

16(1)

AUTHOR:

Levin, B. Ya.

SOV/43-59-13-6/16

TITLE:

On the Uniqueness Theorem in Harmonic Analysis

PERIODICAL:

Vestnik Leningradskogo universiteta, Seriya matematiki, mekhaniki i astronomii, 1959, Nr 13 (3), pp 59-62 (USSR)

ABSTRACT:

Theorem: 1) If $\varphi(z) = \int_{-\infty}^{\infty} e^{itz} f(t) dt$, where $f(t)$ is continuous,

bounded on the imaginary axis, and $|f(t)| = O(e^{-kt^2})$ for all $k > 0$, then $f(t) \equiv 0$.

2) This result is rigorous in the following sense: If $1 < \lambda < 2$, then there exists a function $f(t)$ different from zero so that

$|f(t)| = O(e^{-|t|^\lambda})$ and $\varphi(iy)$ is bounded for $-\infty < y < \infty$.

The author mentions Gel'fand and Shilov.

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

SUBMITTED: December 22, 1957

Card 1/1

KADETS, M.I.; LEVIN, B.Ya.

Solution of S.Banach's problem of the topological equivalence
of spaces of continuous functions. Trudy Sem.po funk.anal.
no.3/4:20-25 '60. (MIRA 14:10)
(Banach spaces) (Functional analysis)

LEVIN, B.Ya.; OSTROVSKIY, I.V.

Dependence of the growth of an entire function on the location of
the zeros of its derivatives. Sib. mat. zhur. 1 no.3:42-45 8-0.'60.
(MIRA 14:2)

(Functions, Entire)

KREYN, M.G.; LEVIN B.Ya.

Naum Il'ich Akhiezer; on his 60th birthday. Usp. mat. nauk 16
no.4:224-234 J1-Ag '61. (MIRA 14:8)
(Akhiezer, Naum Il'ich, 1901-)

LEVIN, B.Ya.

Bases of exponential functions in L_2 . Uch.zap. KHGU 115:39-48
'61. (MIRA 17:5)

ZHURKOV, S.N.; NOVAK, I.I.; LEVIN, B.Ya.; SAVITSKIY, A.V.; VETTEGREN', V.I.

Relation between the strength of a polymer and its molecular orientation. Vysokom.sped. 7 no.7:1203-1207 J1 '65.

1. Fiziko-tekhnicheskii institut imeni Ioffe AN SSSR.

(MIRA 18:8)

LEVIN, B.Ya.; KHACHATRYAN, I.O.

Extension of a Wiener-Paly theorem to functions of arbitrary
integral order and normal type in a half-plane. Dokl. AN Arm.
SSR 41 no.1:3-9 '65. (MIRA 18:8)

1. Khar'kovskiy gosudarstvennyy universitet im. M.Gor'kogo i
Institut matematiki i mekhaniki AN ArmSSR. Submitted January
15, 1965.

LEVIN, B. Ya.; OVCHARENKO, I.Ye.

Description of the continuation of Hermitian-positive functions.
Dokl. AN SSSR 159 no.4:746-749 D '64 (MIRA 18:1)

1. Khar'kovskiy gosudarstvennyy universitet imeni A.M. Gor'kogo
i Odesskiy inzhenerno-stroitel'nyy institut. Predstavleno aka-
demikom S.N. Bernshteynom.

LEVIN, Boris Yakovleyich; BARKOVSKIY, N.D., red.; BRUSHTEYN, A.I., red.
isd-vs; MIKHAYLOVA, V.V., tekhn.red.

[Financial transactions in the operation of metallurgical plants;
a practical guide] Operativnaya finansovaya rabota na metallur-
gicheskoy predpriyatii; prakticheskoe posobie. Moskva, Gos.nauchno-
tekhn.isd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1960. 186 p.
(MIRA 13:5)

(Metallurgical plants--Accounting) (Credit)

L 32965-66 EWP(j)/EWT(m)/T IJP(c) RM

ACC NR: AP6017603

(A)

SOURCE CODE: UR/0183/66/000/001/0029/0031

AUTHOR: Levin, B. Ya.; Savitskiy, A. V.; Demicheva, V. P.

37

ORG: Physicotechnical Institute im. A. F. Ioffe AN SSSR (Fiziko-tehnicheskiy institut AN UkrSSR)

B

TITLE: Effect of the degree of stretching on the strength of capron fibers¹⁵

SOURCE: Khimicheskiye volokna, no. 1, 1966, 29-31

TOPIC TAGS: synthetic fiber, polyamide, tensile strength, nylon

ABSTRACT: The authors study the effect of stretching conditions on the strength of polyamide fibers at liquid nitrogen temperatures. The specimens had minimum initial orientation evaluated from measurements of birefringence. The experimental data show a linear relationship between strength and degree of stretching. Elongation and molecular orientation increase when the stretching temperature is raised. The experimental data prove conclusively that the strength of capron fiber is a function of the degree of stretching alone and is independent of the temperature and the rate at which the orientation stretching is done. The increase in strength properties of the capron takes place in such a way that stretching does not change the breaking load at -196°C reduced to the cross section of the original fiber. This same relationship is observed in specimens of polyethylene and rubber when they are stretched to 400-700%. If the

Card 1/2

UDC: 677.494.675

L 32965-66

ACC NR: AP6017603

mechanism responsible for this phenomenon were determined, it could explain the process of strength increase in polymer fibers. Orig. art. has: 3 figures. 0

SUB CODE: 11/ SUBM DATE: 17Nov64/ ORIG REF: 006/ OTH REF: 003

Card 2/2

LEVIN, B.Ya., insh.

New mobile feeder. Stroi. i dor. mashinostr. 5 no.5:23-24 My '60.
(MIRA 14:4)

(Conveying machinery)

LEVIN, B. Ye.

(Ber Yel'yeich)

Deceased - 1960

Dynamics of prothrombinemia in typhoid. *Klin. med.*, Moskva
29 no.8:61-63 Aug 1951. (CIAM 20:11)

1. Of the Clinic for Infectious Diseases (Director -- Prof.
V. V. Kosmachevskiy), Minsk Medical Institute.

GOL'DBERG, A.A.; LEVIN, B.Ya.

Integral functions bounded on the real axis. Dokl. AN SSSR
157 no.1:19-21 JI '64 (MIRA 17:8)

1. L'vovskiy gosudarstvennyy universitet im. I. Franko, 1
Khar'kovskiy gosudarstvennyy universitet im. A.M.Gor'kogo.
Predstavleno akademikom S.N. Bernshteynom.

