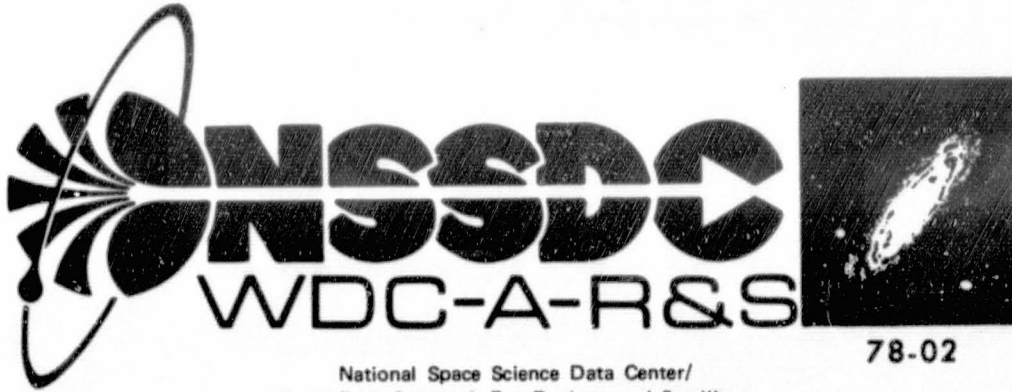


NASA TM-79398
B29978



National Space Science Data Center/
World Data Center A For Rockets and Satellites

78-02

(NASA-TM-79398) LAUNCH SUMMARY FOR 1973 -
1977 (NASA) 113 p HC A06/MF A01 CSCI 22A

N78-30158

Unclas
G3/15 29843

Launch Summary for 1973-77



May 1978

NSSDC/WDC-A-R&S 78-02

Launch Summary

for

1973-77

Robert W. Vostreys

May 1978

National Space Science Data Center
National Aeronautics and Space Administration
Goddard Space Flight Center
Greenbelt, Maryland 20771

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INTRODUCTION

Purpose

World Data Center A for Rockets and Satellites (WDC-A-R&S) collects and exchanges reports of sounding rocket launches; reports of satellite and space probe launchings; descriptive information on spacecraft experiments; scientific reports on results of experiments that receive a limited distribution; data supporting conclusions when not included in the published reports; and precise positional observations, orbital elements, and ephemerides that are of great scientific interest and value. Original (raw) or calibrated (reduced or analyzed) data are not normally deposited in the subcenters for rockets and satellites. Data related to rocket and satellite launchings are summarized in the *Launch Summary*. This report replaces the annual World Data Center A Rockets and Satellites Catalogue of Data, which was last published in 1975.

This document is in accordance with international agreements concerning international exchange of rocket and satellite data adopted by the Committee on Space Research (COSPAR) in May 1962 and published in COSPAR Information Bulletin No. 9, Part I, July 1962. The COSPAR Guide to Rocket and Satellite Information and Data Exchange was incorporated in full by the Comité International de Geophysique (CIG) into the overall Guide to International Data Exchange through the World Data Centers for the Period 1960-Onwards (published November 1963). These agreements were modified to include recommendations for improving the exchange of information and data, and a revised COSPAR Guide to Rocket and Satellite Information and Data Exchange was adopted by COSPAR in May 1972 and published in COSPAR Transactions No. 8, Part I, December 1972.

The current plans for continued international exchange of solar-terrestrial data through the WDC's were set forth in the STP NOTES No. 6 and incorporated with slight modifications in the Third Consolidated Guide to International Data Exchange through the World Data Centres, published in December 1973 by the International Council of Scientific Unions (ICSU) panel on World Data Centers.

NSSDC Facilities and Services

The National Space Science Data Center (NSSDC) provides facilities for reproduction of data and for onsite data use. Resident and visiting researchers are invited to study data while at the Data Center. The Data Center staff will assist users with additional data searches and with the use of equipment. Advance notice of such a visit enables the staff to provide better services to the data user. In addition to rocket information and satellite data, the Data Center maintains some supporting information and other supporting data that may be related to the needs of researchers.

The services provided by NSSDC are available to any individual or organization resident in the United States and to researchers outside the United States through WDC-A-R&S. Normally a charge is made for the requested data to cover the cost of reproduction and the processing of the request. The researcher will be notified of the charge, and payment must be received prior to processing the request. However, as resources permit, the Director of NSSDC/WDC-A-R&S may waive the charge for modest amounts of data when they are to be used for scientific studies or for specific educational purposes and when they are requested by an individual affiliated with: (1) NASA installations, NASA contractors, or NASA grantees; (2) other U.S. Government agencies, their contractors, or their grantees; (3) universities or colleges; (4) state or local governments; or (5) nonprofit organizations.

The Data Center's address for requests is:

National Space Science Data Center
Code 601.4
Goddard Space Flight Center
Greenbelt, Maryland 20771
[Telephone: (301) 982-6695]

Researchers who reside outside the U.S. should direct requests for data to:

World Data Center A for Rockets and Satellites
Code 601
Goddard Space Flight Center
Greenbelt, Maryland 20771
U.S.A.
[Telephone: (301) 982-6695]

Organization

This issue of the *Launch Summary* is a 5-year cumulative summary of launchings identified by NSSDC/WDC-A-R&S from launching reports received for the period January 1, 1973, through December 31, 1977. There are two major sections to this edition: Sounding Rockets, and Artificial Earth Satellites and Space Probes.

The Sounding Rockets section contains a summary listing of sounding rocket launchings and a listing of the experimenters associated with the launchings and their addresses. There is also an index of launch sites and two tables giving the meanings and the codes used in the launch listing for the Experiment Discipline and Instrument categories. A sample rocket launching report form is also included. The Artificial Earth Satellites and Space Probes section includes a summary listing of satellite and space probe launchings, and a sample satellite or space probe launching report form. (The satellite and space probe launch listing, as well as the sounding rocket launch listing and the launch site index in the Sounding Rocket

section, were all generated from the NSSDC information system.) There are also two appendixes to this document. Appendix 1 is a description of the World Data Centers, including functions and responsibilities. Appendix 2 gives the addresses of the WDC-A Coordination Office and seven subcenters.

NSSDC/WDC-A-R&S would welcome comments regarding errors in this report. Recommendations directed to the appropriate address in reference to the overall contents and organization of this *Launch Summary* would also be appreciated.

SOUNDING ROCKETS

Launch Listing

The listing of sounding rocket launchings was generated using the NSSDC Rocket File. This file is compiled from reports of rocket launchings, national reports to COSPAR, and scientific publications. The Rocket File is used for such listings because it facilitates easy sorting, selecting, updating, and report generation.

The listing is a summary of launchings identified between January 1, 1973, and December 31, 1977. Information extracted from the file for this time-ordered printout are: date and time of launch (universal time); the agency rocket identification; the sponsoring country or countries (sponsored in this context means that the country provided scientists (experimenters), support personnel (such as launch crews), equipment (rocket vehicles, launch facilities), or funds for the launch); the launch site; experiment disciplines; instruments used for the experiment; experimenters or institutions involved in the launching; and the peak altitude achieved by the rocket.

When the launch site is on board a ship, the coordinates of the ship location at time of launch are included, if known. Table 1 is a list of the launch sites identified to date. When launch sites have changed names or are in close proximity to one another, usually only one name is used.

The scientific disciplines with which the experiment are concerned are coded, as well as can be determined, from the information provided in the launch report. The disciplines are divided into 10 general categories, each of which may have up to 13 subcategories, as can be seen in Table 2.

When possible, the type of instrumentation used on a particular rocket flight was selected from a standard coded list of instruments. In preparing this list, the instrument energy converter or sensor function was emphasized, and the collimating, concentrating, selecting, comparing, and amplification characteristics were largely ignored. Table 3 shows the codes in use.

Some rocket launches are not reported in this *Launch Summary* because the launching agencies did not provide the necessary information to WDC-A-R&S. Because the value of this publication increases with the number of flights reported, all agencies with knowledge of rocket launches are encouraged to announce launchings to WDC-A-R&S at the address given earlier, preferably by means of the form shown in Figure 1. Copies of this form may be obtained from WDC-A-R&S.

Table 1. List of Launch Sites

SITE NAME	SITE LOCATION	GEOGRAPHIC		GEOMAGNETIC		ADD FOR UNIVERSAL TIME
		LAT	E LONG	LAT	E LONG	
ABERPORTH	WALES	52.09	355.67	55.64	79.76	-1.0 HR.
AKITA	JAPAN	39.57	140.07	29.47	205.45	-9.0 HR.
AKITA-KEN	SEE AKITA					
AKITA-SHI	SEE AKITA					
ALASKA ROCKET RANGE	SEE FAIRBANKS					
ANDENES	SEE ANDOYA					
ANDOYA	NORWAY	69.30	16.02	67.34	113.94	-1.0 HR.
ANTIGUA	WEST INDIES	17.15	298.22	28.55	7.85	+4.0 HR.
ARECIBO	PUERTO RICO	18.50	293.17	29.99	2.38	+4.0 HR.
ARENOSILLO	SEE EL ARENOSILLO					
ASCENSION ISLAND	EQUATORIAL ATLANTIC	-7.98	345.58	-1.24	53.83	+0.0 HR.
ATLANTIC MISSILE RANGE	SEE CAPE CANAVERAL					
BARBADOS	WINDWARD ISLANDS	13.05	300.50	24.38	10.17	+4.0 HR.
BARKING SANDS	SEE KAUAI					
BARREIRA DO INFERNO	SEE NATAL					
BARROW	USA/ALASKA	71.33	203.22	68.54	241.11	+10.0 HR.
BARTER ISLAND	USA/ALASKA	70.12	216.37	69.97	253.17	+10.0 HR.
BERMUDA	N ATLANTIC	32.20	295.55	43.66	5.32	+4.0 HR.
CAMP TORTUGUERA	SEE ARECIBO					
CAMP TUTO	SEE THULE/CAMP TUTO					
CAPE CANAVERAL	USA/FLORIDA	28.45	279.47	39.63	346.72	+5.0 HR.
CAPE KARIKARI	NEW ZEALAND	-34.00	173.50	-38.63	250.28	-12.0 HR.
CAPE KENNEDY	SEE CAPE CANAVERAL					
CAPE PARRY	CANADA/NORTHWEST TERRITORIES	70.17	235.28	73.72	269.94	+8.0 HR.
CARNARVON	AUSTRALIA/WESTERN AUSTRALIA	-24.50	113.40	-35.99	182.70	-8.0 HR.
CASSINO	BRAZIL	-32.20	307.83	-21.14	15.23	+3.0 HR.
CELPA	SEE CHAMICAL					
CELPA ATLANTICO	SEE MAR CHIQUITA					
CENTRE SPATIAL GUYANAIS	SEE KOUROU					
CHAMICAL	ARGENTINA	-30.33	293.68	-18.84	2.45	+4.0 HR.
CHILCA	PERU	-12.50	283.20	-1.11	352.19	+5.0 HR.
CHURCHILL	SEE FORT CHURCHILL					
COLOMB BECHAR	SEE HAMMAGUIR					
CORONIE	SURINAM (DUTCH GUIANA)	5.85	303.70	17.06	13.21	+4.0 HR.
CROATAN (SHIP)	VARIOUS OCEANS AND SEAS					
DEFIANCE (SHIP)	VARIOUS OCEANS AND SEAS					
DUMONT D'URVILLE	ANTARCTICA	-64.67	140.02	-73.80	228.07	-9.0 HR.
EAST QUODDY	CANADA/NEWFOUNDLAND	44.90	296.58	56.33	7.16	+4.0 HR.
EASTERN TEST RANGE	SEE CAPE CANAVERAL					
EGLIN AIR FORCE BASE	USA/FLORIDA	30.38	273.30	41.26	339.58	+6.0 HR.
EL ARENOSILLO	SPAIN	37.10	353.27	41.69	70.98	-1.0 HR.
ESRANGE	SEE KIRUNA					
FAIRBANKS	USA/ALASKA	65.00	212.40	64.79	256.58	+10.0 HR.
FORT CHURCHILL	CANADA/MANITOBA	58.73	266.18	68.67	323.20	+6.0 HR.
FORT GREELY	USA/ALASKA	64.00	214.88	64.38	259.86	+10.0 HR.
FORT SHERMAN	PANAMA	9.33	280.02	20.61	348.42	+5.0 HR.
FORT WAINWRIGHT	SEE FAIRBANKS					
FOX MAIN	CANADA/NORTHWEST TERRITORIES	68.77	278.78	80.23	353.11	+5.0 HR.
G.USHAKOV (SHIP)	VARIOUS OCEANS AND SEAS					
GEOPOLE STATION	SEE THULE/CAMP TUTO					
GILLAM	CANADA/MANITOBA	55.92	264.00	65.67	321.87	+6.0 HR.
GREEN RIVER	USA/UTAH	38.93	249.94	47.11	311.34	+7.0 HR.
GUAM	N PACIFIC	13.50	144.67	3.97	212.89	+10.0 HR.
HALL BEACH	SEE FOX MAIN					
HAMMAGUIR	ALGERIA	30.90	356.92	34.91	72.92	+0.0 HR.
HEISS ISLAND	FRANZ JOSEF LAND	80.62	58.05	71.31	156.06	-5.0 HR.
HOLLOMAN AFB	SEE WHITE SANDS					
HUELVA	SEE EL ARENOSILLO					
ILE DU LEVANT	FRANCE	43.05	06.47	44.87	86.48	+0.0 HR.
JOHNSTON ATOLL	SEE JOHNSTON ISLAND					
JOHNSTON ISLAND	EQUATORIAL PACIFIC	16.75	190.48	14.33	256.34	+11.0 HR.
KAGOSHIMA	JAPAN	31.25	131.07	20.38	198.24	-9.0 HR.
KAGOSHIMA SPACE CENTER	SEE KAGOSHIMA					
KAPUSTIN YAR	U.S.S.R.	48.52	45.80	42.75	125.04	-4.0 HR.
KARACHI	SEE SONMIANI					
KARIKARI	SEE CAPE KARIKARI					
KARYSTOS	GREECE	38.02	24.42	36.46	102.12	-2.0 HR.
KAUAI	USA/HAWAIIAN ISLANDS	22.07	200.23	21.50	264.70	+11.0 HR.
KERGUELEN ISLAND	INDIAN OCEAN	-48.83	70.00	-56.79	127.95	-5.0 HR.
KERUEENAW	USA/MICHIGAN	47.43	272.28	58.14	335.71	+6.0 HR.
KHEYSA ISLAND	SEE HEISS ISLAND					
KIRUNA	SWEDEN	67.90	21.10	65.3	115.8	-1.0 HR.
KOROLEV (SHIP)	VARIOUS OCEANS AND SEAS					
KORONI BEACH	GREECE	36.77	21.95	35.73	99.38	-2.0 HR.
KOUROU	FRENCH GUIANA	5.20	307.27	16.04	16.60	+4.0 HR.
KRENKEL OBSERVATORY	SEE HEISS ISLAND					
KRENKELB (SHIP)	VARIOUS OCEANS AND SEAS					
KRONOGARD	SWEDEN	66.22	19.78	69.95	113.95	-1.0 HR.
KWAJALEIN	MARSHALL ISLANDS	8.73	167.73	2.33	235.80	-12.0 HR.
LANDES TEST CENTER	SEE TEST CENTER OF LANDES					
LAPAN SPACE CENTER	INDONESIA	-6.27	106.87	-17.74	175.69	-7.0 HR.
LEBA	POLAND	54.47	17.33	53.60	102.24	-1.0 HR.
LENINSK	SEE TYURATAM					
MAR CHIQUITA	ARGENTINA	-37.75	302.58	-26.48	10.21	+4.0 HR.
MAR DEL PLATA	SEE MAR CHIQUITA					
MARAMBIO	SEE VICECOMEDORO MARAMBIO					
MCHURDO	ANTARCTICA	-77.50	165.00	-79.13	291.78	-11.0 HR.
MICHIKAWA	SEE AKITA					
MOLODEZHNYAYA	ANTARCTICA	-67.67	45.87	-69.76	85.36	-3.0 HR.
NATAL	BRAZIL	-5.87	324.62	3.87	33.70	+3.0 HR.
NORTON SOUND (SHIP)	VARIOUS OCEANS AND SEAS					
NOUADHIBOU	MAURITANIA	20.91	342.99	27.67	56.21	+0.0 HR.
NOYKOV (SHIP)	VARIOUS OCEANS AND SEAS					
OBACHI	JAPAN	40.70	141.73	30.60	206.75	-9.0 HR.
OSTROV KHEYSA	SEE HEISS ISLAND					
PACIFIC MISSILE RANGE	SEE POINT ARGUELLO					
PERDASDEFUGU	SEE SARDINIA					
PLESETSK	U.S.S.R.	65.70	40.35	59.99	129.08	-4.0 HR.

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Table 1. List of Launch Sites (concluded)

SITE NAME	SITE LOCATION	GEOGRAPHIC		GEOMAGNETIC		ADD FOR UNIVERSAL TIME
		LAT	E LONG	LAT	E LONG	
PLYMOUTH ROCK (SHIP)	VARIOUS OCEANS AND SEAS					
POINT ARGUELLO	USA/CALIFORNIA	34.62	239.42	41.20	301.03	+8.0 HR.
POINT BARROW	SEE BARROW					
POINT MUGU	USA/CALIFORNIA	34.12	240.88	40.96	302.73	+8.0 HR.
POKER FLAT	SEE FAIRBANKS					
PORT-AUX-FRANCAIS	SEE KERGUELEN ISLAND					
PRILIV (SHIP)	VARIOUS OCEANS AND SEAS					
PRIMROSE LAKE	CANADA/SASKATCHEWAN	54.75	249.95	62.50	304.83	+7.0 HR.
PROFESSOR VIZE (SHIP)	VARIOUS OCEANS AND SEAS					
PUNTA LOBOS	PERU	-12.30	283.52	-0.89	352.69	+5.0 HR.
REGGANE	ALGERIA	26.72	0.17	30.26	75.13	+0.0 HR.
RESOLUTE BAY	CANADA/NORTHWEST TERRITORIES	74.70	265.10	82.99	289.27	+6.0 HR.
RUSHMORE (SHIP)	VARIOUS OCEANS AND SEAS					
SALTO DI QUIRRA	SEE SARDINIA					
SAN MARCO PLATFORM	INDIAN OCEAN	-2.94	40.20	-6.64	108.30	-3.0 HR.
SAN MARCO RANGE	SEE SAN MARCO PLATFORM					
SAN NICOLAS ISLAND	SEE POINT MUGU					
SARDINIA	SARDINIA	39.56	9.24	40.95	87.95	-1.0 HR.
SHIP A	EQUATORIAL PACIFIC	0.18	198.58	-0.31	267.59	+11.0 HR.
SHIP A.I. NOYEKOV	SEE NOYEKOV (SHIP)					
SHIP B	N ATLANTIC	62.06	296.08	73.49	8.39	+4.0 HR.
SHIP C	CANADA/NORTHWEST TERRITORIES	74.57	265.52	82.97	290.67	+6.0 HR.
SHIP D	N ATLANTIC	54.00	306.67	64.91	21.98	+4.0 HR.
SHIP E	N ATLANTIC	58.43	304.94	69.42	21.03	+4.0 HR.
SHIP F	N ATLANTIC	49.00	311.60	59.54	27.09	+3.0 HR.
SHIP G	N ATLANTIC	57.80	313.30	68.05	32.74	+3.0 HR.
SHIP H	N ATLANTIC	65.60	302.00	76.72	20.06	+4.0 HR.
SHIRSHOV (SHIP)	VARIOUS OCEANS AND SEAS					
SHOKALSKI (SHIP)	VARIOUS OCEANS AND SEAS					
SIPLE STATION	ANTARCTICA	75.92	276.09	85.83	300.58	-6.0 HR.
SONDRE STROMFJORD	GREENLAND	67.02	309.60	77.40	34.82	+3.0 HR.
SONMIANI	PAKISTAN	25.20	66.75	16.74	138.75	-5.0 HR.
SOUTH UIST	UNITED KINGDOM	57.37	352.67	61.00	80.17	-1.0 HR.
SRIHARIKOTA	INDIA	13.78	80.25	3.84	150.15	-5.5 HR.
SYOWA BASE	ANTARCTICA	-69.00	39.60	-69.66	77.69	-3.0 HR.
SYOWA BAY	SEE SYOWA BASE					
TARTAGUL	ARGENTINA	-22.77	296.18	-11.31	4.87	+4.0 HR.
TERLS	SEE THUMBA					
TEST CENTER OF LANDES	FRANCE	44.27	3.61	46.61	84.11	-1.0 HR.
THULE/CAMP TUTO	GREENLAND	76.55	291.2	88.05	1.37	+4.0 HR.
THUMBA	INDIA	8.33	76.87	-1.22	146.27	-5.5 HR.
TONOPAH TEST RANGE	USA/NEVADA	38.00	243.50	45.19	304.48	+8.0 HR.
TRIVANDRUM	SEE THUMBA					
TYURATAM	U.S.S.R.	45.63	63.27	37.35	139.39	-5.0 HR.
TYURATAM-BAIKONUR	SEE TYURATAM					
UCHINDURA	SEE KAGOSHIMA					
USS PLYMOUTH ROCK	SEE PLYMOUTH ROCK (SHIP)					
VANDENBURG AFB	SEE POINT ARGUELLO					
VEGA BAJA	SEE ARECIBO					
VICECOMEDORO MARAMBIO	ANTARCTICA	-64.27	303.07	-52.95	8.67	-4.0 HR.
VIZE (SHIP)	SEE PROFESSOR VIZE (SHIP)					
VOLGOGRAD	U.S.S.R.	48.68	44.35	43.14	123.82	-4.0 HR.
VOLNA (SHIP)	VARIOUS OCEANS AND SEAS					
WALKER CAY	BAHAMA ISLANDS	27.00	282.00	38.34	349.76	+5.0 HR.
WALLOPS FLIGHT CENTER	SEE WALLOPS ISLAND					
WALLOPS ISLAND	USA/VIRGINIA	37.83	284.52	49.31	352.12	+5.0 HR.
WEST GEIRINISH	SEE SOUTH UIST					
WESTERN TEST RANGE	SEE POINT ARGUELLO					
WHITE SANDS	USA/NEW MEXICO	32.40	253.47	41.19	316.88	+7.0 HR.
WOODMERA	AUSTRALIA/SOUTHERN AUSTRALIA	-31.97	136.52	-42.18	209.55	-9.5 HR.
YUMA	USA/ARIZONA	32.87	245.68	40.51	308.23	+7.0 HR.

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Table 2. Experiment Discipline Codes

- | | |
|---|---|
| <p>1. Aurora and Airglow
 1A atmospheric radiations
 1B auroral emissions
 1C airglow emissions
 1D airglow composition
 1X subdiscipline unknown</p> <p>2. Atmospheric Physics
 2A winds and diffusion
 2B pressure
 2C temperature
 2D albedo
 2E planetary radiations
 2F neutral density
 2G neutral composition
 2H electromagnetic waves
 2I acoustics
 2J meteorological applications
 2K noctilucent clouds
 2L absorption/scattering
 2X subdiscipline unknown</p> <p>3. Ionosphere
 3A wave propagation
 3B currents and fields
 3C ion/electron density
 3D ion composition
 3E ion/electron temperature
 3F ion production/recombination
 3G ionospheric motions
 3X subdiscipline unknown</p> <p>4. Energetic Particles
 4A galactic or solar cosmic rays
 4B precipitating particles
 4C trapped radiation
 4X subdiscipline unknown</p> <p>5. Magnetic and Electric Fields
 5A electric fields
 5B magnetic fields
 5C other
 5X subdiscipline unknown</p> <p>6. Solar Physics
 6A radio (> 1 mm)
 6B infrared (0.8-1000 micrometers)
 6C visible (3000-8000 Å)
 6D ultraviolet (2000-3000 Å)
 6E extreme UV (100-2000 Å)
 6F X rays (0.001-100 Å)
 6G gamma rays (< 0.001 Å)
 6X subdiscipline unknown</p> <p>7. Astronomy
 7A radio (> 1 mm)
 7B infrared (0.8-1000 micrometers)
 7C visible (3000-8000 Å)
 7D ultraviolet (2000-3000 Å)
 7E extreme UV (100-2000 Å)
 7F X rays (0.001-100 Å)
 7G gamma rays (< 0.001 Å)
 7X subdiscipline unknown</p> | <p>8. Planetology
 8A micrometeorites
 8B zodiacal light or gegenschein
 8C gravity
 8D terrain photographs
 8X subdiscipline unknown</p> <p>9. Biology
 9X subdiscipline unknown</p> <p>0. Rocket/Satellite Test and Other
 0A performance
 0B communication systems
 0C experiment test/development
 0D engineering experiments
 0E other
 0X subdiscipline unknown</p> |
|---|---|

Table 3. Instrument Codes

AF	accelerometer	QK	photon spectrometer (spectrograph)
AK	air sample	QKCM	Bragg
BD	antenna	QKKQ	interferometer (grating spectrometer)
CR	camera	QKPM	optical monochromator
CRKE	image tubes (TV)	QKSF	proportional
CRQH	photography	QKUH	scintillator
CX	chaff, needles, tracked parachute	QD	Pitot tube
DC	chemical releases	RW	pressure
DCLA	ion cloud	SE	propagation
DCOM	neutral cloud	SEBZ	beacon
DCYQ	vapor	SESN	radar
		SEZA	vlf/elf emissions
GB	dust	SW	radiometer
GI	electric field meter (electrometer)	SWCH	bolometer
GY	energy deposition	SWHU	fixed frequency
GYKZ	ion chamber	SWOG	multichannel
GYPC	nuclear emulsions	SWOZ	nonscanning
HG	exobiology (extraterrestrial life)	SWQI	photometer
HGCF	biological sample	SWQJ	photomultiplier
HP	falling sphere	SWRO	polarimeter
JE	gravity	SWUE	scanning
JH	grenade	SWUV	single frequency
KD	hygrometer	SWWY	swept frequency
LD	ion trap (probe or retarding potential analyzer)	UT	single element counter
LDDI	cold cathode gage	UTCW	Cerenkov
LDHQ	Faraday cup (planar trap)	UTCZ	channeltron (electron multiplier)
LDIY	capacitance probe	UTIQ	Geiger tube
LDIZ	Gerdien condenser	UTOR	neutron monitor
LDKF	impedance probe	UTPC	nuclear emulsions
LDLU	Langmuir probe	UTQJ	photomultiplier
LDTP	resonance probe	UTSF	proportional
LDVY	spherical traps	UTUH	scintillator
LDWU	suprathermal ion detector	UTVP	solid-state detector
LG	ionization gauge	XG	telescope
LGAS	alphatron	XGSD	antenna
LGBY	Bayard-Alpert	XP	thermometer
LGPH	omegatron	XPCA	bead thermistor
LGTF	redhead (magnetron)	ZZ	unknown instrument or instruments
LI	ionosondes (pulsed transmitter, receiver)		
LIHU	fixed frequency		
LIQG	multichannel		
LIWY	swept frequency		
MY	magnetometer		
MTBD	antenna		
MTHZ	fluxgate		
MTSH	proton precession		
MTUI	search coil		
MTYQ	vapor		
NP	meteorological rocketsonde		
NR	micrometeorites		
NX	other instrument or instruments		
OH	multielement counter		
OHCV	Cerenkov		
OHGZ	channeltron (electron multiplier)		
OHIQ	Geiger tube		
OHOR	neutron monitor		
OHPC	nuclear emulsions		
OHSF	proportional		
OHUH	scintillator		
OHVP	solid-state detector		
OHVU	spark chamber		
OO	ozone		
OOAC	absorption		
OOGT	emission		
OOUF	scattering (backscatter or forward scatter)		
OOZU	chemiluminescence		
PX	particle spectrometer (mass spectrometer)		
PXDT	conductance/resistance		
PXFV	double focus		
PXGS	electrostatic analyzer		
PXMR	magnetic		
PXSK	quadrupole radio frequency (massfilter)		
PXST	radio frequency (Bennett tube)		
PXYV	velocity filter (time of flight)		
PXZU	chemiluminescence		

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OF POOR QUALITY

REPORT OF ROCKET LAUNCHING

WORLD DATA CENTER A
ROCKETS AND SATELLITES, CODE 601
GODDARD SPACE FLIGHT CENTER
GREENBELT, MARYLAND 20771 U.S.A.

