and the density distribution along its radius are discussed. The existence on the moon of metallic iron, hydrous silicates, and volatile substances is uncertain. The author agrees with the majority of experts that the moon does not have and never has had any appreciable atmosphere. Orig. art. has: 3 tables, 2 graphs, and 6 formulas.

SUB CODE: 03/ SUMM DATE: 18Jan66/ ORIG REP: 030/ OTH REF: 051

Card 2/2

ACC NR: AP6018932

SOURCE CODE: UR/0203/GG/00G/003/0G08/0G09

AUTHOR: Levin, B. Yu.; Simonenko, A. N.

ORG: Institute of Earth Physics im. O. Yu. Schmidt, AN SSSR (Institut fiziki Zemli AN SSSR)

TITLE: The disintegration of meteoric bodies in the Earth's atmosphere

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 3, 1966, 608-609

TOPIC TAGS: meteor, meteor observation, atmosphere

ABSTRACT: The authors dispute the contention of Ye. N. Kramer (Geomagn. i aeronomiya, 1965, 5, No. 2, 276) that the conclusions of the micrometeorite theory are applicable to the movement of particles which have separated from a larger meteor body. Disintegration of the meteor body is shown to lead to an increase of  $\sigma$ , and, consequently, to a reduction of the residual mass. Thus, contrary to Kramer's opinion, disintegration not only does not reduce the emission of the meteor, but rather increases it (negligibly, since the residual masses are small). Complete light energy emitted by the meteor is proportional to the initial mass of the meteor body, with disintegration leading only to a redistribution of the emitted energy along the path, without changing the sun light energy, since the proportionality between the mass

Card 1/2

UDC: 523.5



AID P - 5390

Subject : USSR/Engineering  
Card 1/1 Pub. 103 - 20/28  
Author : Levin, B. Yu.  
Title : Device for planing spiral grooves of rectangular profile  
Periodical : Stan. i instr., 9, 34, S 1956  
Abstract : The author briefly describes an attachment which facilitates planing a shaft with 24 spiral grooves of 622.5mm pitch. The originator is the Presnenskiy (Presnya, Moscow) Machine-Building Plant. One drawing.  
Institution : As above  
Submitted : No date



L 23368-65 EWP(e)/EWT(m)/EPF(n)-2/ENA(d)/EPR/EWP(t)/EWP(k)/EWP(b) PF-1/PS-1/PV-1  
IJP(c) HW/JD/JG/AT/WH

ACCESSION NR: AR5000739

S/0277/64/000/009/0020/0020

SOURCE: Ref. zh. Mashinostroitel'nyye materialy\*, konstruksii i raschet detaley mashin. Gidroprivod. Otd. vy\* p., Abs. 9.48.121

AUTHOR: Smirnov, F. F.; Gurevich, L. F.; Stepanova, T. M.; Levin, B. Z.

TITLE: <sup>18</sup> Cutting properties of a new experimental variant of alloy VK4 with improved strength

<sup>16</sup> CITED SOURCE: Sb. tr. Vses. n.-i. in-t tverdykh splayov, no. 5, 1964, 14-28

TOPIC TAGS: cutting tool, tungsten carbide, carbide tool/  
alloy VK4, alloy VK8 <sup>27</sup> <sup>27</sup>

TRANSLATION: Results of laboratory and plant tests of the cutting properties of a new industrial variant of alloy VK4, produced as a result of the use of tungsten carbide with a higher carbidizing temperature, are presented. The cutting properties were tested by comparison with standard types of alloys VK4 and VK8. On the basis

Card 1/2

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ACCESSION NR: AR5000739

of the tests, experimental alloy VK1 is recommended for introduction in the operation of rough turning of engine pistons.

SUB CODE: MM

ENCL: 00

Cord 2/2

LEVIN B.Z.

RYZHAVSKIY, I.M.; SHEPELEVA, M.D.; KATS, F.A., nauchnyy red.; LEVIN, B.Z.,  
nauchnyy red.; POMENKO, P.H., nauchnyy red.; STROYEVA, Ye.V.,  
red.; TRUBOV, N.S., tekhn.red.