PROCEEDINGS AND PRESENTATIONS

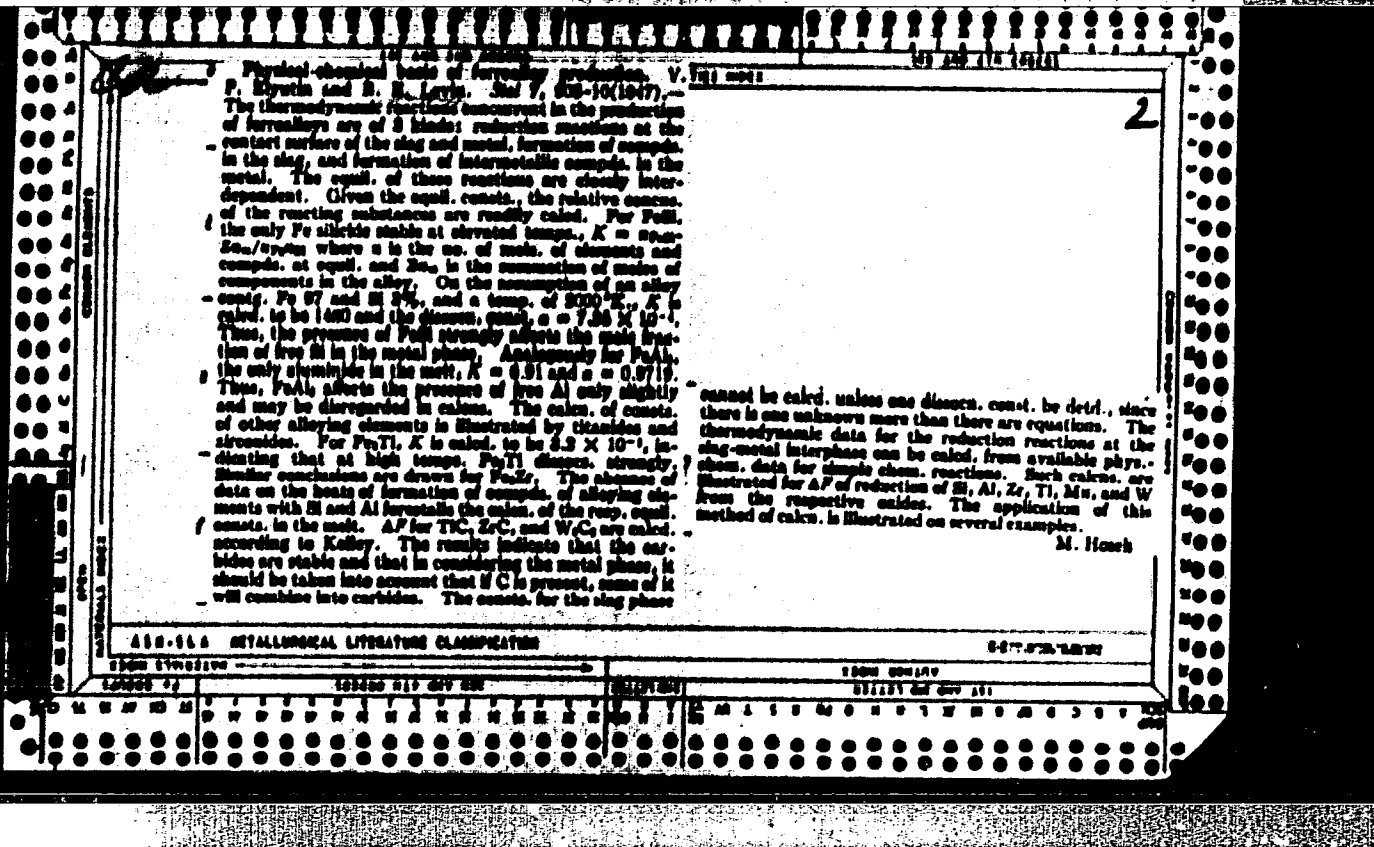
M. H. LEVIN, B. E.

9

Physicochemical principles of silicon reduction in the production of ferroalloys. V. P. Klyutin and B. E. Levin (Moscow Steel Inst.). *Stal* 6, 554-9(1946).—The point of departure is that in the production of FeSi, Si is produced as a result of reducing SiO₂ by solid C. Reduction by CO is not likely, since by the Nernst equation even at 2100° (1827°) oxidizes Si. The likely reaction therefore is SiO₂ + 2C = Si + 2CO, ΔH = 155,100 cal. The equil. const. for this reaction is calcul. from $K = (P_{CO}^2 A_{Si}) / (A_{SiO_2} A_{C_2})$, where P_{CO} is the partial pressure of CO and A_{Si} , A_{C_2} , and A_{SiO_2} are the corresponding activity indexes. It can be assumed that $A_{SiO_2} = 1$ and $A_{C_2} = 1$ and therefore $K = A_{Si} P_{CO}^2$. From free energy calcul. K is computed for temps. between 2000 and 2100°K. At 1943°K., $K = 11.5$ and $P_{CO} = 3.41$ atm. At this temp. (1670°) the reduction of SiO₂ will proceed rapidly. At 2100°K. (1827°), $K = 230$ and $P_{CO} = 15.4$ atm. Under such conditions the reaction will proceed very rapidly. Further rise in temp. is useless and will lead to loss of Si by evapn. On a diagram of state it can be seen that of the several possible Fe silicides the most stable is Fe₃Si. The latter is formed in the presence of 33.3 wt. % or 60 atom %. The formation of Fe₃Si proceeds according to SiO₂ + Fe + 2C = Fe₃Si + 2CO. The thermal effect of this reaction also includes the heat of formation of Fe₃Si. Further thermodynamic calculs. are made for the formation of 45 and 75 wt. % of ferroalloys. The former is formed at 1800-2000°K. (1527-1727°) and the latter at 1800-2000°K. (1527-1727°). Both temps. are below the temp. at which Si alone is reduced. These calculs. are for pure substances. Under production conditions, the presence of Al, Ca, Mn, S, and P will effect a change in the discussed picture.

M. H. LEVIN

CO ₂ O ₂		SiO ₂ O ₂		Fe ₃ Si O ₂		Fe ₂ Si O ₂		FeSi O ₂		Fe O ₂		C O ₂	
1	2	3	4	5	6	7	8	9	10	11	12	13	14



LEVIN, D. E.

USSR!

8099 The Production of Ferroalloys, V. P. Elyutin, Yu. A. Savoy, and D. E. Levin. Henry Brucher Translation No. 3446, 27 p. (Part from book "The Production of Ferroalloys", Chap. V, 1951. Metallurgizdat, Moscow.) Henry Brucher, Alhambra, Calif.
Survey of production methods for various grades; other products. Tables, graphs. 3 ref.

11 65

LEVIN, B. E.

USSR/Physics

Card 1/1 Pub. 43 - 11/11

Authors : Levin, B. E.

Title : Regarding the question on the phase content of ferrites

Periodical : Izv. AN SSSR ser. fiz. 18/4, 519-520, Jul - Aug 1954

Abstract : A method for determination of the phase content of a ferrite is outlined. It is based on the determination of thermo-chemical characteristics of ferrite components. The amount of heat required for formation of a ferrite, as experiments show, varies between 9 and 14 K calarories per mol. Two references: 1-USSR; 1-English (1947-1951).

Institution : ...

Submitted : May 3, 1954

Doris Yeylevich

PHASE I BOOK EXPLOITATION
 Yelyutin, Vyacheslav Petrovich; Pavlov, Yuriy Aleksandrovich;
 Levin, Boris Yeylevich; Alekseyev, Yevgeniy Michaylovich.
 Proizvodstvo ferrosplavov (Production of ferro-alloys;
 Electrometallurgy) 2d ed., rev. and enl. Moscow, Mashgiz,
 1957. 436 p. 7,500 copies printed.
 Ed.: Alekseyev, Ye. M.; Ed. of Publishing House:
 Rozentsveyg, Ya. M.; Tech. Ed.: Vaynshteyn, Ye. B.
 The book is intended as a textbook for students at
 institutions of higher learning specializing in
 metallurgy and may also serve as a manual for engineers
 and scientific workers.

230

PURPOSE:

COVERAGE:

Card 1/7

Theoretical and practical data on production of ferro-
 alloys are systematized and generalized in this book.
 The theoretical foundations and technology of producing
 various ferro-alloys are discussed. Some information
 on physical chemistry is given in order to facilitate
 understanding of thermodynamic calculations.

DP 86-

0330

(Cont.)

Production of Ferro-alloys; Electrometallurgy in the
 problems of economics and of safety engineering in the
 production of ferrous alloys are elucidated. The present
 edition of this book gives a more detailed description of
 technology and progress in the first edition. The Soviet,
 industries than that given in the first edition. The Soviet,
 bibliography contains 93 references, 69 of which are
 15 in English, 6 in German and 3 miscellaneous.

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 Ch. II. Silicon Alloys
 1. Physicochemical properties of silicon and its compounds
 2. Composition and use of silicon alloys
 3. Raw materials for production of silicon
 4. Theoretical base for reduction of silica

Card 2/7

OR RELEA TH: 08/23/2000 CIA

Production of Ferro-alloys; Electrometallurgy (Cont.) 230

Problems of economics and of safety engineering in the production of ferrous alloys are elucidated. The present edition of this book gives a more detailed description of technology and progress in Soviet and non-Soviet ferro-alloy industries than that given in the first edition. The bibliography contains 93 references, 69 of which are Soviet, 15 in English, 6 in German and 3 miscellaneous.

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AVAILABLE: Library of Congress	
Card 7/7	

LEVIN, B. YE.

