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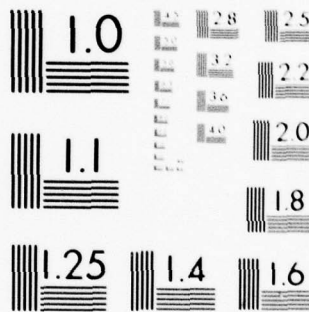
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20. ABSTRACT This is the Soviet Laser Bibliography for July-August 1977 and is No. 30 in a continuing series on Soviet laser developments. The coverage includes basic research on solid state, liquid, gas, and chemical lasers; components; nonlinear optics; spectroscopy of laser materials; ultrashort pulse generation; theoretical aspects of advanced lasers; and general laser theory. Laser applications are listed under biological effects; communications; beam propagation; computer technology; holography; laser-induced chemical reactions; measurement of laser parameters; laser measurement applications; laser-excited optical effects; beam-target interaction; and plasma generation and diagnostics.		

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### Introduction

This bibliography has been compiled under an interagency agreement as a continuing effort to document current Soviet-bloc developments in the quantum electronics field. The period covered is July-August 1977, and includes all significant laser-related articles received by us in that interval. The bulk of the entries come from the approximately 30 periodicals which are known to publish the most significant findings in Soviet laser technology. Citations from the Russian Reference Journals are included, as well as entries from the CIRC data base not otherwise covered. Laser items from the popular or semipopular press are generally omitted.

For convenience we have abbreviated frequently cited source names; a source abbreviations list and an author index are included. All sources cited with no parenthetical notation are available at the Library of Congress. A parenthetical entry (RZh, KL), indicates the secondary source in which the citation was found as a bibliographic entry or abstract, but for which the original source is not currently available at the Library. The authors' affiliations are indicated by the numbers in parentheses following the authors' names in the text and are listed in the Author Affiliations List. New affiliations are assigned a new number and are added to a cumulative list which includes all affiliations from 1969 to the present. Only those affiliations which appear in this issue are listed in this issue's Author Affiliations List.

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## I. BASIC RESEARCH

### A. SOLID STATE LASERS

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#### IV. SOURCE ABBREVIATIONS

(CIRC Codens)

BWAT	(BWATA)	Biuletyn Wojskowej akademii technicznej J. Dabrowskiego
DAN B	(DBLRA)	Akademiya nauk Belorusskoy SSR. Doklady
DAN SSSR	(DANKA)	Akademiya nauk SSSR. Doklady
EOM	(EOBMA)	Elektronnaya obrabotka materialov
FAiO	(IFAOA)	Akademiya nauk SSSR. Izvestiya. Fizika atmosfery i okeana
FGiV	(FCVZA)	Fizika goreniya i vzryva
FiKhOM	(FKOMA)	Fizika i khimiya obrabotka materialov
FTP	(FTPPA)	Fizika i tekhnika poluprovodnikov
FTT	(FTVTA)	Fizika tverdogo tela
IAN Arm	(IAAFA)	Akademiya nauk Armyanskoy SSR. Izvestiya. Fizika
IAN Est	(ETFMB)	Akademiya nauk Estonskoy SSR. Izvestiya. Fizika, matematika
IAN Fiz	(IANFA)	Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya
IAN Lat	(LZFTA)	Akademiya nauk Latviyskoy SSR. Izvestiya. Seriya fizicheskikh i tekhnicheskikh nauk
IT	(IZTEA)	Izmeritel'naya tekhnika
IVUZ Fiz	(IVUFA)	Izvestiya vysshikh uchebnykh zavedeniy. Fizika
IVUZ Priboro	(IVUBA)	Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye
IVUZ Radioelektr (IVUZB)		Izvestiya vysshikh uchebnykh zavedeniy. Radioelektronika
IVUZ Radiofiz	(IVYRA)	Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika
JTP	(JTPhD)	Journal of Technical Physics [Poland]
KE	(KVEKA)	Kvantovaya elektronika
KhVE	(KHVKA)	Khimiya vysokikh energiy
KL	(KNLTA)	Knizhnaya letopis'
KSpF	(KRSFA)	Kratkiye soobshcheniya po fizike