SPONSORING (FUNDING) COUNTRY/COUNTRIES FEDERAL REPUBLIC OF GERMANY		REPORT DATE YEAR 19 <u>78</u> MONTH <u>02</u> DAY <u>07</u>
LAUNCH SITE COUNTRY NORWAY		AGENCY ROCKET IDENTIFICATION T/NL F2D
LAUNCH SITE (SHIP) NAME ANDØYA ROCKET RANGE		PROJECT NAME OR NUMBER IMS SUBSTORM
LAUNCH SITE LATITUDE <u>69°</u> <u>17'</u> <u>39"</u> <input checked="" type="checkbox"/> NORTH <input type="checkbox"/> SOUTH		ROCKET TYPE SKYLARK 12
LAUNCH SITE LONGITUDE <u>16°</u> <u>01'</u> <u>19"</u> <input checked="" type="checkbox"/> EAST <input type="checkbox"/> WEST		OTHER ROCKET IDENTIFICATION A-GRC 88
UT LAUNCH DATE AND TIME YEAR 19 <u>78</u> MONTH <u>01</u> DAY <u>30</u> HOUR <u>22</u> MINUTES <u>10</u>		
LOCAL ZONE LAUNCH TIME DAY <u>30</u> HOUR <u>23</u> MINUTES <u>10</u>		

ROCKET VEHICLE

PROJECT SCIENTIST DR K WILHELM	AFFILIATION MPAE Lindau, FRG	PERFORMANCE <input checked="" type="checkbox"/> SUCCESS <input type="checkbox"/> PARTIAL <input type="checkbox"/> FAILURE	X	PEAK ALTITUDE	
				KM 541	STATUTE MILES

EXPERIMENTS

NUMBER	EXPERIMENTER	EXPERIMENTER AFFILIATION	<input type="checkbox"/> SUCCESS <input type="checkbox"/> PARTIAL <input type="checkbox"/> FAILURE	DISCIPLINE*	INSTRUMENT OR OBSERVING TECHNIQUE*
1	DR B THEILE	TUB, FRG	<input checked="" type="checkbox"/> SUCCESS <input type="checkbox"/> PARTIAL <input type="checkbox"/> FAILURE	5B	MTHZ
2	DR G DEHMEL	TUB, FRG	<input checked="" type="checkbox"/> SUCCESS <input type="checkbox"/> PARTIAL <input type="checkbox"/> FAILURE	5B	MTUI
3	DR K WILHELM/ DR W RIEDLER	MPAE Lindau, FRG TUG, AUSTRIA	<input checked="" type="checkbox"/> SUCCESS <input type="checkbox"/> PARTIAL <input type="checkbox"/> FAILURE	4B	PXGS
4	DR W STÜDEMANN	MPAE Lindau, FRG	<input checked="" type="checkbox"/> SUCCESS <input type="checkbox"/> PARTIAL <input type="checkbox"/> FAILURE	4B	OHVP

CHECK (✓) IF REQUIRED FOR LAUNCH

- | | | |
|---|--|---|
| <input type="checkbox"/> AIRGLOW/AURORA | <input checked="" type="checkbox"/> NIGHT/DAWN | <input type="checkbox"/> STRATWARM |
| <input type="checkbox"/> ECLIPSE | <input type="checkbox"/> NOCTILUCENT CLOUD | <input type="checkbox"/> METEOR SHOWER |
| <input type="checkbox"/> DAWN/DUSK | <input type="checkbox"/> SUN/MAG QUIET | <input checked="" type="checkbox"/> OTHER: <u>Recovery phase of magnetospheric substorm</u> |
| <input type="checkbox"/> SPORADIC E | <input type="checkbox"/> ARTIFICIAL EVENT | |
| <input type="checkbox"/> SPREAD F | <input type="checkbox"/> SOLAR FLARE | |
| <input type="checkbox"/> SID, PCA, OR AZA | <input type="checkbox"/> SATELLITE OVERFLY | PREPARED BY: <u>Rolf Bjurström</u> |
| <input type="checkbox"/> MAGNETIC STORM | <input type="checkbox"/> ACTIVE SUN | AGENCY: <u>Andøya Rocket Range</u> |

*SEE REVERSE SIDE FOR CODES.

REMARKS/RESULTS

DORNIER Attitude Control System mounted in the payload.

601-43 (1/73)

Figure 1. Sample Rocket Launching Report

DATE AND TIME OF LAUNCH (UT)	AGENCY	ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
*63/04/12 1400	KPC3	001	UNITED STATES	WHITE SANDS	2D	QK SWUE	---	WALLACE, L.J.
63/10/31 1650	NASA 04	09411	FRANCE	WALLOPS ISLAND	3X	SEZA	110	UNKNOWN
*63/11/04 1510	KP03	003	UNITED STATES	WHITE SANDS	2D	QK SWUE	---	WALLACE, L.J.
64/04/07 1413	KPC3	004	UNITED STATES	WHITE SANDS	2D	QK	---	WALLACE, L.J.
64/06/19 1346	KP03	006	UNITED STATES	WHITE SANDS	2D 2G	UTQJ	---	HUNTER, D.H.
65/01/13 1549	KP03	009	UNITED STATES	WHITE SANDS	2L	QK SWUE	228	WALLACE, L.J.
65/06/23 1432	KP03	010	UNITED STATES	WHITE SANDS	6F	CRQH OHC2	156	BROADFOOT, A.L. SHEA, M.
*65/11/13 0826	KP03	008	UNITED STATES	WHITE SANDS	7D 7E	QK SWQJ	---	STUART, F.E.
*66/01/19 0439	KP03	011	UNITED STATES	WHITE SANDS	7D 7E	QK SWQJ	---	STUART, F.E.
*66/03/09 0222	KPC3	C15	UNITED STATES	WHITE SANDS	7D 7E	QK	---	MORTON, D.C.
66/08/30 1005	HAD	312	AUSTRALIA	WOOMERA	5C	SWQ1 XG	91	CARVER, J.H.
*66/12/17 0615	KP03	019	UNITED STATES	WHITE SANDS	7D 7E	QK	---	STUART, F.E.
*67/04/10 1051	SL	Q118	AUSTRALIA	WOOMERA	7F	QKSF	167	BYRNE, F.W. POUNDS, K.A.
67/05/14 0600	SL	Q406	AUSTRALIA	WOOMERA	8X	CR QK	200	POUNDS, K.A. STEWART, K.H. WILSON, R.
69/02/15 2120	P--	028K	SWEDEN	KIRUNA	3C	LDLU	153	BULLOUGH, K.
70/05/21 1015	COCKAT00	0104	UNITED KINGDOM	WOOMERA	5C	SWQ1 XG	96	CARVER, J.H.
70/10/06 1050	E101	001	FRANCE	LANDES TEST CENTER	3C 3E	LDKF LDLU LDTP	480	BEGHIN, C. BERTHELIER, J.J. BITOUN, J. HIGEL, B. PETIT, M. STEINBERG, J.L. VERNET
70/10/22 0823	E101	002	FRANCE	LANDES TEST CENTER	3C 3E	LDKF LDLU LDTP	480	BEGHIN, C. BERTHELIER, J.J. BITOUN, J. HIGEL, B. PETIT, M. STEINBERG, J.L. VERNET
70/11/12 1100	COCKAT00	0105	AUSTRALIA	WOOMERA	5C	SWQ1 XG	104	CARVER, J.H.
71/01/25 0819	NASA 14	324GE	CANADA	FORT CHURCHILL	4A	GY	---	BERTSCH, D.L. FICHEL, C.E. REAMES, D.V. PRICE, P.B., JR.
71/01/25 1512	NASA 14	432GE	CANADA	FORT CHURCHILL	4A	GY	---	BERTSCH, D.L. FICHEL, C.E. PRICE, P.B., JR. REAMES, D.V.
71/03/01 1140	KP03	032	UNITED STATES	WHITE SANDS	7D 7E	QK	---	WALLACE, L.J.
71/04/05 2353	P--	068K	SWEDEN	KIRUNA	3X	LD	134	BULLOUGH, K. GIBBONS, W.
71/05/28 0940	KP03	037	UNITED STATES	WHITE SANDS	7E	QKQO	---	MORTON, D.C.
71/07/17 0453	KP03	039	UNITED STATES	WHITE SANDS	7B	SWQ1	---	HARWIT, M.
71/11/16 1545	KP03	036	UNITED STATES	WHITE SANDS	2L	QK SWQ1	---	BROADFOOT, A.L.
71/11/22 2108	CE-C67	ESRO-C78/2	BELGIUM	KIRUNA	1B 3C 3E 4B	LD UTICZ UTIQ	140	BRYANT, D.A. GONFALONE HENRISTE
71/12/16 1957	CISASPE	VERONIQUE 61 M	FRANCE	KOUROU	3A 3C 3D 3E	UTQJ UTVP LDKF LDTP PX SEZA NP	227	SPENNER WENZEL, K.P. BEGHIN, C.
72/01/15 0900	M-100		U.S.S.R.	KOROLEV (SHIP)	2J		92	CENTRAL AEROLOGICAL OBS
72/02/11 1200	S-210	JA-012	JAPAN	(00 24N 1 60E) SYOWA BASE	3C 3D	LDLU PX	108	FUGONO, N. MIYAZAKI, S. NAGATA, T.
72/03/02 2227	ESRO-S77/1		FED REP OF GERMANY	KIRUNA	1B 4B	PXGS PXMR	237	COTIN COURTIER, G.M. KREMSER, G.
72/03/21 1335	KP03	038	FRANCE	WHITE SANDS	7F	UTICZ UTIQ UTVP QK QKSF	---	PARKS, G. SANDERSON, T.R. NOVICK, R.
72/05/17 0740	NASA 10	397GM	UNITED STATES	BARROW	2A 2B 2C 2F	JH	110	THEON, J.S. WRIGHT, D.U., JR.
72/05/17 1130	NASA 10	3958M	UNITED STATES	BARROW	2G	QO	85	HILSENATH, E.
72/05/17 1300	NASA 10	393GM	UNITED STATES	BARROW	2G	QO	127	HENDERSON, W. HILSENATH, E. HORVATH, J.J.
72/05/17 1645	NASA 10	398GM	UNITED STATES	BARROW	2A 2B 2C 2F	JH	92	THEON, J.S. WRIGHT, D.U., JR.
72/05/29 1034	COCKAT00	1014	AUSTRALIA	WOOMERA	5C	SWQ1 XG	120	CARVER, J.H.

*IDENTIFIES LAUNCHINGS THAT FAILED TO RETURN USEFUL DATA.

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OF POOR QUALITY.

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
72/07/01 2000	M-100	U.S.S.R.	SHIRSHOV (SHIP) (32 00S 65 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
72/07/05 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
72/07/05 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
72/07/05 1432	ISRO-08.079 TERLS-449	U.S.S.R.	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
72/07/06 0810	NASA 10.408G1	SPAIN UNITED STATES	EL ARENOSILLO	3C 3D	SE PX	85	AIKIN,A.C.,JR. AZCARRAGA,A. GOLDBERG,R.A. JONES,W.H. PANDURO,L.P.
72/07/06 1700	M-100	U.S.S.R.	SHIRSHOV (SHIP) (31 00S 65 00E)	2J	NP	83	CENTRAL AEROLOGICAL OBS
72/07/08 1700	M-100	U.S.S.R.	SHIRSHOV (SHIP) (40 00S 65 00E)	2J	NP	83	CENTRAL AEROLOGICAL OBS
72/07/09 1700	M-100	U.S.S.R.	SHIRSHOV (SHIP) (45 00S 65 00E)	2J	NP	84	CENTRAL AEROLOGICAL OBS
72/07/12 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
72/07/12 1430	ISRO-08.080 TERLS-451	INDIA	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
72/07/13 1400	M-100	U.S.S.R.	SHIRSHOV (SHIP) (41 00S 65 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
72/07/15 1500	M-100	U.S.S.R.	SHIRSHOV (SHIP) (30 00S 65 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
72/07/18 1920	KP03.040	UNITED STATES	WHITE SANDS	7B	SWQ1	---	HARWIT,M.
72/07/19 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
72/07/19 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	85	CENTRAL AEROLOGICAL OBS
72/07/19 1405	ISRO-08.081 TERLS-452	INDIA	THUMBA	2J	NP	89	CENTRAL AEROLOGICAL OBS
72/07/22 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	91	CENTRAL AEROLOGICAL OBS
72/07/24 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
72/07/24 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
72/07/26 1430	ISRO-08.082 TERLS-453	INDIA	THUMBA	2J	NP	89	CENTRAL AEROLOGICAL OBS
72/07/26 2000	M-100	U.S.S.R.	SHIRSHOV (SHIP) (15 00S 65 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
72/07/31 2000	M-100	U.S.S.R.	SHIRSHOV (SHIP) (01 00N 65 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
72/08/01 2000	M-100	U.S.S.R.	SHIRSHOV (SHIP) (06 00N 65 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
72/08/02 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	91	CENTRAL AEROLOGICAL OBS
72/08/02 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	94	CENTRAL AEROLOGICAL OBS
72/08/02 1444	ISRO-08.083 TERLS-454	INDIA	THUMBA	2J	NP	88	CENTRAL AEROLOGICAL OBS
72/08/02 1800	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
72/08/06 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
72/08/07 0145	S -210-JA-011	JAPAN	SYOWA BASE	1B 3C 5B	LDLU MTHZ PX QK SWQ1	126	AOYAMA,I. KANEDA,E. MIYAZAKI,S. NAGATA,T.
72/08/08 2200	M-100	U.S.S.R.	SHIRSHOV (SHIP) (09 00N 65 00E)	2J	NP	91	CENTRAL AEROLOGICAL OBS
72/08/09 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	93	CENTRAL AEROLOGICAL OBS
72/08/09 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
72/08/09 1430	ISRO-08.084 TERLS-462	INDIA	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
72/08/11 0101	S -210-JA-008	JAPAN	SYOWA BASE	3C 5B	LDLU MTHZ PX NP	127	AOYAMA,I. KOKUBUN,S. MIYAZAKI,S. NAGATA,T.
72/08/12 2000	M-100	U.S.S.R.	SHIRSHOV (SHIP) (05 00N 65 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
72/08/13 2000	M-100	U.S.S.R.	SHIRSHOV (SHIP) (09 00N 65 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
*72/08/14 1843	T 1-6097	UNITED STATES	WALLOPS ISLAND	2J	XPCA	35	SPURLING,J.F.
72/08/14 2000	M-100	U.S.S.R.	SHIRSHOV (SHIP) (13 00N 65 00E)	2J	NP	91	CENTRAL AEROLOGICAL OBS
72/08/16 0200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	92	CENTRAL AEROLOGICAL OBS
72/08/16 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
72/08/16 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
72/08/16 1430	ISRO-08.084 TERLS-464	INDIA	THUMBA	2J	NP	88	CENTRAL AEROLOGICAL OBS
72/08/18 1021	A04.004-08	UNITED STATES	WHITE SANDS	7X	ZZ	171	WALKER,R.W.
72/08/20 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	92	CENTRAL AEROLOGICAL OBS
72/08/21 1600	K -09M-043	JAPAN	KAGOSHIMA	3A 3C 3E 3G 5B	DC LD LDKF MTHZ SEZA	355	AOYAMA,I. EJIRI,M. HIRAO,K. KAMADA,T. KATO,Y. KIMURA,I. NAKAMURA,J. OHCHI,N. OYAMA,K.
72/08/23 0100	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
72/08/23 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
72/08/24 1430	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS

*IDENTIFIES LAUNCHINGS THAT FAILED TO RETURN USEFUL DATA.

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
72/08/27 2100	K-09M-044	JAPAN	KAGOSHIMA	0C 3C 3E 6F	LD UTSF	341	HIRAO,K. ITO,H. KOHNO,T. KONDO,I. NAKAMURA,Y. OBAYASHI,T. OYAMA,K. YANAKA,Y. YAMASHITA,K. HALL,J.E.
72/08/29 1312	P--130H	UNITED KINGDOM	SOUTH U1ST	3C 6E 6F	GKX7 LDLU	133	HALL,J.E.
72/08/30 0100	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	91	CENTRAL AEROLOGICAL OBS
72/08/30 1400	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
72/08/30 1430	ISRO-08,087 TERLS-473	INDIA U.S.S.R.	THUMBA	2J	NP	90	CENTRAL AEROLOGICAL OBS
72/08/30 2302	P--075H	UNITED KINGDOM	SOUTH U1ST	3C	GKX7 LDLU UT10	118	HALL,J.E.
72/08/31 0002	P--108H	UNITED KINGDOM	SOUTH U1ST	3C	GKX7 LDLU UT10	146	HALL,J.E.
72/09/05 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
72/09/06 0930	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
72/09/06 1400	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	83	CENTRAL AEROLOGICAL OBS
72/09/06 1430	ISRO-08,088 TERLS-474	INDIA U.S.S.R.	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
72/09/07 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
72/09/08 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
72/09/11 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
72/09/12 2300	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
72/09/13 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	91	CENTRAL AEROLOGICAL OBS
72/09/13 1400	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
72/09/13 1657	ISRO-08,089 TERLS-475	U.S.S.R.	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
72/09/14 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
72/09/17 2300	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
72/09/20 0200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
72/09/20 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
72/09/20 1400	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
72/09/20 1435	ISRO-08,090 TERLS-484	INDIA U.S.S.R.	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
72/09/22 1820	K-10 -010	JAPAN	KAGOSHIMA	2C 2F 2G 3C 3D 3E 3F 7F	LD LOKF OQAC PXSK UTSF UTUH	242	EJIRI,M. HIRAO,K. ITO,H. KAWASHIMA,N. MATSUOKA,M. MIYAHOTO,S. ODA,M. OGAWARA,Y. OYAMA,K. TOYODA,M. WATANABE,T.
72/09/26 2240	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
72/09/27 0940	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	93	CENTRAL AEROLOGICAL OBS
72/09/27 1400	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	93	CENTRAL AEROLOGICAL OBS
72/09/27 1430	ISRO-08,091 TERLS-485	INDIA U.S.S.R.	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
72/10/03 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
72/10/04 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
72/10/04 1430	ISRO-08,092 TERLS-486	U.S.S.R.	THUMBA	2J	NP	89	CENTRAL AEROLOGICAL OBS
72/10/04 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
72/10/08 1610	NASA 14,499UA NNA 3	FED REP OF GERMANY SWEDEN UNITED STATES	KIRUNA	3C 8A	LD NR SWQ1	109	DUBLIN,M. FECHTIG,H. HEMENWAY,C.L. LINDBLAD,B.A.
72/10/09 1530	NASA 14,501UA NNA 4	FED REP OF GERMANY SWEDEN UNITED STATES	KIRUNA	3C 8A	LD NR SWQ1	109	DUBLIN,M. FECHTIG,H. HEMENWAY,C.L. LINDBLAD,B.A.
72/10/10 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
72/10/11 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	96	CENTRAL AEROLOGICAL OBS
72/10/12 1533	NASA 14,502UA NNA 5	FED REP OF GERMANY SWEDEN UNITED STATES	KIRUNA	3C 8A	LD NR SWQ1	109	DUBLIN,M. FECHTIG,H. HEMENWAY,C.L. LINDBLAD,B.A.
72/10/13 1511	NASA 14,504CA	UNITED STATES	FAIRBANKS	2A	DC	160	BEDINGER,J.F. DUBIN,M.
72/10/13 1639	NASA 14,505CA	UNITED STATES	FAIRBANKS	2A	DC	160	BEDINGER,J.F. DUBIN,M.
72/10/17 1839	SL-1022	AUSTRALIA UNITED KINGDOM	WOOMERA	3D 7F	PX QKSF SWQ1	142	BYRNE,F.N. FENTON,A.G. PLAYFAIR,B.J.
72/10/17 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
72/10/18 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	95	CENTRAL AEROLOGICAL OBS

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
72/10/18 1209	MSCLO-7201	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX LDLU	91	ROSE,G. SANCHEZ,L. WIDDEL,H.U.
72/10/18 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
72/10/18 1506	ISRO-08.092 TERLS-490	INDIA U.S.S.R.	THUMBA	2J	NP	91	CENTRAL AEROLOGICAL OBS
72/10/20 1207	MSCLO-7202	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX LDLU	94	ROSE,G. SANCHEZ,L. WIDDEL,H.U.
72/10/23 1151	SL-402	AUSTRALIA UNITED KINGDOM	WOOMERA	7D 7F	QKSF SWQI	210	CULHANE,J.L.L. MILLER,D.E. WILLMORE,A.P.
72/10/25 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	95	CENTRAL AEROLOGICAL OBS
72/10/25 1208	MSCLO-7203	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX LDLU	93	ROSE,G. SANCHEZ,L. WIDDEL,H.U.
72/10/25 1430	ISRO-08.095 TERLS-497	INDIA U.S.S.R.	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
72/10/25 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
72/10/25 1700	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
72/10/26 0430	SL-1003	AUSTRALIA UNITED KINGDOM	WOOMERA	6F	CRQH QKCM QKSF	195	BRABBAN,D. GLENACROSS,W.M.
72/10/31 2332	A07.106-01	UNITED STATES	EGLIN AIR FORCE BASE	2A 2C	DC	170	ROSENBERG,N.W.
72/10/31 2352	A07.105-06	UNITED STATES	EGLIN AIR FORCE BASE	2A 2C 2F	DC HP	192	FAIRE,A.C. ROSENBERG,N.W.
72/11/01 0104	A07.105-05	UNITED STATES	EGLIN AIR FORCE BASE	2A 2C	DC	174	ROSENBERG,N.W.
72/11/01 0130	A07.105-04	UNITED STATES	EGLIN AIR FORCE BASE	2A 2C	DC	203	ROSENBERG,N.W.
72/11/01 0503	NASA 14.439U1	UNITED STATES	WALLOPS ISLAND	3C	LDLU SE UTIQ	195	BOWHILL,S.A. SCHMERLING,E.R. SMITH,L.G.
72/11/01 0657	NASA 15.094U1	UNITED STATES	WALLOPS ISLAND	3X	GI	79	HALE,L.C. SCHMERLING,E.R.
72/11/01 0933	A07.216-02	UNITED STATES	EGLIN AIR FORCE BASE	2A 2F	HP	220	FAIRE,A.C.
72/11/01 1444	ISRO-08.096 TERLS-498	U.S.S.R.	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
72/11/01 1500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
72/11/02 0426	NASA 15.097U1	CANADA UNITED STATES	FORT CHURCHILL	1X 6F	MT UTIQ	57	SCHMERLING,E.R. SHELDON,W.R.
72/11/04 0215	NASA 14.487U4	UNITED STATES	WHITE SANDS	1C 2G	UTUH SWQI	123	BARTH,C.A. DUBLIN,M. GREER,R. KELLY,K.K.
72/11/09 1430	ISRO-08.097 TERLS-499	INDIA U.S.S.R.	THUMBA	2J	NP	88	CENTRAL AEROLOGICAL OBS
72/11/09 1500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
72/11/15 0100	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
72/11/15 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	91	CENTRAL AEROLOGICAL OBS
72/11/15 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
72/11/15 1430	ISRO-08.098 TERLS-500	INDIA U.S.S.R.	THUMBA	2J	NP	91	CENTRAL AEROLOGICAL OBS
72/11/20 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
72/11/20 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
72/11/22 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	98	CENTRAL AEROLOGICAL OBS
72/11/22 1430	ISRO-08.099 TERLS-501	INDIA U.S.S.R.	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
72/11/23 0200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
72/11/27 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
72/11/29 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
72/11/29 1200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
72/11/29 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	92	CENTRAL AEROLOGICAL OBS
72/11/29 1430	ISRO-08.100 TERLS-502	INDIA U.S.S.R.	THUMBA	2J	NP	88	CENTRAL AEROLOGICAL OBS
72/11/29 1600	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
72/12/01 0123	AND-3B-063	CANADA	FORT CHURCHILL	7A 7B	SWCH	185	BLESS,H. GUSH,H.P. GUSH,R.
72/12/01 0800	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
72/12/05 0700	A18.006-05	CANADA UNITED STATES	FORT CHURCHILL	2H	PX	194	STAIR,A.T.
72/12/05 1730	NASA 14.509U1	UNITED STATES	WALLOPS ISLAND	3C	LDLU SE PXMR UTIQ	185	BOWHILL,S.A. SCHMERLING,E.R. SMITH,L.G.
72/12/05 1814	NASA 15.095U1	UNITED STATES	WALLOPS ISLAND	3C	GI LD	84	HALE,L.C. SCHMERLING,E.R.
72/12/06 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
72/12/06 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
72/12/07 0707	A07.307-02	CANADA UNITED STATES	FORT CHURCHILL	2G	HP	210	FAIRE,A.C.
72/12/08 0545	A07.107-02	CANADA UNITED STATES	FORT CHURCHILL	2G	PX	171	PHILBRICK,C.R.
72/12/09 0130	A30.205-02	CANADA UNITED STATES	FORT CHURCHILL	2H	PX	70	ULWICK,J.C.
72/12/11 0000	SL-1005	AUSTRALIA UNITED KINGDOM	WOOMERA	3D 6C 6E	GYXZ PX QKSF SWQI	196	BYRNE,F.N. HORTON,A.F. MILLER,D.E. PLAYFAIR,B.J.
72/12/11 0130	A07.107-03	CANADA UNITED STATES	FORT CHURCHILL	2A 2F	HP PX	136	PHILBRICK,C.R.

