

ACCESSION NR: AT4042717

After flight the mucoprotein urine levels were either normal or close to normal. Creatine and creatinine determinations were performed only in the case of Nikolayev and Popovich. On the first day after return from flight, both showed a considerable increase in the amount of creatinine, which attained values of 2.01 and 2.60 g for the 24-hr urine respectively. The creatine content remained normal (traces only). Creatinine levels had returned to normal in both cases 14 days after landing. Increased creatinine levels reflect increased physical loads on the organism and increased muscular effort, with a consequent increase in the catabolism of muscle protein. Generally, the biochemical changes observed in the cosmonauts during training for space flight and after landing indicate the occurrence of reversible and short-term metabolic changes characteristic of a brief stress reaction in the organism.

ASSOCIATION: none

SUBMITTED: 27Sep63

ENCL: 00

SUB CODE: LS

NO REF SOV: 000

OTHER: 000

Card 4/4

VOLYNKIN, Yu.M.; YAZDOVSKIY, V.I., prof.; GENIN, A.M.; GAZENKO, O.G.; GEROVSKIY, N.N.; YEMEL'YANOV, M.D.; MIKHAYLOVSKIY, G.P.; GORBOV, F.D.; SERYAPIN, A.D.; BAYEVSKIY, R.M.; ALTUKHOV, G.V.; KOPANEV, V.I.; KAS'YAN, I.I.; MYASNIKOV, V.I.; TEREHT'YEV, V.G.; BRYANOV, I.I.; FEDOROV, Ye.A.; FOMIN, V.S.; ARUTYUNOV, G.A.; ANTIPOV, V.V.; KOTOVSKAYA, A.R.; KAKURIN, L.I.; TSELIKIN, Ye.Ye.; USHAKOV, A.S.; VOLOVICH, V.G.; SAKSONOV, P.P.; YEGOROV, A.D.; NEUMYVAKIN, I.P.; TALAPIN, V.F.; SISAKYAN, N.M., akademik, red.; KOLPAKOVA, Ye.A., red.izd-va; ASTAF'YEVA, G.A., tekhn.red.

[First group space flight; scientific results of medical and biological studies carried out during the group orbital flight of manned satellites "Vostok-3" and "Vostok-4"]  
Pervyi gruppovoi kosmicheskii polet; nauchnye rezul'taty mediko-biologicheskikh issledovaniy, provedennykh vo vremya gruppovogo orbital'nogo poleta korablei-sputnikov "Vostok-3" i "Vostok-4." Moskva, Izd-vo "Nauka," 1964. 153 p.  
(MIRA 17:3)

FEDOROV, Ye.A., inzh.

Rectification column with parts made of wood plastics. Khim.mashinostr.  
no.2:3-4 Mr-Ap '64. (MIRA 27:4)

FEDOROV, Ye.D.; SHATALOV, V.V.

Portable laboratory apparatus for sieve analyses of dry samples.  
Zav. lab. 30 no.1:112-113 '64. (MIRA 17:9)

ACCESSION NR: AT4037684

S/2865/64/003/000/0145/0158

AUTHOR: Fedorova, T. A.; Tutochkina, L. T.; Uspeznkaya, M. S.; Smurikhina, M. N.;  
Fedorov, Ye. A.

TITLE: Some metabolic indices in cosmonauts

SOURCE: AN SSSR. Otdeleniye biologicheskikh nauk. Problemy kosmicheskoy  
biologii, v. 3, 1964, 145-158

TOPIC TAGS: manned space flight, nutrition, metabolism, hematology, urine,  
biochemistry

ABSTRACT: Biochemical analyses of the blood and urine of cosmonauts were made during training periods, after rest periods, and before and immediately after space flight. During periods of intensive training, space pilots revealed changes in the protein composition of their blood serum: a small increase in the relative albumin content and a decrease in the content of  $\alpha_2$ ,  $\beta$ , and gamma globulins and mucoids, which is typical of athletes in training and is due to increased physical loads and emotional strain. During intensive training, the urine showed a decrease in Dische-positive substances, a decrease in the enzymic activity of acid deoxyribonuclease, an increase in the amount of adrenal hormones

Card 1/3

ACCESSION NR: AT4037684

(free 21-oxy-20 ketocorticosteroids), and, in some cases, mucoids. During rest periods, the levels of all these substances in blood and urine usually returned to normal. After space flight, the total protein content in the blood of cosmonauts increased to normal levels or exceeded them, and during longer flights (three and four days) the level of serum mucoids somewhat increased. At the same time, the content of free 21-oxy-20 ketocorticosteroids in the urine rose sharply as the level of steroids coupled with glucuronic acid increased to the upper normal level. The amount of creatinine increased distinctly also. Dische-positive substances and the activity of acid deoxyribonuclease in urine decreased. The changes in the content of Dische-positive substances and the activity of acid deoxyribonuclease in urine during the pre- and the post-start periods appeared to be opposite to those occurring under the action of ionizing radiation. All biochemical shifts discovered in the organisms of space pilots during their preparation for space flight and after their return indicate that some metabolic changes are reversible and rapidly returned to normal.

ASSOCIATION: none

2/3

Card

ACCESSION NR: AT4037684

SUBMITTED: 00

ENCL: 00

SUB CODE: PH, LS

NO REF SOV: 006

OTHER: 007

Card 3/3

L 21548-66 EWT(1)/FSS-2/EEC(R)-2/EWA(d) SCTB TT/DD/GW

ACC NR: AP6007746

SOURCE CODE: UR/0293/66/004/001/0151/0155

AUTHOR: Buyanov, P. V.; Kovalev, V. V.; Terent'yev, V. G. Fedorov, Ye. A. 386  
Khlebnikov, G. F. 13

ORG: none

TITLE: Results of preflight and postflight medical examinations of Voskhod-1 crew members 12- 2-

SOURCE: Kosmicheskiye issledovaniya, n. 4, no. 1, 1966, 151-155

TOPIC TAGS: cosmonaut, physiological change, cardiovascular system, enzyme, encephalogram, muscular tonus, leukocyte/~~leukocyte~~

ABSTRACT: Results of preflight and postflight examinations of the Voskhod-1 cosmonauts were compared and physiological shifts were noted. The physiological profile of each cosmonaut was determined from background data compiled for two weeks before the flight. Examination of the cosmonauts after preflight training showed increased resistance to flight factors in all of them, especially Komarov. By comparison, Feoktistov and Yegorov showed less adaptability, especially in the cardiovascular system. In the week preceding the flight, Komarov and Feoktistov were somewhat reserved in behavior. Prelaunch tests conducted at the cosmodrome emphasized the nervous and emotional state of the cosmonauts. The four-day postflight medical examination began 15 minutes after landing. To ensure uniformity, all postflight tests

Card 1/2

UDC: 629.198.61



L 21548-66

ACC NR: AP6007746

(including laboratory tests) were conducted by the same people who had performed the preflight checks. Clinical investigation begun six hours after landing showed a moderate decrease in working capacity, revealed in an increase in the number of errors and a lengthening of latent periods during performance of psychological tests. Encephalograms showed intensification of retardation processes in the cerebral cortex. Slight variations in digestive enzyme activity were also observed in the cosmonauts after the flight: the activity of amylase, enterokinase, alkaline phosphatase, and trypsin increased. The following shifts were noted in cosmonauts immediately after the flight: slight instability in the Romberg position, tremor of fingers, increased tendency to perspire, moderate decrease in muscle tone, quickening of the pulse, and decrease in blood pressure due to increased diastolic pressure. Body weight decreased 2.6% for Kosmrov, 4% for Feoktistov, and 3.9% for Yegorov. In addition, moderate shifts in metabolic processes were noted: increased energy consumption while resting, increase in blood urea and cholesterol, and increased elimination of nitrogenous components from urine. Some decrease in the phagocytic activity of leukocytes was also observed. The changes noted were attributed to fatigue and stress. They were of a strictly functional nature and usually disappeared within several days after the flight. Individual characteristics and differences in preflight preparation were reflected in the varying character of these physiological shifts.

SER CODE: 06/ SUBM DATE: 28Jul65/ ATD PRESS: 4219

Card 2/2 BLC

L 25520-66 ENT( )	
ACC NR: AP6011409	SOURCE CODE: UR/0057/66/036/093/0569/0170
AUTHOR: Fedorov, Ye.B.; Ivakin, B. A.; Suyetin, P. Ye.	47 0
ORG: Ural Polytechnic Institute im. S.M.Kirov, Sverdlovsk (Ural'skiy politekhnicheskiy institut)	
TITLE: Measurement of the mutual diffusion constants of gases with an optical technique	
SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 3, 1966, 569-570	
TOPIC TAGS: gas diffusion, helium, argon, air, krypton, fluorine compound, optic method	
ABSTRACT: The apparatus for measuring gas diffusion constants by an optical technique, described elsewhere by P. Ye. Suyetin, G.T.Suchegolev, and R.A.Klestov (ZhTF, 29, No.8, 1959) and B.A.Ivakin and P.Ye.Suyetin (ZhTF, 34, No.6, 1964), has been improved. The improvements, which are described briefly, will make it possible to measure diffusion constants with greater ease and accuracy than before, and at pressures far from atmospheric. The improved apparatus has been employed to measure the diffusion constants at room temperature and atmospheric pressure of the following pairs of gases: He-Ar, He-air, He-SF <sub>6</sub> , He-Kr, H <sub>2</sub> -Kr, and Ar-Kr. The results are tabulated and compared with the results of other investigators and with theoretical diffusion constants calculated	
Card 1/2	UDC: 533.15

L 25520-66

ACC NR: AP6011409

with Lennard-Jones potentials derived from viscosity measurements. The present measurements are in good agreement with both the earlier measurements and the theoretical values. Orig. art. has: 1 figure and 1 table.