AYZENKOL, B. F. [Eisenkolb, Friedrich], prof., Dr. Ing. habil.;
 MAURAKH, M. A., kand. tekhn. nauk, prepodavatel' [translator];
 MOZZHUKHIN, Ye. I., kand. tekhn. nauk, prepodavatel' [translator];
 NATANSON, A. K., kand. tekhn. nauk, prepodavatel' [translator];
 LEVIN, B. Ye., kand. tekhn. nauk [translator]; YELIUTIN, V. P.,
 prof., doktor, nauchnyy red.; RZHEZNIKOV, V. S., red.; EL'KIND,
 L. M., red. izd-va; ATTOPOVICH, M. K., tekhn. red.

[Powder metallurgy] Poroshkovaya metallurgiya. Pod nauchnoi
 red. V. P. Eliutina i A. K. Natansona. Moskva, Gos. nauchno-tekhn.
 izd-vo lit-ry po cherno i tsvetnoi metallurgii, 1959. 518 p.
 Translated from the German. (MIRA 13:1)

1. Kafedra metallurgii redkikh metallov i poroshkovoy metallurgii
 Moskovskogo instituta stali (for M. Natanson).

24(3)

AUTHORS:

Levin, B. Ye., Kontorovich, L. I.

SOV/48-23-3-29/34

TITLE:

On the Report by N. A. Smol'kov and Yu. P. Simanov (Po dokladu N. A. Smol'kova i Yu. P. Simanova). "Properties of Solid Solutions $\text{NiFe}_2\text{O}_4 \rightarrow \text{MgFe}_2\text{O}_4$ " (Vol 23, Nr 3, p 307) ("Svoystva tverdykh rastvorov $\text{NiFe}_2\text{O}_4 \rightarrow \text{MgFe}_2\text{O}_4$ (t.23, No 3, str.307)).
On the Problem of Thermodynamics of the Reactions of Ferrite Formation (K voprosu o termodinamike reaktsiy ferritobrazovaniya)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 3, p 419 (USSR)

ABSTRACT:

The formation of ferrospinels in solid phase takes place during the production of ferrites from pure oxides. In the temperature range of up to $1,350^\circ$ approximately, applied to the production of ferrites, the liquid phase is either not formed at all or in small quantities only. The thermodynamic analysis of ferrite formation shows that the formation of ferrites in the solid phase is characterized by a system without degrees of freedom. There is a thermodynamic probability of ferrite formation from pure oxides at temperatures of up

Card 1/2

On the Report by N. A. Smol'kov and Yu. P. Simanov. SOV/48-23-3-29/34
"Properties of Solid Solutions $\text{NiFe}_2\text{O}_4 \rightarrow \text{MgFe}_2\text{O}_4$ " (Vol 23, Nr 3, p 307).
On the Problem of Thermodynamics of the Reactions of Ferrite Formation

to 298° K and below. Depending on the presence of impurities the ferrite formation from technical substances proceeds in a complex thermodynamic system and may be characterized by several degrees of freedom. It is possible to determine the probability of the course of ferrite formation in these cases on the basis of experimental thermodynamic characteristics of ferrite formation. From publications (Refs 1-5) it was possible to obtain data on thermodynamic properties only in the case of magnesium ferrite ($\text{MgO} + \text{Fe}_2\text{O}_3 = \text{MgFe}_2\text{O}_4$). There are 5 references, 3 of which are Soviet.

Card 2/2

ACCESSION NR: AP4031896

S/0286/64/000/007/0082/0082

AUTHOR: Basilov, V. V.; Levin, B. Ye.; Mendelejev, K. F.

TITLE: A method of estimating the wear-resistance of thin metallic films.
Class 42, No. 161561

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 7, 1964, 82

TOPIC TAGS: wear resistance, durability, metallic material, fretting, fret resistance

TRANSLATION: A method is proposed in this author's certificate for estimating the wear resistance of thin metallic films. In order to measure the durability of films on large surfaces, the electrical resistance of the film is measured before and after the film is completely eroded by an indenter. The durability of the film is then judged on the basis of the ratio of the measured values.

ASSOCIATION: none

Card 1/2

ACCESSION NR: AP4031096

SUBMITTED: 16Jan63

DATE ACQ: 29Apr64

ENCL: 00

SUB CODE: ML, AP

NO REF SOV: 000

OTHER: 000

Card 2/2

LEVIN, RYU

600

1. LEVIN, R. Yu.

2. USSR (600)

"Distribution of Meteor heights," Astron. Zhur., 16, No. 4, 1939. State Pedagogic Institute imeni Libknekht Moscow. (submitted 1938)

9. Report U-1518, 23 Oct 1951.

LEVIN488YU8

600

1. LEVIN, B. Yu.

2. USSR (600)

"Elements of the Physical theory of meteors," /with long English-language abstract/,
Astron. Zhur., 17, No 3, 1940. State Pedagogic Institute imeni Libknekht (submitted
1938/39, Moscow)

9. Report U-1518, 23 Oct 1951

Translation 563466

LEVIN, B. Yu.

"Elements of the Physical Theory of Meteors." *Astronomicheskii zhurnal*
Vol. 18, No. 4-5, 1941, pages 331-340 State Pedagogical Institute imeni
K. Liebknecht, Moscow 1940-41.
Translation 563973

LEVIN, B. Yu.

"Gas Evolution from the Nucleus of a Comet as Related to the Variations in its Absolute Brightness," Dok. AN, 38, No. 2-3, 1943.

LEVIN, B. Yu.

"Heights and Velocities of Meteors," Dok. AN, 49, No. 5, 1945.

LEVIN, B. YU.

PA 27721

USSR/Physics

May 1946

Spectroheliscopes
Solar Phenomena

"Chemical Compounds in the Sun," B. Yu. Levin, 4 p

"Priroda" No 5

This short article tells of discoveries, which have been made as a result of hundreds of studies of the sun's spectrum between the limits of 2,950 and 12,200 angstrom units. Babcock, who carried out these experiments, was able to determine some seven compounds (Ba, ScO, YO, MgF, SrF, MgO, and O₂), previously unsuspected in the sun.

ID

27791

LEVIN, B.

PA 2792

Chem/Physics

**Spectrohelioscopes
Solar Phenomena**

May 1946

"Chemical Composition of the Planetary Nebulae and the Stars' Atmospheres," B. Levin, 1 p

"Priroda" No 5

Summary of the work conducted by Menzel, Goldberg, Unseld, and Aller in determining the chemical composition of planetary nebulae and stars' atmospheres. The stars investigated were the sun and scorpio.

ID

2792

LEVIN, B. YU

✓ 8.1-116 SS1 103.54:77:656.7
Levin, B. YU. Fotografirovanie skvoz' atmosfernuiu dymku. [Photography through
atmospheric haze]. *Zhurnal Tekhnicheskoi Fiziki*, Moscow, 16(9):1005-1012, 1946. 7 figs.,
10 tables, 13 refs., 26 eqs. DLC—A technical presentation of a great deal of data and factual
information regarding transmission of light through haze with application to aerial photog-
raphy. Effects of different concentrations of haze, angles of incidence (horizontal, vertical
or slant photography) scattering, absorption, etc. considered quantitatively with equations,
tables and graphs. *Subject Headings:* 1. Turbidity effects on aerial photography 2. Haze.
3. Aerial photography.—M.R.

88

LEVIN, B. Yu.

"Velocities, Orbits, and Masses of Meteorites."
Astronomicheskii zhurnal, Vol 23, No. 2, 1946 83-95

translation 563443

10710, D. 10.

PA 34799

USSR/Physics

Meteors

Magnetism, Terrestrial

May 1947

"Meteor Showers - Draconid," B. Yu. Levin, Candidate
in Physico-Mathematical Sciences, 5 pp

"Zhurnal i Zhizn" No 5

A display of falling stars is an occurrence which
comes approximately once every hundred years. Author
discusses the reasons for this phenomenon and de-
scribes some of the methods which have been used to
observe it, including radar. According to observa-
tions of the Institute of Theoretical Geophysics of
the Academy of Sciences of the USSR and the Institute

34799

USSR/Physics (Contd)

May 1947

For Terrestrial Magnetism, heavy meteor showers tend
to effect the earth's magnetism.

34799

LEVIN, B. Yu.

"The Cosmogonic Theory of Academician O. Yu. Schmidt," Nauka i Zhizn, No. 12, 1947

LEVIN, B. YU.