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72/12/11 0139	AD7.307-01	CANADA UNITED STATES	FORT CHURCHILL	2A 2F	HP	255	FAJRE, A.C.
72/12/13 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	94	CENTRAL AEROLOGICAL OBS
72/12/13 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
72/12/13 1400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	82	CENTRAL AEROLOGICAL OBS
72/12/13 1420	A-2C 48	FED REP OF GERMANY NORWAY SWITZERLAND	ANDOYA	0A 3C 3D 4B	ZZ	144	DUMBS, A. EBERHARDT, P.X. KIST, R. LOIDL, A. NESKE, E. SCHLEGEL, K.E. SPENNER, K. WALKER, H.P. CENTRAL AEROLOGICAL OBS
72/12/13 1430	ISRO-08.102 TERLS-504	INDIA U.S.S.R.	THUMBA	2J	NP	89	CENTRAL AEROLOGICAL OBS
72/12/13 2123	S-210-JA-007	JAPAN	SYOWA BASE	1B 7C 5B	LDLU MTHZ PX SWQI	126	AOYAMA, I. KANEDA, E. MIYAZAKI, S. NAGATA, T. CENTRAL AEROLOGICAL OBS
72/12/20 0200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	82	CENTRAL AEROLOGICAL OBS
72/12/20 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	82	CENTRAL AEROLOGICAL OBS
72/12/20 1430	ISRO-08.103 TERLS-509	INDIA U.S.S.R.	THUMBA	2J	NP	88	CENTRAL AEROLOGICAL OBS
72/12/22 0300	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
72/12/27 0300	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
72/12/27 1200	M-100	U.S.S.R.	SHIRSHOV (SHIP) (35 ODN 165 ODE)	2J	NP	92	CENTRAL AEROLOGICAL OBS
72/12/27 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	85	CENTRAL AEROLOGICAL OBS
72/12/27 1430	ISRO-08.104 TERLS-510	INDIA U.S.S.R.	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
72/12/28 1200	M-100	U.S.S.R.	SHIRSHOV (SHIP) (31 ODN 165 ODE)	2J	NP	85	CENTRAL AEROLOGICAL OBS
72/12/29 1200	M-100	U.S.S.R.	SHIRSHOV (SHIP) (26 ODN 165 ODE)	2J	NP	83	CENTRAL AEROLOGICAL OBS
72/12/30 1200	M-100	U.S.S.R.	SHIRSHOV (SHIP) (21 ODN 165 ODE)	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/01/01 1300	M-100	U.S.S.R.	SHIRSHOV (SHIP) (13 ODN 165 ODE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/01/02 1300	M-100	U.S.S.R.	SHIRSHOV (SHIP) (9 ODN 165 ODE)	2J	NP	91	CENTRAL AEROLOGICAL OBS
73/01/03 1430	ISRO-08.105 TERLS-511	INDIA U.S.S.R.	THUMBA	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/01/03 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/01/04 1300	M-100	U.S.S.R.	SHIRSHOV (SHIP) (05 ODN 165 ODE)	2J	NP	81	CENTRAL AEROLOGICAL OBS
73/01/04 1700	M-100	U.S.S.R.	SHIRSHOV (SHIP) (01 ODN 165 ODE)	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/01/05 1500	M-100	U.S.S.R.	SHIRSHOV (SHIP) (05 ODN 165 ODE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/01/06 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	95	CENTRAL AEROLOGICAL OBS
73/01/06 1500	M-100	U.S.S.R.	SHIRSHOV (SHIP) (10 ODN 165 ODE)	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/01/06 1600	M-100	U.S.S.R.	SHIRSHOV (SHIP) (10 ODN 165 ODE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/01/10 0920	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	93	CENTRAL AEROLOGICAL OBS
73/01/10 1245	MSCLO-7301	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX	82	ROSE, G. SANCHEZ, L. WIDDEL, H.U. CENTRAL AEROLOGICAL OBS
73/01/10 1430	ISRO-08.107 TERLS-517	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
73/01/10 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	91	CENTRAL AEROLOGICAL OBS
73/01/12 1146	KP03.042	UNITED STATES	WHITE SANDS	7F	OKSF SWQI SWQJ UTIQ	229	BOWEN, C.S.
73/01/13 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	94	CENTRAL AEROLOGICAL OBS
73/01/15 2340	S-210-008	JAPAN	KAGOSHIMA	3C 3E	LDIU LDLU	122	EJIRI, M. HIRAO, K. OBAYASHI, T. OYAMA, K. TOHMATSU, T. WATANABE, Y. BOWHILL, S.A. SCHMERLING, E.R. SMITH, L.G. HALE, L.C. SCHMERLING, E.R. AGGSON, T.L. EGELAND, A. EVANS, D.S. MAYNARD, N.C. WILLIAMS, D.J.
73/01/16 1730	NASA 14.510UI	UNITED STATES	WALLOPS ISLAND	3C 3E 3F	LDLU UTIQ	157	BOWHILL, S.A. SCHMERLING, E.R. SMITH, L.G. HALE, L.C. SCHMERLING, E.R. AGGSON, T.L. EGELAND, A. EVANS, D.S. MAYNARD, N.C. WILLIAMS, D.J.
73/01/16 1804	NASA 15.103UI	UNITED STATES	WALLOPS ISLAND	3X	GI	95	SCHMERLING, E.R. SMITH, L.G. HALE, L.C. SCHMERLING, E.R. AGGSON, T.L. EGELAND, A. EVANS, D.S. MAYNARD, N.C. WILLIAMS, D.J.
73/01/16 2059	NASA 18.057AE	NORWAY UNITED STATES	ANDOYA	1B 3C 4B 5A 5B	BD MTHZ OHCZ ORVP SW SWQI	278	AGGSON, T.L. EGELAND, A. EVANS, D.S. MAYNARD, N.C. WILLIAMS, D.J.
73/01/17 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	93	CENTRAL AEROLOGICAL OBS
73/01/17 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	93	CENTRAL AEROLOGICAL OBS
73/01/17 1430	ISRO-08.109 TERLS-519	INDIA U.S.S.R.	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/01/18 1755	NASA 26.001CS	FED REP OF GERMANY UNITED STATES	WHITE SANDS	6E 6F	CRQH OKCM QKKQ OKSF	245	ACTON, L.W. CATURA, R.C. SCHWEITZER, W.

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73/01/19 0210 73/01/19 0900	M-100 K-09M-041	U.S.S.R. JAPAN	VOLGOGRAD KAGOSHIMA	2J 3A 3C 5A 5B	NP LDKF LDTP MTBD SEZA	87 330	CENTRAL AEROLOGICAL OBS EJIRI, M. IWAI, A. KIMURA, I. MATSUMOTO, H. MIYATAKE, S. OBAYASHI, T. OKADA, T. OYA, H. TSURUDA, K. URIMOTO, S. YAMADA, A. YOSHINO, T. ROSE, G. SANCHEZ, L. WIDDEL, H. U.
73/01/19 1149	MSCL0-7302	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX	82	ROSE, G. SANCHEZ, L. WIDDEL, H. U.
73/01/20 1138	MSCL-7301	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX	80	ROSE, G. SANCHEZ, L. WIDDEL, H. U.
73/01/22 1138	MSCL0-7303	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX	91	ROSE, G. SANCHEZ, L. WIDDEL, H. U.
73/01/22 2310	NASA 21.009GT NASA 21.009US	UNITED STATES	WHITE SANDS	1A 6E	AF GYZ MT UTGJ	277	BARTH, C. A. BRUNER, E. C. KELLY, K. K. WOOD, J. F.
73/01/24 0540 73/01/24 1137	M-100 MSCL0-7304	U.S.S.R. FED REP OF GERMANY SPAIN	VOLGOGRAD EL ARENOSILLO	2J 3X	NP CX	88 88	CENTRAL AEROLOGICAL OBS ROSE, G. SANCHEZ, L. WIDDEL, H. U.
73/01/24 1200	M-100	U.S.S.R.	SHIRSHOV (SHIP) (01 D0S 165 D0E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/01/24 1430	ISRO-08.110 TERLS-521	INDIA U.S.S.R.	THUMBA	2J	NP	90	CENTRAL AEROLOGICAL OBS
73/01/24 1500 73/01/25 1147	M-100 MSCL-7302	U.S.S.R. FED REP OF GERMANY SPAIN	MOLODEZHNYA EL ARENOSILLO	2J 3X	NP CX	83 94	CENTRAL AEROLOGICAL OBS ROSE, G. SANCHEZ, L. WIDDEL, H. U.
73/01/26 1200	M-100	U.S.S.R.	SHIRSHOV (SHIP) (09 D0S 165 D0E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/01/26 1300	M-100	U.S.S.R.	SHIRSHOV (SHIP) (09 D0S 165 D0E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/01/27 0900 73/01/27 1143	M-100 MSCL0-7305	U.S.S.R. FED REP OF GERMANY SPAIN	HEISS ISLAND EL ARENOSILLO	2J 3X	NP CX	88 87	CENTRAL AEROLOGICAL OBS ROSE, G. SANCHEZ, L. WIDDEL, H. U.
73/01/27 1832	FERDINAND-032 NASA 18.1381E	AUSTRIA FED REP OF GERMANY NORWAY UNITED STATES	ANDOYA	1B 2H 3A 3C 4B 5A 5B	BD LDHQ LDIZ OHVP	227	BERNSTEIN, W. BROMHUND, G. EGELAND, A. EVANS, D. S. FOLKESTAD, K. HICKS, G. T. HOLTET, J. A. MAEHLUM, B. N. MASEIDE, K. MAYNARD, N. C. RIEDLER, W. W. SORAAS, F. WAX, R. L.
73/01/28 1200	M-100	U.S.S.R.	SHIRSHOV (SHIP) (19 D0S 165 D0E)	2J	NP	90	CENTRAL AEROLOGICAL OBS
73/01/28 1400	M-100	U.S.S.R.	SHIRSHOV (SHIP) (19 D0S 165 D0E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/01/29 0502	AAF-4B-027	CANADA	FORT CHURCHILL	1K 4B 5A	LD	760	ANGER, C. D. COGGER, L. L. KAVADAS, A. KOEHLER, J. A. MCNAMARA, A. G. WHALEN, B. A.
73/01/29 1245	MSCL-7303	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX	90	ROSE, G. SANCHEZ, L. WIDDEL, H. U.
73/01/30 0300 73/01/30 0635	M-100 SL-1205	U.S.S.R. AUSTRALIA UNITED KINGDOM	VOLGOGRAD WOOMERA	2J 7F	NP QKSF	85 234	CENTRAL AEROLOGICAL OBS CRUISE, A. M. CULHANE, J. L.
73/01/31 0900 73/01/31 1300	M-100 M-100	U.S.S.R. U.S.S.R.	HEISS ISLAND SHIRSHOV (SHIP)	2J 2J	NP NP	94 88	CENTRAL AEROLOGICAL OBS CENTRAL AEROLOGICAL OBS
73/01/31 1400	M-100	U.S.S.R.	SHIRSHOV (SHIP) (30 D0S 165 D0E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/01/31 1437	ISRO-08.111 TERLS-522	INDIA U.S.S.R.	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
73/01/31 1500 73/02/01 2000	M-100 M-100	U.S.S.R. U.S.S.R.	MOLODEZHNYA KOROLEV (SHIP)	2J 2J	NP NP	93 85	CENTRAL AEROLOGICAL OBS CENTRAL AEROLOGICAL OBS
73/02/02 0615	AAF-3B-067	CANADA	GILLAM	1X 4B	LD SWQI	200	HARRIS, F. R. MCNAMARA, A. G. WHALEN, B. A.
73/02/02 0620	AAF-5B-036	BELGIUM CANADA	FORT CHURCHILL	1B 1D 4B	LD SWQI	335	HARRIS, F. R. MCNAMARA, A. G. MONFILS, A. G. V. WHALEN, B. A.

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73/02/02	0623 NASA 15.102UI	CANADA UNITED STATES	FORT CHURCHILL	1X	UTIQ UTUH	81	SCHMERLING,E.R. SHELDON,W.R.
73/02/03	0900 M-100	U.S.S.R.	HEISS ISLAND	2J	XP	88	CENTRAL AEROLOGICAL OBS
73/02/03	1500 M-100	U.S.S.R.	SHIRSHOV (SHIP) (37 00S 165 00E)	2J	NP	83	CENTRAL AEROLOGICAL OBS
73/02/03	2000 M-100	U.S.S.R.	KOROLEV (SHIP) (10 00N 65 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/02/04	1900 M-100	U.S.S.R.	KOROLEV (SHIP) (05 00N 65 00E)	2J	NP	90	CENTRAL AEROLOGICAL OBS
73/02/05	1900 M-100	U.S.S.R.	KOROLEV (SHIP) (00 00 65 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
73/02/06	1959 ELECTRA-2 FERDINAND-030 NASA 18.1361E	NORWAY UNITED STATES	ANDOYA	0D 1B 3A 3C 4B	LDKF LDTF MTHZ OHCZ OH1Q OHUH SWQI	255	EGELAND,A. EVANS,D.S. FOLKESTAD,K. MAELHUM,B.N. WASEIDE,K. SKOVLI,G. TROIM,J.
73/02/07	0900 M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/02/07	1500 M-100	U.S.S.R.	MOLODEZHNAJA	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/02/07	2000 M-100	U.S.S.R.	KOROLEV (SHIP) (10 00S 65 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/02/08	1435 ISRO-08.112 TERLS-524	INDIA U.S.S.R.	THUMBA	2J	NP	90	CENTRAL AEROLOGICAL OBS
73/02/09	0054 NASA 18.1321A SNT 7/2	SWEDEN UNITED STATES	KIRUNA	1B 3C 4X 5A 8A	BD LDHQ LDKF LDLU NR PXGS SWQI UTVP	182	ANDERSSON,L.E. BERING,E.A.3RD ENGSTROM,F. FAHLESON,U.V. LINDELD,B.A. STOFFREGEN,W.
73/02/09	0253 AAF-4B-028	CANADA	FORT CHURCHILL	1X 4B 5A	LD	760	ANGER,C.D. COGGER,L.L. KAVADAS,A. KOEHLER,J.A. MCNAMARA,A.G. WHALEN,B.A. BOWYER,C.S.
73/02/10	0408 NASA 21.016UG	UNITED STATES	WHITE SANDS	7E 7F	CRQH QKKQ UTSF XG	212	
73/02/10	0900 M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/02/10	1000 M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/02/13	1530 NASA 15.107GM	UNITED KINGDOM UNITED STATES	ANTIGUA	2G 2J	00	58	KRUEGER,A.J.
73/02/13	2200 M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/02/14	0900 M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/02/14	1400 M-100	U.S.S.R.	MOLODEZHNAJA	2J	NP	91	CENTRAL AEROLOGICAL OBS
73/02/14	2345 S -210-JA-016	JAPAN	SYOWA BASE	0A 3C 3E 6F	LDLU LDTF MTHZ UTUH	103	AOYAMA,I. KODAMA,M. MIYAZAKI,S. NAGATA,T.
73/02/17	0900 M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
73/02/17	2357 E1D1-003	FRANCE	LANDES TEST CENTER	3C 3E	LDKF LDLU LDTF	460	BEGHIN,C. BERTHELIER,J.J. BITOUN,J. HIGEL,B. PETIT,M. STEINBERG,J.L. VERNET
73/02/19	0022 K -10 -009	JAPAN	KAGOSHIMA	2L 3B 6D 6E 6F	G1 GYZ QK SWQI SWQJ	236	HIGASHI,K. HIGASHINO,I. HIRAO,K. MASUOKA,T. MATSUOKA,M. MATSUSHITA,I. MITOME,S. MIYAMOTO,S. NISHI,K. ODA,M. OGAWA,T. OGAWARA,Y. OSHIO,T. TOHMATSU,T. WATANABE,N. WATANABE,T. YAMAGUCHI,A. WILLIAMS,E.R.
73/02/19	1317 P--116H	UNITED KINGDOM	SOUTH UIST	3A 3C 3X 6E	GYZ SE 00	124	
73/02/20	1525 NASA 15.108GM	UNITED KINGDOM UNITED STATES	ANTIGUA	2G 2J		53	KRUEGER,A.J.
73/02/20	2300 M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/02/21	0930 M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/02/21	1400 M-100	U.S.S.R.	MOLODEZHNAJA	2J	NP	90	CENTRAL AEROLOGICAL OBS
73/02/21	1400 M-100	U.S.S.R.	SHIRSHOV (SHIP) (05 00S 165 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
73/02/22	0349 AAD-3B-064	CANADA	FORT CHURCHILL	1X	SW	207	MCNAMARA,A.G.
73/02/22	1304 P--114H	UNITED KINGDOM	SOUTH UIST	3A 3C 3X 6E	GYZ SE	126	WILLIAMS,E.R.

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DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
73/02/22 1430	ISRO-08.113	INDIA	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
73/02/23 0938	TERLS-529 K-09M-042	U.S.S.R. JAPAN	KAGOSHIMA	3C 3E 3G 5X	CR DCOM GI LD MTYO SEZA SWQI	306	ASO,T. FUKUHARA,T. HIRAO,K. HISHINUMA,N. KATO,S. KIMURA,I. NAKAMURA,J. OGAWA,T. OHCHI,N. OYAMA,K. SUZUKI,Y. TAKEYA,Y. TOMIMOTO,T. TSUTSUMI,M. TSUTSUMI,S. YABUZAKI,T. WILLIAMS,E.R.
73/02/23 1348	P--113H	UNITED KINGDOM	SOUTH UIST	3A 3C 4B	GY	---	
73/02/23 1500	M-100	U.S.S.R.	SHIRSHOV (SHIP) (05 OOS 165 OOE)	2J	NP	84	CENTRAL AEROLOGICAL OBS
73/02/23 2000	M-100	U.S.S.R.	KOROLEV (SHIP) (20 OOS 65 OOE)	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/02/23 2200	M-100	U.S.S.R.	KOROLEV (SHIP) (20 OOS 65 OOE)	2J	NP	85	CENTRAL AEROLOGICAL OBS
73/02/23 2300	M-100	U.S.S.R.	KOROLEV (SHIP) (20 OOS 65 OOE)	2J	NP	85	CENTRAL AEROLOGICAL OBS
73/02/24 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
73/02/26 0323	ADD-2-127	CANADA	FORT CHURCHILL	1B 1D 3C 3E 4B	QK SWQI UT	132	ANGER,C.D. LLEWELLYN,E.J. MCWEN,D.J. MCNAMARA,A.G. SHEPHERD,G.G.
73/02/26 1900	M-100	U.S.S.R.	KOROLEV (SHIP) (30 OOS 65 OOE)	2J	NP	85	CENTRAL AEROLOGICAL OBS
73/02/26 2000	M-100	U.S.S.R.	KOROLEV (SHIP) (30 OOS 65 OOE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/02/26 2100	M-100	U.S.S.R.	KOROLEV (SHIP) (30 OOS 65 OOE)	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/02/27 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
73/02/27 1500	M-100	U.S.S.R.	THUMBA	2J	NP	91	CENTRAL AEROLOGICAL OBS
73/02/28 0100	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/02/28 0535	NASA 04.330UA	CANADA UNITED STATES	FORT CHURCHILL	1B 3C 3D 3E 3F 4X	LDLU LDWU PXSK SWQI	180	HAYS,P.B. SHARP,W.E.
73/02/28 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/02/28 1200	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
73/02/28 2000	SL-1010	AUSTRALIA	WOOMERA	7F	QKSF	199	GRIFFITHS,R.E.
73/03/01 0657	NASA 14.503UA	UNITED KINGDOM CANADA UNITED STATES	FORT CHURCHILL	1B 3C 3D	MT PX	135	DONAHUE,T.M. DUBIN,M. ZIFF,E.C.,JR.
73/03/01 1900	M-100	U.S.S.R.	KOROLEV (SHIP) (40 OOS 65 OOE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/03/01 2100	M-100	U.S.S.R.	KOROLEV (SHIP) (40 OOS 65 OOE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/03/01 2200	M-100	U.S.S.R.	KOROLEV (SHIP) (40 OOS 65 OOE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/03/04 1800	M-100	U.S.S.R.	KOROLEV (SHIP) (30 OOS 65 OOE)	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/03/04 2000	M-100	U.S.S.R.	KOROLEV (SHIP) (30 OOS 65 OOE)	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/03/05 1725	NASA 13.032US	UNITED STATES	WHITE SANDS	6E	QK QKKO XG NP	241	PARKINSON,W.H.
73/03/06 1200	M-100	U.S.S.R.	SHIRSHOV (SHIP) (10 OOS 165 OOE)	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/03/06 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/03/07 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/03/07 1200	M-100	U.S.S.R.	SHIRSHOV (SHIP) (05 OOS 165 OOE)	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/03/07 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/03/07 1430	ISRO-08.116 TERLS-534	INDIA U.S.S.R.	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/03/07 2100	M-100	U.S.S.R.	KOROLEV (SHIP) (19 OOS 65 OOE)	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/03/07 2200	M-100	U.S.S.R.	KOROLEV (SHIP) (19 OOS 65 OOE)	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/03/08 1500	M-100	U.S.S.R.	SHIRSHOV (SHIP) (15 OOS 165 OOE)	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/03/08 1800	NASA 13.029CS	UNITED STATES	WHITE SANDS	6F	CRQH QKCM XG NP	170	DAVIS,J.M. VAIANA,G.S.
73/03/09 1300	M-100	U.S.S.R.	SHIRSHOV (SHIP) (04 OOS 165 OOE)	2J	NP	90	CENTRAL AEROLOGICAL OBS
73/03/09 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
73/03/10 1400	M-100	U.S.S.R.	SHIRSHOV (SHIP) (09 00N 165 00E)	2J	NP	92	CENTRAL AEROLOGICAL OBS
73/03/11 2000	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00 65 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/03/12 1600	M-100	U.S.S.R.	SHIRSHOV (SHIP) (14 00N 165 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/03/12 2000	M-100	U.S.S.R.	KOROLEV (SHIP) (04 00N 65 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/03/14 0315	SL-1004	AUSTRALIA UNITED KINGDOM	WOOMERA	6E	QKKQ	226	JONES, B. B. SHENTON, D. B.
73/03/14 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/03/14 1200	M-100	U.S.S.R.	SHIRSHOV (SHIP) (27 00N 165 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/03/14 1400	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
*73/03/14 1415	SUPARCO/MR/71	PAKISTAN	SOMMIANI	2A 2C	ZZ	---	JAFRI, S. A. RAHMATULLAH, M.
73/03/14 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/03/15 0200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/03/15 1200	M-100	U.S.S.R.	SHIRSHOV (SHIP) (32 00N 165 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/03/15 1415	SUPARCO/MR/72	PAKISTAN	SOMMIANI	2A 2C	ZZ	58	JAFRI, S. A. RAHMATULLAH, M. ARNOLDY, R. L. CAHILL, L. J., JR.
73/03/16 1040	NASA 18.152UE	UNITED STATES	FAIRBANKS	1B	GI LDLU MTHZ MTHS OHIQ PXGS	249	
73/03/19 1900	M-100	U.S.S.R.	KOROLEV (SHIP) (04 00S 65 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/03/20 0341	P--043H	UNITED KINGDOM	SOUTH UIST	4B	LDLU OHCZ OHIQ OHUH PXGS QKKQ	129	GOODALL, C. V. ROTHWELL, P. H. M.
73/03/20 0352	SL-1102	AUSTRALIA UNITED KINGDOM	WOOMERA	6E	QKKQ	242	JONES, B. B. SHENTON, D. B.
73/03/20 0900	M-100	U.S.S.R.	SHIRSHOV (SHIP) (48 00S 165 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/03/20 1900	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00 65 00E)	2J	NP	83	CENTRAL AEROLOGICAL OBS
73/03/20 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/03/20 0600	NASA 18.144GE	UNITED STATES	FAIRBANKS	5A	BD DCLA	225	HEPPNER, J. P. MAYNARD, N. C.
73/03/21 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
73/03/21 1010	A30.205-05	UNITED STATES	FAIRBANKS	1C	SWOG	78	GRIEDER, W. F. ULWICK, J. C.
73/03/21 1400	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	91	CENTRAL AEROLOGICAL OBS
73/03/21 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
73/03/22 0602	NASA 18.145GE	UNITED STATES	FAIRBANKS	5A	BD DCLA SWOG	24C	HEPPNER, J. P. MAYNARD, N. C.
73/03/22 1212	A18.006-02	UNITED STATES	FAIRBANKS	1B	SWOG SWQI	163	STAIR, A. T. WHEELER, N. B.
73/03/22 1900	M-100	U.S.S.R.	KOROLEV (SHIP) (10 00N 65 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/03/23 1236	MSC-7302	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX	92	CISNEROS, J. M. ROSE, G. SANCHEZ, L. WIDDEL, H. U.
73/03/24 0335	NASA 13.064UG	UNITED STATES	WHITE SANDS	7F	CRQH QKSF UTSF XG NP LDLU SWOG SWQI	200	GARMIRE, G. P.
73/03/24 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
73/03/24 1032	A10.205-02	UNITED STATES	FAIRBANKS	1B 3C	LDLU SWOG SWQI	213	ULWICK, J. C.
73/03/24 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
73/03/24 1900	M-100	U.S.S.R.	KOROLEV (SHIP) (20 00N 65 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/03/25 2047	S -210-JA-U14	JAPAN	SYOWA BASE	0A 5A 6B 6C	GI MTHZ SWQJ	114	AOYAMA, I. ISHIKAWA, H. KANEDA, E. NAGATA, T. TOHMATSU, T.
73/03/26 1235	MSC-7303	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX	79	CISNEROS, J. M. ROSE, G. SANCHEZ, L. WIDDEL, H. U.
73/03/27 0938	A10.216-03	UNITED STATES	FAIRBANKS	2A 2F	DC HP	235	CHAMPION, K. S. W. FAIRE, A. C.
73/03/27 0938	A18.205-01	UNITED STATES	FAIRBANKS	1B 2G 3C	LDLU PXSK SWOG	181	NARCIS, R. S. ULWICK, J. C.
73/03/27 1258	NASA 18.146GE	UNITED STATES	FAIRBANKS	5A	BD DCLA	233	HEPPNER, J. P. MAYNARD, N. C.
73/03/28 0100	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
73/03/28 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	93	CENTRAL AEROLOGICAL OBS

*IDENTIFIES LAUNCHINGS THAT FAILED TO RETURN USEFUL DATA.