SUB CODE: 20

SUBM DATE: 07Jul65

ORIG. REF: 002

Card 2/2

PB

13

L 00269-67

FSS-2/INT(1)/REG(N)-2

SCTB

TT/DM/GD/GM

SOURCE CODE: UR/0000/66/000/000/0034/0036

ACC NR: AT6036480

AUTHOR: Arzhanov, I. M.; Boregovkin, A. V.; Bryanov, I. I.; Buyanov, P. V.;  
 Zaloguyev, S. N.; Kamen'shchikov, Yu. V.; Kovalov, V. V.; Krasovskiy, A. S.;  
 Kuznetsov, S. V.; Litsov, A. N.; Nikitin, A. V.; Nistratov, V. V.; Poruchikov, Ye. A.;  
 Potkin, V. Ye.; Tsist'yev, V. G.; Fedorov, Ye. A.; Khlebnikov, G. F.;  
 Yaroshenko, G. L.

61.  
BT!

ORG: none

TITLE: Results of clinical and physiological investigations of the crew of the  
 first multiman Voskhod spacecraft [Paper presented at the Conference on Problems of  
 Space Medicine held in Moscow from 24 to 27 May 1966.]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy  
 kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii,  
 Moscow, 1966, 34-36

TOPIC TAGS: space medicine, space physiology, weightlessness, bodily fatigue,  
 stress reaction, combined stress, cardiovascular system, central nervous system,  
 manned spaceflight/Voskhod-1

ABSTRACT: The inclusion of a physician in the crew of the Voskhod-1 made it pos-  
 sible to increase medical investigations of the crew members during  
 flight and to compare them with results of preflight and postflight exami-  
 nations. The scope of the physiological examinations was selected in  
 order to obtain a more complete evaluation of the functional condition of  
 the cardiovascular and central nervous systems, and the function of

Card 1/4

L 08269-67

ACC NR: AT6036480

external respiration of the cosmonauts. Physical exercises and ortho-static tests were included to detect earlier signs of physiological shifts.

Examinations were carried out before and after training in the ship, where certain conditions of flight were simulated, and also two weeks before flight. Postflight examination was begun fifteen minutes after landing and was continued for the first four days after the flight and also two weeks later.

After landing, the cosmonauts were active, looked somewhat excited, and complained of general fatigue. They were found to have hyperemia of the mucosa of the upper respiratory tract and conjunctivitis.

Komarov's weight dropped by 2.6%, Feoktistov's weight dropped by 4%, and Yegorov's by 3.9%. Weight loss was determined by Zhdanov to be due to water and fat loss. Neurological examination revealed a light swaying in the Romberg position, a tremor of the fingers, and increased perspiration. In addition, Yegorov showed a contraction of the retinal arteries. Disruption of vision and vestibular difficulties were not noted. Changes in EEG indicated an increase in inhibitory processes in the cortex of the brain. A diminution in work capacity was established by

Card 2/4

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ACC NR: AT6036480

psychological experiments (increase in the number of mistakes, increase in latent periods). D

Indices of cardiovascular activity during rest did not exceed wide norms. However, an increase in pulse frequency was noted (Komarov up to 96, Feoktistov up to 100, and Yegorov up to 94 beats/min), as well as moderate drop in arterial pulse pressure at the expense of an increase in diastolic pressure. All three cosmonauts, when subjected to exercise, showed a significant increase in the pulse rate and inertia in the stroke volume. Feoktistov and Yegorov showed a significant diminution in the heart stroke volume and minute circulation of the blood during the passive orthostatic test. This could indicate a disruption of the venous inflow to the heart.

Postflight blood examinations indicated neutrophilic leukocytosis and eosinopenia. Urine was found to contain significant quantities of salts, chiefly urates, single erythrocytes (in the field of vision), and an increase in the excretion of 17-oxycorticosteroids. Eosinopenia, an increase in excretion of products of hormone decomposition, indicated the development of a stress reaction in cosmonauts. Since some of the indications found on the flight were also found after training in the train-

Card 3/4

L 08269-67

ACC NR: AT6036480

ing ship, there is reason to attribute them to limitation of motor activity under conditions of weightlessness. The functional shifts found after flight are indications of a general fatigue, a moderate stress reaction, and a certain amount of detraining. In general, the changes observed in the cosmonauts were of one type. The differences found between the cosmonauts can be attributed to individual differences. [W.A. No. 22; ATD Report 66-116]

SUB CODE: 06, 22 / SUBM DATE: 00May66

Card 4/4 *eyk*

L 08268-67 FSS-2/ENT(1)/EEC(k)-2 SCTB TT/DD/GD/GW

ACC NR: AT6036481

SOURCE CODE: UR/0000/66/000/000/0036/0637

AUTHOR: Arzhanov, I. M.; Bryanov, I. I.; Baturenko, V. A.; Beregovkin, A. V.;  
Buyanov, P. V.; Kovalev, V. V.; Kondrakov, V. M.; Krasovskiy, A. S.; Kuznetsov, O. N.;  
Kuznetsov, S. V.; Nikitin, A. V.; Nistratorov, V. V.; Teret'yay, V. G.; Fedorov, Ye. A.;  
Khlebnikov, G. V.

ORG: none

TITLE: Some results of the postflight examination of P. I. Belyayev and A. A. Leonov following their flight on the Voskhod-2 spacecraft [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 36-37

TOPIC TAGS: space medicine, postflight medical examination, bodily fatigue, body weight, cardiovascular system, oculocardiac reflex, unconditioned reflex, space psychology, oxygen consumption, respiration, pulmonary ventilation/Voskhod-2

ABSTRACT: Postflight examinations of the Voskhod-2 crew members, Leonov and Belyayev, were performed on the third and fourth days after the flight and again a month later. The cosmonauts complained of light fatigue. They were found to have hyperemia of the mucosa of the nose and throat and conjunctivitis of the eyelids and eyeballs. They had lost weight

Card 1/3



L 08262-57

ACC NR: AT6036481

Their pulse showed a certain lability. Pulse frequency rose significantly during mild physical exertions and changes in the position of the body. There was an increase in intraventricular conductivity, an increase in the systolic index (7-11%), and a delay in restoration of hemodynamic indices after physical exercise.

Belyayev's oxygen consumption increased by 23% and Leonov's by 14% as compared with preflight levels. Vital capacity of the lungs diminished by 8-12%, while pulmonary ventilation increased by 51-18%.

Neurological examinations revealed a light tremor of the fingers, a high orthostatic reflex with an absence of pulse reaction to the oculo-cardiac reflex, and an increase in the slow bioelectrical activity of the brain cortex. Psychological tests revealed an increase in distribution and in the middle magnitudes of the duration of the period of sensory motor reaction. Since this was not accompanied by errors, it is possible to assume that the fatigue observed in cosmonauts was a compensatory reaction. Blood and urine examination on the third day after flight did not differ substantially from preflight levels. Biochemical examination uncovered an increase of chlorides, adrenalin, noradrenalin, and 17-oxy corticosteroids in the urine.

Card 2/3

L 08268-67

ACC NR: AT6036481

The observed shifts in physiological indices were short-term and reversible. They indicated the development of moderately marked fatigue in the subjects. Thus, despite the complexity of the flight, the postflight examinations revealed only moderate functional changes in the two cosmonauts. There was no difference in the nature of these changes in the cosmonauts. This indicates a high degree of training and a good neuropsychological and physical preparation for spaceflight. [W.A. No. 22; ATD Report 66-116]

SUB CODE: 06, 22 / SUBM DATE: 00May66

Card 3/3

*ryk*

5.3300

78251  
SOV/79-30-3-45/69

AUTHORS: Korotkov, A. A., Lishanskiy, I. S., Fedorov, Ye. F.

TITLE: Synthesis of 2-Octylbuta-1,3-diene Using Organomagnesium Compounds

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, Nr. 5, pp. 960-962 (USSR)

ABSTRACT: Preparation of 2-octylbuta-1,3-diene (III) by W. H. Carothers' method (W. H. Carothers, J. J. Berchet, J. Am. Chem. Soc., 55, 2813, (1933)) and reaction between 4-chlorobuta-1,2-diene (I) and octylmagnesium bromide (II) was studied. From a mixture obtained by the reaction of equimolar ether solutions of I and II, the following three fractions were separated. The first fraction: bp 28-30° (50 mm),  $n_D^{20}$  1.4380,  $d_4^{20}$  0.8438, colorless volatile liquid; apparently, it is  $\text{CH}_2=\text{C}=\text{CH}-\text{CH}_2-\text{CH}_2-\text{CH}=\text{C}-\text{CH}_3$ . The second fraction: bp 70-77° (5 mm),  $n_D^{20}$  1.4422 (first run) and 1.4530 (last run),  $d_4^{20}$  0.8924; this is 2-octylbuta-1,3-diene, obtained

Card 1/2

Synthesis of 2-Octylbuta-1,3-diene Using  
Organomagnesium Compounds

78291  
SOV/79-30-3-45/69

for the first time and characterized by its adduct with  
maleic anhydride. The third fraction: bp 109-110°

(1.5 mm), hexadecane bp 110° (1 mm). The authors  
suggested that the reaction between I and II proceeds  
through the formation of an unstable intermediate  
complex, which rearranges into a stable cyclic complex.  
Decomposition of the latter leads to the formation of  
4-alkylbuta-1,2-diene or 2-alkylbuta-1,3-diene. There  
are the following 4 U.S. references: W. H. Carothers,  
G. I. Berchet, J. Am. Chem. Soc., 55, 2813 (1933);  
W. H. Carothers, G. I. Berchet, J. Am. Chem. Soc., 55,  
2807 (1933); J. E. Wotiz, J. S. Matthews, J. Am. Chem.  
Soc., 74, 2559 (1952); R. C. Fuson, H. D. Porter, J.  
Am. Chem. Soc., 70, 895 (1948).