[Use of hard alloys and cermets; a collection of articles]  
O primeneni tverdykh splavov i mineralokeramiki; sbornik statei.  
Moskva, 1957. 87 p. (MIRA 11:6)

1. Moscow. Tsentral'nyy institut informatsii tevetnoy metallurgii.  
(Alloys) (Cermets)

LEVIN, B. Z.

BEYLINA, TS.O., inzhener; BLAGONADEZHIN, V.Ye., inzhener; BOGUSLAVSKIY, P.Ye., kandidat tekhnicheskikh nauk; VORONKOV, I.M., professor, GITINA, L.Ya., inzhener; GROMAN, M.B., inzhener; GOROKHOV, N.V., doktor tekhnicheskikh nauk [deceased]; DENISTYUK, I.N., kandidat tekhnicheskikh nauk; DOVZHNIK, S.A., kandidat tekhnicheskikh nauk; DUKEL'SKIY, M.P., professor, doktor khimicheskikh nauk [deceased]; DYKHOVICHNIY, A.I., professor; ZHITKOV, D.G., professor, doktor tekhnicheskikh nauk; KOZLOVSKIY, N.S., inzhener; LAKHTIN, Yu.M., doktor tekhnicheskikh nauk; LEVENSON, L.B., professor, doktor tekhnicheskikh nauk [deceased]; LEVIN, B.Z., inzhener; LIPKAN, V.F., inzhener; MARTYNOV, M.V., kandidat tekhnicheskikh nauk; MOLEVA, T.I., inzhener; NOVIKOV, F.S., kandidat tekhnicheskikh nauk; OSETSKIY, V.M., kandidat tekhnicheskikh nauk; OSTROUMOV, G.A.; PONOMARENKO, Yu.F., kandidat tekhnicheskikh nauk; RAKOVSKIY, V.S., kandidat tekhnicheskikh nauk; REGIRER, Z.L., inzhener; SOKOLOV, A.N., inzhener; SOSUNOV, G.I., kandidat tekhnicheskikh nauk; STEPANOV, V.N., professor; SHEMAKHANOV, M.M., kandidat tekhnicheskikh nauk; EL'KIND, I.A., inzhener; YANUSHEVICH, L.V., kandidat tekhnicheskikh nauk; BOKSHITSKIY, Ya.M., inzhener, redaktor; BULATOV, S.B., inzhener, redaktor; GASHINSKIY, A.G., inzhener, redaktor; GRIGOR'YEV, V.S., inzhener, redaktor; YEGURNOV, G.P., kandidat tekhnicheskikh nauk, redaktor; ZHARKOV, D.V., dotsent, redaktor; ZAKHAROV, Yu.G., kandidat tekhnicheskikh nauk, redaktor; KAMINSKIY, V.S., kandidat tekhnicheskikh nauk, redaktor; KOMARKOV, Ye.F., professor, redaktor; KOSTYLEV, B.N., inzhener, redaktor; POVAROV, L.S., kandidat tekhnicheskikh nauk, redaktor; ULINICH, F.R., redaktor; KLORIK'YAN, S.Kh., otvetstvennyy redaktor; GLADILIN, L.V., redaktor;

(Continued on next card)