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALTI. (KM)	EXPERIMENTERS OR INSTITUTIONS
73/03/28 1430	ISRO-08.119	INDIA	THUMBA	2J	NP	91	CENTRAL AEROLOGICAL OBS
73/03/28 1500	TERLS-549 M-100	U.S.S.R. FRANCE	KERGUELEN ISLAND	2J	NP	81	CENTRAL AEROLOGICAL OBS
73/03/29 1250	MSC-7304	U.S.S.R. FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX	96	CISNEROS,J.M. ROSE,G. SANCHEZ,L. WIDDEL,H.U.
73/03/30 1043	NASA 13.040UG	UNITED STATES	WHITE SANDS	7F	CRQH QKSF UTSF XG BD DCLA NP	184	BRADY,H.V.D. RAPPAPORT,S.
73/03/30 1234	NASA 18.147GE	UNITED STATES	FAIRBANKS	5A		243	HEPPNER,J.P. MAYNARD,N.C.
73/03/30 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/03/31 0317	P--044H	UNITED KINGDOM	SOUTH UIST	4B	LDLU OHCZ OH1Q OHUH PXGS BD	126	GOODALL,C.V. ROTHWELL,P.H.M.
73/03/31 1227	NASA 18.148GE	UNITED STATES	FAIRBANKS	5A		232	HEPPNER,J.P. MAYNARD,N.C.
73/04/03 0609	P--131H	UNITED KINGDOM	SOUTH UIST	3A 3C 6E 6F	DCLA GKZ LDLU QKSF	131	DICKINSON,P.H.G.
73/04/03 0654	P--133H	UNITED KINGDOM	SOUTH UIST	3A 3C 6E 6F	GKZ LDLU QKSF	132	DICKINSON,P.H.G.
73/04/03 0814	P--105H	UNITED KINGDOM	SOUTH UIST	3A 3C 6E 6F	GKZ LDLU QKSF	137	DICKINSON,P.H.G.
73/04/03 0948	P--132H	UNITED KINGDOM	SOUTH UIST	3A 3C 6E 6F	GKZ LDLU QKSF	139	DICKINSON,P.H.G.
73/04/03 1205	MSC-7305	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX	93	CISNEROS,J.M. ROSE,G. SANCHEZ,L. WIDDEL,H.U.
73/04/03 1452	P--134H	UNITED KINGDOM	SOUTH UIST	3A 3C 6E 6F	GKZ LDLU QKSF	140	DICKINSON,P.H.G.
73/04/03 1615	P--104H	UNITED KINGDOM	SOUTH UIST	3A 3C 6E 6F	GKZ LDLU QKSF	136	DICKINSON,P.H.G.
73/04/03 1744	P--135H	UNITED KINGDOM	SOUTH UIST	3A 3C 6E 6F	GKZ LDLU QKSF	134	DICKINSON,P.H.G.
73/04/04 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
73/04/04 1700	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
73/04/05 1200	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
73/04/06 0845	A30.205-06	UNITED STATES	FAIRBANKS	1C	SWOG	78	ULWICK,J.C.
73/04/06 1219	MSC-7306	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX	93	CISNEROS,J.M. ROSE,G. SANCHEZ,L. WIDDEL,H.U.
73/04/07 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
73/04/10 0659	NASA 13.0910G	UNITED STATES	WHITE SANDS	7F	CRQH QKSF	198	FRITZ,G.G. SHULMAN,S.D.
73/04/11 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
73/04/13 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
73/04/16 1104	A09.209-01	UNITED STATES	WHITE SANDS	2G	SWQJ	175	GOOD,R.E. WEEKS,L.H.
73/04/16 1258	A09.102-01	UNITED STATES	WHITE SANDS	2G	SWQJ	209	WEEKS,L.H.
73/04/17 1030	UNKNOWN	FRANCE	KOUROU	6E	QK	200	BONNET,R.M. SAMAIN,D.
73/04/17 1535	SL-1011	AUSTRALIA UNITED KINGDOM	WOOMERA	7F	QKSF	214	ADAMS,D.J. WHITFORD,C.H.
73/04/18 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
73/04/18 1430	SUPARCO/MR/73	PAKISTAN	SONMIANI	2A 2C	ZZ	65	JAFRI,S.A. RAHMATULLAH,M.
73/04/18 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	83	CENTRAL AEROLOGICAL OBS
73/04/20 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	83	CENTRAL AEROLOGICAL OBS
73/04/21 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	83	CENTRAL AEROLOGICAL OBS
73/04/22 2125	S-219-JA-017	JAPAN	SYOWA BASE	0A 3C 3E 6F	LDLU LDTP MTHZ UTUH	124	AOYAMA,I. KODAMA,M. MIYAZAKI,S. MAGATA,T.
73/04/25 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	93	CENTRAL AEROLOGICAL OBS
73/04/25 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
73/04/27 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/05/02 0940	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	93	CENTRAL AEROLOGICAL OBS

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
73/05/02 1500	M-100-	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
73/05/07 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
73/05/09 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
73/05/09 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/05/12 1241	A-BBVC-051	FED REP OF GERMANY NORWAY	ANDOYA	1C 2G 3C 3D	LD OH PX SWQI	305	DRESCHER, A. KRANKOWSKY, D. K. H. LAMMERZAHN, P. NOAK, W. SCHLEGEL, K. E. SCHNEPPE, G. UNGER, L.
73/05/16 0919	AAF-5B-037	CANADA	FORT CHURCHILL	0D 2C 2G 2H 6B 6D 8A	AK CR XD NR OK SWQI	301	DE LEEUW, J. H. EVANS, W. LLEWELLYN, E. J. MCEWEN, D. J. MCNAMARA, A. G. ROBERTS, H. WLOCHOWICZ, R.
73/05/16 1106	AAF-6-001	CANADA	FORT CHURCHILL	2G	AK	78	WLOCHOWICZ, R.
73/05/18 1600	NASA 21.019GT NASA 21.019US	UNITED STATES	WHITE SANDS	0A 1A 6E	AK AF LIOG PXGS PXSK PXST UTQJ	267	BARTH, C. A. BRUNER, E. C., JR. FARWELL, L. KELLY, K. K. OTT, R. H., JR. WILSHUSEN, F.
73/05/19 1600	M-100	U.S.S.R.	NOYKOV (SHIP) (00 00N 66 00E)	2J	NP	83	CENTRAL AEROLOGICAL OBS
73/05/23 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/05/23 1630	NASA 04.235UA	UNITED STATES	WHITE SANDS	2G	AK NR	111	EHHALT, D. MARTELL, E. A.
73/05/25 0550	NASA 13.075UG	UNITED STATES	WHITE SANDS	7E	CRKE CRQH SWOG	178	MORTON, D. C.
73/05/25 1520	A44.320-01	BRAZIL UNITED STATES	NATAL	1A		569	WALKER, R. G.
73/05/25 1900	M-100	U.S.S.R.	NOYKOV (SHIP) (00 00N 55 00E)	2J	NP	84	CENTRAL AEROLOGICAL OBS
73/05/29 2000	M-100	U.S.S.R.	NOYKOV (SHIP) (00 00N 50 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
73/05/30 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	91	CENTRAL AEROLOGICAL OBS
73/06/01 2000	M-100	U.S.S.R.	NOYKOV (SHIP) (00 00N 50 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/06/02 1651	NASA 13.097CS	UNITED STATES	WHITE SANDS	6F	CRQH QKCM XG	175	DAVIS, J. M. VAIANA, G. S.
73/06/04 2000	M-100	U.S.S.R.	NOYKOV (SHIP) (00 00N 50 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/06/05 1501	NASA 15.109GM	UNITED KINGDOM	ANTIGUA	2G 2L	00	56	KRUEGER, A. J.
73/06/06 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/06/06 2000	M-100	U.S.S.R.	NOYKOV (SHIP) (00 00N 50 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/06/08 2000	M-100	U.S.S.R.	NOYKOV (SHIP) (00 00N 45 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
73/06/10 2020	S -210-JA-013	JAPAN	SYOWA BASE	0A 5A 6B 6C	GI MTHZ SWQJ	123	AOYAMA, I. ISHIKAWA, H. KANEDA, E. NAGATA, T. TOHMATSU, T.
73/06/11 1830	NASA 26.002CS	UNITED STATES	WHITE SANDS	6F	CRQH QKCM QKSF	221	ACTON, L. W. CATURA, R. C.
73/06/11 2110	S -210-JA-015	JAPAN	SYOWA BASE	0A 5A 6B 6C	GI MTHZ SWQJ	125	AOYAMA, I. ISHIKAWA, H. KANEDA, E. NAGATA, T. TOHMATSU, T.
73/06/12 1609	A09.210-01	CANADA UNITED STATES	FORT CHURCHILL	3C 3D	LDTP PXSK UTUH	124	NARCISI, R. S.
73/06/13 1617	A09.210-02	CANADA UNITED STATES	FORT CHURCHILL	3C 3D	LDTP PXSK UTUH	125	NARCISI, R. S.
73/06/13 1738	NASA 21.012DS NASA 21.012NP	UNITED STATES	WHITE SANDS	6D 6F	CRKE CRQH QKQO XG	241	BRUECKNER, G. E.
73/06/16 1030	SL-1111	AUSTRALIA UNITED KINGDOM	WOOMERA	7E	QKQO	227	GRIFFIN, W. LEWIS, C. SHENTON, D. B.
73/06/20 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/06/21 1030	APF-4B-030	CANADA UNITED STATES	KAUAI	7F	UT	686	BAIRD, G. FRANCEY, R. J. VENKATESAN, D. WILSON, B. G.
73/06/24 2000	M-100	U.S.S.R.	NOYKOV (SHIP) (00 00N 50 00E)	2J	NP	84	CENTRAL AEROLOGICAL OBS

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DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
73/06/27 1900	M-100	U.S.S.R.	NOYEV (SHIP) (00 00N 49 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
73/06/29 1159	P--162H	UNITED KINGDOM	SOUTH UIST	3A 3C 3X 6E	GYKZ SE QK	---	WILLIAMS,E.R.
*73/06/30 1033	KP03.041	MAURITANIA UNITED STATES	NOUADHIBOU	7D 7E		---	SPEER,R.J.
73/06/30 2000	M-100	U.S.S.R.	NOYEV (SHIP) (00 00N 49 00E)	2J	NP	84	CENTRAL AEROLOGICAL OBS
73/06/30 2012	NASA 10.412GI T 2-6474	UNITED STATES	WALLOPS ISLAND	3C 3D	LDHQ LDIZ MT PX	86	AIKIN,A.C.,JR. GOLDBERG,R.A.
73/06/30 2033	NASA 14.519GI	UNITED STATES	WALLOPS ISLAND	3C 3D	LDHQ MT PX	77	AIKIN,A.C.,JR. GOLDBERG,R.A.
73/06/30 2230	NASA 23.001GI T 1-6628	UNITED STATES	WALLOPS ISLAND	3C 3D 4X	LDHQ LDIZ MT OH1Q LD	93	AIKIN,A.C.,JR. JONES,W.H.
73/07/01 1015	B-37	U.S.S.R.	UNKNOWN (17 23N 27 56W)	3C 3D 3E		175	INST OF EXP METEOROLOGY
73/07/02 0745	NASA 13.087UG	UNITED STATES	WHITE SANDS	7F	CRQH OHSF UTSF	176	NOVICK,R. WEISSKOPF,M.C. WOLFF,R.S.
73/07/02 1230	P--163H	UNITED KINGDOM	SOUTH UIST	3A 3C 3X 6E	GYKZ SE	136	WILLIAMS,E.R.
73/07/02 1900	M-100	U.S.S.R.	NOYEV (SHIP) (00 00N 50 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/07/03 0250	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/07/04 0327	A-8BVC-49	FED REP OF GERMANY NORWAY UNITED STATES	ANDOVA	1A 2A 2G 3C 3D 6D	LIOG PXSK SWQI	260	BARTH,C.A. KELLY,K.K. LAMMERZAHN,P. RAHER,K. TRINKS,H. UNGER,L. VON ZAHN,U.
73/07/04 0910	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
73/07/04 1430	ISRO-08.137 TERLS-579	INDIA U.S.S.R.	THUMBA	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/07/04 1900	M-100	U.S.S.R.	NOYEV (SHIP) (06 00S 57 00E)	2J	NP	84	CENTRAL AEROLOGICAL OBS
73/07/11 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
73/07/11 1400	M-100	U.S.S.R.	MOLDEZHNYAYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
73/07/11 1430	ISRO-08.138 TERLS-580	INDIA U.S.S.R.	THUMBA	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/07/12 1449	B-38	U.S.S.R.	UNKNOWN (22 19N 24 39W)	2G 3D	LD	175	INST OF EXP METEOROLOGY
73/07/14 1600	M-100	U.S.S.R.	NOYEV (SHIP) (00 00N 76 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/07/15 1600	M-100	U.S.S.R.	NOYEV (SHIP) (00 00N 78 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
73/07/15 1909	S -210-JA-019	JAPAN	SYOWA BASE	0A 0X 3C	LDLU MTHZ	131	AOYAMA,I. KAMADA,T. MIYAZAKI,S. NAGATA,T.
73/07/17 1500	M-100	U.S.S.R.	NOYEV (SHIP) (00 00N 82 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/07/17 1522	NASA 10.416GM	UNITED STATES	WALLOPS ISLAND	2A 2C	JH	117	WRIGHT,D.U.,JR.
73/07/17 1641	NASA 10.417GM	UNITED STATES	WALLOPS ISLAND	2A 2C	JH	116	WRIGHT,D.U.,JR.
73/07/17 1658	T 1-6682	UNITED STATES	WALLOPS ISLAND	0D	XPCA	80	SCHMIDLIN,F.
73/07/17 1735	E 1-6685	UNITED STATES	WALLOPS ISLAND	0D	HP	134	OLSON,R.
73/07/17 1801	T 1-6684	UNITED STATES	WALLOPS ISLAND	0D	XPCA	81	SCHMIDLIN,F.
73/07/17 2213	NASA 08.061UA	UNITED STATES	WALLOPS ISLAND	1C 1D 2F 2G	QKQK QKPM	724	ZIPF,E.C.,JR.
73/07/18 0240	E 1-6686	UNITED STATES	WALLOPS ISLAND	0D	HP	141	OLSON,R.
73/07/18 0314	G 1-6687	UNITED STATES	WALLOPS ISLAND	0D	HP	116	FISHER,E.E.
73/07/18 0417	NASA 10.418GM	UNITED STATES	WALLOPS ISLAND	2A 2C	JH	115	WRIGHT,D.U.,JR.
73/07/18 0502	G 1-6689	UNITED STATES	WALLOPS ISLAND	0D	HP	115	FISHER,E.E.
73/07/18 0600	NASA 10.419GM	UNITED STATES	WALLOPS ISLAND	2A 2C	JH	121	WRIGHT,D.U.,JR.
73/07/18 0628	T 1-6692	UNITED STATES	WALLOPS ISLAND	0D	XPCA	82	SCHMIDLIN,F.
73/07/18 0731	E 1-6693	UNITED STATES	WALLOPS ISLAND	0D	HP	133	OLSON,R.
73/07/18 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/07/18 1400	M-100	U.S.S.R.	MOLDEZHNYAYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/07/18 1430	ISRO-08.139 TERLS-583	INDIA U.S.S.R.	THUMBA	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/07/18 1700	M-100	U.S.S.R.	NOYEV (SHIP) (00 00N 88 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/07/19 2121	B-39	U.S.S.R.	UNKNOWN (49 38N 30 10W)	2C 2G 3B 3D 3E	LD	175	INST OF EXP METEOROLOGY
73/07/20 0648	B-40	U.S.S.R.	UNKNOWN (49 51N 30 21W)	2C 2G 3B 3D 3E	LD	175	INST OF EXP METEOROLOGY
73/07/21 1400	M-100	U.S.S.R.	MOLDEZHNYAYA	2J	NP	91	CENTRAL AEROLOGICAL OBS
73/07/23 1223	P--045H	UNITED KINGDOM	SOUTH UIST	7F	UTUH	143	HILLIER,R.R.
73/07/25 1400	M-100	U.S.S.R.	MOLDEZHNYAYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/07/25 1430	ISRO-08.140 TERLS-584	INDIA U.S.S.R.	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/07/25 1545	NASA 26.004GP	UNITED STATES	WHITE SANDS	0D	CRQH JE	276	MCINTOSH,R.,JR. OLLENDORF,S.
73/07/28 1400	M-100	U.S.S.R.	MOLDEZHNYAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/08/01 0230	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/08/01 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS

*IDENTIFIES LAUNCHINGS THAT FAILED TO RETURN USEFUL DATA.

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
73/08/01 1400	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	92	CENTRAL AEROLOGICAL OBS
73/08/01 1430	ISRO-08.141	INDIA	THUMBA	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/08/01 2218	TERLS-587 NASA 14.515UA NNA-06	U.S.S.R. SWEDEN UNITED STATES	KIRUNA	2G 2I 2K	LD SWQI	109	DUBIN,M. HEMENWAY,C.L. WITT,G.
73/08/01 2249	NASA 14.516UA NNA-07	SWEDEN UNITED STATES	KIRUNA	2G 2I 2K	LD SWQI	111	DUBIN,M. HEMENWAY,C.L. WITT,G.
73/08/02 0536	NASA 10.4146I NNC-10	SWEDEN UNITED STATES	KIRUNA	3C 3D	LDHQ LDIZ MT PX BD LDLU MT SE	88	AIKIN,A.C.,JR. GOLDBERG,R.A.
73/08/03 1600	NASA 14.513UI T 2-6520	UNITED STATES	WALLOPS ISLAND	3C 3E	LDHQ LDIZ MT PX LD QK	184	BOWHILL,S.A. MECHTLY,E.A. SMITH,L.G.
73/08/05 2343	NASA 14.5076I NNA-09	SWEDEN UNITED STATES	KIRUNA	3C 3D 4B	LDHQ LDIZ MT PX LD QK	123	AIKIN,A.C.,JR. GOLDBERG,R.A.
73/08/06 0008	NASA 14.517UA NNA-08	SWEDEN UNITED STATES	KIRUNA	2G 2I	LD QK	103	DUBIN,M. HEMENWAY,C.L. WITT,G.
73/08/08 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/08/08 1400	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	91	CENTRAL AEROLOGICAL OBS
73/08/08 1430	ISRO-08.142	INDIA	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/08/09 0200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/08/09 1731	NASA 21.022NP NASA 21.022US	UNITED STATES	WHITE SANDS	6D 6F	CRKE CRQH QKQ XG	269	TIMOTHY,J.G.
73/08/09 2012	A16.000-01	UNITED STATES	WALLOPS ISLAND	0D	**	605	MANSFIELD,E.S.
73/08/10 1056	A03.211-01	UNITED STATES	WHITE SANDS	2F	LD SWQI UTSF LDLU SE	168	PICKELL,J.R. COHEN,H.A.
73/08/10 1505	NASA 14.514UI	UNITED STATES	WALLOPS ISLAND	3C 3E	LD SWQI UTSF LDLU SE	188	BOWHILL,S.A. MECHTLY,E.A. SMITH,L.G.
73/08/15 0545	NASA 14.512UA	UNITED STATES	WHITE SANDS	2G 3D	MT PX PXGS	117	DONAHUE,T.M. DUBIN,M. ZIPF,E.C.,JR.
73/08/15 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/08/15 1400	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/08/16 1430	ISRO-08.143	INDIA	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
*73/08/16 1650	TERLS-589 NASA 15.111GM	U.S.S.R. UNITED KINGDOM UNITED STATES	ANTIGUA	2G	00	53	KRUEGER,A.J.
*73/08/16 1810	NASA 15.112GM	UNITED KINGDOM UNITED STATES	ANTIGUA	2G	00	51	KRUEGER,A.J.
73/08/19 0955	S -210-009	JAPAN	KAGOSHIMA	2F 3C 3E	LD LDKF 00AC	115	EJIRI,M. HIRAO,K. OBAYASHI,T. TOHMATSU,T.
73/08/22 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
73/08/22 1400	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
73/08/22 1430	ISRO-08.144	INDIA	THUMBA	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/08/23 0053	TERLS-590 S-210-JA-018	U.S.S.R. JAPAN	SYOWA BASE	3C 5A 5B	GI LDLU LDTP MTHZ	129	AOYAMA,I. ISHIKAWA,H. MIYAZAKI,S. NAGATA,I.
73/08/24 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
73/08/29 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/08/29 1400	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	93	CENTRAL AEROLOGICAL OBS
73/08/29 1430	ISRO-08.145	INDIA	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/08/30 1701	TERLS-593 NASA 21.007US	U.S.S.R. UNITED STATES	WHITE SANDS	6E	CR CRQH GYZ QK QKCM QKQ	299	CUSHMAN,G.W. RENSE,W.A. ROTTMAN,G.J.
73/08/31 0530	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
73/08/31 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/09/03 0003	P--097H	UNITED KINGDOM	SOUTH UIST	1C	SWQI	135	GREER,R.G.H.
73/09/03 0204	P--098H	UNITED KINGDOM	SOUTH UIST	1C	SWQI	143	GREER,R.G.H.
73/09/04 1645	NASA 21.013DS NASA 21.013NP	UNITED STATES	WHITE SANDS	6D 6F	CRKE CRQH QKQ XG	235	BRUECKNER,G.E.
73/09/05 0140	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
73/09/05 0920	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/09/05 1400	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
73/09/05 1430	ISRO-08.146	INDIA	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/09/06 1139	TERLS-594 P--165H	U.S.S.R. UNITED KINGDOM	SOUTH UIST	0B 3A 3C 3X 6E	GYZ SE	131	HALL,J.E. TURNER,M.D.
73/09/10 0002	P--102H	UNITED KINGDOM	SOUTH UIST	2A	DC	170	WILLIAMS,E.R. REES,D.

*IDENTIFIES LAUNCHINGS THAT FAILED TO RETURN USEFUL DATA.
**NO SCIENTIFIC INSTRUMENTS USED.