NM	(IVNMA)	Akademiya nauk SSSR. Izvestiya. Neorganicheskiye materialy
OiS	(OPSPA)	Optika i spektroskopiya
OMP	(OPMPA)	Optiko-mekhanicheskaya promyshlennost'
Otkr izobr	(OIPOB)	Otkrytiya, izobreneniya, promyshlennyye obraztsy, tovarnyye znaki
PTE	(PRTEA)	Pribory i tekhnika eksperimenta
RiE	(RAELA)	Radiotekhnika i elektronika
RZhF	(RZFZA)	Referativnyy zhurnal. Fizika
RZhGeofiz	(RZGFA)	Referativnyy zhurnal. Geofizika
RZhMekh	(RZMKA)	Referativnyy zhurnal. Mekhanika
RZhRadiot	(RZRAB)	Referativnyy zhurnal. Radiotekhnika
Sb1		Sbornik. Tekhnicheskaya elektronika i elektrodinamika, no. 1, Saratov, 1976.
Sb2		Vsesoyuznaya konferentsiya "Optika lazerov." 1st. Leningrad, 4-8 January 1977. Tezisy dokladov. Leningrad, 1976 [sic].
Sb3		Aerofizicheskiye issledovaniya, no. 6, Novosibirsk, 1976.
Sb4		Kvantovaya elektronika, no. 12, Kiyev, Naukova dumka, 1977.
Sb5		Itogi nauki i tekhniki. Radiotekhnika, no. 12, Moskva, 1977.
Sb6		Kvantovaya elektronika, no. 13, Kiyev, Naukova dumka, 1977.
Sb7		Vsesoyuznaya akusticheskaya konferentsiya. 9th. Moskva, 1977.
Sb8		Informatsionnyye materialy po gidrometeorologicheskim priboram i metodam nablyudeniya, no. 67, Moskva, Gidrometeoizdat, 1976.
Sb9		Informatsionnyye materialy po gidrometeorologicheskim priboram i metodam nablyudeniya, no. 68, Moskva, Gidrometeoizdat, 1976.
Sb10		Rasseyaniye i refraktsiya opticheskikh voln v atmosfere. Tomsk, 1976.
Sb11		Issledovaniya po elektrodinamike i rasprostraneniyu elektromagniticheskikh voln. Tomsk. Tomskiy universitet, 1977.



Sbl2		Khimiya plazmy, no. 4, Moskva, Atomizdat, 1977.
Sbl3		Pribory tochnoy mekhaniki, no. 1, Moskva, 1976.
TKiT	(TKTEA)	Tekhnika kino i televideniya
Tr1		AN SSSR. Fizicheskiy institut. Trudy, no. 98, 1977.
Tr2		Moskovskiy fiziko-tekhnicheskiy institut. Trudy. Seriya Obshcheniya i molekulyarnaya fizika, no. 8, 1976.
Tr3		Khar'kovskiy universitet. Vestnik, no. 151, radiofizika i elektronika, no. 6, 1977.
Tr4		AN SSSR. Fizicheskiy institut. Trudy, no. 99, 1977.
Tr5		Kazanskiy gos pedagogicheskiy institut. Uchenyye zapiski, no. 163, 1976.
Tr6		Tomskiy politekhnicheskiy institut. Izvestiya, no. 296, 1976.
Tr7		Leningradskiy korablestroitel'skiy institut. Trudy, no. 110, 1976.
Tr8		Moskovskiy energeticheskiy institut. Trudy, no. 306, 1976.
Tr9		Trudy metrologicheskikh institutov SSSR. VNII metrologii, no. 206(266), 1977.
Tr10		AN SSSR. Fizicheskiy institut. Trudy, no. 100, 1977.
Tr11		Moskovskiy fiziko-tekhnicheskiy institut. Trudy. Seriya Radiotekhnika i elektronika, 1976(1977).
Tr12		AN SSSR. Fizicheskiy institut. Trudy, no. 94, 1977.
TVT	(TVYTA)	Teplofizika vysokikh temperatur
UFN	(UFNAA)	Uspekhi fizicheskikh nauk
UFZh	(UFIZA)	Ukrainskiy fizicheskiy zhurnal
VMU	(VMUFA)	Moskovskiy universitet. Vestnik. Seriya fizika, astronomiya
ZhETF	(ZEIFA)	Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhETF P	(ZFPRA)	Pis'ma v Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhNiPFIK	(ZNPFA)	Zhurnal nauchnoy i prikladnoy fotografii i kinematografii
ZhPMTF	(ZPMFA)	Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki
ZhPS	(ZPSBA)	Zhurnal prikladnoy spektroskopii
ZhTF	(ZTEFA)	Zhurnal tekhnicheskoy fiziki
ZhTF P	(PZTFD)	Pis'ma v Zhurnal tekhnicheskoy fiziki