ASSOCIATION:

Institute of High Molecular Weight Compounds, Academy of  
Sciences USSR (Institut vysokomolekularnykh soedineniy  
Akademii nauk SSSR)

SUBMITTED:  
Card 2/2

April 7, 1959

S/195/62/003/001/009/010  
E071/E136

AUTHORS: Polyanskiy, N.G., Tulupov, P.Ye., and Fedorov, Ye.F.

TITLE: Ion-exchange resins as catalysts for the polymerization of unsaturated hydrocarbons

PERIODICAL: Kinetika i kataliz, v.3, no.1, 1962, 162

TEXT: The possibility of polymerization of tertiary amylones using anhydrous sulphonated co-polymer of styrene and divinylbenzene on a resin KY -2 (KU-2) as a catalyst is communicated. At a temperature of 150° the degree of conversion in 2 hours amounted to 45%. The main reaction product is dimer. It is also stated that resin KU-2 acts as an effective catalyst in polymerization of isobutylene,  $\alpha$ -methylstyrene and isoprene. Butylenes of normal structure also polymerize, but to a lesser degree.

ASSOCIATION: There is 1 table.  
Nauchno-issledovatel'skiy institut sinteticheskikh spirtov i organicheskikh produktov, Novokuybyshevskiy filial (Scientific Research Institute for Synthetic Alcohols and Organic Products, Novokuybyshev Branch)

Card 1/1

SUBMITTED: April 7, 1961

POLYANSKIY, N.G., TSEKHMISTER, E.F., FEDOROV, Ye.F.

Quantitative determination of tertiary amyl alcohol in aqueous solutions  
and hydration products of tertiary amines. Zhur.prikl.khim,  
36 no.3:613-617 My '63. (MIRA 16:5)  
(Amyl alcohol) (Butene) (Hydration)

BYR'KA, V.F.; FEDOROV, Ye.F.

The RDK-2 automatic regulator for stabilizing the operation  
of the "Karaganda" cutter-loader in a vertical plane. Nauch.  
trudy KN'UI no. 11:162-171 '62. (MIRA 17:7)

FEDOROV, Ye. I.

"Influence of some antibiotics on immunologic reaction in experimental animals."

report submitted for Antibiotics Cong, Prague, 15-19 Jun 64.

Dept of Infectious Pathology & Experimental Therapy, Inst Epidemiology & Microbiology in N. F. Gamaleya, AMS USSR, Moscow.



MIKHANT'YEV, B.I.; SKLYAROV, V.A.; FEDOROV, I.p.I.

Polymerisation and copolymerization of vinyl n.butyl ether.  
Trudy VGU 49:41-44 '58. (MIRA 13:5)  
(Ether) (Polymers)

MIKHAILOV, B.I.; SKLYAROV, V.A.; FEDOROV, Ye.I.

Conversions of vinyl ethers. Acetals. Trudy VGU 49:45-47 '58.  
(MIRA 13:5)

(Ethers)

(Acetals)

MIKHANT'YEV, B.I.; TARASOVA, A.F.; SKLIYAROV, V.A.; FEDOROV, Ye.I.

Acetals. Report No.2. Trudy VGU 57:177-187 '59.  
(MIRA 13:5)

(Acetals)

5 (3)

AUTHORS:

Mikhant'yev, B. I., Fedorov, Ye. I.

SOV/153-2-3-15/29

TITLE:

Synthesis of Vinyl Pyridone and Some of Its Derivatives

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1959, Vol 2, Nr 3, pp 390-391 (USSR)

ABSTRACT:

By vinylation of 2-pyridone with acetylene the authors synthesized N-vinyl-2-pyridone. This reaction was carried out under pressure at 145 - 150° in the autoclave. Dioxane was used as solvent, the duration of vinylation was 6 hours. The product obtained yields N-ethyl-2-pyridone in the catalytic hydrogenation. The working conditions in this synthesis were the following: hydrogenation during 2 hours at 17° and 300 torr pressure with the use of a nickel catalyst. N-1,2-dichloro ethyl-2-pyridone was obtained by chlorination of N-vinyl-2-pyridone in carbon tetrachloride as solvent. Moreover, the authors synthesized N-vinyl-5-Br-2-pyridone by the action of acetylene on 5-Br.-2-pyridone. Dioxane was used as solvent, the reaction was carried out in the autoclave at 150-160°. These four syntheses are described in detail in an experimental part. Yields, compositions, and physical data of the products obtained are given. There are 3 references, 2 of which are Soviet.

Card 1/2

Synthesis of Vinyl Pyridone and Some of Its  
Derivatives

SOV/153-2-3-15/29

ASSOCIATION: Voronezhskiy gosudarstvennyy universitet; Kafedra vysoko-  
molekulyarnykh soyedineniy. (Voronezh State University;  
Chair of High Molecular Compounds)

PRESENTED: May 15, 1958

Card 2/2

5 (3)

**AUTHORS:** Mikhant'yev, B. I., Fedorov, Ye. I., SOV/79-29-6-20/72  
Kucherova, A. I., Potapova, V. P.

**TITLE:** N-Allyl-pyridone-2 and 2-Alloxy-pyridine and Their Hydrogenation Products (N-Alil'piridon-2 i 2-alloksipiridin i produkty ikh gidrirovaniya)

**PERIODICAL:** Zhurnal obshchey khimii, 1959, Vol 29, Nr 6, pp 1874 -- 1875 (USSR)

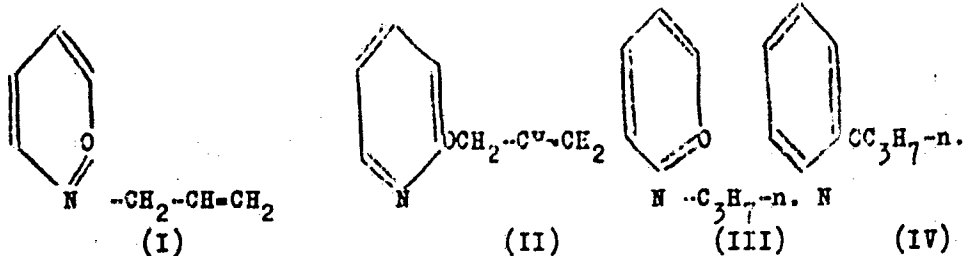
**ABSTRACT:** A. Ye. Fedorov (Ref 1) synthesized the N-allyl quinolone-2 by reaction of the potassium salt of quinolone-2 with allyl bromide and tried to synthesize the 2-alloxy-quinoline from 2-chloro-quinoline and sodium allylate. The 2-alloxy-quinoline, however, was transformed by distillation under normal pressure into the N-allyl-quinolone-2. Considering the similarity of the chemical properties of quinolone-2 and pyridone-2 the authors tried the analogous synthesis on the basis of the sodium salt of pyridone-2 and obtained the N-allyl-pyridone-2 (I). By reaction of 2-chloro-pyridine with sodium allylate the 2-alloxy-pyridine was formed (II). In order to avoid the isomerization of compound (II) into the N-allyl-pyridone-2 the product was distilled from the reaction mixture in the vacuum (1.5 mm).

Card 1/2

**N-Allyl-pyridone-2 and 2-Alloxy-pyridine and Their Hydrogenation Products**

30V/79-29-6-20/72

The hydrogenation of N-allyl pyridone-2 and 2-alloxy-pyridine on the skeleton-nickel catalyst yielded the corresponding N-n.-propyl pyridone-2 (III) and 2-propoxy-pyridine (IV).



There are 3 references.

ASSOCIATION: Voronezhskiy gosudarstvennyy universitet (Voronezh State University)

SUBMITTED: May 15, 1958

Card 2/2

FEDOROV, Ye.I.; SEMENOV, V.Ye.; SITSNIT, I.Ye.; VEREVKINA, A.M.

Analysis operation of the Bashkatovskoye underground gas storage.  
Gaz. prom. 5 no.5:44-47 My '60. (MIRA 14:11)  
(Kuybyshev--Gas, Natural--Storage)



5.3610

77890

SOV/79-30-2-41/78

## AUTHORS:

Mikhant'yev, B. I., Fedorov, E. I.

## TITLE:

Allylation of Amino and Bromoaminopyridines

## PERIODICAL:

Zhurnal obshchey khimii, 1960, Vol 30, Nr 2, pp 568-570 (USSR)

## ABSTRACT:

Allyl chloride reacts with 2-sodium derivatives of aminopyridine, 5-bromo-aminopyridine, and 3,5-dibromo-aminopyridine, forming corresponding 2-allyl-aminopyridine (I), 5-bromo-2-allylaminopyridine (II), and 2,5-dibromo-2-allylaminopyridine (III).

Nr	Obtained product	bp/mm pr	mp	$n_D^{20}$	$d_4^{20}$	Yield (%)
1	I	56-58/1	-	1.5676	1.0241	61.2
2	II	-	50-50.7	-	-	57
3	III	108-110/1.5	-	1.6297	1.7744	40.7

Compounds I, II, and III were hydrogenated over skeletal Ni at room temperature, at atmospheric pressure, and the corresponding 2-n-propylaminopyridine (IV), 5-bromo-2-n-propylaminopyridine (V), and

Card 2/2

Allylation of Amino and Bromoaminopyridines

77890  
SOV/79-30-2-41/78

3-5,dibromo-2-n-propylaminopyridine (VI) were obtained.