Levin, B. Yu

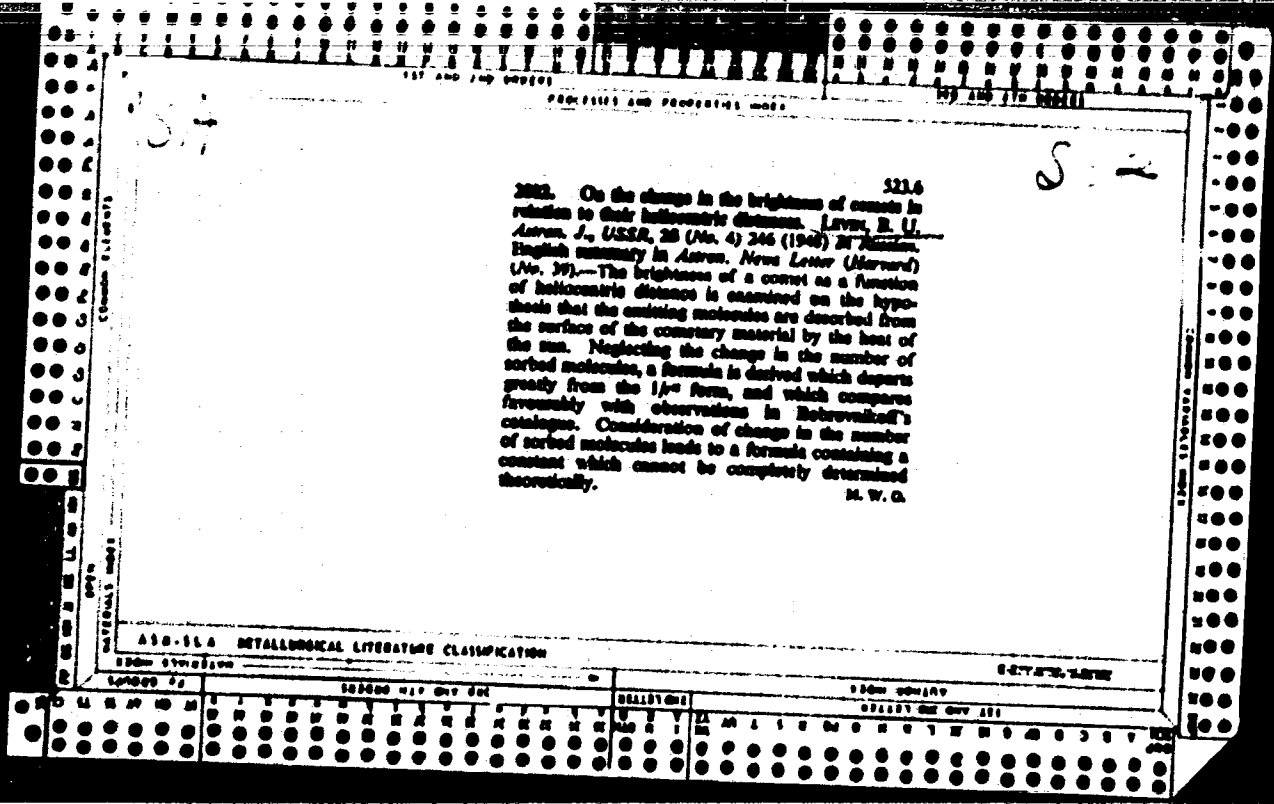
Internal Structure of Planets of The Earth's Group

Doklady Akademiyi Nauk, SSSR
Vol. 55, 1947, pp. 483

From: B. N. L. Guide to R. Scientific Per. Lit. No. 2, Vol. 1, May 1948, p. 3

LEVIN, B. YU.

The origin of the earth and the planets. Verbatim report of a public lecture read in
Moscow. Moskva (Pravda) 1948. 23 p.



LEVIN, B. Yu.

PA 12/49T72

USSR/Geophysics

Atmosphere - Density

Atmosphere - Measurements

Apr 48

"Studying the Density of the Upper Layers of the
Atmosphere by the Meteorite Method," B. Yu. Levin,
12 pp

"Uspekhi Fiz Nauk" Vol XXXIV, No 4

A survey of the progress made in this field since
the work of Lindemann and Dobson in 1923.

12/49T72

LEVIN, B. Iv.

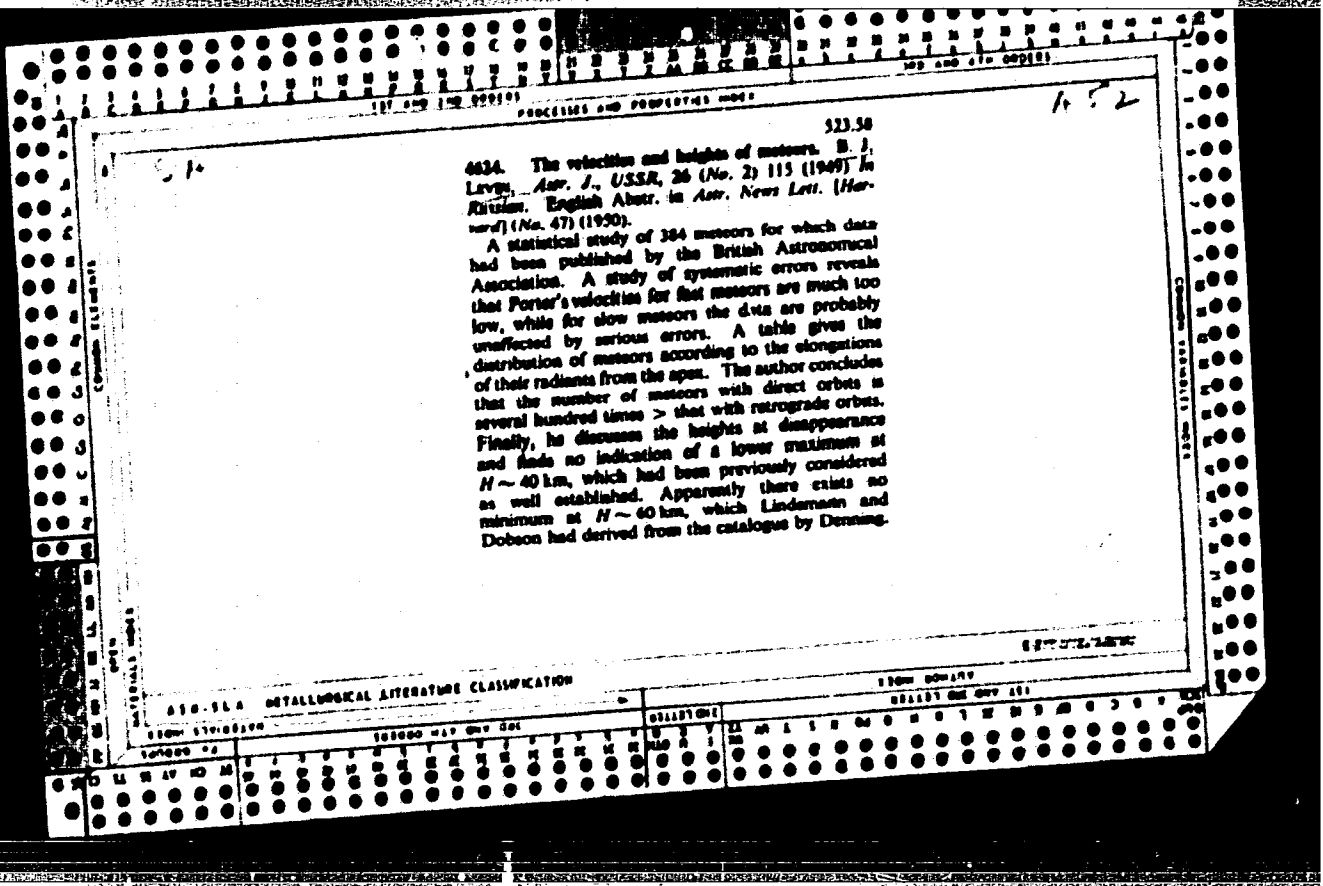
B. Iv. Levin

The origin of the Earth and planets

A public lecture Stograph (Read in Moscow) Moscow (Pravda)

1959, 22 pages.