## V. AUTHOR AFFILIATION LIST

- NS. Non-Soviet
0. Affiliation not given
  1. Physics Institute im Lebedev, AN SSSR, Moscow (Fizicheskiy institut im Lebedeva AN SSSR).
  2. Moscow State University (Moskovskiy gosudarstvennyy universitet).
  3. Institute of Physics, AN BSSR, Minsk (Institut fiziki AN BSSR).
  4. Physicotechnical Institute im Ioffe, Leningrad (Fiziko-tekhnicheskiiy institut im Ioffe).
  5. Institute of Physics, AN UkrSSR, Kiev (Institut fiziki AN UkrSSR).
  6. Institute of Semiconductors, AN UkrSSR, Kiev (Institut poluprovodnikov AN UkrSSR).
  7. State Optical Institute im Vavilov, Leningrad (Gosudarstvennyy opticheskiy institut im Vavilova).
  8. Radiophysics Scientific Research Institute at Gorkiy State University (Nauchno-issledovatel'skiy institut pri Gor'kovskom gos universitete).
  10. Institute of Semiconductor Physics of the Siberian Branch, AN SSSR, Novosibirsk (Institut fiziki poluprovodnikov SOAN)
  12. Leningrad State University (Leningradskiy gos universitet).
  13. Institute of Crystallography, AN SSSR, Moscow (Institut kristallografiya AN SSSR).
  15. Institute of Radio Engineering and Electronics, AN SSSR, Moscow (Institut radiotekhniki i elektroniki AN SSSR).
  16. Moscow Engineering Physics Institute (Moskovskiy inzhenerno-fizicheskiy institut).
  17. Institute of Mechanical Problems, AN SSSR, Moscow (Institut problem mekhaniki AN SSSR).
  19. Moscow Power Engineering Institute (Moskovskiy energeticheskiy institut).
  21. Acoustics Institute, AN SSSR, Moscow (Acusticheskiy institut AN SSSR).
  22. Institute of Metallurgy im Baykov, Moscow (Institut metallurgii im Baykova).
  23. Institute of Atomic Energy im Kurchatov, Moscow (Institut atomnoy energii im Kurchatova).
  24. Moscow Higher Technical College im Bauman (Moskovskoye vyssheye tekhnicheskoye uchilishche im Baumana).
  30. Leningrad Institute of Precision Mechanics and Optics (Leningradskiy institut tochnoy mekhaniki i optiki).
  34. Khar'kov State University (Khar'kovskiy gos universitet).
  37. Yerevan State University (Yerevanskiy gos universitet).
  44. Institute of Applied Physics, AN MSSR, Kishinev (Institut prikladnoy fiziki AN MSSR).
  46. Novosibirsk State University (Novosibirskiy gos universitet).
  49. Vilnyus State University (Vil'nyusskiy gos universitet).
  50. Institute of Semiconductor Physics, AN LitSSR, Vilnyus (Institut fiziki poluprovodnikov AN LitSSR).
  51. Kiev State University (Kiyevskiy gos universitet).
  52. Joint Institute of Nuclear Research, Dubna (Ob'yedinennyy institut yadernykh issledovaniy).
  61. Institute of Physics and Astronomy, AN EstSSR (Institut fiziki i astronomii AN EstSSR).
  63. Institute of Physics, AN LatSSR (Institut fiziki AN LatSSR).
  64. Institute of Atmospheric Physics, AN SSSR (Institut fiziki atmosfery AN SSSR).
  72. Institute of Spectroscopy, AN SSSR (Institut spektroskopii AN SSSR).
  73. Institute of Theoretical Physics im Landau, AN SSSR (Institut teoreticheskoy fiziki im Landau AN SSSR).