Properties of Propylaminopyridines

Nr	Obtained product	bp/mm pr	mp	$n_D^{20}$	$d_4^{20}$	Yield (%)
4	IV	66-67/1.5	-	1.5468	0.9935	90.4
5	V	"	40.3-41	-	-	80
6	VI	95-96/2	-	1.8090	1.7153	90.5

There are 2 tables; and 3 references, 2 Soviet, 1 Austrian.

ASSOCIATION: Voronezh State University (Voronezhskiy gosudarstvennyy universitet)

SUBMITTED: February 4, 1959

Card 2/2

MIKHANT'YEV, B.I.; FEDOROV, Ye.I.

Allylation of chloraminopyridines. Zhur.ob.khim. 33  
no.3:865-866 Mr '63. (MIRA 16:3)

1. Voronezhskiy gosudarstvennyy universitet.  
(Pyridine)  
(Allyl compounds)

1 19673-05 ESP(e)/BPR/EMP(j)/EWT(m)/T Po-4/1r-4 Ps-1 RPL RM/2

ACCESSION NR: AR5006368

S/G/31/64/000/024/S031/S032

SOURCE: ReS. zh. Khimiya, Abs. 24S182

AUTHOR: Miknantiyev, R. I.; Skiyarov, A.; Fidorov, Ye. I.; Anonova, N. D.; Shmygalava, T. A.; Mlynkova, V. P.; Shaidan, P. D.; Shevtsova, A. G.; Afanasyev, P. P.

TITLE: Polymerization and copolymerization of vinyl ether

vyp. 2, 1963, 3-11

TOPIC TAGS: polymerization, copolymerization, vinyl ether, polymer, copolymer

...molecular weight of 14,000. A polymer with a molecular weight of 6,000 is obtained  
...pressure and  $-3^{\circ}\text{C}$  in the presence of  $\text{BF}_3$ . vinylidene ester is copoly-  
...with divinyl in the presence of  $\text{BF}_3$  or ferric chloride.  $\text{BF}_3$  appears to be

Card 11/13

AR5006369

10,400 is produced at -50°C. Chains of vinylbutyl ester predominate in the structure of the copolymer, and transverse bonds are present on account of the divinyl chains. The copolymerization of vinylbutyl ester with divinyl does not occur under conditions of phosphorus anhydride and ferric chloride. The polyvinylbutyl ester is copolymerized with styrene (1:1) in benzene solution in the presence of the same catalyst. The molecular weight of the copolymer is 10,400. The copolymerization of vinylbutyl ester with styrene (1:1) in benzene solution in the presence of the same catalyst (FeCl<sub>3</sub> as catalyst) gives a copolymer of molecular weight of 20,000. The copolymerization of vinylbutyl ester with styrene (1:1) in benzene solution in the presence of the same catalyst (FeCl<sub>3</sub> as catalyst), and in the presence of phosphorus anhydride gives a copolymer of molecular weight of 10,400. Solid copolymers of vinylbutyl ester and styrene are obtained.

catechate of  $\text{Bi}_2\text{O}_3$  (as catalyst), and is also copolymerized with acrylonitrile in ratios of 1:1, 1:2, and 2:1 at 100-105°C. Solid copolymers are obtained with molecular weights of 48,500-92,000. Copolymers of N-vinylacridone and styrene are produced in mass and in emulsion; N-vinylacridone, styrene, and divinyl are produced in mass and also N-vinylacridone, styrene, divinyl, and acrylonitrile. The products have appreciable weights of 200,000-650,000. The latter copolymer, containing N-vinylacridone, styrene, divinyl, and acrylonitrile in the ratio 1:16:29:22. N-vinylacridone content increases and increases the hardness of the copolymers. S. Hass

Cont. 2/3

1. 35073-65

ACCESSION NR: AR5006368

SUB CODE: OC, GC

ENCE: 03



ACC NR: AR6015910 (A) SOURCE CODE: UR/0081/65/000/022/S027/S027

AUTHOR: Fedorov, Ye. I.; Mikhant'yev, B. I.; Fursova, L. Ya. 40  
B

TITLE: Emulsion copolymerization of 2-allylaminopyridine and N-vinyl-2-pyridone with bivinyl and styrene

SOURCE: Ref. zh. Khimiya, Abs. 22S157

REF SOURCE: Tr. Labor. khimi vysokomolekul. soyedineniy. Voronezhsk. un-t, vyp. 3, 1964, 100-104

TOPIC TAGS: emulsion polymerization, copolymerization, pyridine, vinyl compound, styrene

ABSTRACT: The copolymerization (CP) of N-vinyl-2-pyridone and 2-allylaminopyridine with bivinyl and styrene was carried out in an emulsion, the latex obtained was tested for bonding with rubber, and the effect of ultrasound on the adhesive properties of the latex were studied. The emulsion CP was carried out at 20° and a ratio of the hydrocarbon phase (HP) to the aqueous phase of 100:150; the HP consisted of 70% bivinyl and 30% styrene (the pyridine derivatives were introduced by decreasing the amount of styrene); the aqueous phase (in % of HP) consisted of: water 150, synthetic fatty acid (C<sub>10</sub>-C<sub>16</sub>) 4, KOH 0.9, hydroquinone 0.035, Na<sub>2</sub>SO<sub>3</sub> 0.2, trilon B 0.025, cumene hydroperoxide 0.25, Leukanol 0.5, diproxid 0.2. The copolymers B, C,

Card 1/2

L 38861-66

ACC NR: AR6015910

D contained 3.1, 5.53, and 4.1% of pyridine derivatives respectively. The impregnant for the cord was prepared from latex, resorcinol-formaldehyde resin, and a carbon black dispersion. It is shown that admixtures of pyridine derivatives do not appreciably affect the bonding of the cord to the rubber; an increase in the static strength of the bond is observed only in latex B in the case of rubber based on synthetic butadiene rubber; irradiation with ultrasound does not affect the adhesive properties of the latexes. A. Zak. [Translation of abstract]

SUB CODE: 07,11

*ms*

STERLIN, B.P.; TOMASHUNAS, E.V.; AGISHEV, A.P.; FEDOROV, Ye.I.

Creation of underground natural gas reservoirs in the Donets,  
Dnieper, and Black Sea Economic Regions. Gaz. delo no.8:22-25  
'64. (MIRA 17:9)

1. Ukrainskiy filial' Vsesoyuznogo nauchno-issledovatel'skogo  
instituta prirodnogo gaza.

FEDOROV, Ye. K.

Cand Tech Sci - (diss) "Sulfatizing roasting of high-mountain iron ores in a boiling layer with the purpose of their complete utilization." Moscow, 1961. 16 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Order of Labor Red Banner Inst of Steel imeni I. V. Stalin); 150 copies; price not given; (KL, 5-61 sup, 194)

PETROV, L.A. (Moskva); FEDOROV, Ye.K. (Moskva); TSYLAV, L.K. (Moskva)

Sulfatization roasting of Vysokaya Gora iron ores in a fluidized bed. Izv. AN SSSR. Otd. tekhn. nauk. Ser. 1 topl. no.1:31-38 Ja-1961. (NIPA 14:2)

(Sverdlovsk Province—Iron ores)  
(Ore dressing) (Fluidization)

PETROV, L.A. (Moskva); FEDOROV, Ya.K. (Moskva)

Cobalt recovery from its ferrates during sulfatization roasting.  
Izv. AN SSSR. Otd. tekhn. nauk. Met. i topl. no.1:67-69 Ja-F  
'62.

(MIRA 15:2)

(Cobalt--Metallurgy)

FEDOROV, Ye.K.; KOLESANOV, F.F.; GLADKOVSKIY, V.A.

Measuring specific pressure in roller presses during nickel ore  
briquetting. TSvet. met. 36 no.7:82-84 J1 '63. (MIRA 16:8)  
(Pressure--Measurement) (Briquets)

KOLESANOV, F.F.; FEDOROV, Ye.K.; KONAREVA, A.S.

Roasting oxidized nickel ore pellets in gas. TSvet. met. 36  
no.10:26-29 0 '63. (MIRA 16:12)



FEDOROV, Ye.K.; GLADKOVSKIY, V.A.; KOLESANOV, F.F.

Method of measuring the specific pressure in pressing loose materials in roller presses. Gor. zhur. no.3:64-65 Nr '63.

(MIRA 16:4)

1. Nauchno-issledovatel'skiy institut metallurgii, Chelyabinsk.

FELDEROV, Ye. S.

Yes

Meteorological Abst.  
Vol. 5 No. 1  
Jan. 1954  
Part 2  
Bibliography on  
General Oceanographic  
Meteorology

5A-7B  
1. Ekspeditsiya SSSR na Severnyy Polus, 1937. Tretye dnevnyye otchetnyye stat'yi "Severnyy Polus"; nauchnye otchet i resul'taty nauchnykh dnevnykh Ekspeditsii Glavvymorputi 1937-1938 g. [Transactions of the drifting station "Severnyy Polus." Scientific account and results of observations on the drifting expedition of the Glavvymorputi in 1937-1938.] 2 v. Leningrad, Izdat. Glavvymorputi, 1940-1945. Di.C--Vol. I, contains a descriptive account of expedition, map of route and a complete list of coordinates of drift. Vol. II contains descriptions and discussion of meteorological apparatus and observations, p. 5-30; meteorological service of the expedition, p. 31-63; atmospheric circulation in the central polar basin, p. 64-177; tables of hourly or synoptic observations and various types of summaries, p. 187-397; cloud photographs, p. 401-423; and 58 synoptic charts on color backgrounds, p. 427-484, mostly Northern Hemisphere analyzed charts for 1937 and 1938. (For fuller abstract see item 1-127, Jan. 1950, I.A.A.B.) Subject Headings: 1. Arctic exploration. 2. "Severnyy Polus" Expedition, 1937-1938. I. Fel'derov, Yevgenii Konstantinovich (ed.).