From: Monthly list of Russian Accessions. July 1951, Vol. 4, No. 4, p. 5,
(Trans. Copy)



LEVIN, B. YU.

Origins of the earth and the planets. A verbatim report of a public lecture read in Moscow. Moskva (Pravda) 1950. 22 p. (52-18090).

LEVIN, B. Yu.

"A Few Questions of the Motion of Meteors in the Earth's Atmosphere,"
Ak. Nauk SSSR Meteoritika, No.7, 1950

Translation 563467

LEVIN, B. Yu.

15574

USSR/Astronomy - Stars, Binary
Capture Hypothesis Jan 50

"Statistics of Physical Characteristics of Binary Stars and Capture Hypothesis," B. Yu. Levin, Geophy's Inst, Acad Sci USSR, 4 pp

"Dok Ak Nauk SSSR" Vol LXX, No 1

Capture hypothesis best explains: statistical data on physical characteristics of visual double stars (distribution with respect to difference in size of star components, for stars of individual spectral types, and for wide pairs); distribution of main stars in pairs according to

15574

USSR/Astronomy - Stars, Binary (Contd) Jan 50

spectral types; and laws connecting sizes and spectra of components. Submitted by Acad O. Yu. Smidat 3 Nov 49.

15574

LEVIN, B. YU.

PA 15875

USSR/ Astronomy - Binary Stars
Stellar Phenomena
Jan 50

"Concerning the Formation of Binary Stars," L.E. Gurevich, B. Yu. Levin, Geophys Inst, Acad Sci USSR, Leningrad State U Imeni A. A. Zhdanov, 4 pp

"Dok Ak Nauk SSSR" Vol LXX, No 3

Strict mathematical derivation of hypothesis which effectively synthesizes two seemingly opposite hypotheses: V. A. Ambartsumyan's general derivation of stellar components and O. Yu. Shmidt's formation of twins by captures. Authors consider that components first form in one association and later unite in pairs by means of gravitational captures within this association.

USSR/Astronomy - Binary Stars
(Contd)
Jan 50

The second process, formation of twins or pairs, occurs at early stage when the first, formation of stars, is not yet finished, friction may be very important in kinetics of captures. Submitted by Acad P. I. Lukirskiy 21 Sep 49.

*also published in Astrom.
Zhurn., 27, No. 5, 1950
Geophys. Inst. Acad Sci*

15875

USSR/Astronomy - Stellar Systems Evolution 11 Feb 50

"Evolution of Systems of Gravitating Bodies," L. E. Gurevich, B. Yu. Levin, Geophy's Inst, Acad Sci USSR, Leningrad State U Imeni A. A. Zhdanov

"Dok Ak Nauk SSSR" Vol LIX, No 5, pp 781-784

Mathematically develops ideas on which V. A. Ambartsumyan's theory of star clusters was based. Proves incorrect the usual notion of evolution of gravitational systems, namely star clusters. In particular, according to this notion only scattering would occur

16571

11 Feb 50

USSR/Astronomy - Stellar Systems (Contd)

Actually, processes of scattering of gravitational systems during their evolution are continuously connected with their consolidation. Submitted 16 Dec 49 by Acad O. Yu. Shmidt.

16571

LEVIN, B. YU.

1951, p. VII.

Conata

Expanded plenum of the Committee on Cosmets and Astronmical Sciences of the Academy of Sciences of the USSR. Biol. Nauk, no. 10 (17), 1951.

APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R000929520007-7"

Monthly List of Russian Accessions, Library of Congress, May 1954. UNCLASSIFIED.

LEVIN, B. IU.

Meteority [Meteorites]. Moskva, Znanie, 1952. 32 p.

SO: Monthly List of Russian Accessions, Vol. 6, No. 5, August 1953

1. LEVIN, B. YU.
2. USSR (600)
4. Cosmogony
7. Origin of the earth and of planets.
Nauka i zhizn' no 10, 1952

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

LEVIN, B. YU

Cosmogony

How the earth came to be. Krest'ianka 31, No. 9, 1952.

MONTHLY LIST OF RUSSIAN ACCESSIONS. Library of Congress, December 1952. UNCLASSIFIED.

LEVIN, B. Yu.

LAVRENT'YEV, M.A., akademik, redaktor; AMBARTSUMYAN, V.A., akademik;
KUKARKIN, B.V., dektek fiziko-matematicheskikh nauk; PARENAGO, P.P.,
chlen-korrespondent AN SSSR; LEVIN, B.Yu., kandidat fiziko-matema-
ticheskikh nauk; MASEVICH, A.G., kandidat fiziko-matematicheskikh
nauk, redaktor.

[Transactions of the 2nd conference on problems of cosmogony,
19-22 May 1952] Soveshchaniya po voprosam kosmogonii. Trudy.
Zed. koll. M.A. Lavrent'ev i dr. Moskva, 1953. 582 p. (MLRA 7:5)
(Cosmogony) (Stars)

LEVIN, B.Iu.

"Conference held 27-30 March 1953 in Kiev on Contemporary Theories of the Origin and Development of the Earth," B.V. Gorak and B.Iu. Ivanenko (reporters)

IzAk Nauk SSSR, Ser Izv, No 6, pp 571-573 - 1953

Conference was organized by the Kiev regional branch of VNIITD (All-Union Scientific Society of Engineers and Technicians (Union)) together with the Inst of Geol Sci, Acad Sci SSSR, and the geol section of the Kiev House of Scientists. Participating in the conference were scientific workers and institute instructors, astronomers, geologists, geophysicists, geochemists of Moscow, Kiev, and Lvov. Reports were read by B.Iu. Levin, P. Ia. Salushko, Ia. S. Burksar, V.V. Salusev and V.I. Bilykhorvsky.

773104

LEVIN, B.

Planets

Structure of the earth and planets. Nauka i zhizn' 20, No. 2, 1953.

Monthly List of Russian Accessions, Library of Congress, June 1953. Incl.

LEVIN, B.Yu.; SHMIDT, O.Yu, akademik.

Brightness function for meteoric showers and the distribution of meteoric bodies according to their mass. Dokl.AN SSSR 90 no.4:513-516 Je '53.
(MLRA 6:5)

1. Akademiya Nauk SSSR (for Shmidt).

(Meteors)

States that investigators of meteoric astronomy are not giving sufficient attention to the transition from quantities characterizing the apparent properties of meteors to quantities characterizing the true properties of meteoric bodies and their swarms and the encounter with the earth, which encounter generates the observed meteors. Although the series of observations by I.S. Astapovich and other Soviet observers of meteors, comprising myriads of meteors, contain ample material for the study, it is being neglected.
Presented by Acad O. Yu. Shmidt 27 Mar 53. 254T65

LEVIN, B. Yu.

Jul/Aug 63

USSR/Geophysics - Earth's Structure

"Some Problems of the Development, Structure, and Composition of the Earth." B. Yu. Levin,
Geophys Inst, Acad Sci USSR

Iz Ak Nauk SSSR, Ser Geofiz, No 4, pp 289-306

Discusses: (1) the history and origin of the notion of terrestrial stratification according to chemical compn during the earth's incandescent stage; (2) formation of the earth and planets from cold, hard particles; (3) criticism of the hypothesis that the earth has an iron core; and (4) criticism of the explanation that a solid center formed in a phase-transitional substance under the action of high pressure; (5) the average chem compn of the earth; (6) earth's crust and process of formation; (7) thermal history of the earth.

265 T77

LEVIN, E.Yu.; SHMIDT, O.Yu, akademik.

Quantity of meteors in a shower and the density of meteoric bodies in a swarm. Dokl.AN SSSR 90 no.5:737-740 Je '53. (MLRA 6:5)

1. Geofizicheskiy institut Akademii nauk SSSR (for Levin).
2. Akademiya nauk SSSR (for Shmidt). (Meteors)

Defines subject number as some number characterized by the so-called 'hourly number of meteors' (i.e., the number of meteors noted by the unaided eye of one observer per hour), which in turn depends upon: 1 - the specific stellar magnitude of the meteors as determined by the keenness of the observer's vision, transparency of the atmosphere, and background brightness of the sky; 2 - size of the observed portion of the sky; 3 - the zenith distance of the observed portion of the sky; and 4 - the zenith distance z of the radiant. Mathematically derives $N(m)$, the density of a stream of meteors brighter than the m -th stellar magnitude; and $D(M^*)$, the density of meteoric bodies exceeding the one and the same specific mass M^* ($10^{-10}/\text{km}^3$). Presented by Acad O. Yu. Shmidt 7 Apr 53.