74. Institute of High Temperatures, AN SSSR (Institut vysokikh temperatur AN SSSR).
75. Institute of Automation and Electronic Measurements, Siberian Branch AN SSSR (Institut avtomatiki i elektrometrii SOAN).
76. Institute of Hydrodynamics, Siberian Branch AN SSSR (Institut gidrodinamiki SOAN).
77. Institute of Inorganic Chemistry, Siberian Branch AN SSSR (Institut neorganicheskoy khimii SOAN).
78. Institute of Atmospheric Optics, Siberian Branch AN SSSR (Institut optiki atmosfery SOAN).
79. Institute of Nuclear Physics, Siberian Branch AN SSSR (Institut yadernoy fiziki SOAN).
84. Institute of Radiophysics and Electronics, AN UkrSSR (Institut radiofiziki i elektroniki AN UkrSSR).
87. Belorussian State University (Belorusskiy gos universitet).
90. Electrotechnical Institute of Communications (Elektrotekhnicheskiy institut svyazi).
92. Physicochemical Institute im Karpov (Fiziko-khimicheskiy institut im Karpova).
94. Gor'kiy State University (Gor'kovskiy gos universitet).
98. Institute of Nuclear Physics at Moscow State University (Institut yadernoy fiziki pri Moskovskom gos universitete).
99. Institute of Mechanics and Physics, Saratov (Institut mekhaniki i fiziki).
110. Leningrad Electrotechnical Institute (Leningradskiy elektrotekhnicheskiy institut).
114. L'vov State University (L'vovskiy gos universitet).
118. Moscow Physicotechnical Institute (Moskovskiy fiziko-tekhnicheskii institut).
129. Siberian State Scientific Research Institute of Metrology (Sibirskiy gos NII metrologii).
136. Uzhgorod State University (Uzhgorodskiy gos universitet).
137. Voronezh State University (Voronezhskiy gos universitet).
140. All Union Scientific Research Institute of Physicotechnical and Radiotechnical Measurements (VNII fiziko-tekhnicheskikh i radio-tekhnicheskikh izmereniy, VNIFTRI).
141. All Union Scientific Research Institute of Opticophysical Measurements (VNII optiko-fizicheskikh izmereniy).
149. Leningrad Shipbuilding Institute (Leningradskiy korablestroitel'nyy institut).
160. Scientific Research Institute of Hydrometeorological Instrument Manufacture (NII gidrometeorologicheskogo priborostroyeniya).
161. Moscow Institute of Radio Engineering, Electronics and Automation (Moskovskiy institut radiotekhnika, elektroniki i avtomatiki).
163. All Union Scientific Research Institute of Metrology im Mendeleyev (VNII metrologii im Mendeleyeva).
174. Scientific Research Institute of Organic Intermediates and Dyestuffs, Moscow (NII organicheskikh poluproduktov i krasiteley).
177. Riga Institute for Civil Aviation Engineers (Rizhskiy institut inzhenerov grazhdanskoj aviatsii).
197. Tomsk Polytechnic Institute (Tomskiy politekhnicheskiy institut).
201. Institute for Problems of Information Transmission, AN SSSR, Moscow (Institut problem peredachi informatsii AN SSSR).
210. Institute of Physics, Siberian Branch AN SSSR (Institut fiziki SOAN).
214. Kazan' Pedagogical Institute (Kazanskiy pedagogicheskiy institut).
215. Physicotechnical Institute, AN TadzhSSR (Fiziko-tekhnicheskii institut AN TadzhSSR).
220. Institute of Experimental Meteorology (Institut eksperimental'noy meteorologii).