BEYLINA, TS.O. --- (continued) Card 2.  
 RUPPENYIT, K.V., redaktor; TERPIGOREV, A.M., glavnyy redaktor;  
 BARABANOV, F.A., redaktor; BAHANOV, A.I., redaktor; BUCHNEV, V.K.,  
 redaktor; GRAFOV, L.Ye., redaktor; DOKUKIN, A.V., redaktor; ZADEMID-  
 KO, A.N., redaktor; ZASYAD'KO, A.F., redaktor; KRASNIKOVSKIY, G.V.  
 redaktor; LETOV, N.A., redaktor; DISHIN, G.L., redaktor; MAN'KOV-  
 SKIY, G.I., redaktor; MEL'NIKOV, N.V., redaktor; ONIKA, D.G.,  
 redaktor; OSTROVSKIY, S.B., redaktor; POKROVSKIY, N.M., redaktor;  
 POLSTYANOV, G.N., redaktor; SKOCHINSKIY, A.A., redaktor; SONIN,  
 S.D., redaktor; SPIVAKOVSKIY, A.O., redaktor; STANCHENKO, I.K.,  
 redaktor; SUDOPLATOV, A.P., redaktor; TOPCHIYEV, A.V., redaktor;  
 TROYANSKIY, S.V., redaktor; SHEVYAKOV, L.D., redaktor; BYKHOV-  
 SKAYA, S.N., redaktor izdatel'stva; ZAZUL'SKAYA, V.F., tekhnicheskiy redaktor; PROZOROVSKAYA, V.L., tekhnicheskiy redaktor.

[Mining; an encyclopedic handbook] Gornoe delo; entsiklopedicheskiy spravochnik. Glav.red. A.M. Terpigorev. Chleny glav.red. F.A. Barabanov i dr. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po ugol'noi promysh]. Vol.1. [General engineering] Obshchie inzhenernye svedeniya. Redkollegiya toma S.Kh.Klorik'ian i dr. 1957. 760 p. (Mining engineering) (MLRA 10:10)

ANDRES, N.R.; LEVIN, B.Z., red.; KOVALEVSKIY, M.A., red. izd-va;  
OBUKHOVSKAYA, G.P., tekhn. red.

[Hard alloys are tool materials] Tverdye splavy - instrumental'-  
nyi material. Moskva, Metallurgizdat, 1963. 31 p. (MIRA 16:6)

(Ceramic metals) (Metal cutting tools)  
(Mining machinery)

L 32456-65 EWP(e)/EWT(m)/EPP(n)-2/EWA(d)/EPR/EWP(t)/EWP(b) Pad/Ps-4/Pu-4  
LJP(c) MJW/JD/HW/JG/AT/WH

ACCESSION NR: AR5004790

S/0137/64/000/010/I080/I081

SOURCE: Ref. zh. Metallurgiya, Abs. 10I575

AUTHOR: Smirnov, F. F.; Gurevich, L. F.; Stepanova, T. M.;  
Levin, B. Z.

43  
B

TITLE: Cutting properties of a new experimental variant of alloy  
VK4 with increased strength

CITED SOURCE: Sb. tr. Vses. n.-i. in-t tverdykh splavov, no. 5,  
1964, 14-28

TOPIC TAGS: tungsten base alloy, cobalt containing alloy, tungsten  
carbide, cutting tool, carbidizing alloy VK4

TRANSLATION: Results of laboratory and production tests of the  
cutting properties of a new industrial variant of alloy VK4, obtained  
by use of tungsten carbide with an increased carbidizing temperature,  
are described. Cutting properties were tested by comparison with  
standard alloys VK4 and VK8. On the basis of test results, experi-  
mental alloy VK4 is recommended for introduction in the rough

Card 1/2

L 32456-65

ACCESSION NR: AR5004790

machining of engine pistons. N. Saznova.

SUB CODE: MM

ENCL: 00

Card 2/2



BILIBIN, I.; LEVIN, D.; SOROCHKIN, Yu.

Results of testing the PAZ-652 motorbus. Avt. transp. 36 no. 6:36-  
39 Ja '58. (MIRA 11:7)

(Motorbuses--Testing)

LEVIN, D.

Possibilities to reduce marketing expenses. Fin. 858R 21 no.8:74-75  
Ag '60. (MIRA 13:8)

1. Ekonomist gosdokhodov Dergachskogo rayfinotdela.  
(Dergachi District—Cooperative societies)

DOTSENKO, G.I. [Dotsenko, H.I.]; VOYT, S.K., kand.sel'skokhoz.nauk;  
OZEROV, V.I., kand.sel'skokhoz.nauk; TIKHONOV, M.I., kand.  
sel'skokhoz.nauk; VAKAL, L.S., nauchnyy sotrudnik; VISHNEVSKAYA,  
T.O. [Vyshnevs'ka, T.H.], nauchnyy sotrudnik; KRATYUK, V.I.,  
nauchnyy sotrudnik; YAKOVENKO, M.S., nauchnyy sotrudnik;  
LEVIN, D.A., agronom; GALAT, B.F. [Galat, B.F.], zootekhnik;  
PETROVSKIY, O.M. [Petrovs'kiy, O.M.], red.; LIMANOVA, M.I.,  
tekhn.red.