FEDOROV, Yevgeniy Konstantinovich

The Weather, published in 1940

Wintering on Cape "Tcheluskin", published in 1939

FEDOROV, E. K.

"Astronomical Determinations," Glavsevmorputi, Izd., Moscow, 1940, Vol. 1,  
pp. 7-19.

The use of astronomy, astrographs, etc., for the purpose of navigation, orientation,  
and location of ice floes during the 1937-38 expedition of Glavsevmorputi to the North  
Pole.

FEDOROV, Ye. K.

"Basic Problems of the Hydrometeorological Service, USSR "

SO: Meteorologiya i Gidrologiya, No 6, 1946.

FEDOROV, YE. K.

PA 40/49T53

USSR/Geophysics  
Clouds  
Meteorology

Nov 48

"How Do Clouds Become Charged?" Ye. K. Fedorov,  
Corr Mem, Acad Sci USSR, 1 p

"Nauka i Zhizn" No 11

Simplified explanation of subject phenomena  
according to the ionization theory.

40/49T53

FEDOROV, YE, K.

USSR/Geophysics - Atmospheric Elec- Jan/Feb 50  
tricity  
Air Currents

"Lokvachov's Comment on Atmospheric Phenomena  
That Are 'The... Origin to Electric Force' and Con-  
temporary Ideas on Atmospheric Electricity," Ye.  
K. Fedorov, 11 pp

PA156T42  
"Iz Ak Nauk SSSR, Ser Geograf i Geofiz" Vol XIV,  
No 1

All available data on atmospheric electricity con-  
firm the basic principles: (1) Water drops catch  
make up clouds and other smaller solid and liquid

156T42

USSR/Geophysics - Atmospheric Elec- Jan/Feb 50  
tricity (Contd)

particles are for the most part charged. (2) As-  
cending air currents, carrying along charged par-  
ticles, sort them in definite way depending upon  
their dimensions and other properties, thus caus-  
ing particles of opposite sign to be widely  
scattered; from this results polarization of  
clouds and possibly of definite atmospheric  
spaces outside clouds. (3) Necessary conditions  
for atmospheric electricity are ascending air  
currents and electrification of atmospheric aero-  
sols.

156T42

FEDOROV, YE. K.

USSR/Geophysics - Ionic Spectrum

11 Feb 52

"New Method for Investigating the Ionic Spectrum in the Atmosphere," Ye. K. Fedorov, Corr Mem Acad Sci USSR

"Dok Ak Nauk SSSR" Vol 82, No 5, pp 717, 718

Describes the scheme for measuring ionic currents in the air, as developed in 1950 at the Laboratory of Atm Electricity, Geophys Inst, Acad Sci. States that this method permits the measurement of the entire spectrum of ions in 2-3 min and automatic recording of the measurements of spectra. Presents the math theory governing the method. Submitted 17 Dec 51.

230T55



184752

FEDOROV, Ye. K

USSR/Geophysics - Sedimentation, Rain 21 Jun 51

"Electrical Charges of Sedimentation Particles,"  
Ye. K. Fedorov, Corr Mem, Acad Sci USSR, Geophys  
Inst, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXVIII, No 6, pp 1131-1134

During investigation of elec phenomena in the atm  
connected with clouds and sedimentation, Lab of Atm  
Electricity, Geophys Inst, conducted in 1949 several  
series of measurements of subject charges. De-  
scribes app and distribution of particles according  
to size of charge. Discusses comparatively small  
mean and max charges of particles; possibility of

184752

USSR/Geophysics - Sedimentation, Rain 21 Jun 51  
(Contd)

min charges differing from zero; and pulsation in  
elec characteristics of rain. Submitted 26 Apr 51.

184752

SUBJECT USSR / PHYSICS  
AUTHOR FEDOROV, E.K. CARD 1 / 2 PA - 1725  
TITLE On the Influence Exercised on Meteorology Processes by Atomic Explosions.  
PERIODICAL Atomnaja Energija, 1, fasc.5, 103-112 (1956)  
Issued: 1 / 1957

Heating: Thermal convection in the lower strata of the atmosphere in the vicinity of the epicenter of the explosion is increased only to a small extent by the direct heating caused by an atomic explosion. Under certain especially favorable conditions in the adjacent atmosphere the explosion can cause small changes in the synoptic processes which, without the explosion, would have occurred somewhat later. The rising drift: As regards the energy set free in the case of an explosion, the thermodynamic effect of an atomic explosion is small compared to the natural processes. This applies both in the case of immediate and indirect effect. In the case of a delayed liberation of the same amount of heat the effect would be greater. The modification of optical properties of the atmosphere: The amount of solid material blown into the atmosphere by atomic bombs can be estimated only with difficulty. Also in the case of an explosion of an H-bomb on the surface of the earth the effect is probably by from a hundredth to a thousandth part smaller than that on the occasion of the eruption of the KRAKATAU in 1883. Therefore even in the case of an explosion of a large H-bomb on the ground, no in any way essential changes of the optical properties of the atmosphere are to be expected.

FEDOROV, E., Member-correspondent of the Academy of Sciences of the USSR

HA Great Victory of Creative Thought," The Soviet Artificial Earth Satellite, 1957, p. 24.

FEDOROV, Ye. K.

PHASE I BOOK EXPLOITATION

418

Ryabchikov, Yevgeniy Ivanovich

Tak idut k zvezdam (The Way to the Stars) Moscow, Izd-vo "Sovetskaya Rossiya", 1957. 85 p. 50,000 copies printed.

Science Ed.: Fedorov, Ye. K., Corresponding Member of the USSR Academy of Sciences. Ed.: Berenson, Yu. E.; Tech. Ed.: Fivog, G. M.

PURPOSE: The booklet is a popular account of the development of rocketry, satellites, etc., addressed to a large audience.

COVERAGE: The booklet contains a brief account of Tsiolkovskiy's life and discusses this "prophet's message" on astronomy and future space travel. The early history of rocketry up to 1903 is given. The development of Russian aviation is described and a great number of aircraft designers and pilots are mentioned. Modern rockets used for geophysical measurements and developed more or less on the basis of the German V-2 are described. A section deals with dog-carrying rockets and tests made at various altitudes. Soviet progress before the launching of Sputnik I and the sudden change in

Card 1/3

## The Way to the Stars

418

world opinion concerning Soviet scientific achievements after this event are commented on. The launching of Sputnik II is described and a comparison of the two satellites is made. A description is given of the celebration in Moscow on November 7, 1957 of the 40th Anniversary of the Revolution. The speeches delivered are mentioned and the booklet closes with an expression of confidence in further rapid scientific progress.

TABLE OF  
CONTENTS:

"The visionary of Kaluga"	3
Rockets	8
Faith in victory	11
A visit with K. E. Tsiolkovskiy	15
Exploring the atmosphere	18
Storming the cosmos	29
Dogs as space travelers	32

Card 2/3

The Way to the Stars

418

The International Geophysical Year

36

About the Sputnik

43

Sputnik No. 2

61

Aftermath of the rockets

75

A glimpse of the future

82

AVAILABLE: Library of Congress

Card 3/3

IS/eng  
7/1/58

AUTHORS: Mamina, Ye. F. and Fedorov, Ye. K.

49-5-10/18

TITLE: On the water budget of a cloud system. (O vodnom balance oblachnoy sistemy).

PERIODICAL: "Izvestiya Akademii Nauk, Seriya Geofizicheskaya"  
(Bulletin of the Ac.Sc., Geophysics Series), 1957, No.5,  
pp. 658-663 (U.S.S.R.)

ABSTRACT: On the basis of meteorological observations and results of vertical sounding by aircraft an approximate quantitative evaluation is given of the relations between the humidity content of a cloud and the rain produced by it. On the basis of the indications of rainfall measurements in several stations uniformly distributed along a territory which was covered by a cloud system, the authors evaluated the average magnitude of the rainfall dropping on the territory under consideration and these data are entered in Table 1, pp.660-661. Comparison of the rainfall data with the data of the water content of the cloud systems indicates that in all cases the quantity of rainfall during 2 to 3 days from the cloud system exceeds the reserve of liquid water in the system by several times; on the average this ratio equals 6.9, the minimum being 3.8 and the maximum 9.4. The authors arrived at the following conclusions: by analysing the

Card 1/2

On the water budget of a cloud system. (Cont.) 49-5-10/18

standard observations it is possible to obtain data for evaluating certain characteristics of the water budget of cloud systems. By organising sounding, by specially equipped aircraft, of the cloud system and additional rainfall observations in the neighbouring region, it is possible to obtain reliable and sufficiently accurate data for evaluating the rainfall capacity of cloud systems. During their existence, cloud systems with a warm front form rainfall in quantities which are larger by an order of magnitude than the moisture content at the given instant of the clouds. It follows therefrom that the entire mass of liquid water in clouds of this type is renewed several times during their existence (for instance over 2 to 3 hours).

There are 2 tables and 5 references, 4 of which are Slavic.

SUBMITTED: December 20, 1956.

ASSOCIATION: Ac.Sc. U.S.S.R., Institute of Applied Geophysics.  
(Akademiya Nauk SSSR Institut Prikladnoy Geofiziki).

AVAILABLE: Library of Congress  
Card 2/2



16 DO NOT WRITE

*Final*

9143

THE INFLUENCE OF ALIEN EXPLOSIONS ON METEOROLOGICAL PROCESSES. K. Fedorov. J. Nuclear Energy, No. 4, 1954-55, 10 p.