227. Tashkent State University (Tashkentskiy gos universitet).
231. Scientific Research Institute of Motion Pictures and Photography (NI kinofotoinstitut)
295. Institute of Chemical Kinetics and Combustion, Siberian Branch AN SSSR, Novosibirsk (Institut khimicheskoy kinetiki i goreniya SOAN).
297. Institute of Chemistry, AN SSSR, Gor'kiy (Institut khimii AN SSSR).
299. Institute of Electronics, AN BSSR (Institut elektroniki AN BSSR).
303. L'vov Branch of Mathematical Physics of the Institute of Mathematics, AN UkrSSR (L'vovskiy filial matematicheskoy fiziki Instituta matematiki AN UkrSSR).
308. Moscow Institute of Railroad Transport Engineers (Moskovskiy institut inzhenerov zheleznodorozhnogo transporta).
317. Saratov Polytechnic Institute (Saratovskiy politekhnicheskiy institut).
326. Institute of Radioelectronics, AN SSSR (Institut radioelektroniki AN SSSR).
327. Novosibirsk Electrotechnical Institute (Novosibirskiy elektrotekhnicheskiy institut).
427. Physics Power Institute, AN LatSSR (Fiziko-energeticheskiy institut AN LatSSR).
428. Riga Medical Institute (Rizhskiy meditsinskiy institut).
429. Scientific Research Institute of Labor Hygiene and Occupational Diseases, AMN SSSR, Moscow (NII gigiyeny truda i profzabolevaniy AMN SSSR).
430. Minsk Radio Engineering Institute (Minskiy radiotekhnicheskiy institut).
431. Institute of Applied Mechanics AN SSSR, Moscow (Institut prikladnoy mekhaniki AN SSSR).
432. Kirovograd State Pedagogical Institute im Pushkin (Kirovogradskiy gos pedagogicheskiy institut im Pushkina).
433. Vilnius Civil Engineering Institute (Vil'nyusskiy inzhenerno-stroitel'skiy institut).