260T30

LEVIN, B. YU.

21 Jul 53

USSR/Astronomy - Cosmogony

"Cosmogony of the Planetary System and Evolution of the Sun," B. Yu. Levin, Geophys
Inst, Acad Sci USSR

DAN SSSR, Vol 91, No 3, pp 471-474

Derives evolution of sun by analyzing loss of mass while sun evolved along upper part of
main sequence. Concludes that problems of stellar and planetary evolution are closely
related and that existence of planetary belt influenced solar evolution. Presented by
Acad. O. Yu. Shmidt 18 May 53.

262T34

LEVIN, B. Yu.
~~www.levin.ru~~

Dimensions of asteroids. Astron. tsir. no. 141:3-5 8 '53. (MLRA 7:7)

1. Geofizicheskiy Institut Akademii nauk SSSR.
(Planets, Minor)

LEVIN, B.Yu.; SAMSONENKO, L.V., redaktor; AKHILAMOV, S.N., tekhnicheskii
~~redaktor.~~

[Origin of the earth and planets] Proiskhozhdenie zemli i planet.
Moskva, Gos. izd-vo tekhniko-teoret. lit-ry, 1954. 73 p. (Popu-
liarnye lektsii po astronomii, no.3) (MLRA 8:1)
(Cosmogony)

LEVIN, B. Yu.

KUKARKIN, B.V., doktor fiziko-matematicheskikh nauk, redaktor; PA-
RIYSKIY, N.N., kandidat fiziko-matematicheskikh nauk, redaktor;
BARANOV, V.I., doktor fiziko-matematicheskikh nauk, redaktor;
BELOUSOV, V.V., redaktor; LEVIN, B.Yu., kandidat fiziko-ma-
tematicheskikh nauk, redaktor. MASHVICH, A.G., kandidat fiziko-
matematicheskikh nauk, redaktor; SAYRONOV, V.S., kandidat fi-
siko-matematicheskikh nauk, redaktor.

[Problems in cosmogony] Voprosy kosmogonii. Moskva, Izd-vo
Akademii nauk SSSR. Vol 2. 1954. 363 p. (MLRA 7:8)

1. Chlen-korrespondent AN SSSR (for Belousov) 2. Akademiya
nauk SSSR.
(Cosmogony)

LEVIN, B. YU.

"In the Commission on the Absolute Age of Geological Formations," vopr. kosmogonii, 2, 358-359, 1954

The first session of the commission heard several reports possessing great significance for cosmogony. A. P. Vinogradov, I. K. Zadorozhniy, and S. I. Zykov showed that the maximum age of the earth's crust has been determined to be 5 billion years, but the minimum is 2 billion. O. Yu. Shmidt and B. Yu. Levin gave a report entitled "Significance of the Determinations of the Age for the Cosmogony of the Solar System" and another briefer report on the age of meteorites. The report of L. E. Gurevich was devoted to the origin of the elements.

RZhGeol, No 1, 1955

LEVIN, B.Yu.

Fourth conference on meteorites. Vop.kosm. 2:360-361 '54. (MIRA 8:5)
(Meteorites)

LEVIN, B.Yu.

LEVIN, B.Yu.

Cosmogony of the planetary system and the evolution of the sun. ✓
Vop.kosm. 3:20-32 '54. (MLBA 8:3)
(Planets) (Sun)

USSR/Geophysics - Book Review

Card 1/1

Author : Zvolinskiy, N. V., Dr. Phys-Math. Sci.;
Levin, B. Yu., Cand Phys-Math. Sci.;
Molodenskiy, M. S., Corr. Mem. Acad. Sci. USSR.

Title : Vnutrenneye stroyeniye zemli [Internal structure of the Earth],
by V. F. Bonchkovskiy

Periodical : Izv. AN SSSR, Ser geofiz. 3, p 299, May/June 1954

Abstract : Favorable review of geophysics book, belonging to the popular-science
series put out by the Acad. Sci. USSR. The book contains a large
amount of material in the form of numerous graphs, maps, and tables.

Institution :

Submitted :

LEVIN, B. YU.

"Extended Session of the Learned Council of the Geophysical Institute
Devoted to the Internal Structure of the Earth," *Voprosy Kosmogonii*, 3, 1954,
pp 336-340

The conference was held during the period 23-27 December 1952. The
speakers on the above topic were V.V. Belousov, B.I. Davydov, A.G. Falashnikov,
B.Yu. Levin, Ye.A. Lyubimova, Ye.N. Lyustikh, V.A. Magnitskiy, I.Ya. Melik-
Geykazan, M.S. Molodenskiy, N.N. Bariyskiy, Ye.F. Savarenskiy, A.I. Treskov,
and A.P. Vinogradov. (*RZhAstr*, No 3, 1955)

SO: Sum. No. 536, 10 Jun 55

DAVID, B. Yu.

"Meteorites and the Structure of the Earth," Meteoritika, No 11, pp 47-61, 1964

Meteorites arose from the same protoplanetary cloud from which the Earth was formed and the other planets. A number of factual data indicate the close connection of meteoritic and terrestrial matter. Thus, the isotopic composition of 19 elements of meteorites, including also carbon, is identical to the isotopic composition of these elements in the Earth's crust (mantle). The author objects to hypothesis of the formation of meteorites by way of the decay of a single large parental laminar planet (for example, the variety of meteorites' structures is noted.) (RikGeol, No 4, 1965)

Sov. No. 681, 7 Oct 65

LEVIN, B.Yu.

Problem of the velocity and orbit of the Tungus meteorite.
Meteoritika no.11:132-136 '54. (MIRA 8:3)
(Meteorites) (Orbits)

LEVIN, B. Yu.

LEVIN, B. Yu. -- "The Physical Theory of Meteors and Meteor Substance in the Solar System." Acad Sci USSR. Geophysics Inst. Moscow, 1955. (Dissertation for the Degree of Doctor of Physicomathematical Sciences.)

SO: Knizhnaya Letopis', No 5, Moscow, Feb 1956

Xu .

60-55 -26-3/16

AUTHOR: Levin, B. Yu.

TITLE: Composition of the Earth (Sostav zemli)

PERIODICAL: Trudy Geofizicheskogo instituta Akademii nauk SSSR, 1955, Nr 26, pp 11-38 (USSR)

ABSTRACT: The author presents an historical review of the theories of chemical differentiation of the Earth's interior and discusses the connection between the cosmogony of the planetary system and the composition of the Earth. He shows that a comparative analysis of the composition of the planets of the Earth group provides a hypothesis on the nature of the Earth's core, and discusses the possibility of determining the composition of the Earth through an analysis of the mean composition of meteorites. There are 6 tables and 76 references, of which 29 are Soviet, 27 English, 17 German, 2 French, and 1 Swedish.

AVAILABLE: Library of Congress

Card 1/1

LEVIN, B.Yu.; GULAK, Yu.K.; SKOROBOGAT'KO, A.F.; ZELENTSOV, V.P.

~~.....~~
A bright bolide. Priroda 44 no.4:86-87 Ap '55.
(Meteors)

(MIRA 8:4)

LEV IN, B. Yu.; LYUBIMOVA, Ye. A.

Thermal history of the moon. Priroda 44 no. 10: 81-84 0'55.
(MLRA 8:12)

1. Geofizicheskiy institut Akademii nauk SSSR.
(Moon)

LEVIN, Boris Yuliyevich, doktor fiz.-mat. nauk

[Survey of popular literature on planetary cosmogony, 1953-1956]
Obzor populiarnoi literatury po planetnoi kosmogonii za 1953-1956
ZS. Moskva, Vses. ob-vo po rasprostraneniю polit. i nauchn. znaniy,
31 p. (MIRA 11:4)
(Bibliography--Cosmogony)

LEVIN, Boris Yul'yevich; SHMIDT, O.Yu., akademik, otvetstvennyy redaktor;
ROKHLIN, I.Ye., redaktor izdatel'stva; KASHINA, P.S., tekhnicheskii
redaktor

[A physical theory of meteors and meteoric matter in the solar system]
Fizicheskaya teoriya meteorov i meteornoe veshchestvo v solnechnoy
sisteme. Moskva, Izd-vo Akademii nauk SSSR, 1956. 293 p. (MIRA 9:10)
(Meteors)

LEVIN, B. Y.