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
73/09/10 0418	P--103H	UNITED KINGDOM	SOUTH UIST	2A	DC	168	REES,D.
73/09/12 0119	A09.214-01	UNITED STATES	WHITE SANDS	0E 3C	LDLU	160	SHERMAN,C.
73/09/12 0940	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
73/09/12 1400	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/09/12 1430	ISRO-08.147 TERLS-595	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
73/09/13 2130	NASA 13.069GS	UNITED STATES	WHITE SANDS	6F	QKSF	199	MARAN,S. NEUPERT,W.M.
73/09/14 0100	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/09/15 0436	P--106H	UNITED KINGDOM	SOUTH UIST	3A 3C	LDLU SEZA	124	BULLOUGH,K. RYCROFT,M.J.
73/09/15 0823	X-141	U.S.S.R.	HEISS ISLAND	2G 3D	LD	---	INST OF EXP METEOROLOGY
73/09/18 1550	A09.312-05	UNITED STATES	FAIRBANKS	1A	SWOG	127	NADILE,R. STAIR,A.T.
73/09/18 1721	A09.312-04	UNITED STATES	FAIRBANKS	1A	SWOG	129	NADILE,R. STAIR,A.T.
73/09/19 0100	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	91	CENTRAL AEROLOGICAL OBS
73/09/19 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
73/09/19 1400	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/09/19 1430	ISRO-08.148 TERLS-596	INDIA U.S.S.R.	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
73/09/19 1519	NASA 15.113GM	UNITED KINGDOM UNITED STATES	ANTIGUA	2J 2L	NP OO QK	49	KRUEGER,A.J.
73/09/21 1700	NASA 26.020GS	UNITED STATES	WHITE SANDS	6E	QKQK	290	BEHRING,W.E.
73/09/25 1400	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/09/26 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	91	CENTRAL AEROLOGICAL OBS
73/09/26 1600	A07.306-02	BRAZIL	NATAL	2F	HP	225	FAIRE,A.C.
73/09/27 0427	A07.306-03	UNITED STATES BRAZIL	NATAL	2F	HP	232	FAIRE,A.C.
73/09/27 1430	ISRO-08.149 TERLS-597	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
73/09/27 1701	X-142	U.S.S.R.	HEISS ISLAND	2G 3D	LD	141	INST OF EXP METEOROLOGY
73/10/02 0152	S-93	FED REP OF GERMANY SPAIN	EL ARENOSILLO	0A 7D 7X	CR QKPM	186	HASER,L.
73/10/03 0100	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/10/03 1430	ISRO-08.150 TERLS-598	INDIA U.S.S.R.	THUMBA	2J	NP	91	CENTRAL AEROLOGICAL OBS
73/10/03 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	92	CENTRAL AEROLOGICAL OBS
73/10/04 0040	A30.311-01	UNITED STATES	WHITE SANDS	1C	SWOG	53	ULWICK,J.C.
73/10/04 0127	A30.311-02	UNITED STATES	WHITE SANDS	1C	SWOG	100	ULWICK,J.C.
73/10/04 0340	NASA 13.010GG	UNITED STATES	WHITE SANDS	7F	QKSF	152	BOLDT,E.A. HOLT,S.S. SERLEMITOS,P.J.
73/10/04 0500	A30.311-03	UNITED STATES	WHITE SANDS	1C	SWOG	102	ULWICK,J.C.
73/10/06 0300	S-92	FED REP OF GERMANY SPAIN	EL ARENOSILLO	7C 7D	QK SWOI	260	HESSBERG,H.
73/10/06 0900	M-100	U.S.S.R.	NOYKOV (SHIP) (29 00M 180 00E)	2J	NP	---	CENTRAL AEROLOGICAL OBS
73/10/08 0900	M-100	U.S.S.R.	NOYKOV (SHIP) (22 00M 180 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/10/10 0100	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	91	CENTRAL AEROLOGICAL OBS
73/10/10 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/10/10 1430	ISRO-08.151 TERLS-599	INDIA U.S.S.R.	THUMBA	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/10/10 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	91	CENTRAL AEROLOGICAL OBS
73/10/14 0001	P--100A	NORWAY UNITED KINGDOM	ANDOYA	2A 2B 2C	DC	166	REES,D. SANDFORD,M.C.W.
73/10/14 0900	M-100	U.S.S.R.	NOYKOV (SHIP) (03 00S 180 00E)	2J	NP	90	CENTRAL AEROLOGICAL OBS
73/10/16 0900	M-100	U.S.S.R.	NOYKOV (SHIP) (00 00M 180 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/10/16 1942	P--141A	NORWAY UNITED KINGDOM	ANDOYA	4B	OH CZ UTIQ	148	JENKINS,G.J. ROTHWELL,P.H.M.
73/10/16 1944	SL-1121	NORWAY UNITED KINGDOM	ANDOYA	4B 5A	BD OH CZ PXGS PXNR UTIQ	267	BRYANT,D.A. COLLIN,H.L. GOUGH,M.P. RAITT,M.J. ROTHWELL,P.H.M. WILSON,J.W.G.
73/10/17 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/10/17 0900	M-100	U.S.S.R.	NOYKOV (SHIP) (00 00M 180 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/10/17 1430	ISRO-08.152 TERLS-600	INDIA U.S.S.R.	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
73/10/17 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	91	CENTRAL AEROLOGICAL OBS
73/10/17 1728	P--101A	NORWAY UNITED KINGDOM	ANDOYA	2A 2B 2C	DC DCOM	136	REES,D. SANDFORD,M.C.W.
73/10/17 1807	MR-12	U.S.S.R.	HEISS ISLAND	2G 3D 4A 4B	PXST UTCZ UTVP	186	INST OF APPLIED GEOPHYS SSCNR
73/10/18 0900	M-100	U.S.S.R.	NOYKOV (SHIP) (04 00S 180 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/10/18 2345	A07.105-01	UNITED STATES	EGLIN AIR FORCE BASE	2A	DC	167	ROSENBERG,N.W.
73/10/19 0000	A08.105-11	UNITED STATES	EGLIN AIR FORCE BASE	2A 2G	DC SWOI	206	ROSENBERG,N.W.
73/10/19 0020	A09.301-03	UNITED STATES	EGLIN AIR FORCE BASE	2A	DC	228	ROSENBERG,N.W.
73/10/19 0050	A07.105-02	UNITED STATES	EGLIN AIR FORCE BASE	2A	DC	173	ROSENBERG,N.W.
73/10/19 1125	A08.005-02	UNITED STATES	EGLIN AIR FORCE BASE	2A	DC	146	ROSENBERG,N.W.

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
73/10/19 1236	MSCLA-7301	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX L0LU SW	92	CISNEROS, J. ROSE, G. SANCHEZ, L. WIDDEL, H. U. KRUEGER, A. J.
73/10/19 1715	NASA 15.114GM	UNITED KINGDOM	ANTIGUA	2G	00	43	
73/10/19 2342	A09.106-03	UNITED STATES	EGLIN AIR FORCE BASE	0D 2A	DC	176	PICKELL, J. R. ROSENBERG, N. W. ROSENBERG, N. W.
73/10/19 2353	A08.105-12	UNITED STATES	EGLIN AIR FORCE BASE	2A	DC	160	ROSENBERG, N. W.
73/10/20 2343	A07.105-03	UNITED STATES	EGLIN AIR FORCE BASE	2A	DC	184	ROSENBERG, N. W.
73/10/23 1234	MR-12	FRANCE U.S.S.R.	HEISS ISLAND	2A 2B 2G 3D 4B	DCOM LG PXST UTIQ	154	CNRS INST OF APPLIED GEOPHYS SSCNR
73/10/23 1300	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/10/24 0305	A16.313-01	UNITED STATES	EGLIN AIR FORCE BASE	3A	SEZA	609	HARVEY, R. B. LEWIS, E. A.
73/10/24 1430	ISRO-08.153 TERLS-601	INDIA U.S.S.R.	THUMBA	2J	NP	91	CENTRAL AEROLOGICAL OBS
73/10/24 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	91	CENTRAL AEROLOGICAL OBS
73/10/25 0307	A16.313-02	UNITED STATES	EGLIN AIR FORCE BASE	3A	SEZA	600	HARVEY, R. B. LEWIS, E. A.
73/10/30 0808	MR-12	FRANCE U.S.S.R.	HEISS ISLAND	2D 2G 4B	PXST UTIQ	---	CNRS INST OF APPLIED GEOPHYS SSCNR
73/10/30 1200	M-100	U.S.S.R.	NOYEV (SHIP) (28 00S 180 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/10/30 1851	SL-1122	NORWAY UNITED KINGDOM	ANDOYA	3A 3C 4B	ZZ	229	BRYANT, D. A. COLLIN, H. L. GARSIDE, G. GIBBONS, W. GOUGH, M. P. HALL, D. S. MARTELLI, G. A. G. RAIT, W. J. ROTHWELL, P. H. M. SMITH, P. N. SOJKA, J. J. BRYANT, D. A. MASON, R. W.
73/10/30 1915	P--142A	NORWAY UNITED KINGDOM	ANDOYA	4B	PXGS UTCZ UTIQ	133	BRYANT, D. A. MASON, R. W.
73/10/30 2004	P--143A	NORWAY UNITED KINGDOM	ANDOYA	4B	PXGS UTCZ UTIQ	135	BRYANT, D. A. MASON, R. W.
73/10/31 1200	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/10/31 1430	ISRO-08.154 TERLS-602	INDIA U.S.S.R.	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/10/31 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	93	CENTRAL AEROLOGICAL OBS
73/10/31 2300	M-100	U.S.S.R.	KOROLEV (SHIP) (13 00N 129 00W)	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/11/01 0100	M-100	U.S.S.R.	KOROLEV (SHIP) (13 00N 130 00W)	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/11/01 1530	NASA 13.103UG	AUSTRALIA UNITED STATES	WOOMERA	7F	CRQH	185	KRAUSHAAR, W. L.
73/11/01 1730	NASA 13.065UG	AUSTRALIA UNITED STATES	WOOMERA	7F	CRQH	165	GARMIRE, G. P.
73/11/02 1000	M-100	U.S.S.R.	NOYEV (SHIP) (39 00S 180 00E)	2J	NP	84	CENTRAL AEROLOGICAL OBS
73/11/02 1630	A04.104-02	UNITED STATES	WHITE SANDS	6E	QKPM	233	HEROUX, L. J.
73/11/06 1440	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
73/11/06 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	91	CENTRAL AEROLOGICAL OBS
73/11/06 1540	NASA 13.104UG	AUSTRALIA UNITED STATES	WOOMERA	7F	CRQH UTSF	167	BRADT, H. V. D.
73/11/07 1400	M-100	U.S.S.R.	KOROLEV (SHIP) (19 00N 170 00W)	2J	NP	82	CENTRAL AEROLOGICAL OBS
73/11/07 1430	ISRO-08.155 TERLS-603	INDIA U.S.S.R.	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/11/09 1715	NASA 13.106UG	AUSTRALIA UNITED STATES	WOOMERA	7F	CRQH	169	GARMIRE, G. P.
73/11/09 1800	NASA 13.105UG	AUSTRALIA UNITED STATES	WOOMERA	7F	CRQH	175	BRADT, H. V. D.
73/11/11 1200	M-100	U.S.S.R.	KOROLEV (SHIP) (28 00N 175 00E)	2J	NP	82	CENTRAL AEROLOGICAL OBS
73/11/12 1400	NASA 13.102UG	AUSTRALIA UNITED STATES	WOOMERA	7F	CRQH	172	KRAUSHAAR, W. L.
73/11/12 1450	NASA 13.100DG	AUSTRALIA UNITED STATES	WOOMERA	7F	CRQH	154	FRITZ, G. G.
73/11/13 0900	M-100	U.S.S.R.	NOYEV (SHIP) (40 00S 180 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/11/14 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/11/14 1430	ISRO-08.156 TERLS-604	INDIA U.S.S.R.	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
73/11/14 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
73/11/16 0900	M-100	U.S.S.R.	NOYEV (SHIP) (30 00S 179 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS

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DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
73/11/16 2246	SL-1123	NORWAY UNITED KINGDOM	ANDOYA	2A 3B 3C 3E 4B 5A	DCYQ LDLU PXGS UTCZ UTIQ	216	BRYANT, D.A. EDWARDS, T. GOODALL, C.V. RAITT, W.J. REES, D. SOJKA, J.J. WILSON, J.W.G.
73/11/16 2304	P--150A	NORWAY UNITED KINGDOM	ANDOYA	3B 3C 3E	GI LDLU	145	GOODALL, C.V. WILSON, J.W.G.
73/11/16 2342	P--145A	NORWAY UNITED KINGDOM	ANDOYA	2A 2B 2C	DC DCOM	175	REES, D. SANDFORD, M.C.W.
73/11/17 0023	P--149A	NORWAY UNITED KINGDOM	ANDOYA	3B 3C 3E	GI LDLU	143	GOODALL, C.V. WILSON, J.W.G.
73/11/17 0101	P--146A	NORWAY UNITED KINGDOM	ANDOYA	2A 2B 2C	DC	175	REES, D. SANDFORD, M.C.W.
73/11/17 0122	P--148A	NORWAY UNITED KINGDOM	ANDOYA	3C 3E 4B	DCOM LDKF LDLU OHCZ OHUQ OHUH PXGS UTIQ	132	GOODALL, C.V. JENKINS, G.J. ROTHWELL, P.H.M. WILSON, J.W.G.
73/11/17 1430	ISRO-08.157 TERLS-605	INDIA U.S.S.R.	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/11/21 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/11/21 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/11/23 1520	NASA 15.115GM	UNITED STATES	ANTIGUA	2G	OO	---	KRUEGER, A.J.
73/11/24 0910	M-100	U.S.S.R.	NOYEV KOV (SHIP) (04 00S 180 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/11/24 1430	ISRO-08.159 TERLS-614	INDIA U.S.S.R.	THUMBA	2J	NP	90	CENTRAL AEROLOGICAL OBS
73/11/25 1430	M-100	U.S.S.R.	NOYEV KOV (SHIP) (00 00N 180 00E)	2J	NP	90	CENTRAL AEROLOGICAL OBS
73/11/26 0247	AMF-5A-040	CANADA	FORT CHURCHILL	1B	LD 9K	103	MCEWEN, D.J. MCNAMARA, A.G. NICHOLLS, R.W. PARKINSON, J.H. POUNDS, K.A. HESSBERG, H.
73/11/26 0535	SL-1206	AUSTRALIA UNITED KINGDOM	WOOMERA	6F 7C	CRQH QKCM	238	
73/11/27 0152	S-74	FED REP OF GERMANY SPAIN	EL ARENOSILLO	7C 7D	QK SWQI	246	
73/11/27 0900	M-100	U.S.S.R.	NOYEV KOV (SHIP) (04 00N 179 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/11/27 1506	NASA 19.008UA	UNITED STATES	FAIRBANKS	5B	DC	552	MURCRAY, W.B. WESCOTT, E.M.
73/11/27 1910	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
73/11/28 1438	ISRO-08.160 TERLS-615	INDIA U.S.S.R.	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/11/28 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/11/28 2213	MR-12	U.S.S.R.	VOLGOGRAD	2B 3C	LDKF LG	150	CENTRAL AEROLOGICAL OBS SSCNR
73/11/28 2215	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
73/11/30 1130	MSCL0-7306	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX LDLU PX	81	CISNEROS, J.M. ROSE, G. SANCHEZ, L. WIDDEL, H.U.
73/12/01 1430	ISRO-08.161 TERLS-616	INDIA U.S.S.R.	THUMBA	2J	NP	83	CENTRAL AEROLOGICAL OBS
73/12/02 1410	P--181A	NORWAY UNITED KINGDOM	ANDOYA	2A 5A	DCLA DCOM DCYQ	---	MARTELLI, G.A.G. ROTHWELL, P.H.M.
73/12/03 1139	MSCL0-7307	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX LDLU PX	90	CISNEROS, J.M. ROSE, G. SANCHEZ, L. WIDDEL, H.U.
73/12/04 0120	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/12/04 0900	M-100	U.S.S.R.	NOYEV KOV (SHIP) (25 00N 179 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/12/04 1520	NASA 19.009UA	UNITED STATES	FAIRBANKS	5B	DC	570	MURCRAY, W.B. WESCOTT, E.M.
73/12/04 1800	AMM-S2-011	CANADA UNITED STATES	FORT CHURCHILL	2F	AK	108	MEGILL, L.R. SCHIFF, H.I.
73/12/04 2234	AMM-S2-012	CANADA UNITED STATES	FORT CHURCHILL	2F	AK	108	MEGILL, L.R. SCHIFF, H.I.
73/12/05 1146	MSCL0-7308	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX LDLU PX	90	CISNEROS, J.M. ROSE, G. SANCHEZ, L. WIDDEL, H.U.
73/12/05 1405	AMM-S2-014	CANADA UNITED STATES	FORT CHURCHILL	2F	AK	110	MEGILL, L.R. SCHIFF, H.I.
73/12/05 1430	ISRO-08.162 TERLS-617	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
73/12/05 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/12/05 2324	SL-1124	NORWAY UNITED KINGDOM	ANDOYA	3C 3E 4B 5A 5B	LDIY SEZA SWUE UTCZ UTIQ	222	BULLOUGH, K. GOODALL, C.V. MARTELLI, G.A.G. ROTHWELL, P.H.M. RYCROFT, M.J. WILSON, J.W.G.
73/12/06 0711	P--09cA	NORWAY UNITED KINGDOM	ANDOYA	2A 5A	DCLA DCOM DCYQ	---	MARTELLI, G.A.G. ROTHWELL, P.H.M.

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DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
73/12/06 0900	M-100,	U.S.S.R.	NOYKOV (SHIP) (31 00N 180 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/12/06 0919	P--071A	NORWAY UNITED KINGDOM	ANDOYA	3A 3C 5B	LDLU SEZA	---	BULLOUGH,K. RYCROFT,M.J.
73/12/06 1800	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	91	CENTRAL AEROLOGICAL OBS
73/12/06 2259	A21-220-01	UNITED STATES	WALLOPS ISLAND	0B	SEZA	303	ROTMAN,W.
73/12/07 1132	MR-12	U.S.S.R.	HEISS ISLAND	2G 3D 4A 4B	PXST UTCZ UTIQ UTVP	189	INST OF APPLIED GEOPHYS SSCNR
73/12/07 1132	MSCL0-7309	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX LDLU PX	90	CISNEROS,J.M. ROSE,G. SANCHEZ,L. WIDDEL,H.U.
73/12/07 1156	MR-12	U.S.S.R.	VOLGOGRAD	2B 3C	LDKF LG	150	CENTRAL AEROLOGICAL OBS SSCNR
73/12/09 0900	M-100	U.S.S.R.	NOYKOV (SHIP) (40 00N 176 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/12/10 1910	NASA 21-023NP NASA 21-023US	UNITED STATES	WHITE SANDS	6D 6F	CRKE CRQH QKQK XG	269	TIMOTHY,J.G.
73/12/11 0120	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/12/11 1046	MSCL0-7310	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX LDLU PX	90	CISNEROS,J.M. ROSE,G. SANCHEZ,L. WIDDEL,H.U.
73/12/11 1820	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	91	CENTRAL AEROLOGICAL OBS
73/12/12 1108	MSCL0-7311	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX LDLU PX	91	CISNEROS,J.M. ROSE,G. SANCHEZ,L. WIDDEL,H.U.
73/12/12 1220	M-100	U.S.S.R.	SHIRSHOV (SHIP) (20 00N 165 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/12/12 1430	ISRO-08-163 TERLS-618	INDIA U.S.S.R.	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
73/12/12 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/12/14 1136	MSCL0-7312	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX LDLU PX	85	CISNEROS,J.M. ROSE,G. SANCHEZ,L. WIDDEL,H.U.
73/12/15 1430	ISRO-08-164 TERLS-619	INDIA U.S.S.R.	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
73/12/16 1130	MSCL0-7313	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX LDLU PX	92	CISNEROS,J.M. ROSE,G. SANCHEZ,L. WIDDEL,H.U.
73/12/17 1300	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 177 00E)	2J	NP	82	CENTRAL AEROLOGICAL OBS
73/12/18 0120	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
73/12/19 1000	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	---	CENTRAL AEROLOGICAL OBS
73/12/19 1300	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 175 00E)	2J	NP	82	CENTRAL AEROLOGICAL OBS
73/12/19 1430	ISRO-08-165 TERLS-620	INDIA U.S.S.R.	THUMBA	2J	NP	83	CENTRAL AEROLOGICAL OBS
73/12/19 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	91	CENTRAL AEROLOGICAL OBS
73/12/19 2205	NASA 26.003CS	UNITED STATES	WHITE SANDS	6F	CRQH QKCM QKSF	220	CATURA,R.C.
73/12/23 1300	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 179 00W)	2J	NP	84	CENTRAL AEROLOGICAL OBS
73/12/24 1300	M-100	U.S.S.R.	SHIRSHOV (SHIP) (04 00S 179 00E)	2J	NP	91	CENTRAL AEROLOGICAL OBS
73/12/25 0130	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
73/12/25 0808	MR-12	FRANCE U.S.S.R.	HEISS ISLAND	2G 3D 4A 4B	PXST UTCZ UTIQ UTVP	190	SNRS INST OF APPLIED GEOPHYS SSCNR
73/12/25 1300	M-100	U.S.S.R.	SHIRSHOV (SHIP) (10 00S 179 00W)	2J	NP	89	CENTRAL AEROLOGICAL OBS
73/12/25 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
73/12/26 1430	ISRO-08-166 TERLS-621	INDIA U.S.S.R.	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
73/12/26 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	92	CENTRAL AEROLOGICAL OBS
74/01/02 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
74/01/02 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/01/02 1430	ISRO-08-167 TERLS-622	INDIA U.S.S.R.	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/01/02 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
74/01/05 0145	NASA 26.023UG NASA 26.023UP	UNITED STATES	WHITE SANDS	7C 7D 7E	QK XG	233	FASTIE,W.G. FELDMAN,P.D.
74/01/05 1000	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/01/08 0140	NASA 26.022DG NASA 26.022DP NB12-271	UNITED STATES	WHITE SANDS	2X 7E	CRKE CRQH QK SWQJ	193	OPAL,C.B.
74/01/08 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	93	CENTRAL AEROLOGICAL OBS
74/01/09 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	91	CENTRAL AEROLOGICAL OBS
74/01/09 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	86	CENTRAL AEROLOGICAL OBS

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DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
74/01/09 1430	ISRO-08.168 TERLS-623	INDIA	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/01/10 1130	MSCLD-7401	U.S.S.R. FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX LDLU PX	93	CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
74/01/12 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	93	CENTRAL AEROLOGICAL OBS
74/01/13 1912	UNKNOWN	FED REP OF GERMANY SPAIN	EL ARENOSILLO	7D 7E	QK	245	HASER,L.L.
74/01/14 1135	MSCLD-7403	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX LDLU PX	86	CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
74/01/15 2000	NASA 21.014DS NASA 21.014NP	UNITED STATES	WHITE SANDS	6D 6F	CRKE CRQH QKQ XG	234	BRUECKNER,G.F.
74/01/15 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	---	CENTRAL AEROLOGICAL OBS
74/01/16 0200	K-09M-045	JAPAN	KAGOSHIMA	3C 3E 4B 4X 6E	GYKZ LD LDLU PXGS	360	HIGASHI,K. HIGASHI,I. HIRAO,K. ITO,H.T. KUBO,H. MUKAI,T. ODA,M. OYAMA,K.
74/01/16 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
74/01/16 1138	MSCLD-7404	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX LDLU PX	86	CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
74/01/16 1500	ISRO-08.169 TERLS-624	INDIA	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/01/16 1740	NASA 14.511UI T 2-6214	U.S.S.R. UNITED STATES	WALLOPS ISLAND	2C 2F 3A 3C 3E	LDLU MT PX QK SE UTIQ	205	BOWHILL,S.A. SCHMERLING,E.R. SMITH,L.G.
74/01/16 1800	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/01/16 1813	NASA 15.105UI	UNITED STATES	WALLOPS ISLAND	2G	LD	103	HALE,L.C. SCHMERLING,E.R.
74/01/17 0237	NASA 18.160GE	UNITED STATES	FAIRBANKS	5A 5C	DC DCLA	298	HEPPNER,J.P.
74/01/18 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
74/01/19 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/01/19 1134	MSCL-7401	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX LDLU	110	CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
74/01/21 0239	NASA 18.161GE	UNITED STATES	FAIRBANKS	5A 5C	DC DCLA	298	HEPPNER,J.P.
74/01/21 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	91	CENTRAL AEROLOGICAL OBS
74/01/21 1130	MS4CLD-7401	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX LDLU PX	114	CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
74/01/22 0241	NASA 18.162GE	UNITED STATES	FAIRBANKS	2A 5A	DC DCLA DCOM	298	HEPPNER,J.P. STOLARIK,J.D.
74/01/22 1100	L-03H-008	JAPAN	KAGOSHIMA	1C 2C 3C 3E 4B 4C 7D 7F	GYKZ LD LDKF LDTP LIWY OHSF OHVP PXGS QK	1571	EJIRI,M. FUKUDA,Y. HAYAKAWA,S. HIRAO,K. IKEDA,M. IMAI,T. ITO,K. IWAGAMI,H. KOHNO,T. MAKINO,F. MASUOKA,T. MATSUMOTO,H. MATSUMOTO,T. MATSUMURA,S. MIYAZAKI,S. MORI,H. MUKAI,T. MURAKAMI,T. NAGASE,F. NAKAMURA,M. OBAYASHI,T. OYA,H. OYAMA,K. SHINOKI,T. TAKEUCHI,H. TANAKA,Y. TOHMATSU,T. UENO,M.
74/01/22 1645	NASA 26.007CS	UNITED STATES	WHITE SANDS	6E 6F	QK XG	238	WALKER,A.B.C.,JR.
74/01/23 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
74/01/23 0900	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
74/01/23 1130	MS4CLD-7402	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX LDLU PX	106	CISNEROS,J.M. ROSE,G. WIDDEL,H.U.

IDENTIFIES LAUNCHINGS THAT FAILED TO RETURN USEFUL DATA.

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74/01/23 1250	AMD-5B-034	CANADA UNITED STATES	FOXT CHURCHILL	1B 2G 2H 3B 3C 4B 5B	GI LDLU MTUI PX QKKB SEZA	208	HARRIS, F. R. KAVADAS, A. LLEWELLYN, E. J. MCWEN, D. J. MCNAMARA, A. G. MENTALL, J. E. SHEPHERD, G. G. YOUNG, R. A. ZIPF, E. C., JR.
74/01/23 1430	ISRO-08.170 TERLS-625	INDIA U.S.S.R.	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/01/23 1500	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/01/25 1130	MS4CLO-7403	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3X	CX LDLU PX	109	CISNEROS, J. M. ROSE, G. WIDDEL, H. U.
74/01/26 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
74/01/26 1400	M-100	U.S.S.R.	SHIRSHOV (SHIP) (46 OOS 10C OOE)	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/01/27 1909	FERDINAND-035 NASA 18.1391E POLAR-003	NORWAY UNITED STATES	ANDOYA	0A 1B 3A 3C 3E 4B 4C 5A	GI LDIY LDKF LDLU LDTP OHVP PXGS SWQI	232	EVANS, D. S. FOLKESTAD, K. GERHARDSEN, T. MAELHUM, B. N. MAYNARD, N. C. MELBY, K. SORAAS, F. TROIIM, J.
74/01/28 1000	M-100	U.S.S.R.	SHOKALSKI (SHIP) (40 OON 180 OOE)	2J	NP	95	CENTRAL AEROLOGICAL OBS
74/01/29 1700	M-100	U.S.S.R.	SHIRSHOV (SHIP) (48 OOS 82 OOE)	2J	NP	81	CENTRAL AEROLOGICAL OBS
74/01/30 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/01/30 0900	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/01/30 1430	ISRO-08.171 TERLS-626	INDIA U.S.S.R.	THUMBA	2J	NP	82	CENTRAL AEROLOGICAL OBS
74/01/30 1500	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
*74/01/31 1500	NASA 15.051GM	UNITED KINGDOM UNITED STATES	ANTIGUA	2G	OO	---	KRUEGER, A. J.
74/02/01 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/02/01 1100	M-100	U.S.S.R.	SHOKALSKI (SHIP) (26 OON 180 OOE)	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/02/03 1700	M-100	U.S.S.R.	SHIRSHOV (SHIP) (44 OOS 70 OOE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/02/04 1340	SL-1203	AUSTRALIA UNITED KINGDOM UNITED STATES	WOOMERA	7E 7F	GKSF XG	197	BOWYER, C. S. CULHANE, J. L. RAPLEY, C. G.
74/02/05 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/02/06 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/02/08 1430	ISRO-08.172 TERLS-627	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
74/02/06 1800	M-100	U.S.S.R.	SHIRSHOV (SHIP) (29 OOS 64 OOE)	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/02/06 2249	0-101	NORWAY SWEDEN THE NETHERLANDS UNITED KINGDOM	ANDOYA	1B 3A 3C 3E 4B 5A	GI LDKF LDLU LDTP OHVQ PXGS PXMR SEZA SWQI	548	FAHLESON, U. V. FOLKESTAD, K. MAELHUM, B. N. PEDERSEN, A. ROTHWELL, P. H. M. TROIIM, J.
74/02/07 0900	M-100	U.S.S.R.	SHOKALSKI (SHIP) (04 OON 180 OOE)	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/02/08 0416	A30.311-04	UNITED STATES	FAIRBANKS	0B	**	91	ULWICK, J. C.
74/02/08 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
74/02/08 0900	M-100	U.S.S.R.	SHOKALSKI (SHIP) (01 OON 180 OOE)	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/02/09 0210	NASA 26.021UG	UNITED STATES	WHITE SANDS	7E 7F	CRQH UTSF	186	NOVICK, R. WEISSKOPF, M. C. WOLFF, R. S.
74/02/09 0900	M-100	U.S.S.R.	SHOKALSKI (SHIP) (02 OOS 180 OOE)	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/02/09 1900	M-100	U.S.S.R.	SHIRSHOV (SHIP) (14 OOS 63 OOE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/02/11 0900	M-100	U.S.S.R.	SHOKALSKI (SHIP) (10 OOS 180 OOE)	2J	NP	91	CENTRAL AEROLOGICAL OBS
74/02/11 1500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/02/11 1630	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/02/11 1900	M-100	U.S.S.R.	SHIRSHOV (SHIP) (06 OOS 61 OOE)	2J	NP	88	CENTRAL AEROLOGICAL OBS
74/02/12 0400	NASA 26.031UG	UNITED STATES	WHITE SANDS	7C 7D	CRQH SWQI	227	LILLIE, C. F.
74/02/13 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/02/13 1400	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/02/13 1400	M-100	U.S.S.R.	SHOKALSKI (SHIP) (18 OOS 180 OOE)	2J	NP	91	CENTRAL AEROLOGICAL OBS
74/02/13 1430	ISRO-08.173 TERLS-633	INDIA U.S.S.R.	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/02/13 1536	MR-12	FRANCE U.S.S.R.	HEISS ISLAND	2G 3D 4A 4B	PXST UTC2 UTIQ UTVP	184	CNRS INST OF APPLIED GEOPHYS SSCNR

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**NO SCIENTIFIC INSTRUMENTS USED.