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KOSOLOBOV V N	30	KUPRENYUK V I	8	LEONTOVICH A M	MATEYEVA F I	57
KOSOLOV V N	29	KUPRIYANOV S YE	10	LEONTOVICH A M	MATSVEYKO A A	28
KOSTIN V N	16	KURNOSOV V D	28	LEONTOVICH A M	MATVIYCHUK A S	36
KOSTKO O K	32,61	KUROV V YU	54	LEONTOVICH A M	MAURING K	48
KOSTYSHIN M T	50	KUSHIN V V	43	LEONTOVICH A M	MAYKO A G	18
KOTLYACHKOV M I	34	KUTAKHOV V P	18	LEONTOVICH A M	MAYDOROV S A	60
KOVALENKO V F	52	KUZ'MIN G P	21	LEONTOVICH A M	MAZINICHENKO A F	9
KOVALENKO V S	54	KUZ'MIN M V	26	LEONTOVICH A M	MEDVID' A P	51
KOVALEV A A	1,19	KUZNETSOV A I	18	LEONTOVICH A M	MELIKSETYAN T E	24
KOVALEVSKIY V I	36	KUZNETSOV S P	48	LEONTOVICH A M	MELTSCHUK M V	6
KOVSH I B	13	KUZNETSOV V A	53	LEONTOVICH A M	MEL'NIKOVA S V	44
KOZLENKOV V P	55	KUZNETSOV V V	34	LEONTOVICH A M	MEL'NIKOVA S V	19
KOZLOV D N	33,47	KUZYAKOV B A	9	LEONTOVICH A M	MERRUL'YEV YU A	57
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61	MERZLYAKOV N S	MEMCHINOV I V	55	PANOV O L	30	POPELA B	45
54	METEVA S M	NERSIYAN S TS	20	PAN'SHIN I A	51	POPOV A A	35
25	MIKHAILEVICH V G	NESIC D	30	PAPAZYAN T A	24	POPOV A I	7
49	MIKHAYLIN V V	NESTERENKO M T	60	PAPYRIN A N	41, 60	POPOV N I	20
50, 51, 52, 53	MIKHAYLOVA G N	NESTEROV B A	55	PARITSKIY L G	38	POPOV V G	46, 49
51	MIKHAYLOVA G V	NESTEROV Z V	30	PARKHOMENKO YU N	17	POPOV V K	33
19	MILINKEVICH A V	NEVSKIY L B	45	PASHININ P P	56	POPOV YE G	54
44	MILONSKIY N D	NEVZOROV A A	55	PASTERNAK L B	26	POPOV YU M	13, 17, 27, 28, 49
50, 52, 53	MILYAYEV V A	NIKITCHENKO V M	6	PATURYAN S V	25	POPOV YU V	29, 30
50	MIN'KO V I	NIKITENKO A I	57	PAVLOV A I	50	POPOVA L L	44
37, 38, 48	MISHIN V I	NIKITIN V V	2, 35	PAVLOV V M	17	PORINOV YE L	3
61	MITROFANOV A A	NIKOLAYCHIK A V	34	PAVLOVSKAYA N G	17	PORISEL L M	38
19	MIISA V M	NIKOLAYEV V D	23	PAVLYUK A A	2	POTAPOV V T	29
56	MIZIN V M	NIKOLAYEV V A	50	PAZDZERSKIY V A	56	POVROZIN A I	43, 45
25	MKRICHYAN A R	NIZAMETDINOV M M	54	PCHELKIN V YU	30	POZHAR V V	6
7	MOGIL'NITSKIY B S	NOVAK I I	42	PECHERSKIY YU YA	21	POZHIDAYEV V N	32
28	MOKHOREVA S I	NOVIKOV I K	47	PEKLENKOV V D	47	PREDEIN A L	41