[Management system on a collective farm; the Dzerzhinskiy  
Artel, Sumy Province] Sistema vedeniya hospodarstva u kolhozi;  
artil' imeni Dzerzhyns'koho Sums'koi oblasti. Kharkiv, Kharkivs'ka  
knyzhkove vyd-vo, 1960. 77 p. (MIRA 14:4)

1. Nachal'nik kolkhosa imeni Dzerzhinskogo, Sumskogo rayona,  
Sumskoy oblasti (for Dotsenko).  
(Sumy Province--Farm management)

BARMASH, Vadim Nikolayevich; LEVIN, David Isaakovich; FREYBERG, Vladimir Zinov'yevich; NOVIKOV, M.P., kand.tekhn.nauk, retsentsent; KORSAKOV, V.S., prof., doktor tekhn.nauk, red.; SOKOLOVA, G.F., tekhn.red.; KL'KIND, V.D., tekhn.red.

[Portable tools for assembling and finishing operations] Ruchnye mashiny dlia montazhnykh i otdelochnykh rabot. Moskva, Gos. nauchno-tekhn.isd-vo mashinostroit.lit-ry, 1960. 264 p.  
(MIRA 13:4)

(Building--Tools and implements)

LEVIN, D., ekonomist

They have relaxed their attention toward taxes. Fin. SSSR 22  
no.4:48-49 Ap '61. (MIRA 14:4)

1. Dergachevskiy rayfinotdel Khar'kovskoy oblasti.  
(Dergachi District--Income tax)

Levin, D.I.

USSR/Chemistry - Opalescence of glass

Card 1/1 Pub. 40 - 5-27

Authors : Levin, D. I.; Zhdanov, S. N.; and Poray-Koshits, Ye. A.

Title : ~~Structure of sodium borosilicate glass~~  
Structure of sodium borosilicate glass in connection with the opalescence phenomenon. Part 1. Study of the opalescence of glass

Periodical : Izv. AN SSSR. Otd. khim. nauk 1, 31-39, Jan-Feb 1955

Abstract : The origin of opalescence in sodium borosilicate glass is discussed. A study of relay diffusion in the glass established in close connection between the diffusion intensity and the structure of the glass. Three temperature zones characteristic for opalescence intensity changes are listed. The connection between the ability of sodium borosilicate glass to opalesce and their ability to form porous glass (during lixiviation) is explained. Fourteen references: 10 USSR, 3 USA and 1 German (1939-1953). Graphs.

Institution : Acad. of Sc., USSR, Inst. of Chem. of Silicates

Submitted : April 2, 1954

Levin, D. I.

USSR/Chemical Technology. Chemical Products and Their Application -- Silicates.  
Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5171

Author: Levin, D. I.

Institution: Academy of Sciences USSR

Title: Raleigh Scattering in Glasses and Glass Structure

Original

Publication: Sb. Stroyeniye stekla, M.-L., AN SSSR, 1955, 198-201

Abstract: Investigation of the scattering in a series of optical glasses. From the results thus obtained the author draws the conclusion that Raleigh scattering is due to heterogeneity of glass structure per se. It was found that at temperatures above the temperature of industrial annealing, where a rapid relaxation of stresses can be expected, the intensity of scattering of flints is not reduced, but somewhat increased. Optical heterogeneity is caused by structural heterogeneities, which are of the order of hundreds of angstrom units.

Card 1/1

LEVIN, D. I.