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DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
74/02/13 1900	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 59 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/02/14 0401	AAF-4B-031	CANADA	FORT CHURCHILL	1B 3C 5A 5B	LD	638	KAVADAS,A. KOEHLER,J.A. MCNAMARA,A.G. WHALEN,B.A. ULWICK,J.C.
74/02/14 0707	A18.006-04	UNITED STATES	FAIRBANKS	1A	SWQI SWUE	200	
74/02/14 1900	M-100	U.S.S.R.	SHIRSHOV (SHIP) (04 00N 57 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/02/15 1200	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	91	CENTRAL AEROLOGICAL OBS
74/02/15 1215	MR-12	FRANCE U.S.S.R.	HEISS ISLAND	2A 2C 2G 3D 4A 4B	DCOM PXST UTCZ UTIQ UTVP	160	CNRS INST OF APPLIED GEOPHYS SSCNR
74/02/15 1800	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/02/16 0833	A35.191-02	UNITED STATES	WHITE SANDS	7B	SWOG	111	WALKER,R.G.
74/02/16 1103	A09.400-01	UNITED STATES	WHITE SANDS	0C 2F	HP	190	FAIRE,A.C. GEARY,J.F.,JR.
74/02/17 1900	M-100	U.S.S.R.	KOROLEV (SHIP) (34 00N 160 00E)	2J	NP	79	CENTRAL AEROLOGICAL OBS
74/02/18 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	81	CENTRAL AEROLOGICAL OBS
74/02/18 1500	M-100	U.S.S.R.	SHOKALSKI (SHIP) (18 00S 180 00E)	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/02/19 2200	M-100	U.S.S.R.	KOROLEV (SHIP) (23 00N 160 00E)	2J	NP	95	CENTRAL AEROLOGICAL OBS
74/02/20 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	95	CENTRAL AEROLOGICAL OBS
74/02/20 1400	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	93	CENTRAL AEROLOGICAL OBS
74/02/20 1430	ISRO-08.174 TERLS-634	INDIA U.S.S.R.	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/02/20 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/02/20 1900	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
74/02/21 0916	A18.116-01	UNITED STATES	FAIRBANKS	1C	SWOG	180	STAIR,A.T.
74/02/21 1521	G 1-6480	UNITED STATES	WALLOPS ISLAND	0D	OOAC	69	WRIGHT,D.U.,JR.
74/02/22 0459	ADD-2A-128	CANADA	FORT CHURCHILL	1B 2G 2H 3B 3D 4B	LD OH PX QK	131	ANGER,C.D. LLEWELLYN,E.J. MCEWEN,D.J. MCNAMARA,A.G. SHEPHERD,G.G.
74/02/22 0631	NASA 14.526UA	CANADA UNITED STATES	FORT CHURCHILL	1B	LD MT PX QK	137	DUBIN,M. ZIPF,E.C.,JR.
74/02/22 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	97	CENTRAL AEROLOGICAL OBS
74/02/23 1600	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
74/02/24 0900	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 180 00E)	2J	NP	91	CENTRAL AEROLOGICAL OBS
74/02/24 1410	MR-12	FRANCE U.S.S.R.	HEISS ISLAND	2A 2C 2G 3D 4A 4B	DCOM PXST UTCZ UTIQ UTVP	165	CNRS INST OF APPLIED GEOPHYS SSCNR
74/02/25 0738	A18.219-01	UNITED STATES	FAIRBANKS	1B 1D	SWOG SWQI CRQH	195	NARCISI,R.S. ULWICK,J.C.
*74/02/26 1817	NASA 21.018US	UNITED STATES	WHITE SANDS	6E	CRQH	98	BRUNER,E.C.,JR. RENSE,W.A.
74/02/26 2000	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 70 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/02/26 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/02/27 1000	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	91	CENTRAL AEROLOGICAL OBS
74/02/27 1400	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/02/27 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/02/27 1600	ISRO-08.175 TERLS-641	INDIA U.S.S.R.	THUMBA	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/02/28 0253	AKF-5B-039	CANADA UNITED STATES	FORT CHURCHILL	0E 1B 1X 2B 2C 2X 3C 3D 3E 5A 5B	LD PX QK	246	ANGER,C.D. BERNSTEIN,W. COGGER,L.L. DAVIES,W.E.R. DE LEEUW,J.H. KAVADAS,A. KOEHLER,J.A. MCEWEN,D.J. MCNAMARA,A.G. SHEPHERD,G.G. WHALEN,B.A.
74/02/28 1700	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 81 00E)	2J	NP	92	CENTRAL AEROLOGICAL OBS
*74/03/01 0334	NASA 14.527UA TD-7317 TH2-7004	CANADA UNITED STATES	FORT CHURCHILL	1B	QKKQ	---	DUBIN,M. ZIPF,E.C.,JR.
74/03/01 1800	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 87 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/03/02 0205	NASA 14.528UA	CANADA UNITED STATES	FORT CHURCHILL	1B	LD MT PX QK	135	DUBIN,M. ZIPF,E.C.,JR.

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74/03/02 0900	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 ODN 170 OOW)	2J	NP	93	CENTRAL AEROLOGICAL OBS
74/03/02 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/03/04 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/03/04 1900	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/03/05 0200	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 ODN 161 OOW)	2J	NP	90	CENTRAL AEROLOGICAL OBS
*74/03/05 0536	NASA 14.518GA TH2-7002	CANADA UNITED STATES	FORT CHURCHILL	1B	MT OK	156	HEATH,D.F. HERMAN,J.R. MENTALL,J.E.
74/03/05 1035	MR-12	U.S.S.R.	HEISS ISLAND	3B	GI	162	IZMIRAN
74/03/05 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
74/03/05 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	---	CENTRAL AEROLOGICAL OBS
74/03/06 0200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/03/06 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/03/06 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	83	CENTRAL AEROLOGICAL OBS
74/03/06 1500	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/03/07 0900	M-100	U.S.S.R.	SHOKALSKI (SHIP) (05 ODN 160 OOW)	2J	NP	93	CENTRAL AEROLOGICAL OBS
74/03/10 0920	NASA 18.158UE	UNITED STATES	FAIRBANKS	1B 5A	MT	189	CLOUTIER,P.A.
74/03/10 2100	M-100	U.S.S.R.	KOROLEV (SHIP) (25 ODN 180 OOE)	2J	NP	88	CENTRAL AEROLOGICAL OBS
74/03/13 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/03/13 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	83	CENTRAL AEROLOGICAL OBS
74/03/13 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/03/13 1530	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	81	CENTRAL AEROLOGICAL OBS
74/03/13 1955	MR-12	U.S.S.R.	HEISS ISLAND	3B	GI	171	IZMIRAN
74/03/14 1235	MR-12	FRANCE U.S.S.R.	HEISS ISLAND	3C 3E	LDKF LDTP	177	CNRS INST OF APPLIED GEOPHYS
74/03/14 1715	MR-12	FRANCE U.S.S.R.	HEISS ISLAND	2A 2C 2G 3D 4A 4B	DCOM PXST UTCZ UTIQ UTVP	177	CNRS INST OF APPLIED GEOPHYS SSCNR
74/03/14 1935	MR-12	FRANCE U.S.S.R.	HEISS ISLAND	2G 3D 4A 4B	PXST UTCZ UTIQ UTVP	162	CNRS INST OF APPLIED GEOPHYS SSCNR
74/03/14 2200	M-100	U.S.S.R.	KOROLEV (SHIP) (37 ODN 160 OOW)	2J	NP	84	CENTRAL AEROLOGICAL OBS
74/03/15 2000	MR-12	FRANCE U.S.S.R.	HEISS ISLAND	2A 2C 2G 3D 4A 4B	DCOM PXST UTCZ UTIQ UTVP	173	CNRS INST OF APPLIED GEOPHYS SSCNR
74/03/16 0335	NASA 26.011GG	UNITED STATES	WHITE SANDS	7C 7D	CRQH XG	199	EVANS,D.C. STECHEER,T.P.
74/03/17 2200	M-100	U.S.S.R.	KOROLEV (SHIP) (50 ODN 160 OOW)	2J	NP	84	CENTRAL AEROLOGICAL OBS
74/03/18 2015	MR-12	FRANCE U.S.S.R.	HEISS ISLAND	2A 2C 2G 3D 4A 4B	DCOM PXST UTCZ UTIQ UTVP	167	CNRS INST OF APPLIED GEOPHYS SSCNR
74/03/19 1730	MR-12	FRANCE U.S.S.R.	HEISS ISLAND	2A 2C 4A 4B	DCOM UTCZ UTIQ UTVP	146	CNRS INST OF APPLIED GEOPHYS SSCNR
74/03/20 0800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (38 ODN 160 OOW)	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/03/20 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/03/20 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/03/20 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/03/20 2100	M-100	U.S.S.R.	KOROLEV (SHIP) (49 ODN 178 OOE)	2J	NP	168	CENTRAL AEROLOGICAL OBS
74/03/20 2300	M-100	U.S.S.R.	KOROLEV (SHIP) (49 ODN 180 OOE)	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/03/21 0413	NASA 26.029UE	CANADA UNITED STATES	FORT CHURCHILL	1B 2C 5A	LDLU MT PX SWQ1	251	HAYS,P.B. SHARP,W.E.
74/03/21 0645	NASA 10.411GM	FRANCE UNITED STATES	KOUROU	2G	OOZU OK	83	HILSENATH,E.
74/03/21 0931	NASA 10.420GM T12-7055	FRANCE SWEDEN UNITED STATES	KOUROU	2G	OOZU OK	89	HILSENATH,E. WITT,G.
74/03/21 1643	MR-12	FRANCE U.S.S.R.	HEISS ISLAND	2G 3C 3D 3E	LDKF LDTP	---	CNRS INST OF APPLIED GEOPHYS SSCNR
*74/03/21 2100	NASA 15.123GM T11-7058	FRANCE UNITED STATES	KOUROU	2X	PXST OO SWQ1 XPCA	---	KRUEGER,A.J.
74/03/22 0645	NASA 10.421GM	FRANCE UNITED STATES	KOUROU	2A 2B 2C 2I	JH	119	THEON,J.S.

*IDENTIFIES LAUNCHINGS THAT FAILED TO RETURN USEFUL DATA.

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
74/03/22 0900	M-100	U.S.S.R.	SHOKALSKI (SHIP) (44 00N 160 00W)	2J	NP	91	CENTRAL AEROLOGICAL OBS
74/03/22 0931	NASA 10.422GM	FRANCE UNITED STATES	KOUROU	2A 2B 2C 2I	JH	121	THEON, J.S.
*74/03/22 1445	NASA 15.124GM T11-7059	FRANCE UNITED STATES	KOUROU	2X	00 SWGI XPCA NP	89	KRUEGER, A.J.
74/03/22 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/03/23 1700	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/03/23 2100	M-100	U.S.S.R.	KOROLEV (SHIP) (50 00N 160 00E)	2J	NP	82	CENTRAL AEROLOGICAL OBS
74/03/23 2100	M-100	U.S.S.R.	KOROLEV (SHIP) (50 00N 160 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/03/24 0800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (50 00N 161 00W)	2J	NP	88	CENTRAL AEROLOGICAL OBS
74/03/24 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
74/03/26 2130	AAF-06-004	CANADA	FORT CHURCHILL	2G	AK	81	WLOCHOWICZ, R.
74/03/26 2300	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/03/27 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/03/27 1100	M-100	U.S.S.R.	SHOKALSKI (SHIP) (50 00N 178 00W)	2J	NP	93	CENTRAL AEROLOGICAL OBS
74/03/27 1200	M-100	U.S.S.R.	SHOKALSKI (SHIP) (50 00N 178 00W)	2J	NP	82	CENTRAL AEROLOGICAL OBS
74/03/27 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	83	CENTRAL AEROLOGICAL OBS
74/03/27 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	91	CENTRAL AEROLOGICAL OBS
74/03/27 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	88	CENTRAL AEROLOGICAL OBS
74/03/28 0405	A09.303-03	CANADA UNITED STATES	FORT CHURCHILL	3C 3D	LDLU PXSK	129	NARCISI, R.S.
74/03/29 0200		PERU UNITED STATES	PUNTA LOBOS	1C 3A 3C 4B 4C	LDLU PXGS PXMR SEBZ SEZA SWGI	742	CHRISTENSEN, A.B. HEIKKILA, W.J. HOFFMAN, J.H. KOONS, H.C. MORSE, F.A. RICE, C.J. WINNINGHAM, J.D.
74/03/29 0424	MR-12	FRANCE U.S.S.R.	HEISS ISLAND	2G 3C 3D 3E	LDKF LDTP PXST NP	167	CNRS INST OF APPLIED GEOPHYS SSCNR
74/03/31 1000	M-100	U.S.S.R.	SHOKALSKI (SHIP) (50 00N 160 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/03/31 1000	M-100	U.S.S.R.	SHOKALSKI (SHIP) (50 00N 160 00E)	2J	NP	93	CENTRAL AEROLOGICAL OBS
74/04/01 2237	P--174H	UNITED KINGDOM	SOUTH UIST	2G 3C	LDLU QKPM	142	DICKINSON, P.H.G.
74/04/01 2256	P--178H	UNITED KINGDOM	SOUTH UIST	2F 3C	LDLU	134	WILLIAMS, E.R.
74/04/02 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
74/04/03 0347	A09.303-01	CANADA UNITED STATES	FORT CHURCHILL	1B 3C 3D	LDTP PXSK UTUH	162	NARCISI, R.S.
74/04/03 0524	P--173H	UNITED KINGDOM	SOUTH UIST	2G 3C	LDLU QKPM	133	DICKINSON, P.H.G.
74/04/03 0540	P--177H	UNITED KINGDOM	SOUTH UIST	2F 3C	LDLU	133	WILLIAMS, E.R.
74/04/03 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/04/03 1422	MR-12	U.S.S.R.	HEISS ISLAND	2G 3D 4A 4B	OH1Q PXST UTCZ UTIQ UTVP	184	INST OF APPLIED GEOPHYS SSCNR
74/04/03 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
74/04/03 1500	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/04/03 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/04/03 1600	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/04/03 1918	A09.303-04	CANADA UNITED STATES	FORT CHURCHILL	3C 3D	LDLU PXSK	129	NARCISI, R.S.
74/04/04 1343	MR-12	U.S.S.R.	HEISS ISLAND	2G 3C 3D 3E 4A 4B	LDKF LDLU PXST UTIQ	166	INST OF APPLIED GEOPHYS INST OF EXP METEOROLOGY SSCNR
74/04/04 2000	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
74/04/05 0000	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/04/05 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/04/06 0410	NASA 17.012CG	UNITED STATES	WHITE SANDS	7F	CRQH QKCM	237	CATURA, R.C.
74/04/09 0521	A09.303-02	CANADA UNITED STATES	FORT CHURCHILL	1B 3C 3D	LDTP PXSK UTUH	169	NARCISI, R.S.
74/04/09 2000	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/04/09 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	91	CENTRAL AEROLOGICAL OBS
74/04/10 0000	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
74/04/10 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/04/10 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	82	CENTRAL AEROLOGICAL OBS
74/04/10 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	88	CENTRAL AEROLOGICAL OBS

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DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET* IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
74/04/10 1700	M-100	U.S.S.R.	MOLODEZHNAJA	2J	NP	88	CENTRAL AEROLOGICAL OBS
*74/04/11 2338	A30.413-01	UNITED STATES	FAIRBANKS	3D	LD1Z	83	CONLEY, T.C. ULWICK, J.C.
74/04/12 0000	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/04/12 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	81	CENTRAL AEROLOGICAL OBS
74/04/12 2325	A30.413-02	UNITED STATES	FAIRBANKS	3A	SEZA	129	ULWICK, J.C.
74/04/17 0100	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/04/17 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/04/17 1400	M-100	U.S.S.R.	MOLODEZHNAJA	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/04/17 1500	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/04/17 1500	M-100	U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
74/04/17 1830	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/04/18 0840	A10.312-03	UNITED STATES	FAIRBANKS	1C 3C 4B 5A	LD GI LD PXGS UTQJ LBU MT SE UTVP	185	ULWICK, J.C.
74/04/19 0430	NASA 14.520U1	UNITED STATES	WALLOPS ISLAND	3A 3C 3E 4B	LDLU MT SE UTVP	199	SCHMERLING, E.R. SMITH, L.G. BOWHILL, S.A.
74/04/19 1500	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/04/20 1600	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/04/21 1500	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	97	CENTRAL AEROLOGICAL OBS
74/04/22 1802	A04.208-02	UNITED STATES	WHITE SANDS	6D	QK	212	HEROUX, L.J.
74/04/23 0003	SL-1207	AUSTRALIA	WOOMERA	1C 2A 2F 3B 3G 6E 6F	DCLA GKZ MTYQ PXGS QKCM QKQK SWQI UTSF	177	BIBBO, G. DAVIS, A. KASKIEWICZ, P. REES, D. WALKER, R.
74/04/23 0431	AKF-6 -003	CANADA	FORT CHURCHILL	1B	UTUH	76	VENKATESAN, D.
74/04/23 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/04/24 0930	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/04/24 1500	M-100	U.S.S.R.	MOLODEZHNAJA	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/04/24 1600	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
74/04/24 1600	M-100	U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
74/04/25 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/04/30 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	--	CENTRAL AEROLOGICAL OBS
74/04/30 1500	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
74/04/30 1500	M-100	U.S.S.R.	MOLODEZHNAJA	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/04/30 1655	P--072H	UNITED KINGDOM	SOUTH UIST	3D	PXSK	126	KAISER, T.R.
74/04/30 1800	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/04/30 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/05/01 1500	M-100	INDIA	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/05/05 1000	M-100	U.S.S.R.	SHOKALSKI (SHIP) (09 00N 159 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/05/07 1300		FED REP OF GERMANY	LANDES TEST CENTER	0E	**	120	OPPERMANN, H.
74/05/07 2240	M-100	FRANCE	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/05/08 1300	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	83	CENTRAL AEROLOGICAL OBS
74/05/08 1500	M-100	INDIA	THUMBA	2J	NP	83	CENTRAL AEROLOGICAL OBS
74/05/08 1500	M-100	U.S.S.R.	MOLODEZHNAJA	2J	NP	99	CENTRAL AEROLOGICAL OBS
74/05/09 1300	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 160 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/05/14 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/05/15 0745	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 170 00W)	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/05/15 0920	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/05/15 1500	M-100	U.S.S.R.	MOLODEZHNAJA	2J	NP	77	CENTRAL AEROLOGICAL OBS
74/05/15 2137	NASA 14.482 T 2-5980	UNITED STATES	WALLOPS ISLAND	2F 3C 3D	LD PX RU XP	138	KENDALL, B.R. SCHMERLING, E.R.
74/05/15 2211	NASA 26.018US	UNITED STATES	WHITE SANDS	6C 6D	QK	281	PARKINSON, W.H. REEVES, E.M.
74/05/16 1500	M-100	INDIA	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
74/05/18 0640	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 154 00W)	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/05/21 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/05/22 0640	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 140 00W)	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/05/22 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/05/22 1500	M-100	INDIA	THUMBA	2J	NP	81	CENTRAL AEROLOGICAL OBS
74/05/22 1500	M-100	U.S.S.R.	MOLODEZHNAJA	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/05/25 0500	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 125 00W)	2J	NP	87	CENTRAL AEROLOGICAL OBS

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OF POOR QUALITY

*IDENTIFIES LAUNCHINGS THAT FAILED TO RETURN USEFUL DATA.
**NO SCIENTIFIC INSTRUMENTS USED.

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
74/05/27 0400	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 110 00W)	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/05/28 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/05/29 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/05/29 1500	M-100	INDIA	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/05/29 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	97	CENTRAL AEROLOGICAL OBS
74/05/29 1948	NASA 30.001WT	UNITED STATES	WALLOPS ISLAND	0A	**	46	FLOWERS,B.J.
74/06/05 0010	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/06/05 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/06/12 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/06/12 1500	M-100	INDIA	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
74/06/12 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	91	CENTRAL AEROLOGICAL OBS
74/06/16 0510	NASA 21.017UG	UNITED STATES	WHITE SANDS	7D 7E 7F	CRQH SWQI XG	187	BOWYER,C.S.
74/06/18 0500	SL-1104	AUSTRALIA UNITED KINGDOM	WOOMERA	7F	ZZ	245	CRUISE,A.M. CULHANE,J.L. MITCHELL,R.J. TUOHY,I.R.
74/06/18 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/06/19 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	66	CENTRAL AEROLOGICAL OBS
74/06/19 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/06/19 1700	NASA 26.036US	UNITED STATES	WHITE SANDS	6D 6E	CRKE MT	200	JEFFERIES,J.T.
74/06/20 0815	MR-12	U.S.S.R.	HEISS ISLAND	2G 3D 4A 4B	OHIQ PXST UTCZ UTIQ UTVP	160	INST OF APPLIED GEOPHYS SSCNR
74/06/20 2003	MR-12	U.S.S.R.	HEISS ISLAND	2G 3D 4A 4B	OHIQ PXST UTCZ UTVP	160	INST OF APPLIED GEOPHYS SSCNR
74/06/21 1206	MR-12	U.S.S.R.	HEISS ISLAND	2G 3D 4A 4B	OHIQ PXST UTCZ UTVP	160	INST OF APPLIED GEOPHYS SSCNR
74/06/21 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	95	CENTRAL AEROLOGICAL OBS
74/06/26 0910	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/06/26 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	94	CENTRAL AEROLOGICAL OBS
74/06/27 1845	NASA 26.015CS	UNITED STATES	WHITE SANDS	6F	CRQH MT XG DC	222	DAVIS,J.M. KRIEGER,A.
74/06/29 0110	A07.105-07 D 2-7285	UNITED STATES	WALLOPS ISLAND	2A	DC	184	ROSENBERG,N.W.
74/06/29 1945	A04.208-01 D 2-7306	UNITED STATES	WALLOPS ISLAND	2L	QKKR	211	HEROUX,L.J.
74/06/29 2000	A09.213-02 D 2-7300	UNITED KINGDOM UNITED STATES	WALLOPS ISLAND	2G 3B	BD PXSK PX	110	PHILBRICK,C.R. REES,D.
74/06/29 2016	NASA 21.028IA	UNITED STATES	WALLOPS ISLAND	2A 2B 2C 2F	SWQI 2G	234	VON ZAHN,U.
74/06/29 2033	A08.306-04 D 2-7304	UNITED STATES	WALLOPS ISLAND	2F 2L	GKYZ HP SWQI	189	CHAMPION,K.S.W. FAIRE,A.C. WEEKS,L.H.
74/06/29 2105	A08.207-02 D 2-7298	UNITED STATES	WALLOPS ISLAND	1C 3D	DC SWQI	186	GOLOMB,D. GOOD,R.E. ROSENBERG,N.W.
74/06/29 2110	NASA 15.104UI T 1-7325	UNITED STATES	WALLOPS ISLAND	3C 3D 3E	LDKF	89	HALE,L.C.
74/06/30 0005	NASA 15.125UI T 1-7326	UNITED STATES	WALLOPS ISLAND	3C 3D 3E	LDIZ	83	HALE,L.C.
74/06/30 0106	A09.301-01 D 2-7290	UNITED STATES	WALLOPS ISLAND	2A	DC	203	ROSENBERG,N.W.
*74/06/30 0111	A09.001-03 D 2-7302	UNITED STATES	WALLOPS ISLAND	3D	LDLU PXSK DC	16	MARCISI,R.S. ROSENBERG,N.W.
*74/06/30 0126	A09.301-02 D 2-7291	UNITED STATES	WALLOPS ISLAND	2A	DC	---	ROSENBERG,N.W.
74/06/30 0220	NASA 14.521UI T 2-7307	UNITED STATES	WALLOPS ISLAND	3A 3C 3E	LDLU SE UTVP	196	BOWHILL,S.A. SMITH,L.G.
74/06/30 0315	NASA 15.126UE T 1-7327	UNITED STATES	WALLOPS ISLAND	3C 3D 3E	LOIZ	72	HALE,L.C.
*74/06/30 0345	A09.301-05 D 2-7292	UNITED STATES	WALLOPS ISLAND	2A	DC	201	ROSENBERG,N.W.
74/06/30 0440	NASA 14.522UI T 2-7308	UNITED STATES	WALLOPS ISLAND	3A 3C 3E	LDLU SE UTVP	191	BOWHILL,S.A. SMITH,L.G.
74/06/30 0530	NASA 14.529UA T 2-7310	UNITED STATES	WALLOPS ISLAND	2X	PX	134	ZIPP,E.C.,JR.
74/06/30 0558	A09.207-04 D 2-7293	UNITED STATES	WALLOPS ISLAND	2A 2F 2L	DC HP SWQI	188	FAIRE,A.C. LLENELLYN,E.J. ROSENBERG,N.W.
74/06/30 0710	A08.207-01 D 2-7299	UNITED STATES	WALLOPS ISLAND	1C 3D	DC	185	GOLOMB,D. GOOD,R.E. ROSENBERG,N.W.
74/06/30 0730	A09.301-04 D 2-7294	UNITED STATES	WALLOPS ISLAND	1C 3D	DC SWQI	178	GOLOMB,D. HENDERSON,W. ROSENBERG,N.W.