13, 17	MOLCHANOV A G	NOVIKOV M A	48	PELEKHATYY V M	31	PRILEZHAYEV D S	5
2	MOLOCHEV V I	NOVORRANTSEV I V	10	PEREVOZCHIKOV N F	11	PRISHIVALKO A P	32
47	MONCHINSKIY V A	NOVOKRESHCHENOV V K	1	PESCHEL C	40, 56	PRIVALOV V YE	45, 60
27, 28, 35	MOROZOV V N	NOZDRIN V V	51	PESTOV E G	45	PROKHOROV A M	21, 29, 31
24	MOROZOVA YE A			PETROV G D	46		52, 56
51	MOSKALENKO S A			PETROV N S	14	PROKHOROV K A	52
6, 10, 28	MOSTOVNIKOV V A			PETROV V I	15	PROKOPENKO V T	20, 46
1	MOZHAROVSKIY A M			PETROVA N N	15	PROKUDIN V S	5
48	MOZOL' P YE			PEVGOV V G	43	PROTASOV YU S	16
29	MUCHIYEV S G	OBRAZTSOV G V	5	PIKHTIN A N	9, 10, 12	PROTSENKO YE D	7, 43
44	MUCHNIK G F	OCHKIN V N	10	PIKULEV A T	28	PUDKOV S D	53
7	MULLER YA N	OKHRIMENKO B A	48	PIKULIK L G	6	PURETSKIY A A	37, 38
47	MURATOV V R	OKSMAN YA A	51, 54	PILINYI A	42	PUSHNYY B V	15, 16
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38	MURUGOV V M	OLEYNIK YU M	38	PIMENOV V P	12	PYN'KO V G	36
49	MURZIN V N	OLKOVNIKOV B F	40	PINCHUK V P	34		
4	MUSZYNSKI Z	OPASOV V P	44	PINCHUK V I	9		
33	MYAKIN G V	ORDENKO E I	4, 8	PINCHUKOV V I	43		
		ORLOV V K	40, 56	PISKARSKAS A	22	RABINOVICH E M	40
		ORZEGONSKI H	20	PISKARSKAS A S	39	RADCHENKO V V	25
		OSIKO V V	37	PIS'MENNY S V	17	RAKHIMOV A T	17
		OSIPOV A I	39	PIS'MENNY V D	54	RASDOBARIN G T	10
49	NAGIBAROV V R	OSTAPCHENKO YE P	55	PITERKIN B D	39	RASPOPIN A M	47
60	NAGIBINA I M	OVCHINNIKOV N I	41, 54	PLYASHKEVICH L N	17	RASSOKHIN I T	15
36	NAKHODKIN N G	OVCHINNIKOV V M	29	PODGAYETSKIY V M	51	RAYKHMAN B A	48
4	NAKWASKI W	OVILKO O G	51	PODPALYY YE A	32	RAZHEV A M	13
10	NAPARTOVICH A P	OZOLS A O		POGODAYEV V A	1	RAZVIN YU V	1, 19
2	NARZULLAYEV K N			POKORA L	36	REBANE I	2
58	NASTOYASHCHIY A F			POLIKANIN A M	20, 52	RESHETNYAK S A	11
25	NASYROV U			POLIVANOV YU N	49	REYND V V	31
10	NAUMENOV P A			POLUEKTOV I A	59	RITUS A I	20, 29
45	NAZARENKO M M	PADUCH M	1	POLYANICHEV A N	3	ROJIONOV N R	12
43	MEDAVNIY A P	PAL'YANOV P A	31	PONDHAREV YA G		ROGOZHIN A V	11
27	MEFED'YEV L A	PANCHENKO V YA	14, 37				
		PAN'KIN V G	30				