✓ Structure of sodium borosilicate glasses in its relation to the phenomenon of opalescence. III. Comparison of the results of investigations on sodium borosilicate glasses and on porous products obtained from them by leaching. R. A. Porai-Koshits, S. P. Zhukov, and D. I. Levin. *Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci.* 1955, 333-8 (Engl. translation).—Na borosilicate glasses were leached with HCl soln. Initial  $\text{SiO}_2$  skeleton was likewise leached with glasses. The methods of investigation were by absorption, electron microscope, and by low-angle scattering of x-rays. The cells of these structures were filled with a secondary component contg.  $\text{B}_2\text{O}_3$ ,  $\text{SiO}_2$ , and  $\text{Na}_2\text{O}$ . These micro "two-phase" systems provided the source of light scattering and opalescence. Glasses, 75%  $\text{SiO}_2$ , became clear when heated to 710-15° while other glasses, 60%  $\text{SiO}_2$ , became clear at 685-90°. Glass with low- $\text{SiO}_2$  content, 35%  $\text{SiO}_2$ , yielded spongy gel-like products.

Glenn Dopley

(2)



LEVIN, D. I.

Category : USSR/Optics - Optical media

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 2222

K-3

Author : Zhdanov, S.P., Foray-Koshits, Ye.A., Levin, D.I.

Inst : Inst. of Chemistry of Silicates, Acad. of Sciences USSR, Leningrad

Title : On the Structure of Sodium Borosilicate Glass in Connection with the Opalescence Phenomenon. Report #2. Investigation of the Properties of Porous Glass

Orig Pub : Izv. AN SSSR, Otd. khim. nauk, 1955, No 2, 197-207

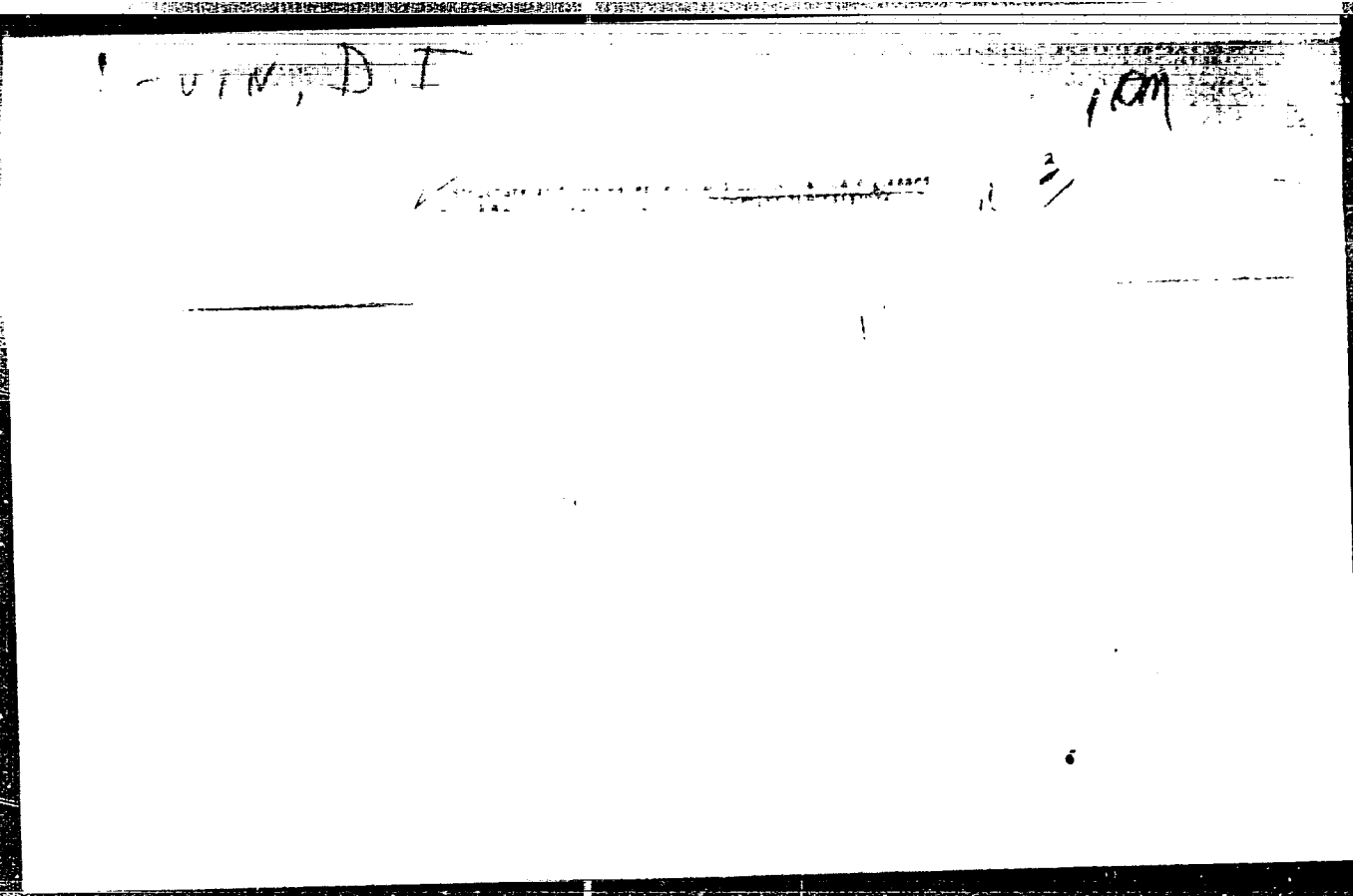
Abstract : Three independent methods -- adsorption, electron microscopy, and X-ray scattering at low angles -- were used to investigate the structure of porous glass to establish the connection between the degree of opalescence of sodium borosilicate glass processed by the acid method. It was established that porous glass is a combination of two structures -- a deeper structure of the silica skeleton and a finer structure of secondary origin, formed by the highly dispersed silicic acid inside the ducts of the skeleton. The diameter of the ducts (cells) of the silica skeleton of porous glass obtained from opalescent glass may reach 1000 A and more, while the diameters of the ducts of the skeleton of porous glass obtained from non-opalescent (transparent) original glass does not exceed 80-160 A. The differences in the structure of porous glasses, obtained from opalescent and non-opalescent sodium borosilicate glass, is due to the differences in the structure of the latter (for Report #1 see Ref. Zhur. Fiz. 1956, 20889).