*IDENTIFIES LAUNCHINGS THAT FAILED TO RETURN USEFUL DATA.

DATE AND TIME OF LAUNCH	TIME (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
74/06/30	0835	A10.301-06 D 2-7295	UNITED STATES	WALLOPS ISLAND	1C 3D	DC SWQ1	191	GOLOMB, D. ROSENBERG, N.W.
74/06/30	0845	A09.001-04 D 2-7303	UNITED STATES	WALLOPS ISLAND	3D	LDLU PXSK	17	NARCISI, R.S.
74/06/30	0900	NASA 14.508UA T 2-7311	UNITED STATES	WALLOPS ISLAND	2B 2C	GO	204	DUBIN, M. HARVATH, J.J.
74/06/30	0915	NASA 14.523UI T 2-7309	UNITED STATES	WALLOPS ISLAND	3A 3C 3E	LDLU SE UTVP	199	BOWHILL, S.A. SMITH, L.G.
74/06/30	1001	A10.209-02 D 2-7305	UNITED STATES	WALLOPS ISLAND	2F 2L	GKZ HP SWQ1	228	CHAMPION, K.S.W. FAIRE, A.C. WEEKS, L.H. ROSENBERG, N.W.
74/06/30	1255	A09.105-09 D 2-7296	UNITED STATES	WALLOPS ISLAND	3D	DC	152	ROSENBERG, N.W.
74/06/30	1320	A09.301-07 D 2-7297	UNITED STATES	WALLOPS ISLAND	3D	DC	185	ROSENBERG, N.W.
74/07/03	0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
74/07/03	1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/07/05	0204	NASA 14.433GE TD -7123	CANADA UNITED STATES	FORT CHURCHILL	4A	OHOR	140	BERTSCH, D.L. PELLERIN, C.J. REAMES, D.V.
74/07/06	1432	NASA 14.488GE TD -7124	CANADA UNITED STATES	FORT CHURCHILL	4A	OHOR	141	BERTSCH, D.L. PELLERIN, C.J. REAMES, D.V.
74/07/10	0920	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
74/07/10	1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	95	CENTRAL AEROLOGICAL OBS
74/07/17	0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/07/17	1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	96	CENTRAL AEROLOGICAL OBS
74/07/20	0610	NASA 13.084UG	UNITED STATES	WHITE SANDS	7F	CR MT UTSF	195	KRAUSHAAR, W.L.
74/07/24	0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/07/24	1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/07/25	1800	NASA 15.106UI	UNITED STATES	WHITE SANDS	2J	CX	74	SHELDON, W.R.
74/07/30	1422	G 1-7460	UNITED STATES	WALLOPS ISLAND	0D 2J	OOAC	72	WRIGHT, D.U., JR.
74/07/30	1716	G 1-7461	UNITED STATES	WALLOPS ISLAND	0D 2J	OOAC XPCA	72	WRIGHT, D.U., JR.
74/07/30	1900	G 1-7462	UNITED STATES	WALLOPS ISLAND	0D 2J	OOAC XPCA	75	WRIGHT, D.U., JR.
74/07/31	0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/07/31	1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	91	CENTRAL AEROLOGICAL OBS
74/08/07	0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	93	CENTRAL AEROLOGICAL OBS
74/08/07	1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/08/14	0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/08/14	1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/08/14	1808	NASA 14.417UA T 2-7142	UNITED STATES	WALLOPS ISLAND	2J	AK	133	DUBIN, M. HEMENWAY, C.L.
74/08/14	1900	M-100	U.S.S.R.	SHOKALSKI (SHIP) (20 00N 65 00E)	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/08/16	1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	92	CENTRAL AEROLOGICAL OBS
74/08/17	0500	A09.214-02	UNITED STATES	WHITE SANDS	0E 3C	NP LDLU	161	SHERMAN, C.
74/08/18	0859	FERDINAND-036	AUSTRIA FED REP OF GERMANY NORWAY SWEDEN	KIRUNA	2C 2G 6X	LD LQ	106	KRANKOWSKY, D.K.H. RIEDLER, W.V. THRAE, E.V.
74/08/18	1930	M-100	U.S.S.R.	SHOKALSKI (SHIP) (10 00N 65 00E)	2J	NP	91	CENTRAL AEROLOGICAL OBS
74/08/20	1830	M-100	U.S.S.R.	SHOKALSKI (SHIP) (04 00N 65 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/08/20	1855	S -210-010	JAPAN	KAGOSHIMA	2X 3C 3E 3X	OOAC SWQ1	112	EJIRI, M. ITO, T. IWAGAMI, N. OGAWA, T. OYAMA, K. WATANABE, T. WATANABE, Y.
74/08/20	2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	91	CENTRAL AEROLOGICAL OBS
74/08/21	1140	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	91	CENTRAL AEROLOGICAL OBS
74/08/23	0720	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
74/08/23	1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	92	CENTRAL AEROLOGICAL OBS
74/08/23	1900	M-100	U.S.S.R.	SHOKALSKI (SHIP) (07 00S 65 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/08/24	1930	M-100	U.S.S.R.	SHOKALSKI (SHIP) (10 00S 65 00E)	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/08/26	0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
74/08/26	1340	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	91	CENTRAL AEROLOGICAL OBS
74/08/27	2300	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
74/08/28	0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/08/28	1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/08/30	0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/09/02	0930	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	80	CENTRAL AEROLOGICAL OBS
74/09/03	1930	M-100	U.S.S.R.	SHOKALSKI (SHIP) (21 00S 65 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
74/09/03	2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/09/03	2325	P--099H	UNITED KINGDOM	SOUTH OIST	4B	UTCZ UTIQ	136	ROTHWELL, P.H.M.
74/09/04	0524	A05.391-01	AUSTRALIA UNITED STATES	WOOMERA	7B	SWOG	193	WALKER, R.G.
74/09/04	0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
74/09/04	1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	85	CENTRAL AEROLOGICAL OBS

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OF POOR QUALITY

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
74/09/05 1940	M-100	U.S.S.R.	SHOKALSKI (SHIP) (28 00S 65 00E)	2J	NP	80	CENTRAL AEROLOGICAL OBS
74/09/06 2359	P--094H	UNITED KINGDOM	SOUTH UIST	4B	UTCZ UTIQ	174	ROTHWELL,P.H.M.
74/09/10 1940	M-100	U.S.S.R.	SHOKALSKI (SHIP) (42 00S 65 00E)	2J	NP	79	CENTRAL AEROLOGICAL OBS
74/09/10 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/09/11 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
74/09/11 1102	P--090H	UNITED KINGDOM	SOUTH UIST	3D	PX	135	NORMAN,K.
74/09/11 1325	A05.391-02	AUSTRALIA UNITED STATES	WOOMERA	7B	SWOG	200	WALKER,R.G.
74/09/11 1400	M-100	U.S.S.R.	MOLDEZHNYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/09/13 2000	M-100	U.S.S.R.	SHOKALSKI (SHIP) (50 00S 65 00E)	2J	NP	91	CENTRAL AEROLOGICAL OBS
74/09/15 1140	K -09M-046	JAPAN	KAGOSHIMA	3A 3C 3E 4X 5A	BD LDKF LDTP SEZA	336	EJIRI,M. KANAKO,O. KAWASHIMA,N. KAYA,N. MATSUMOTO,H. MIYATAKE,S. MURASATO,Y. OBAYASHI,T. OKAMURA,S. OYAMA,K. SASAKI,S. TSURUDA,K. WATANABE,Y. YAMORI,A. YASUDA,Y.
74/09/15 1800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (45 00S 65 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/09/16 1900	M-100	U.S.S.R.	SHOKALSKI (SHIP) (42 00S 65 00E)	2J	NP	83	CENTRAL AEROLOGICAL OBS
74/09/17 1533	A05.391-03	AUSTRALIA UNITED STATES	WOOMERA	7B	SWOG	193	WALKER,R.G.
74/09/18 0920	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/09/18 1300	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/09/18 1743	NASA 13.035US	UNITED STATES	WHITE SANDS	6D 6E	QKKQ SWQJ	252	PARKINSON,W.H. REEVES,E.M.
74/09/19 0200	K -09M-047	JAPAN	KAGOSHIMA	0C 2G 3C 3D 3E	LDKF LDLU PXGS PXSK	328	EJIRI,M. HASEBE,A. HAYASHI,T. HIRAO,K. ITOH,T. MUKAI,Y. OGAWARA,Y. OYAMA,K.
74/09/19 1426	MR-12	U.S.S.R.	VOLGOGRAD	6D 6E	GYKZ SWQI	---	CENTRAL AEROLOGICAL OBS
74/09/19 1440	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/09/19 1547	MR-12	U.S.S.R.	VOLGOGRAD	2G 3D 4A 4B	PXST UTIQ	---	CENTRAL AEROLOGICAL OBS
74/09/19 1731	MR-12	U.S.S.R.	VOLGOGRAD	2G 3D 4A 4B	PXST UTIQ	---	CENTRAL AEROLOGICAL OBS
74/09/19 1900	MR-12	U.S.S.R.	VOLGOGRAD	2C 2F 3D 4A 4B	LG OHIQ PXST UTCZ	---	INST OF APPLIED GEOPHYS SSCNR
74/09/19 2100	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	91	CENTRAL AEROLOGICAL OBS
74/09/20 0030	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	---	CENTRAL AEROLOGICAL OBS
74/09/20 0310	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/09/20 0400	MR-12	U.S.S.R.	VOLGOGRAD	2B 2C 4B	LG UTIQ	---	CENTRAL AEROLOGICAL OBS INST OF APPLIED GEOPHYS SSCNR
74/09/20 0600	MR-12	U.S.S.R.	VOLGOGRAD	2G 3C 3D 3E 4A 4B	LDKF LDLU OHIQ PXST UTCZ	---	INST OF APPLIED GEOPHYS INST OF EXP METEOROLOGY SSCNR
74/09/20 0718	MR-12	U.S.S.R.	VOLGOGRAD	2C 2F 2G 3D 4A 4B	LG OHIQ PXST UTCZ	---	INST OF APPLIED GEOPHYS SSCNR
74/09/20 0740	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/09/20 1000	MR-12	U.S.S.R.	VOLGOGRAD	2G 3C 3D 3E 4A 4B	LDKF LDLU OHIQ PXST UTCZ	---	INST OF APPLIED GEOPHYS INST OF EXP METEOROLOGY SSCNR
74/09/20 1100	MR-12	U.S.S.R.	VOLGOGRAD	2A 2B 2C	CR MT	---	CENTRAL AEROLOGICAL OBS

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74/09/20 1132	K-09M-048	JAPAN	KAGOSHIMA	2C 3E 4B 7E	PXGS PXVY UTSF	348	HAYAKAWA,S. HIRAO,K. ITOH,T. KUBO,H. MATSUMURA,S. MUKAI,T. MURAKAMI,T. NAGASE,F. OYAMA,K.
74/09/20 1330	MR-12	U.S.S.R.	VOLGOGRAD	2C 2F 2G 3D 4A 4B	LG OHIQ PXST UTCZ	---	INST OF APPLIED GEOPHYS SSCNR
74/09/20 1430	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/09/20 1700	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	93	CENTRAL AEROLOGICAL OBS
74/09/20 1840	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/09/20 1900	M-100	U.S.S.R.	SHOKALSKI (SHIP) (29 00S 65 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
74/09/20 1936	MR-12	U.S.S.R.	VOLGOGRAD	2A 2C 2G 3C 3D 3E 4A 4B	DCOM LDKF LDLU OHIQ PXST UTCZ	---	INST OF APPLIED GEOPHYS SSCNR
74/09/20 2220	MR-12	U.S.S.R.	VOLGOGRAD	2C 2F 3D 4A 4B	LG OHIQ PXST UTCZ	---	INST OF APPLIED GEOPHYS SSCNR
74/09/20 2236	MR-12	U.S.S.R.	VOLGOGRAD	2A 2C 2G 3C 3D 3E 4A 4B	DCOM LDKF LDLU OHIQ PXST UTCZ	---	INST OF APPLIED GEOPHYS INST OF EXP METEOROLOGY SSCNR
74/09/21 0310	MR-12	U.S.S.R.	VOLGOGRAD	6D 6E	GYKZ SW	---	CENTRAL AEROLOGICAL OBS
74/09/21 0440	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	91	CENTRAL AEROLOGICAL OBS
74/09/21 0600	MR-12	U.S.S.R.	VOLGOGRAD	2G 3D 4A 4B	OHIQ PXST UTIQ	---	CENTRAL AEROLOGICAL OBS
74/09/21 0930	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/09/21 1130	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
74/09/24 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/09/24 2317	P--050H	UNITED KINGDOM	SOUTH UIST	1C	QKPM	133	BYRNE,F.N.
74/09/25 0910	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	91	CENTRAL AEROLOGICAL OBS
74/09/25 1500	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/09/27 0209	P--057H	UNITED KINGDOM	SOUTH UIST	1C	QKPM	136	BYRNE,F.N.
74/09/28 1132	P--161H	UNITED KINGDOM	SOUTH UIST	3A 3C 3X 6E	GYKZ SE	119	WILLIAMS,E.R.
74/10/01 1825	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/10/01 2000	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/10/01 2320	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/10/02 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
74/10/02 1500	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/10/04 1440	SL-1012	AUSTRALIA UNITED KINGDOM	WOONERA	7F	QKCM	196	CULHANE,J.L. GUTTRIDGE,P. HOLMES,J. ZARNECKI,J.C. MCINTOSH,R.,JR. COOPER,R.D. DALDORPH,R. GILES,B. HOFFMANN,J. KENDZIORA,E. REINIGER,K. REPPIN,C. STAUBERT,R.
74/10/04 1616	NASA 21-015GP	UNITED STATES	WHITE SANDS	0C 0D	**	227	
74/10/07 0640	SL-1304	FED REP OF GERMANY SPAIN UNITED KINGDOM	EL ARENOSILLO	0B 7F	SE UTSF UTUH	190	
74/10/08 1940	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	79	CENTRAL AEROLOGICAL OBS
74/10/08 2210	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	77	CENTRAL AEROLOGICAL OBS
74/10/09 0000	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/10/09 0820	F -74001	SPAIN	EL ARENOSILLO	0D	AF	250	MATEO,A. RODRIGUEZ,L. SIMON,J. VAZQUEZ,M.
74/10/09 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/10/09 1400	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	92	CENTRAL AEROLOGICAL OBS
74/10/10 0530	SL-1471	AUSTRALIA UNITED KINGDOM	WOONERA	0D	**	270	BOVINGTON,J. BROWN,D. CARTER,D.
74/10/10 1930	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
74/10/15 1453	MR-12	U.S.S.R.	VOLGOGRAD	2A 2B 2G 3D 4A 4B	DCOM OHIQ PXST UTCZ	---	INST OF APPLIED GEOPHYS INST OF EXP METEOROLOGY SSCNR
74/10/15 2030	MR-12	U.S.S.R.	VOLGOGRAD	2A 2C 3C 3D 3E 4A 4B	DCOM LDKF LDLU OHIQ PXST UTCZ	---	CENTRAL AEROLOGICAL OBS INST OF APPLIED GEOPHYS INST OF EXP METEOROLOGY SSCNR
74/10/15 2300	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS

**NO SCIENTIFIC INSTRUMENTS USED.

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
74/10/16 0214	MR-12	U.S.S.R.	VOLGOGRAD	2A 2C 2G 3C 3D 3E 4A 4B	DCOM LDKF LDLU OHIO PKST UTCZ UTIC	---	INST OF APPLIED GEOPHYS INST OF EXP METEOROLOGY SSCNR
74/10/16 1200	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	91	CENTRAL AEROLOGICAL OBS
*74/10/19 1600	NASA 26.016AS	UNITED STATES	WHITE SANDS	6F	CRQH	201	BLAKE,R.
74/10/22 0300	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 110 00W)	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/10/22 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/10/23 0920	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/10/23 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
74/10/27 0400	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 110 00W)	2J	NP	84	CENTRAL AEROLOGICAL OBS
74/10/30 0400	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 125 00W)	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/10/30 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/10/30 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	93	CENTRAL AEROLOGICAL OBS
74/10/30 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/11/01 2044	SL-1221	NORWAY SWEDEN UNITED KINGDOM	ANDOYA	3C 3E 4B 5A	BD GI LDLU PKGS UTCZ UTIQ	225	BRYANT,D.A. EDWARDS,T. FAHLESON,U.V.
74/11/02 0700	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 140 00W)	2J	NP	81	CENTRAL AEROLOGICAL OBS
74/11/03 1157	NASA 13.107UG	UNITED STATES	KAUAI	7F	UTSF	169	NOVICK,R. WOLFF,R.S.
74/11/05 0800	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 154 00W)	2J	NP	84	CENTRAL AEROLOGICAL OBS
74/11/05 1800	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/11/05 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/11/06 1000	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	95	CENTRAL AEROLOGICAL OBS
74/11/13 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	93	CENTRAL AEROLOGICAL OBS
74/11/13 1400	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	95	CENTRAL AEROLOGICAL OBS
74/11/14 0946	MR-12	FRANCE U.S.S.R.	HEISS ISLAND	2A 2B 2G 3D 4A 4B	LDKF LDTP OHIO PKST UTCZ UTIQ UTVP	---	CNRS INST OF APPLIED GEOPHYS SSCNR
74/11/16 0506	MR-12	FRANCE U.S.S.R.	HEISS ISLAND	2A 2B 2G 3D 4A 4B	LDKF LDTP OHIO PKST UTCZ UTIQ UTVP	---	CNRS INST OF APPLIED GEOPHYS SSCNR
74/11/16 0921	MR-12	FRANCE U.S.S.R.	HEISS ISLAND	2A 2B 4A 4B	LDKF LDTP OHIO UTCZ UTIQ UTVP	---	CNRS INST OF APPLIED GEOPHYS SSCNR
*74/11/16 0949	NASA 13.0920G	UNITED STATES	WHITE SANDS	7E	CRQH GYZ QKKQ SWQJ	181	CARRUTHERS,G.R.
74/11/16 1035	NASA 13.034UG	UNITED STATES	WHITE SANDS	7E 7F	QKSF UT	166	BRADY,H.V.D. RAPPAPORT,S.
74/11/19 2000	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/11/20 0600	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	93	CENTRAL AEROLOGICAL OBS
74/11/20 0946	MR-12	FRANCE U.S.S.R.	HEISS ISLAND	2A 2B 4A 4B	LDKF LDTP OHIO UTCZ UTIQ UTVP	---	CNRS INST OF APPLIED GEOPHYS SSCNR
74/11/20 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	92	CENTRAL AEROLOGICAL OBS
74/11/25 0722	NASA 18.154UA	UNITED STATES	WHITE SANDS	1C 7D	PX SWQJ SWRO	133	BARTH,C.A. GOODE,E.
74/11/25 0810	NASA 21.031UG	UNITED STATES	WHITE SANDS	7E 7F	CRQH QKSF SWQJ	184	BOWYER,C.S.
74/11/25 0915	NASA 26.042UG	UNITED STATES	WHITE SANDS	7E	XG QKKQ SWQJ UTCZ	207	BLESS,R.C.
74/11/26 1030	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 158 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
74/11/26 1440	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 158 00E)	2J	NP	91	CENTRAL AEROLOGICAL OBS
74/11/27 0920	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	97	CENTRAL AEROLOGICAL OBS
74/11/27 1800	NASA 26.041US	UNITED STATES	WHITE SANDS	2E 6E	OK SWQJ	297	CARLSON,R.W. JUDGE,D.L. MALOY,J.O.

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74/11/27 2100	M-100		U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/11/27 2230	M-100		U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
*74/11/28 1640	SL-0917		AUSTRALIA UNITED KINGDOM	WOOMERA	7D	CRQH QKKQ XG	203	GRIFFIN, W. HARDCASTLE, R. LEWIS, C. SHENTON, D.B. KRANKOWSKY, D.K.H.
74/11/29 1017	P--182H		FED REP OF GERMANY UNITED KINGDOM	SOUTH UIST	3D	PX	118	
74/11/29 1053	P--175H		UNITED KINGDOM	SOUTH UIST	2G 3C	LDLU QKPM	134	DICKINSON, P.H.G.
74/11/29 1209	P--179H		UNITED KINGDOM	SOUTH UIST	2F 3C	LDLU NX SEBZ	123	WILLIAMS, E.R.
74/11/30 0700	M-100		U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/12/02 1236	P--091H		UNITED KINGDOM	SOUTH UIST	3D	PX	129	NORMAN, K.
74/12/02 1600	M-100		U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/12/03 1930	M-100		U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
74/12/04 1200	M-100		U.S.S.R.	HEISS ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
74/12/04 1500	M-100		U.S.S.R.	MOLODEZHNYAYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/12/06 2332	AMF-58-041		BELGIUM CANADA JAPAN	CAPE PARRY	1B 2G 3C	LD PX SQI	---	EVANS, W. HIRAO, K. MCEWEN, D.J. MCNAMARA, A.G. MONFILS, A.G.V. SHEPHERD, G.G. WHALEN, B.A.
*74/12/07 2037	P--183H		FED REP OF GERMANY UNITED KINGDOM	SOUTH UIST	3D	PX	101	KRANKOWSKY, D.K.H.
74/12/07 2058	P--180H		UNITED KINGDOM	SOUTH UIST	2F 3C	LDLU NX SEBZ	132	WILLIAMS, E.R.
74/12/07 2226	P--176H		UNITED KINGDOM	SOUTH UIST	2G 3C	LDLU QKPM	137	DICKINSON, P.H.G.
74/12/07 2253	P--128H		UNITED KINGDOM	SOUTH UIST	1C	SWQI	138	GREER, R.G.H.
74/12/11 0100	M-100		U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/12/11 1400	M-100		U.S.S.R.	MOLODEZHNYAYA	2J	NP	84	CENTRAL AEROLOGICAL OBS
74/12/11 1430	M-100		U.S.S.R.	HEISS ISLAND	2J	NP	93	CENTRAL AEROLOGICAL OBS
74/12/11 2248	AAF-4B-032		CANADA	CAPE PARRY	1B 3C	LD PX SWQI	---	MCNAMARA, A.G. SHEPHERD, G.G. WHALEN, B.A.
74/12/13 1927	FERDINAND-037		NORWAY UNITED STATES	ANDOYA	0A 1B 3A 3C 3E 4B 4C 5A	GI LD LDIY LDLU LDTF OHVP PXGS SWQI	235	EVANS, D.S. FOLKESTAD, K. MAHLUM, B.N. MAYNARD, N.C. SORAAS, F. TROM, J.
74/12/13 2325	A09-401-01		UNITED STATES	WHITE SANDS	2F	HP	90	FAIRE, A.C.
74/12/14 0910	M-100		U.S.S.R.	HEISS ISLAND	2J	NP	94	CENTRAL AEROLOGICAL OBS
74/12/17 1112	P--086G		DENMARK UNITED KINGDOM	SONDRE STROMFJORD	2A	DCOM	165	REES, D.
74/12/17 1237	P--087G		DENMARK UNITED KINGDOM	SONDRE STROMFJORD	2A	DCOM	165	REES, D.
74/12/18 0200	M-100		U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
74/12/18 0900	M-100		U.S.S.R.	HEISS ISLAND	2J	NP	82	CENTRAL AEROLOGICAL OBS
74/12/18 1115	P--166G		DENMARK UNITED KINGDOM	SONDRE STROMFJORD	2A	DCOM	165	REES, D.
74/12/18 1245	P--167G		DENMARK UNITED KINGDOM	SONDRE STROMFJORD	2A	DCOM	165	REES, D.
74/12/18 1400	M-100		U.S.S.R.	MOLODEZHNYAYA	2J	NP	83	CENTRAL AEROLOGICAL OBS
74/12/21 0926	MR-12		FRANCE U.S.S.R.	HEISS ISLAND	2G 4A 4B	OHVQ PXST UTCZ	---	CNRS INST OF APPLIED GEOPHYS SSCNR
74/12/22 2300	M-100		U.S.S.R.	SHIRSHOV (SHIP) (00 00N 90 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
74/12/24 1813	MR-12		U.S.S.R.	HEISS ISLAND	2G 4A 4B	OHVQ PXST UTCZ	---	INST OF APPLIED GEOPHYS SSCNR
74/12/24 1850	M-100		U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
74/12/25 0000	M-100		U.S.S.R.	SHIRSHOV (SHIP) (01 00N 80 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/12/25 0140	M-100		U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
74/12/25 1500	M-100		U.S.S.R.	MOLODEZHNYAYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
74/12/28 0000	M-100		U.S.S.R.	SHIRSHOV (SHIP) (00 00N 66 00E)	2J	NP	91	CENTRAL AEROLOGICAL OBS
74/12/28 0615	NASA 26-030UG		UNITED STATES	WHITE SANDS	7F	CRKE UTSF	197	NOVICK, R. WOLFF, R.S.
74/12/31 1500	M-100		U.S.S.R.	MOLODEZHNYAYA	2J	NP	85	CENTRAL AEROLOGICAL OBS
75/01/02 1320	M-100		U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/01/02 1700	M-100		U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
75/01/04 1320	M-100		U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/01/04 1900	M-100		U.S.S.R.	SHIRSHOV (SHIP) (00 00N 65 00E)	2J	NP	92	CENTRAL AEROLOGICAL OBS
75/01/06 0200	M-100		U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/01/06 0900	M-100		U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS