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RUDNITSKIY YU P	5	SERDYUKOV V I	21	SIRAZIYEV A I	27	STEPANOV S A	41
RUDOV YU K	30	SEREBRYAKOV V A	5	SISAKYAN YE V	21	STEPANOV S I	33
RUKMAN G I	39	SERGEYEV A B	40	SKACHKOV YU F	7	STEPANOV V M	47
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RYCHKOVA YE R	57	SEVAST'YANOV B K	26	SKOROBOGATOV G A	38	STOYANOV A K	35
RYKALIN N N	54	SHAKHNAZARYAN N V	25	SKREBKOV O V	13	STOYKA I M	19
RYVKIN S M	38	SHALAGIN A M	38	SKRINSKIY A N	35	STRIZHEVSKIY V L	22, 23, 24
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		SHARLAY S F	41	SLIVKOV I N	50	SUKHODOL'SKIY A T	20
SADOWSKI M	46	SHASHKIN V V	30	SMIL'GYAVICHYUS V	43	SUKHOV YE G	3
SAFIULINA S S	28	SHCHEGLOV V A	12	SMIRNOV A A	27	SURAN V V	47
SALASHCHENKO N N	55	SHCHEGLOV V B	11	SMIRNOV B M	12	SURKOV V I	45
SAMOKHINA M A	24	SHCHELEV M YA	59	SMIRNOV G I	42	SURSKIY O K	17
SAMOYLOV L N	40	SHCHELOKOV A N	16	SMIRNOV I V	5	SUSHKO V G	22
SANINA A M	19	SHCHERBAKOV I A	20	SMIRNOV R V	5	SUS'KOV S YU	57
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SAPRYKIN E G	42	SHELOPUT D V	52	SMIRNOV YU G	37	SVENITSKAYA I N	5
SARKISYAN S M	24	SHELOPUT T A	52	SMIRNOVA Z A	54	SVETTSOV V V	55
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SAVEL'YEV I I	45	SHERMET'YEV YU N	38	SOKOLOV A A	34		
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SAVUSHKIN A F	42	SHEYNDLIN A YE	12	SOLODOV A M	21, 44	TAIZHIRAYEV F M	16
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SAYAKHOV P SH	20	SHIGORIN V I	21	SOLOMAKHA D A	40	TALASHEV A A	33
SAZONOV V N	26, 49	SHIKANOV A S	59	SOLOMONOV V I	11	TALENSKIY O N	2
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SELEZNEVA L A	11	SHITOVA E V	52	SOROKIN YU M	34	TAPARROV V V	41
SELIVANOVA L F	16	SHKVARINA N S	5	SOSKIN M S	34	TARAN M D	12
SEMAK D G	36	SHMAONOV T A	33	SOSNIN V P	29	TARANENKO V F	15
SEMCHISHEN V A	48	SHOKHUIZHAYEV N	4	STARINIS A YU	22	TARASOV M D	17
SEMENENKO A I	46	SHPAK I V	17	STAFIYEV V I	3	TATAPSKIY V A	5
SEMENENKO L V	41, 46	SHPAK M T	19, 35, 39	STANENOV K V	54	TATARSKIY V I	34
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TIKHONOV YE A	6	VASIL'YEV B I	10	YAROSHENKO O I	ZOLIN V F	24
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TIMUSHEV A G	35	VASIL'YEV V M	13	YASHUROV I V	ZON B A	56
TOROPOV A K	40	VAS'KOVA V I	33	YASNEVA I A	ZUROV B V	52, 53
TREGUB D P	29	VAYTSEL' V I	36	YAS'KOV A D	ZUSMAN L D	27
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TRINCHUK B F	5	VENKIN G V	22	YEGOROV B V	ZUYKOV I YE	14
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TROM'KO V D	27	VEREYKIN V A	39	YEGOROV V V		
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TRUSOV V P	12	VLASOV A N	39	YEYTEYEV G V		
TSEBULYA G G	50	VLASOV N G	36	YEVTIKHIEV N N		
TSEKHOMSKIY V A	35	VLASOV V I	36	YEVTYUNIN A I		
TSIDLUKO I M	3	VODOTYKA G S	6	YUDIN I I		
TSIKIN B G	24	VOKHMIN P A	11	YUZAPAVICHYUS A S		
TSITROVSKIY V V	19	VOLCHENOK V I	10	YURCHEV V V		
TSUKERMAN V A	17	VOLKOV L A	52	YURCHUK E F		
TSVETAYEV S K	54	VOLKOV N B	47			
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TUNIMANOVA I V	35	VOLODIN YE B	30	ZAKHAROV V M		61
TURYANITS A I D	19	VOROB'YEV P A	56	ZAKHAROVA YE I		60
TUZOV V G	48	VOROB'YEV V S	12	ZALETAYEV S P		34
TYUSHKEVICH B N	1, 19	VOROB'YEV V V	42	ZAMYATINA N A		36
		VORON'KO YU K	30	ZANADVOROV N P		5
		VORONTSOV V I	2	ZAPESCHNYI I P		47
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UGNIEWSKI S	46	VOYTOVICH A P	13, 17	ZASKAL'KO O P		24
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UMANSKIY S YA	37			ZBOROVSKIY A A		32
URBANIYAK A	46			ZEMLYANOV A A		32
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