The physical effects of alien explosions on meteorological elements in the earth's atmosphere are investigated. An analysis of the meteorological conditions in the atmosphere of an alien planet is made. It is shown that the meteorological processes in the atmosphere of an alien planet might result in a considerable change in the intensity of the electrical processes in the atmosphere and from the corresponding increase in condensation. To this order of magnitude, any such effects on the weather are comparable with those brought about by the periodic fluctuations in solar activity. (auth)

*W. J. Kelly*  
*MT*

Fedorov, Ye. K.

30-8-5/37

**AUTHORS:** Fedorov, Ye.K., Corresponding Member, AN, USSR, Skuridin, G. A.,  
Candidate of Physical-Mathematical Sciences

**TITLE:** Rockets and Artificial Satellites for the Investigation of the  
Higher Atmosphere (Rakety i iskusstvennyye sputniki zemli v iss-  
ledovaniyakh verkhney atmosfery)

**PERIODICAL:** Vestnik Akademii Nauk SSSR, 1957, Vol. 27, Nr 8, pp. 37-48 (USSR)

**ABSTRACT:** The use of rockets and artificial satellites belongs to the no-  
ticeable particularities of the investigation of the upper at-  
mosphere in the international geophysical year. The presence of  
chemically active atoms and molecules, as well as the ionized  
state of the upper stratum of the atmosphere are a characteristic  
feature of the higher atmosphere. Therefore it was necessary to  
find a new research method. Further, this treatise deals with the  
effects of the radiated energies of the sun and the investigat-  
ion of the Northern light, etc. Rockets for investigation pur-  
poses were used first in the USA (1946). The captured V-2 rockets  
served as models. 47 rockets of the V-2 type were launched in the  
research area of White Sands in 1946 to 1952 (26 reached an alti-

Card 1/3

30-8-5/37

Rockets and Artificial Satellites for the Investigation of the Higher Atmosphere

tude of 120 km and 2 even 160 km). In White Sands also 91 rockets of the type Aero-B were launched which reached altitudes of up to 80 km. The "Aero-X" - rocket carried the record at that time and it reached 280 km. It was followed by the "Viking" with 253 km and the great event was: the two-stage-Vanpyre-rocket (composed of a V-2 and a "Corporal"). It reached 400 km on February 24, 1949. A short time after, the first 3-stage rocket was built (discharge from the BBC-basis in Florida) which for the first time reached an altitude of 1200 km. Sounding of the atmosphere by means of rockets was carried out in various countries. In the Soviet-Union too, rockets are used for research-purposes. Both American and British constructors built their measuring instruments into the head of the rockets, whereas the Soviet scientists developed an other method: the case containing the measuring instruments is automatically disengaged from the rocket and parachuted. Among the numerous projects of artificial satellites there is one particularly interesting, i.e. the so called "Vanguard"-project (USA). The 3-stage-rocket which is to convey the satellite on its way, is constructed in such a way that the first two are guidable, whereas the third one stabilizes its position

Card 2/3

30-8-5/37

Rockets and Artificial Satellites for the Investigation of the Higher Atmosphere

by rotation, Length of the rocket: 21.9 m, maximum diameter: 1,14 m, weight (fuel included): 11 tons. (see figure and drawing 1 and 2). Further, a detailed description of the measuring instruments and their location in the interior of the artificial satellite is given, as well as a description of the "Viking"-rocket. Finally the various models of artificial satellites of the earth are summarized: The Singer-project, varieties 1 and 2 with a detailed description of their interior construction (see figure 4 and 5), and the "British model" (see fig. 6). In conclusion, this treatise deals with the great advantages of measuring by means of artificial satellites - especially with respect to ionization of the higher atmosphere and their horizontal distribution. We can state right now that artificial satellites will play a decisive part in all physical and astrophysical stages of investigation. There are 6 figures.

AVAILABLE: Library of Congress

Card 3/3

FEDOROV, Ya.K.

Investigating upper layers of the atmosphere by means of rockets  
and artificial earth satellites. Priroda 46 no.9:3-12 8 '57.  
(MIRA 10:8)

1. Institut prikladnoy geofiziki, Moskva. 2. Chlen-korrespondent  
Akademii nauk SSSR,

(Atmosphere, Upper) (Artificial satellites)  
(Rockets (Aeronautics))

FEDOROV, Ye.

Corres Mbr., Acad. Sci. USSR

"The Sputnik Studies the Earth" Izvestiya, 8 June 1958

Discusses the Third artificial earth satellite as a flying cosmic laboratory.

PHASE I BOOK EXPLOITATION 954

Fedorov, Yevgeniy Konstantinovich, Corresponding Member, USSR Academy of Sciences

Nauchnyye issledovaniya s pomoshch'yu raket i iskusstvennykh sputnikov zemli (Scientific Research With the Aid of Rockets and Artificial Earth Satellites) Moscow, Izd-vo "Znaniye," 1958. 28 p. (Series: Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy. Seriya IV, 1958, no. 21) 50,000 copies printed.

Sponsoring Agency: Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy.

Ed.: Faynboym, I.B.; Tech. Ed.: Berlov, A.P.

PURPOSE: The booklet is intended for the general reader interested in rockets and artificial satellites.

Card 1/4  
2

Scientific Research With the Aid of Rockets (Cont.)

954

COVERAGE: The author presents a general, elementary account of the scientific investigations conducted in the Soviet Union with the aid of rockets and artificial satellites. These investigations may be roughly divided into three groups: studies of the properties and characteristics of the upper layers of the atmosphere and particularly the effect of various cosmic phenomena on them; studies of phenomena occurring on the Sun and in outer space which for one reason or another cannot be studied from the surface of the Earth; and studies of conditions accompanying cosmic flight. Instruments used in Soviet satellites are briefly mentioned. In conclusion the author provides a summary account of the artificial satellites launched in the United States. The booklet has no illustrations. There are no references.

TABLE OF CONTENTS:

Introduction

3

Card 2/4

2



FEDOROV, Ye.K.

With the aid of rockets and satellites. Nauka i zhizn' 25  
no.5:11-16 My '58. (MIRA 11:5)

1. Chlen-korrespondent AN SSSR.  
(Artificial satellites) (Rockets (Aeronautics))

FEDOROV, Yevgeniy Konstantinovich; FAYNBOYM, I.B.. red.; SAVCHENKO,  
~~18.7., 1959. 21 p.~~

[Physical methods of weather control] Fizicheskie metody  
vozdeistviia na pogodu. Moskva, Izd-vo "Znanie," 1959. 21 p.  
(Vsesoiuznoe obshchestvo po rasprostraneniuiu politicheskikh i  
nauchnykh znanii. Ser.9, Fizika i khimii, no.20) (MIRA 12:11)

1. Chlen-korrespondent AN SSSR (for Fedorov).  
(Weather control)

3(0)

**AUTHOR:**

Fedorov, Ye. K., Corresponding Member, SOV/30-59-1-3/57  
Academy of Sciences, USSR

**TITLE:**

Some Tasks of Modern Geophysics (Nekotoryye zadachi  
sovremennoy geofiziki)

**PERIODICAL:**

Vestnik Akademii nauk SSSR, 1959, Nr 1, pp 24-31 (USSR)

**ABSTRACT:**

The author emphasizes the great practical importance of correct weather forecasts and other meteorological and hydrological manifestations. Forming a quantitative theory of atmospheric processes as a basis for calculation methods of their future development is designated the most essential and difficult problem of modern geophysics. Science is actually faced with the task of examining the possibilities, and finding out means, of active influence on geophysical processes in order to control their development in the direction required by man. The functions of the observation network of geophysical stations and observatories are steadily increasing - the artificial earth satellites being of great help. The friendly cooperation of various countries enabled the upper atmospheric layers as well as the cosmic space to be investigated. It was also possible to determine the

Card 1/3

Some Tasks of Modern Geophysics

SOV/30-59-1-3/57

composition of atmospheric gases and their transformations. It can be seen that geophysics is developing into a universal science with scientists of many countries taking part, which justifies the hope that the task of controlling certain natural processes will be fulfilled too. Primarily this concerns the meteorological phenomena. The Russian scientist Voyeykov already at the end of the last century asserted that man, by his activity, has long been exerting an influence - though involuntarily - on the climate. The terrestrial atmosphere is negatively influenced by the destruction of cultivated soil, the accumulation of CO<sub>2</sub> by industry, as well as hydrogen bomb explosions. Finally, the author opposes the opinions expressed in western geophysical literature where he considers the influence of natural factors on the development of material culture and the consciousness of man is exaggerated. Further, he states that the West endeavors to evaluate every achievement in this field as a new weapon in meteorological warfare. The worldwide character of meteorological processes should, however, be considered. Control of the latter necessitates close cooperation of all countries, which in the author's estimation is more important than obtaining"

Card 2/3

Some Tasks of Modern Geophysics

SOV/30-59-1-3/57

new scientific data. This article represents the partially modified text of a talk on international cooperation in the field of geophysics held by the author at the Conference of Scientists in Vienna-Kitzbühel in September 1958.