Card : 1/1

LEVIN, D.I.  
**PORAY-KOSHITS, Ye.A.; ZHDANOV, S.P.; LEVIN, D.I.**

**Structure of sodium borosilicate glass and opalescence. Report no.3. Comparison of results of research on sodium borosilicate glasses and of porous products of their leaching. Izv.AN SSSR. Otd.khim.nauk no.3:395-402 My-Je '55. (MLRA 8:9)**

- 1. Institut khimii silikatov Akademii nauk SSSR.  
(Glass manufacture--Chemistry)**



PORAY-KOSHITS, Ye.A.; LEVIN, D.I.; ANDREYEV, N.S.

Structure of sodium borosilicate glasses in connection with opalescence. Part 4. Relation of the structure of sodium borosilicate glasses to prolonged heating at a constant temperature. Izv.AN SSSR. Otd.khim.nauk no.3:287-293 Mr '56. (MLRA 9:8)

1. Institut khimii silikatov Akademii nauk SSSR.  
(Glass manufacture--Chemistry)

LEVIN D. I.

SOV/81-59-12-43034

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 12, p 308 (USSR)

AUTHORS: Levin, D.I., Basin, Ye.V.

TITLE: A Sonic Method for Determining the Elasticity Module of Ceramic Materials in the Plastic State

PERIODICAL: Tr. Gos. n.-i. keram. in-ta, 1958, Nr 1, pp 92-97

ABSTRACT: A dynamic method has been described for determining the elasticity module, based on the measurement of the frequencies of the natural oscillations of the tested sample. The determination of the resonance frequency of the sample is carried out on an installation consisting of a "ZG-10" generator of audio frequency oscillations, an exciter of mechanical oscillations, a receiver of mechanical oscillations, an "EO-7" oscillograph, and a test panel, on which the exciter, the receiver and the supports of the sample are mounted. A diagram of the installation, the compositions of the porcelain masses and the curves of the dependence of the elasticity module on the humidity are given.