"On the Character and Causes of the Separation of Molecules During Planet Formation," a paper read at the 7th International Astrophysical Colloquium, Liege, 12-14 Jul 1956.

Chemical evidence obtained by Urey supports Prof. O. Schmidt's theory of the origin of the solar system, according to which the modern planets are due to the growth of the initially small "embryos", owing to accumulation processes and not to ~~dissipation~~ a dissipation of massive protoplanets. Thus, the ability of different molecules to condense into solid particles, at temperatures which existed during planet and satellite formation in the places of their formation, is the main factor determining the chemical composition of these bodies.

SO: 568946

LEVIN, B.Yu.; KOZLOVSKAYA, S.V.; STARKOVA, A.G.

Mean chemical composition of meteorites. Meteoritika no.14:38-53
'56. (MIRA 10:1)

(Meteorites)

IRVIN, B. YA

"Formation of the Earth from cold matter and the origin of primitive organic compounds," a paper presented at the International Symposium on the Origin of Life, Moscow, 19-24 Aug 1957.

LEVIN, B. Yu.

BALAKINA, L. M.

X(10)

PHASE I BOOK EXPLOITATION

SCN/1663

Akademiya nauk SSSR, Komitet po geodesii i geofizike.

Tezisy dokladov na XI General'noy sessii nauchnoy konferentsii geodesicheskogo i geofizicheskogo otdelov. Nauchnoprobnaya assotsiatsiya seismologii i fiziki vodoronnoi (Abstracts of Reports Submitted to the XI General Assembly of the International Union of Geodesy and Geophysics. The International Association of Seismology and Physics of the Earth's Interior) Moscow, 1977. 108 p. /Parallel texts in Russian and English/ 1,500 copies printed.

No additional contributors mentioned

PURPOSE: This booklet is intended for geophysicists, especially those specializing in seismology.

COVERAGE: This collection of articles deals with the structure and composition of the Earth and phenomena related thereto. The majority of the articles concern studies of earthquakes and seismic waves. Other articles cover the structure of the Earth's crust and mountain roots; the elastic properties of rocks at high pressures; the piezoelectric effect of rocks and the method of modeling in tectonophysics. The collection also contains articles on the Earth's thermal history, the microseismic method of tracing stresses and others.

Smith, G. T. (deceased), and B. Yu. Levin. Origin and Composition of the Earth 39

Shchegolev, N. V. Correlation Between Magnitude and Intensity of Earthquakes and Atmosphere 77

AVAILABLE: Library of Congress (GS 534,AA)

Card 3/3

NS/MS
5-28-77

SOV/15-58-7-12281

Translation from: Referativnyy zhurnal, Geologiya, 1958, Nr 7,
p 133 (USSR)

AUTHOR: Levin, B. Yu.

TITLE: The Formation of the Earth From Cold Material and the
Problem of Developing the Simplest Organic Combinations

PERIODICAL: V sb: Vozniknoveniye zhizni na Zemle. Leningrad, AN
SSSR, 1957, pp 40-47

ABSTRACT: For a long time the ruling hypothesis in cosmogony has
been that the Earth formed from incandescent gaseous
clouds, and from this it followed that organic combi-
nations developed after the earth cooled. Modern
hypotheses consider the planet to have formed from
cold gas-dust clouds trapped by the sun. These clouds
should contain the simplest types of organic combi-
nations. However, different authors disagree on the
precise process of planet development, particularly in

Card 1/3

SOV/15-58-7-12281

The Formation of the Earth (Cont.)

regard to the thermal history. Keuper and V. G. Fesenkov believe that compression of the massive gas-dust protoplanet was accompanied by a strong evolution of heat, and this must have caused the destruction of organic combinations. In this case, the problem of developing organic compounds on the earth acquires the same character it had in the days when Jeans' hypothesis and similar views were widely held. According to O. Yu. Shmidt, the earth was formed by the gradual accumulation of dust components of the protoplanetary cloud, but at low temperatures. H. C. Urey's view is intermediate between those of Keuper and of Shmidt, since he considers, in contrast to the latter hypotheses, that at some stage there was strong evolution of heat, but only surficial, on the asteroidal bodies. Thus, according to Urey and Shmidt, modern organic substances on the earth are descendants of organic compounds from the protoplanetary cloud. The existence of organic combinations in the gas-dust cloud is confirmed by recent astronomical data. It has been established that the gas-dust environment that fills interstellar space, and also the atmospheres of relatively cold stars, ✓
Card 2/3

SOV/15-58-7-12281

The Formation of the Earth (Cont.)

contain molecules of CH and CN. Spectroscopic studies of the heads and tails of comets have shown the presence of C₂, C₃, CN, OH, CO, CH, and N₂. The atmospheres of Venus and Mars contain CO₂. Gases identified in meteorites include CO₂, CO, CH₄, H₂, N₂, H₂S, and SO₂.

In studying carbonaceous chondrites, Mueller (G. Mueller, Geochim. et Cosmochim. Acta, 1953, 4, 1) came to the conclusion that meteoritic organic substance consists of complex organic acids, arising from a nonbiological process of polymerization in a gaseous environment containing N, S, and Cl. At present all investigators are in agreement that the hydrosphere and atmosphere of the earth resulted from a protracted period of segregation of gases and vapors from the interior, where they were generated by the heating effect of radioactivity. In this process some combinations were decomposed, but others have undergone further complication and polymerization, especially when they emerged at the surface, since, according to Seuss, the photodissociation of methane in the presence of aqueous vapors (steam) opens up the path for the synthesis of various organic compounds.

Card 3/3

N. A. Solodov ✓

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

Luminosity-intensity curve of meteors and Cepiecha's method
for checking the course of braking of separate meteor. Biul.
Kom.po komet. i meteor, AN SSSR no.1:29-31 '57. (MIRA 12:5)

1. Institut fiziki Zemli AN SSSR.
(Meteors)

LEVIN B. YU.

49-11-2/12

AUTHOR: Levin, B. Yu.

TITLE: : Origin and Composition of the Earth. (Proiskhozhdeniye i sostav zemli)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, 1957, No.11, pp.1323-1331. (USSR)

ABSTRACT: This paper was presented at the Eleventh General Meeting of the International Geophysics and Geodetic Association, Toronto, Canada, September 1957.
There are 52 references, 24 of which are Slavic.

ASSOCIATION: Ac.Sc. Institute of Physics of the Earth.
(Institut Fiziki Zemli).

AVAILABLE: Library of Congress.

Card 1/1

LEVIN, B.

LEVIN, B., doktor fiziko-matematicheskikh nauk.

Are there any reasons for excluding Pluto from the number of
"real" planets? Znan.sila 32 no.8:41 Ag '57. (MIRA 10:10)
(Pluto (Planēt))

LEVIN, B.YU.
SHCHERBAKOV, K.I., akademik; LEVIN, B.Yu., doktor fiziko-matematicheskikh nauk.

A champion of materialistic science; on the first anniversary of
O.IU. Shmidt's death. Priroda 46 no.9:40-46 S '57. (MIRA 10:8)

1. Institut fiziki Zemli im. O.Yu. Shmidta Akademii nauk SSSR, Moskva.
(Shmidt, Otto Iul'evich, 1891-1956)

LEVIN, B. Yu.