Card 3/3

KONSTANTINOV, B.P.; DEBORIN, A.M., akademik; PEYVE, Ya.V.; IOFFE, A.F.,  
akademik; MIKHAYLOV, A.I., prof.; SATPAYEV, K.I., akademik;  
ZHUKOV, Ye.M., akademik; LAVHENT'YEV, M.A., akademik; SEMENOV, R.N.,  
akademik; PAVLOVSKIY, Ye.N., akademik; MINTS, I.I., akademik;  
SISAKYAN, N.M.; ROMASHKIN, P.S.; FEDOROV, Ye.K.; STECHKIN, B.S.,  
akademik; MYSKIY, I.M., akademik; PAVLOV, Todor, akademik;  
ARBUZOV, A.Ye., akademik; VASIL'YEV, N.V., doktor ekon.nauk;  
BULOUSOV, V.V.; MITIN, M.B., akademik; BLAGONRAVOV, A.A., akademik;  
KANTOROVICH, L.V.; RYBAKOV, B.A., akademik; NEMCHINOV, V.S., akademik

Discussion of the address. Vest. AN SSSR 29 no.4:34-63 Ap '59.  
(MIRA 12:5)

1.Chlen-korrespondent AN SSSR (for Konstantinov, Peyve, Sisakyan,  
Romashkin, Fedorov, Bulousov, Kantorovich).  
(Science)

Name : FEDOROV, Ye. K.

Title : Corresponding Member of the USSR Academy of Sciences /Terrest. Magnetism/.

Remarks : Ye. K. FEDOROV is the author of an article entitled "Attack on the Outer Space" in which he deals with the third Soviet sputnik.

Source : M: Stantsii v Kosmose (Stations in Outer Space), a collection of articles, published by the USSR Academy of Sciences, Moskva, 1960, with foreword by Academicians A. N. Nesmeyanov and A. V. Topchiyev, p. 204.

69 10

FEDOROV, Ye. K. Chief Learned Secretary, Presidium AS USSR.

"The Present State of Talks on Termination of Nuclear Tests."

paper presented at the Pugwash Conference on Disarmament and World Security,  
Moscow, 27 Nov-6 Dec 60.



RYABCHIKOV, Yevgeniy Ivanovich; FEDOROV, Ye.K., nauchnyy red.; KASSEL',  
I.M., otv.red.; BORISOVA, V.K., tekhn.red.

[Pennants on the moon] Vypely na lune. Red. Ye.K. Fedorov.  
Moskva, Gos.izd-vo detskoi lit-ry M-va prosv. RSFSR, 1960. 93 p.  
(MIRA 14:1)

1. Chlen-korrespondent Akademii nauk SSSR (for Fedorov).  
(Rocket research) (Artificial satellites)  
(Lunar probes)

FEDOROV, Ye.

PHASE I BOOK EXPLOITATION

SOV/5174

Pravda, Moscow.

Vtoroy Sovetskiy kosmicheskiy korabl'; materialy, opublikovannyye v gazete "Pravda" (The Second Soviet Cosmic Ship; Materials Published in the Newspaper "Pravda") Moscow, 1960. 198 p. 50,000 copies printed.

Resp. for this Publication: V. Reut and V. Smirnov; Tech. Ed.: V. Yagodkina.

PURPOSE: This book is intended for the general reader.

COVERAGE: The book is a compilation of articles which appeared in the newspaper Pravda after the launching, orbiting, and recovery of the capsule of the Soviet 4,600 kg spaceship on August 19, 1960. The articles give some details of scientific research undertaken in this flight in the fields of biology, cytology, genetics, cosmic radiation, solar radiation, ultra-violet radiation, and radiation levels. A description and

Card ~~1A~~ 1/3

The Second Soviet Cosmic Ship (Cont.)

SOV/5174

three photos of the capsule are given. No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

Great Contribution to the Treasury of World Science and Culture.  
Greetings From the Central Committee of the Communist Party and  
the Council of Ministers of the USSR 3

SECOND SOVIET SPACESHIP ENTERS THE ORBIT OF THE EARTH SATELLITE

TASS Communiqué 7

Path of the Second Soviet Spaceship 9

From the First Sputnik to the Spaceship 12

Fatherland, I am Proud of You! Vilis Latsis 13

Signals From the Spaceship Are Received 13

Card ~~2/3~~ 1/3

The Second Soviet Cosmic Ship (Cont.)

SOV/5174

Flight of the spaceship and its return to earth	31
Assuring living conditions in the spaceship	34
Launchable container with animals	40
Television apparatus on the spaceship	43
Medical and biological research	45
Scientific research on the spaceship	62
<u>The Time for Human Flight to Outer Space is Approaching.</u> <u>Ye. Fedorov, Academician</u>	76
What Was Beyond the Capability of Nature is Accomplished by Soviet Man. S. Poloskov, Professor	80
Brilliant Success: <u>21</u> trial in Pravda	82
It Happened This	86

Card ~~17~~  
1/9

S/103/60/021/05/13/013  
BC07/B011

**AUTHORS:** Topchiyev, A. V., Academician, Vice President of the Academy of Sciences USSR, Fedorov, Ye. K., Corresponding Member of the AS USSR, Acting as Senior Scientific Secretary of the Presidium of the Academy of Sciences USSR; Dorodnitsyn, A. A., Ishlinskiy, A. Yu., Petrov, B. N., Members of the Commission

**TITLE:** Information.  
Byuro prezidiuma Akademii nauk Soyuza SSR (Office of the Presidium of the Academy of Sciences of the USSR).  
Resolution of February 12, 1960, No. 134, Moscow

**PERIODICAL:** Avtomatika i telemekhanika, 1960, Vol. 21, No. 5, pp. 655 - 656

**TEXT:** The paper under review contains the literal text of the above resolution. This consists of two parts: resolution on the theory of invariance and its application to automatic devices of October 20, 1958 (Kiyev), and the judgment of the Commission in connection with the dis-

Card 1/5 ✓

Information.

Byuro prezidiuma Akademii nauk Soyuza SSR  
(Office of the Presidium of the Academy of  
Sciences of the USSR).  
Resolution of February 12, 1960, No. 134,  
Moscow

S/103/60/021/05/13/013  
B007/B011

discussion on the theory of invariance. After having heard the Academician  
A. A. Dorodnitsyn's communication, (President of the komissiya Prezidiuma  
AN SSSR (Commission of the Presidium of the AS USSR)), on the resolution  
adopted on the theory of invariance and its application to automatic de-  
vices of October 20, 1958 (Kiyev), the Byuro Prezidiuma Akademii nauk  
SSSR (Office of the Presidium of the Academy of Sciences, USSR) decided  
to approve the judgment of the Commission of the Presidium of the AS  
USSR and to order its publication in the periodical "Avtomatika i tele-  
mekhanika". The judgment reads as follows: the Commission consisting of  
Academician A. A. Dorodnitsyn, Academician of the AS UkrSSR A. Yu.  
Ishlinskiy, and Corresponding Member of the AS USSR B. N. Petrov, and  
appointed by Academician A. V. Topchiyev, Vice President of the AS USSR  
on October 28, 1958 examined the following materials: the afore-men-  
tioned resolution of October 20, 1958, the resolution of the Presidium

Card 2/5

Information.

Byuro prezidiuma Akademii nauk Soyuz SSSR  
(Office of the Presidium of the Academy  
of Sciences of the USSR).  
Resolution of February 12, 1960, No. 134,  
Moscow

S/103/60/021/05/13/013  
B007/B011

of the AS USSR of April 1, 1941, the conclusions reached by the Commission of the Presidium of the AS USSR on Professor G. V. Shchipanov's work "Automatic Regulation of Systems With Some Degrees of Freedom", the work itself, as well as papers resulting from the discussion thereon. The Commission established the following: The work published by Professor G. V. Shchipanov in the periodical under consideration, 1939, No. 1, gave rise to a detailed discussion. By order of the Presidium of the AS USSR of March 4, 1940 a commission was formed consisting of Academician O. Yu. Schmidt, Vice President of the AS USSR, Academician S. A. Chaplygin, Academician S. L. Sobolev, Academician N. Ye. Kochin, and Corresponding Member of the AS USSR N. G. Bruyevich. The conclusions reached by the Commission were discussed at the session held by the Presidium of the AS USSR on April 1, 1941. These included the particular opinion of Academician V. S. Kulebakin and Academician N. N. Luzin. Papers by Academician N. N. Luzin, Academician V. S. Kulebakin, A. G.

Card 3/5

Information.

Byuro prezidiuma Akademii nauk Soyuza SSR  
(Office of the Presidium of the Academy  
of Sciences of the USSR).  
Resolution of February 12, 1960. No. 134  
Moscow

S/103/60/021/05/13/013  
B007/B011

Ivakhnenko, B. N. Petrov, G. M. Ulanov, and others were published on this subject in the following years. The meeting under discussion was held on October 16 to 20, 1958 in Kiev. It had been convened by the Otdeleniye tekhnicheskikh nauk Akademii nauk USSR (Department of Technical Sciences of the Academy of Sciences UkrSSR), Kiyevskiy gorodskoy seminar (Kiev Municipal Seminar), and Institut elektrotekhniki AN USSR (Institute of Electrical Engineering of the AS UkrSSR). In their resolution, the delegates referred to the necessity of working out methods of compensating disturbances and of further developing the principle of invariance. On the strength of its investigations, the Commission states the following in its judgment: The conclusions reached by the Commission in 1941 are right, but the statement of the principal mistake contained in the work by G. V. Shchipanov "Condition of Compensation" is too general and, therefore, inexact. His principal mistake was not to have formulated the said condition, but to have applied it to the calculation of

Card 4/5



Information,  
Byuro prezidiuma Akademii nauk Soyuzo SSR  
(Office of the Presidium of the Academy  
of Sciences of the USSR).  
Resolution of February 12, 1960, No. 134,  
Moscow

S/103/60/021/05/13/013  
B007/B011

such a class of control systems as do not allow the use of compensation conditions. The "Compensation Condition" or "Invariance Condition" formulated by Professor G. V. Shchipanov led to a new mathematical relation which can be successfully applied when projecting a determined class of dynamic systems. With reference to the inaccurate formulation of the 1941 resolution, it is recommended that an article be published in one of the technical periodicals to make it clear in which cases the principle of invariance can be used, and in which cases it is not admissible.