Card 1/1

G. Gerashchenko

LEVIN, D. I.

15(7)

SOV/72-58-12-23/23

AUTHOR: Yustova, Ye.N.

TITLE: Conference on Problems of Measuring the Whiteness of Products  
(Soveshchaniye po voprosam izmereniya belizny izdeliy)

PERIODICAL: Steklo i keramika, 1958, Nr 12, pp 48-48 (USSR)

ABSTRACT: In the current year, the Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii imeni Mendeleyeva (All-Union Scientific Research Institute of Metrology imeni Mendelejev), with the participation of representatives of interested organizations, held an extended session of the Postoyannaya komissiya pri VNIIme (Permanent Commission at the VNIIme), which dealt with problems of the whiteness measurement. The following reports and informations were given:  
Ye.N. Yustova on methods of whiteness measurement.  
D.A. Shklover on an electronic color comparator and its application in the determination of whiteness.  
V.S. Khazanov on the photometer FT-2 and its application in the measurement of whiteness.  
D.I. Levin reported on the determination of an expedient measuring method of porcelain whiteness.  
M.M. Gurevich spoke on the stage of the problem of whiteness measurement.

Card 1/2

Conference on Problems of Measuring the Whiteness of Products SOV/72-58-12-23/23

As a result of the conference it was stated that it is necessary to use either the colorimetric or the spectrophotometric method, according to the purpose for which the whiteness is measured. It was regarded as necessary to organize the series production of the photometer FT-2, the colorimeter KNO, the spherical photometer FM-58, and the photo-electric comparator GOI. The work done by the All-Union Scientific Research Institute of Metrology, the Vsesoyuznyy nauchno-issledovatel'skiy svetotekhnicheskiy institut (All-Union Scientific Photological Research Institute), the Gosudarstvennyy nauchno-issledovatel'skiy keramicheskiy institut (State Scientific Ceramic Research Institute), the Nauchno-issledovatel'skiy institut khlopchatobumazhnoy promyshlennosti (Scientific Research Institute of Cotton Industry) was appreciated, and its continuation was recommended. The desire was expressed to create in the VNIIM a center which should be equipped with the most up-to-date apparatus for measuring the whiteness in order to help industrial organizations.

Card 2/2

USCOMM-DC-60,515



BASIN, Ye.V.; LEVIN, D.I.

Investigating the relation of the elasticity modulus of  
porcelain bodies to temperature. Trudy GIKI no.1:68-84, '60.  
(MIRA 16:1)

(Ceramics)

(Elasticity)

BASIN, Ye.V.; LEVIN, D.I.

Effect of quartz on the dependence of the modulus of elasticity  
of ceramic materials on the temperature. Zhur. prikl. khim. 34  
no.5:1157-1158 My '61. (MIRA 16:8)

(Ceramic materials)

BERKMAN, A.S.; MEL'NIKOVA, I.G.; LEVIN, D.I., kand. fiz.-mat.nauk,  
nauchnyy red.; PETRENKO, N.P., red. izd-va; CHERKASSKAYA, F.T.,  
tekhn. red.

[Structure and frost resistance of wall materials] Struktura i  
moroostoikost' stenovykh materialov. Leningrad, Gosstroizdat,  
1962. 164 p. (MIRA 15:6)

(Walls) (Building materials)

~~LEVIN~~ D.I., kand. fiz.-matem. nauk; NIKULINA, L.N., kand. geol.-  
mineral. nauk

Use of a microscope with a heating device for studying feldspars.  
Stek. i ker. 20 no.6:30-32 Je '63. (MIRA 16:6)

1. Gosudarstvennyy nauchno-issledovatel'skiy keramicheskii  
institut.

(Feldspar--Testing)  
(Microscopy--Technique)