PA - 2911

AUTHOR LEVIN B.Yu., SLONIMSKIY G.L.
TITLE On the Origin of Meteoritic Chondrules.
 (K voprosu od proikhozhdenni meteoritnykh khondr.- Russian)
PERIODICAL Doklady Akademii Nauk SSSR 1957, Vol 113, Nr 1,
 pp 62 - 64.
ABSTRACT Received: 6/1957 Reviewed: 7/1957
 About 90% of meteorites are chondrites, i.e. they consist of
 silicate rounded granules called chondrules, bound by a
 cementing mass. Because of the existence of glass in the
 chondrules their origin is usually explained by the rapid
 solidification of silicate drops which were formed either
 on the occasion of the decay of a planet, ancestor of
 meteorites, or on the occasion of a collision of many
 asteroid bodies. The first hypothesis is not sufficiently
 motivated, whereas the second certainly played an important
 part in the evolution of meteoritic substance, not on the
 occasion of chondrule-formation, but much later. Both
 hypotheses assume that the interior of the celestial bodies
 was glowing and the differentiation of the substance took
 place here. However, chemical composition of meteorites,
 shows that the formation of bodies of which they are

CARD 1/3

PA - 2911

On the Origin of Meteoritic Chondrules.

splinters, developed from an accumulation of solid particles at low temperatures. Meteorites (according to not metamorphosed models) attain ages of from 4.5 - 4.8 billion years. The chondrules were formed even earlier. Since the age of the solar system obviously does not exceed 5.5 billion years, the time between the formation of the mother-planet or the asteroid body and the formation of chondrules seems to be rather short, namely about 0.5 billion years.

Data concerning the chemical composition of meteorites play an important part in the motivation of the modern point of view, according to which the planets and asteroids were formed from a cloud of gas dust surrounding the sun.

The investigation of chondrules leads to the conclusion that their crystallization already took place in the meteorites. The presence of glass-like chondrules proves an extremely slow crystallization process. This is also proved by the velocities of the crystallization of the silicic acid- colloidal particles at room temperature. Signs of a beginning crystallization often become visible only after two years. It can be concluded that

CARD 2/3

LEVIN, B. YU,

On the Planetary Distances and Masses,"

paper presented at the 17th General Assembly of the IAU, Moscow, Aug 1958.

PAGE 1 BOX 27/27

Walter and Scott. Excerpt from translation

Walter and Scott, Excerpt from translation
Walter and Scott, Excerpt from translation
1,200 copies printed

Walter and Scott, Excerpt from translation

Walter and Scott, Excerpt from translation

Walter and Scott, Excerpt from translation

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Walter and Scott, Excerpt from translation

LEVIN, B. YU

LEVIN, B.Yu.

3(1)

PHASE I BOOK EXPLOITATION SOV/1415

Voprosy kosmogonii, t. 6 (Problems in Cosmogony, Vol. 6) Moscow, Izd-vo AN SSSR, 1958. 367 p. 2,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Astronomicheskii sovet.

Ed. of Publishing House: Rakhlin, I. Ye.; Tech. Ed.: Polenova, T.P.; Editorial Board: Kukarkin, B.V. (Resp. Ed.) Doctor of Physical and Mathematical Sciences, Pariyskiy, N.N. (Deputy Resp. Ed.) Candidate of Physical and Mathematical Sciences, Baranov, V.I., Doctor of Physical and Mathematical Sciences, Belousov, V.V., Doctor of Geological and Mineralogical Sciences, Levin, B. Yu., Doctor of Physical and Mathematical Sciences, Masevich, A.G., Candidate of Physical and Mathematical Sciences, Safronov, V.S. (Scientific Secretary) Candidate of Physical and Mathematical Sciences.

PURPOSE: This book is intended for students and scientists of cosmogony and cosmic physics.

Card 1/9

Problems in Cosmogony

SOV/1415

COVERAGE: This book, consisting of articles and conference reports, is devoted to a discussion of intragalactic formations and phenomena, and speculations on approaches to extragalactic investigations. Individual articles discuss the origin and development of stars, planets and nebulae, and the forces and phenomena affecting them, the terrestrial planets, the solar system as a whole, gaseous nebulae, the origin of elements, magnetism, and other natural phenomena and problems of cosmogony. According to V.A. Magnitskiy, the evolution of the Earth's continents and oceans is not due to oceanic expansion and the subsidence of continents but rather the reverse. V.I. Baranov evaluates the age of the Earth to be between 4-5 billion years, basing this estimate on a determination of the absolute age of the oldest minerals, rocks, meteorites and chemical elements by radioactive methods. B. Yu. Levin finds that the deviation of the Moon from an equilibrium shape is due to an essential oblateness and not to the presence of large tidal bulges; and that the Moon's oblateness definitely indicates its solidification in a state of free rotation. V.S. Safronov submits a theory that planetary growth is due to the simultaneous accretion of small particles and large bodies falling on planets. H. Alfven, the Swedish scientist,

Card 2/9

Problems in Cosmogony

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discusses the role of electromagnetic forces in the origin and development of the solar system. Kipper and Tiyt examine the significance of the bi-quantum transition $2P \rightarrow 1S$ in a hydrogen atom in relation to the physics of planetary nebulae with the theory supported by the discovery of radio emission of 2.74 cm waves by optically thick planetary nebulae. The state of modern physics of planetary nebulae is briefly reviewed by V.V. Sobolev. G.A. Gurzadyan states that the dynamics of planetary nebulae are concerned with 1) planetary origin and 2) the evolution of its form and structure under the forces acting upon the gaseous envelope surrounding a hot star. He shows that two-envelope nebulae cannot form as a result of repeated outbursts of the central nucleus, thus proving the existence of one-envelope planetary nebulae. He provides a summary for the quantitative theory of the origin of the second envelope due to tearing-off by L_α radiation pressure. I.N. Minin examines the field of L_α - radiation in planetary nebulae which expands with the velocity gradient and is divided into 2 parts: the ionized and non-ionized. A theoretical interpretation is

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given for the formation of two-envelope nebulae. T.A. Agekyan develops an equation to express the acceleration of a star due to its interaction with a system of fixed dust clouds which takes into account gravity and light pressure. S.A. Kaplan presents the basic principles developed and the results obtained in magnetic gas dynamics, i.e., the existence of the "adherence" integral, magnetic line forces of "entanglement" and "un-entanglement," the increase of magnetic energy in gasomagnetic shock waves, and the concept of gasomagnetic turbulence. P.G. Parkhomenko, discussing the preservation of continuance (abundances) in the formation of elements, contends that in a thermonuclear medium, at temperatures higher than 10^8 K, photodisintegration will obstruct radiative capture of nucleons by the nuclei of light elements so that these nuclei will remain in a state of "freezing." He demonstrates that if the temperature falls to 10^8 K the lifetime of the nucleus between two adjacent captures will be in the order of 10^4 years. During this interval total rarefaction and cooling of the medium may occur. In another article Parkhomenko evaluates the mass of a cosmic body in equilibrium in which observed continuance (abundances) of elements and isotopes could arise. Pikel'ner underlines the importance of studying the synthesis of complex

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atoms from simpler ones and the efforts in search of non-equilibrium reactions. G.I. Naan reviews and analyzes cosmological paradoxes (gravitational, photometric, thermodynamic, expansion) pointing out that these are due to a tendency to attribute finite properties to infinity. Certain possibilities due to various mechanisms are offered, such as the conversion of a gravitational field into matter. On the whole the evolution of the Metagalaxy is seen as an "attenuated oscillation of the second order." Latest data on extragalactic astronomy open a way to these conclusions through observations. In addition to the articles, reports of the following conferences are given: the Conference on Variable Stars held in Budapest, August 1956, sponsored by the Hungarian Academy of Sciences; the Symposium on Electromagnetic Phenomena in Cosmic Physics at Stockholm, sponsored by the International Astronomical Union in conjunction with the International Union of Pure and Applied Physics and the International Union of Geodesy and Geophysics; the Conference on Fixed Stars held September, 1956 at the Byurakan Astrophysical Observatory (near Yerevan), sponsored

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by the Armenian Academy of Sciences; the Conference on the Physics of Planetary Nebulae held February 1957 in Leningrad, sponsored by the Committee on Cosmogony of the Astronomical Union of the Academy of Sciences of the USSR; a conference held in Moscow, December 1956, by the Committee on Cosmogony of the Astronomical Union of the AN SSSR, to discuss projects of studies in the USSR in cosmology and extragalactic astronomy; and, the Sixth Conference on Cosmogony, held in Moscow in June 1957, devoted to problems of extragalactic astronomy and cosmology. The articles are accompanied by brief summaries in English, German or French, and diagrams and bibliographic references.

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