ASSOCIATION: Byuro prezidiuma Akademii nauk Soyuzo SSR  
(Office of the Presidium of the Academy of Sciences of  
the Union SSR)

Card 5/5



FEDOROV, Ye.K. MASEVICH, A., doktor fiz.-mat.nauk

Steps toward outer space. Tekh.mol. 28 no.6:8-9 '60.  
(MIRA 13:7)

1. Chlen-korrespondent AN SSSR (for Fedorov). 2. Zamestitel'  
predsedatelya Astronomicheskogo soveta AN SSSR (for Masevich).  
(Space ships)

S/030/61/000/003/002/013  
B105/B215

**AUTHOR:** Fedorov, Ye.K., Academician

**TITLE:** Results of scientific activity, and application of completed scientific studies of the Academy of Sciences USSR in 1960. Report of Ye.K. Fedorov, Academician, Scientific Secretary in Chief of the Presidium of the Academy of Sciences USSR

**PERIODICAL:** Vestnik Akademii nauk SSSR, no. 3, 1961, 12 - 26

**TEXT:** The systematic expansion of the Academy in 1960 is described. Nine new institutes were established six of them in autonomous Republics, Siberia, and other regions. Buildings for laboratories with a total area of over 60,000 m<sup>2</sup> and houses for collaborators of the Academy with a residential area of 100,000 m<sup>2</sup> were constructed in Moscow and other cities of the Soviet Union. This year, the Academy engaged 1500 young experts. At present 23,000 scientists are employed in academic institutes. In 1960 500 young scientists of the Academy of Sciences USSR successfully defended their theses for Degrees of Candidates. The major part out of 84 people who got their doctor's degrees were older collaborators. 11 new Acade- ✓

Card 1/5

Results of scientific activity ...

S/030/61/000/003/002/013

B105/B215

cians and 50 Corresponding Members were nominated. In spite of great achievements of Soviet science, much remains to be done in the field of application of results in national economy. In this report, the author only gives a few examples of the work of the Academies. Among others, the following papers are mentioned: on fizika plazmy (Plasma Physics); exploration of cosmic space; study of lunar heat radiation in centimeter and millimeter ranges; work in the field of solid physics; investigation of semiconductors; development of mathematical methods and bases for calculation techniques by M-2 (M-2) and BESM-2 (BESM-2) machines; studies in the field of geophysics; Tadzhikistan is mentioned as the most active seismic rayon of the USSR; the chemistry of high-molecular compounds and the theory of the microstructures of polymer materials were developed in chemical institutes. The International Symposium on polymers held in Moscow in 1960 is mentioned; examination of atomic nuclei forming during the irradiation of iron, antimony, and bismuth by protons; introduction of modern methods of physics and chemistry in biological research; development of physical methods for the examination of higher nerve functions; large-scale examinations on the melioration of the soil of the Amur Basin were conducted, and soil charts of Eastern Europe and Asia were compiled;

Card 2/5

Results of scientific activity ...

8/030/61/000/003/002/013  
B105/B215

new data on the dynamics and formation of ground water in deeper parts of the West-Siberian and Asov-Kuban' artesian basins were obtained; a map on the recent USSR tectonics with a 1:5,000,000 scale was published; important achievements in the improvement of existing and the development of new methods of automatic control were attained; the great importance of the First International Congress on Automatic Control in Moscow is pointed out, which was attended by over 800 foreign scientists from 29 countries; various history books on social sciences are mentioned which partly are in preparation, and partly have already been published; on the occasion of the 90th anniversary of V.I. Lenin's birthday, some monographs have been published; the Institut narodov Azii (Institute of the Peoples of Asia) established in 1960 on the basis of the institut Vostokovedeniya (Institute of Oriental Studies) and the institut Kitayevedeniya (Institute of Sinology) published 146 papers mainly on problems of recent history of Asian countries and their development; the Institut Afriki (African Institute) began its work; problems on the distribution of work among the socialist world system were discussed, including that of competition between the socialist and the capitalist systems. Despite some positive results, theoretical research on the increasing demands in the field of economy is

Card 3/5

Results of scientific activity ...

S/030/61/000/003/002/013  
B105/B215

considered to be backward. Work done by the Institutes of the Otdeleniye literatury i yazyka (Department of Literature and Language) in the field of literary science is mentioned. The Institut organicheskoy khimii (Institute of Organic Chemistry) was established within the Bashkirskiy filial (Bashkir Branch), and two more institutes were founded in the Kol'skiy filial (Kol'skiy Branch): Polyarnyy geofizicheskiy institut (Polar Geophysical Institute) and Gorno-metallurgicheskiy institut (Institute of Mining and Metallurgy). The Geologicheskii institut (Institute of Geology) within the Karel'skiy filial (Karel'skiy Branch), the Institut yazyka, literatury i narodnogo tvorchestva (Institute of Language, Literature and National Art) within the Dagestanskiy filial (Dagestanskiy Branch). The Presidium of the Akademiya nauk SSSR (Academy of Sciences USSR) paid its special attention to the establishment of the Moldavskiy filial (Moldavian Branch) whose 14 scientific institutes employ approximately 1,000 people. This branch is being transformed into the Akademiya nauk Moldavskoy SSR (Academy of Sciences of the Moldavskaya SSR). Among other things, the scientists of the branches worked out a method of determining tetravalent vanadium in the various kinds of petroleum of the Tatariya, and methods of the economic exploitation of the Vtoroye Baku petroleum resources.

Card 4/5

Results of scientific activity ...

S/030/61/000/003/002/013  
B105/B215

Studies were conducted on the diversion of the rivers Strel'na, Chavan'ga, and the upper course of the Varsuga into river Ponoy which would allow an increase in the generation of electric power. All the above achievements of Soviet science are considered as being insufficient in comparison to the existing demands and the blame is to be put on the insufficient organization in scientific research. It was also stated that many nauchnyye sovery po problemam (Scientific Councils for Problems) not fulfill their duties. In conclusion, the correspondent stated that there are already more than 2000 independent design offices organized on social bases, and large enterprises, works, and scientific research institutes in the Soviet Union which employ a large number of talented persons. Great attention should be paid to this increasing initiative of the people. As to the criticism of the work done by the academies, discussions on problems of organizing scientific work are said to be very desirable. Discussions followed the report. ✓

ASSOCIATION: Akademiya nauk SSSR (Academy of Sciences USSR)

Card 5/5

FEDOROV, Ye.K.

Speech of E.K. Fedorov. Vest. Vozd. fl. no.4:40-42 '61.

(MIRA 14:7)

(Astronautics)



FEDOROV, Ye., akademik

Achievement of the century. Vest. Vozd. Fl. no.4:43-46 Ap '61.

(MIRA 14:7)

(Astronautics)

FEDOROV, Ye.K., akademik (SSSR)

Achievements of Soviet science in space research. Mir nauki  
no.1:13-19 '62. (MIRA 15:7)  
(Space sciences)

S/030/62/000/003/001/007  
B105/B102

**AUTHOR:** Fedorov, Ye. K., Academician, Chief Scientific Secretary of  
the Presidium of the Academy of Sciences USSR

**TITLE:** Results of the scientific activity of the Academy of Sciences  
USSR in 1961

**PERIODICAL:** Akademiya nauk SSSR. Vestnik, no. 3, 1962, 8 - 18

**TEXT:** Seven new institutes of the AS USSR including four in the  
Sibirskoye otdeleniye (Siberian Department) were established in 1961 along  
with 96 new laboratories and similar sections in existing institutes.  
Two new vessels for oceanographic research were launched. A 2.6-m  
telescope was put into operation at the Krymskaya astrofizicheskaya  
observatoriya (Crimean Astrophysical Observatory) as well as a 7-Mev  
proton synchrotron. A large electronic computer was installed at the  
vychislitel'nyy tsentr Akademii v Leningrade (Computer Center of the  
Academy in Leningrad). Plants have been erected for plasma research. A  
number of institutes of the Academy were transferred to committees and  
ministries, and branches were subordinated to the Gosudarstvennyy komitet

Card 1/3

Results of the scientific...

S/030/62/000/003/001/007  
B105/J:02

Soveta Ministrov RSFSR po koordinatsii nauchno-issledovatel'skikh rabot (State Committee of the Council of Ministers RSFSR on Scientific Research Coordination). Scientific councils on theoretical problems were established at the Presidium of the Academy and at the Gosudarstvennyy komitet Soveta Ministrov SSSR po koordinatsii nauchno-issledovatel'skikh rabot (State Committee of the Council of Ministers USSR on Scientific Research Coordination). The flights by Yu. A. Gagarin and G. S. Titov are pointed out as a proof of Soviet superiority in space research. The program of the CPSU stresses the necessity of development in the fields of mathematics, physics, chemistry, and biology. The following achievements are pointed out in particular: Production and conservation of high-temperature plasma in a magnetic trap; study of nucleonic interaction between  $10^{11}$  and  $10^{13}$  Mev; giant resonance for  $C^{12}$ ; production of efficient silicon diffusion power rectifiers; production of new ferrites with narrow resonance band and seignette ferromagnetics for solving superhigh frequency problems and for computers; discovery of a new type of semiconductor photoconductivity in the millimeter wave range; production of ultralow temperatures; the maintaining of temperature at  $0.0035^{\circ}K$  for 2 hr by two-stage demagnetization of ferric ammonium alum and cerium magnesium nitrate; about 50 nebulae

Card 2/3