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75/01/07 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
75/01/08 1400	M-100	U.S.S.R.	MOLDEZHAYAYA	2J	NP	82	CENTRAL AEROLOGICAL OBS
75/01/08 1600	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/01/09 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
75/01/10 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
75/01/10 1930	M-100	U.S.S.R.	SHIRSHOV (SHIP) (10 00N 65 00E)	2J	NP	80	CENTRAL AEROLOGICAL OBS
75/01/11 1930	M-100	U.S.S.R.	SHIRSHOV (SHIP) (05 00N 65 00E)	2J	NP	81	CENTRAL AEROLOGICAL OBS
75/01/12 2000	M-100	U.S.S.R.	SHIRSHOV (SHIP) (02 00N 65 00E)	2J	NP	83	CENTRAL AEROLOGICAL OBS
75/01/13 2050	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 65 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/01/14 2000	M-100	U.S.S.R.	SHIRSHOV (SHIP) (02 00S 65 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/01/14 2056	A09.301-08	UNITED STATES	WALLOPS ISLAND	0C	**	235	GUSTAFSON,P.E. MANSFIELD,E.S.
75/01/15 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	80	CENTRAL AEROLOGICAL OBS
75/01/15 0930	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/01/15 1500	M-100	U.S.S.R.	MOLDEZHAYAYA	2J	NP	84	CENTRAL AEROLOGICAL OBS
75/01/15 1950	M-100	U.S.S.R.	SHIRSHOV (SHIP) (05 00S 55 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
75/01/15 2246	A09.105-08	UNITED STATES	WALLOPS ISLAND	2A	DC	159	ROSENBERG,N.W. VICKERY,W.K.
75/01/16 2000	M-100	U.S.S.R.	SHIRSHOV (SHIP) (10 00S 65 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/01/17 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/01/17 0935	K-09M-049	JAPAN	KAGOSHIMA	1C 2F 3E 3X	LDKF LDTP OOAC SEZA SWQJ	363	KONDO,M. MAKINO,T. MORIOKA,A. NAKAMURA,M. OBAYASHI,T. OYA,H. OYAMA,K. SHINOKI,T. TOHMATSU,T. WATANABE,T. YAMAMOTO,H.
75/01/17 2243	A09.301-09	UNITED STATES	WALLOPS ISLAND	2A 2F	DCYQ HP	190	FAIRE,A.C. ROSENBERG,N.W. VICKERY,W.K.
75/01/18 0435	A10.213-01	UNITED STATES	WALLOPS ISLAND	1C 2G 3B	BD PKSK SWQJ DC	159	DANBEKAR,B.S. HAYWARD,M.C. PHILBRICK,C.R. GOLDB,D. GOOB,R.E.
75/01/18 0445	A10.301-010	UNITED STATES	WALLOPS ISLAND	1C 2G	SWQJ	183	ROSENBERG,N.W. SCHMERLING,E.R. SHELDON,W.R.
75/01/22 0226	NASA 15.129UE T21-7560	FRANCE UNITED STATES	KERGUELEN ISLAND	3C	UTIQ UTUH	---	SCHMERLING,E.R. SHELDON,W.R.
75/01/22 0236	NASA 15.130UE T21-7561	FRANCE UNITED STATES	KERGUELEN ISLAND	4B	UTIQ UTUH	---	SCHMERLING,E.R. SHELDON,W.R.
75/01/22 0920	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	93	CENTRAL AEROLOGICAL OBS
75/01/22 1500	M-100	U.S.S.R.	MOLDEZHAYAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/01/22 2310	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/01/25 1105	K-09M-050	JAPAN	KAGOSHIMA	3C 3E 3X 4B	LD LDTP OHSF	353	HAYAKAWA,S. IHO,T. MORI,H. MURAKAMI,T. NAGASE,F. NAKAMURA,M. ODA,M. OGAWA,T. OYAMA,K. YAMASHITA,K.
*75/01/25 1240	M P GFD-75001	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3C	LDIZ	---	CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
75/01/25 1333	M S CLO-75001	FED REP OF GERMANY SPAIN	EL ARENOSILLO	2A 2G 3C	CX LDLU QK	91	CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
75/01/29 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/01/29 1800	M-100	U.S.S.R.	MOLDEZHAYAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/01/30 0215	AED-58-043	CANADA	FORT CHURCHILL	1B 2C 5A 5B 8A	GI MT NR QK SWQI	244	DAVIES,W.E.R. DE LEEUW,J.H. HARRIS,F.N. KOEHLER,J.A. WLOCHOWICZ,R.
75/01/30 1215	M P GFD-75002	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3C	LDIZ	82	CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
75/01/30 1410	S4CLO-75001	FED REP OF GERMANY SPAIN	EL ARENOSILLO	2A 2G 3C	CX LDLU QK	117	CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
75/01/31 0930	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/02/01 0300	NASA 26.027GG	UNITED STATES	WHITE SANDS	7D 7E	QK	220	STECHER,T.P.
75/02/03 0415	NASA 15.138UE T21-7564	FRANCE UNITED STATES	KERGUELEN ISLAND	6F	XG SEZA UTIQ UTUH	---	SCHMERLING,E.R. SHELDON,W.R.

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**NO SCIENTIFIC INSTRUMENTS USED.

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75/02/03 0914	NASA 17.013CG	UNITED STATES	WHITE SANDS	7F	CRQH UTSF	253	CATURA,R.C.
75/02/03 2140	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	78	CENTRAL AEROLOGICAL OBS
75/02/04 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	76	CENTRAL AEROLOGICAL OBS
75/02/05 1302	M 5 CLO-75002	FED REP OF GERMANY SPAIN	EL ARENOSILLO	2A 2G 3C	CX LOLU QK	90	CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
75/02/05 1800	M-100	U.S.S.R.	MOLODEZHAYAYA	2J	NP	83	CENTRAL AEROLOGICAL OBS
75/02/07 1130	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	79	CENTRAL AEROLOGICAL OBS
75/02/09 0024	ISRO-18.009 P--1547/C	INDIA UNITED KINGDOM	THUMBA	2A 2C	DCOM	165	REES,D.
75/02/09 0024	ISRO-18.012 P--1557/C	INDIA UNITED KINGDOM	THUMBA	2A	DCVQ	170	REES,D.
75/02/09 0029	ISRO-18.010 P--1587/C	INDIA UNITED KINGDOM	THUMBA	3C 3E 5A 6D	BD LDLU SWQI	130	GUPTA,S.P. REES,D. SASTRY,T.S.G.
*75/02/09 0530	ISRO-18.011 P--1371/C	INDIA UNITED KINGDOM	THUMBA	3C 3E 5B	BD LDLU MTYQ	102	WILSON,J.W.G. REES,D. SASTRY,T.S.G.
75/02/09 0550	CE-001	INDIA	THUMBA	5B		---	REES,D. SASTRY,T.S.G.
75/02/09 0708	ISRO-05.023 ISRO-18.013 P--1597/C	INDIA UNITED KINGDOM	THUMBA	3C 3E 5A 6D	BD LDLU SWQI	130	GUPTA,S.P. REES,D. SASTRY,T.S.G.
75/02/10 0528	NASA 14.536UA TD -7409 TH2-7589	CANADA UNITED STATES	FORT CHURCHILL	1X	MT PK	142	ERDMAN,P. FINN,T. ZIPPE,E.C.,JR.
75/02/11 0216	NASA 08.065UE	CANADA UNITED STATES	FORT CHURCHILL	1B	OHSF	791	SCHERB,F.
75/02/12 0400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	93	CENTRAL AEROLOGICAL OBS
75/02/12 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/02/13 0443	NASA 14.535UA TD -7409 TH2-7588	CANADA UNITED STATES	FORT CHURCHILL	1X	MT PK	136	ERDMAN,P. FINN,T. ZIPPE,E.C.,JR.
75/02/13 1350	NASA 26.040UE	UNITED STATES	WHITE SANDS	6C	LDLU PXSK QK	295	HAYS,P.D. SHARP,W.E.
75/02/14 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
75/02/15 0125	NASA 15.131UE TZ1-7562	FRANCE UNITED STATES	KERGUELEN ISLAND	3C	UTIQ	---	SCHMERLING,E.R. SHELDON,W.R.
75/02/15 0136	NASA 15.132UE TZ1-7563	FRANCE UNITED STATES	KERGUELEN ISLAND	4B	UTIQ	---	SCHMERLING,E.R. SHELDON,W.R.
75/02/18 0706	NASA 18.1001UI	UNITED STATES	FAIRBANKS	1A 4B 5A 5B	BD MTYQ UTCZ	237	ANDERSON,H.R. CLOUTIER,P.A.
75/02/18 1915	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/02/18 2035	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/02/19 0400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
75/02/19 0535	CE-004 ISRO-05.025	INDIA UNITED KINGDOM	THUMBA	3C 5B	LDLU MTYQ	160	GUPTA,S.P. REES,D. SASTRY,T.S.G.
75/02/19 0837	ISRO-18.015 P--1567/C	INDIA UNITED KINGDOM	THUMBA	2A	DCVQ	170	REES,D.
75/02/19 0842	ISRO-18.014 P--1387/C	INDIA UNITED KINGDOM	THUMBA	3C 3E 5B	BD LDLU	133	WILSON,J.W.G.
75/02/19 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	83	CENTRAL AEROLOGICAL OBS
75/02/19 0904	CE-002	INDIA	THUMBA	5B	MTYQ	164	REES,D. SASTRY,T.S.G.
75/02/19 1332	ISRO-05.024 ISRO-18.016 P--1577/C	UNITED KINGDOM INDIA UNITED KINGDOM	THUMBA	2A 2C	DCOM	165	REES,D.
75/02/19 1500	M-100	U.S.S.R.	MOLODEZHAYAYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/02/20 1811	G 1-7753	UNITED STATES	WALLOPS ISLAND	0B	OOAC	69	WRIGHT,D.U.,JR.
75/02/20 1927	G 1-7754	UNITED STATES	WALLOPS ISLAND	0B	OOAC	67	WRIGHT,D.U.,JR.
75/02/21 1600	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	82	CENTRAL AEROLOGICAL OBS
75/02/21 1910	G 1-7755	UNITED STATES	WALLOPS ISLAND	2G	OOAC	70	KRUEGER,A.J.
75/02/25 0532	NASA 14.537UA TD -7409 TH2-7590	CANADA UNITED STATES	FORT CHURCHILL	1X	MT PK	138	ERDMAN,P. FINN,T. ZIPPE,E.C.,JR.
75/02/25 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/02/26 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/02/26 1500	M-100	U.S.S.R.	MOLODEZHAYAYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/02/26 2250	A30.413-03	UNITED STATES	FAIRBANKS	3C	LOIZ	104	HOWLETT,C. ULWICK,J.C.
75/02/28 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/03/01 0100	A30.311-06	UNITED STATES	FAIRBANKS	1A	SWQJ	111	KEMP,J. ULWICK,J.C.
75/03/01 0655	NASA 18.159UE	UNITED STATES	FAIRBANKS	1B 5B	GY MT OHCZ	190	ANDERSON,H.R. CLOUTIER,P.A.
75/03/01 1600	M-100	U.S.S.R.	SHIRSHOV (SHIP) (30 OBS 100 ODE)	2J	NP	91	CENTRAL AEROLOGICAL OBS
75/03/03 1600	M-100	U.S.S.R.	SHIRSHOV (SHIP) (30 OBS 88 ODE)	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/03/03 1720	M-100	U.S.S.R.	SHIRSHOV (SHIP) (30 OBS 88 ODE)	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/03/04 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/03/05 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS

*IDENTIFIES LAUNCHINGS THAT FAILED TO RETURN USEFUL DATA.

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
*75/03/05 1636	S16/2	CANADA NORWAY SWEDEN UNITED STATES	KIRUNA	1B 1X 2G 4B	OH1Q QK SW SWQ1	2	EVANS,W. FELDMAN,P.D. GRAHN,S. LLEWELLYN,E.J. THRANE,E.V. WITT,G.
75/03/05 2000	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/03/06 1820	M-100	U.S.S.R.	SHIRSHOV (SHIP) (32 OOS 70 OOE)	2J	NP	83	CENTRAL AEROLOGICAL OBS
75/03/07 0022	S13	NORWAY SWEDEN UNITED STATES	KIRUNA	2F 2G 3C 4B	LD OH1Q PX01 SEB2 SWQ1	109	BJORN,L. HENDERSON,W. LUNDIN,A. STEGMAN,J. THRANE,E.V. WITT,G.
75/03/07 1800	M-100	U.S.S.R.	SHIRSHOV (SHIP) (38 OOS 70 OOE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/03/07 1940	M-100	U.S.S.R.	SHIRSHOV (SHIP) (38 OOS 70 OOE)	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/03/09 1630	M-100	U.S.S.R.	KOROLEV (SHIP) (48 OOS 70 OOE)	2J	NP	81	CENTRAL AEROLOGICAL OBS
75/03/10 2119	NASA 04.334UA	CANADA UNITED STATES	FORT CHURCHILL	1B 7B 7C 7D	SWQ1	172	FASTIE,W.G.
75/03/11 1650	M-100	U.S.S.R.	SHIRSHOV (SHIP) (45 OOS 70 OOE)	2J	NP	82	CENTRAL AEROLOGICAL OBS
75/03/11 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
75/03/12 0232	NASA 14.416GA TD -7410 TH2-7587	CANADA UNITED STATES	FORT CHURCHILL	1B	QKQK	138	GENTIEU,E.P. MENTALL,J.E.
75/03/12 1120	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/03/12 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	92	CENTRAL AEROLOGICAL OBS
75/03/13 1600	M-100	U.S.S.R.	SHIRSHOV (SHIP) (35 OOS 70 OOE)	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/03/13 1615	NASA 15.137GM	UNITED STATES	WHITE SANDS	2G	OOZU	78	HILSENRAETH,E.
75/03/13 1702	S16/1	CANADA NORWAY SWEDEN UNITED STATES	KIRUNA	1B 1X 2G 4B	OH1Q QK SW SWQ1	106	EVANS,W. FELDMAN,P.D. GRAHN,S. LLEWELLYN,E.J. THRANE,E.V. WITT,G.
75/03/14 1820	M-100	U.S.S.R.	SHIRSHOV (SHIP) (30 OOS 70 OOE)	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/03/15 0410	NASA 17.015UG	UNITED STATES	WHITE SANDS	7F	CRQH QKSF XG QK XG	214	GORENSTEIN,P.
75/03/15 0700	NASA 26.039UG	UNITED STATES	WHITE SANDS	2E 7E	QK XG	261	FASTIE,W.G. HENRY,R.C. MOOS,H.W.
75/03/15 1550	M-100	U.S.S.R.	SHIRSHOV (SHIP) (24 OOS 70 OOE)	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/03/15 1634	ISRO-18.017 P--070T/C	INDIA UNITED KINGDOM	THUMBA	3C 4B	LDLU UTCZ	147	GUPTA,S.P. RAGHAVARAO,R. ROTHWELL,P.H.M.
75/03/16 0000	ISRO-18.018 P--184T/C	INDIA UNITED KINGDOM	THUMBA	3C 4B	LDLU UTCZ	120	GUPTA,S.P. RAGHAVARAO,R. ROTHWELL,P.H.M.
75/03/16 1400	M-100	U.S.S.R.	SHIRSHOV (SHIP) (18 OOS 69 OOE)	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/03/18 0827	NASA 18.165UE	UNITED STATES	FAIRBANKS	1B 5A 5B	LDLU MTHZ MTUI PXGS UTIQ	---	ARNOLDY,R.L. CAHILL,L.J.,JR.
75/03/18 1700	M-100	U.S.S.R.	KOROLEV (SHIP) (06 OOS 68 OOE)	2J	NP	83	CENTRAL AEROLOGICAL OBS
75/03/18 1840	M-100	U.S.S.R.	KOROLEV (SHIP) (06 OOS 68 OOE)	2J	NP	81	CENTRAL AEROLOGICAL OBS
75/03/18 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
75/03/19 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/03/19 0921	ISRO-18.019 P--185T/C	INDIA UNITED KINGDOM	THUMBA	3C 4B	LDLU UTCZ	107	GUPTA,S.P. RAGHAVARAO,R. ROTHWELL,P.H.M.
75/03/19 1500	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/03/19 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	82	CENTRAL AEROLOGICAL OBS
75/03/19 1700	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 OON 70 OOE)	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/03/20 1700	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 OON 76 OOE)	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/03/22 1700	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 OON 88 OOE)	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/03/23 1118	NASA 18.166UE	UNITED STATES	FAIRBANKS	1A 5A 5B	LDLU MTHZ MTUI PXGS UTIQ DCLA	230	ARNOLDY,R.L. CAHILL,L.J.,JR.
75/03/24 0006	ISRO-18.020 P--160T/C	INDIA UNITED KINGDOM	THUMBA	5A	NP	90	DESAI,J.N.
75/03/25 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/03/26 1105	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS

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DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
75/03/26 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
75/03/26 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	92	CENTRAL AEROLOGICAL OBS
75/04/02 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/04/02 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/04/02 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/04/03 0500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	82	CENTRAL AEROLOGICAL OBS
*75/04/04 1200	NASA 18-172GE	UNITED STATES	FAIRBANKS	3A 3G	CR DCLA DCOM	---	HEPPNER, J.P.
75/04/07 1851	G 1-7756	UNITED STATES	WALLOPS ISLAND	2G	NP	70	KRUEGER, A.J.
75/04/08 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	81	CENTRAL AEROLOGICAL OBS
75/04/09 1100	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
75/04/09 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
75/04/09 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/04/10 0440	NASA 13-088GG	UNITED STATES	WHITE SANDS	7D 7E	CRKE QKKQ	176	SMITH, A.M.
75/04/10 0954	A10.302-03	CANADA UNITED STATES	FORT CHURCHILL	2A 2F	DC HP	216	FAIRE, A.C. MACLEOD, M.A.
75/04/10 0954	A10.302-04	CANADA UNITED STATES	FORT CHURCHILL	2A	DC	219	MACLEOD, M.A.
75/04/10 1000	A10.403-03	CANADA UNITED STATES	FORT CHURCHILL	2G 3B	G1 PX	211	MACLEOD, M.A. NARCISI, R.S. SMIDDY, M.
75/04/11 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/04/12 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/04/12 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/04/13 0815	NASA 18-174GE	UNITED STATES	FAIRBANKS	3A 3G	CR DCLA DCOM	299	HEPPNER, J.P.
75/04/13 1038	NASA 18-173GE	UNITED STATES	FAIRBANKS	3A 3G	CR DCLA DCOM	299	HEPPNER, J.P.
75/04/14 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/04/16 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/04/16 0915	NASA 18-175GE	UNITED STATES	FAIRBANKS	3A 3G	CR DCLA DCOM	299	HEPPNER, J.P.
*75/04/16 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	---	CENTRAL AEROLOGICAL OBS
75/04/16 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	93	CENTRAL AEROLOGICAL OBS
75/04/18 1230	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/04/18 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/04/21 0907	A10.302-01	CANADA UNITED STATES	FORT CHURCHILL	2A 3B	DC G1	213	MACLEOD, M.A. SMIDDY, M.
75/04/21 0907	A10.302-02	CANADA UNITED STATES	FORT CHURCHILL	2A	DC	220	MACLEOD, M.A.
75/04/21 0912	A10.403-01	CANADA UNITED STATES	FORT CHURCHILL	2G	PX	222	MACLEOD, M.A. NARCISI, R.S.
75/04/23 0140	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/04/23 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
75/04/23 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/04/23 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/04/25 0413	A10.302-05	CANADA UNITED STATES	FORT CHURCHILL	1B 2A	DC SWQJ	214	GOOD, R.E. MACLEOD, M.A.
75/04/25 0413	A10.302-07	CANADA UNITED STATES	FORT CHURCHILL	2A	DC	220	MACLEOD, M.A.
75/04/25 0418	A10.403-01	CANADA UNITED STATES	FORT CHURCHILL	2G	PX	217	MACLEOD, M.A. NARCISI, R.S.
75/04/25 0800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (40 00N 160 00E)	2J	NP	90	CENTRAL AEROLOGICAL OBS
75/04/25 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/04/25 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/04/28 0100	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/04/28 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
75/04/28 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	81	CENTRAL AEROLOGICAL OBS
75/04/30 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
75/05/03 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/05/03 1900	P--164H	UNITED KINGDOM	SOUTH OIST	3A 3C 3X 6E	GYKZ NX SE	111	WILLIAMS, E.R.
75/05/04 1122	M S CL -75001	FED REP OF GERMANY SPAIN	EL ARENOSILLO	2A 3C	CX LDLU	85	CISNEROS, J.M. ROSE, G. WIDDEL, H.U.
75/05/04 1142	M P GFD-75003	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3C	LDIZ	81	CISNEROS, J.M. ROSE, G. WIDDEL, H.U.
75/05/05 1600	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	94	CENTRAL AEROLOGICAL OBS
75/05/06 1300	M-100	U.S.S.R.	SHOKALSKI (SHIP) (06 00N 160 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/05/07 0200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/05/07 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS

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OF POOR QUALITY

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
75/05/07 1100	M S CL -75002	FED REP OF GERMANY SPAIN	EL ARENOSILLO	2A 3C	CK LDLU	94	CISNEROS, J.M. ROSE, G. WIDDEL, H.U.
75/05/07 1118	M P GFD-75004	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3C	LDIZ	86	CISNEROS, J.M. ROSE, G. WIDDEL, H.U.
75/05/07 1200	M-100	U.S.S.R.	SHOKALSKI (SHIP) (08 00N 160 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/05/07 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
75/05/07 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/05/08 1200	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 160 00E)	2J	NP	95	CENTRAL AEROLOGICAL OBS
75/05/08 1330	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 160 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/05/08 2000	M-100	U.S.S.R.	SHIRSHOV (SHIP) (01 00S 65 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/05/09 1000	M-100	U.S.S.R.	SHOKALSKI (SHIP) (03 00S 160 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/05/09 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
75/05/11 0800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (09 00S 176 00E)	2J	NP	---	CENTRAL AEROLOGICAL OBS
75/05/13 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (17 00S 162 00E)	2J	NP	---	CENTRAL AEROLOGICAL OBS
75/05/14 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
75/05/14 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	91	CENTRAL AEROLOGICAL OBS
75/05/14 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/05/14 2030	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/05/15 1525	NASA 25.003GT NASA 25.003NP	UNITED STATES	WHITE SANDS	0A 0C 0D	**	224	FIKES, E.H. JUVINALL, G.L. PETERSON, N.E., JR. YOST, V.H.
75/05/17 1830	M-100	U.S.S.R.	SHIRSHOV (SHIP) (28 00S 65 00E)	2J	NP	81	CENTRAL AEROLOGICAL OBS
75/05/17 2040	M-100	U.S.S.R.	SHIRSHOV (SHIP) (28 00S 65 00E)	2J	NP	79	CENTRAL AEROLOGICAL OBS
75/05/19 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/05/20 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/05/21 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
75/05/21 1000	M-100	U.S.S.R.	SHOKALSKI (SHIP) (30 00S 160 00E)	2J	NP	92	CENTRAL AEROLOGICAL OBS
75/05/21 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	66	CENTRAL AEROLOGICAL OBS
75/05/21 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/05/22 1600	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/05/23 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/05/24 0100	NASA 18.170GE	PERU UNITED STATES	CHILCA	1B 3B 3C 3F 4B 4C 7F	GI LDLU OHIO OHUH SWRI LDKF	338	BARCUS, J.R. GOLDBERG, R.A. JONES, W.H. SZUSZCZEWICZ, E. WILLIAMSON, P.R. HALE, L.C.
75/05/24 0105	NASA 15.139UE TU1-7731	PERU UNITED STATES	CHILCA	3C 3D 3E	LDKF	93	HALE, L.C.
75/05/24 0152	NASA 15.133GM TU1-7727	PERU UNITED STATES	CHILCA	2G	00ZU	71	HILSENATH, E.
75/05/24 0655	NASA 18.171GE	PERU UNITED STATES	CHILCA	1B 3B 3C 3F 4B 4C 7F	LDLU OHIO OHUH	324	BARCUS, J.R. GOLDBERG, R.A. JONES, W.H. SZUSZCZEWICZ, E. WILLIAMSON, P.R. HALE, L.C.
75/05/24 0705	NASA 15.140UE TU1-7732	PERU UNITED STATES	CHILCA	3C 3D 3E	LDKF	91	HALE, L.C.
75/05/24 0744	NASA 15.134GM TU1-7728	PERU UNITED STATES	CHILCA	2G	00ZU	68	HILSENATH, E.
75/05/24 0842	NASA 15.135GM TU1-7729	PERU UNITED STATES	CHILCA	2G	00ZU	67	HILSENATH, E.
75/05/24 1030	M-100	U.S.S.R.	SHOKALSKI (SHIP) (40 00S 160 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/05/24 1424	G 1-7743	PERU UNITED STATES	CHILCA	2G	00AC	70	KRUEGER, A.J.
75/05/24 1900	G 1-7742	PERU UNITED STATES	CHILCA	2G	00AC	70	KRUEGER, A.J.
75/05/25 1944	G 1-7744	PERU UNITED STATES	CHILCA	2G	00AC	69	KRUEGER, A.J.
75/05/25 2040	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 65 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/05/26 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
75/05/27 0801	NASA 14.530UA TU2-7725	PERU UNITED STATES	CHILCA	2G	AK	127	DUBIN, M. HEMENWAY, C.L.
75/05/28 0200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/05/28 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	94	CENTRAL AEROLOGICAL OBS
75/05/28 1440	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
75/05/28 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	82	CENTRAL AEROLOGICAL OBS
75/05/28 1700	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	94	CENTRAL AEROLOGICAL OBS

**NO SCIENTIFIC INSTRUMENTS USED.

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
75/05/28 1930	NASA 15.142UE	PERU UNITED STATES	CHILCA	3C 3D 3E	LKXF	86	HALE,L.C.
75/05/28 2026	NASA 14.532UE TU2-7721	PERU UNITED STATES	CHILCA	3A 3C 3E	LDLU SE UTVP	191	BOWHILL,S.A. SMITH,L.G.
75/05/28 2116	NASA 15.141UE YU1-7733	PERU UNITED STATES	CHILCA	3C 3D 3E	LDIZ	82	HALE,L.C.
75/05/29 0355	NASA 14.538UA TU2-7722	PERU UNITED STATES	CHILCA	3D	QKPM	131	DUBIN,M. ZIFF,E.C.,JR.
75/05/29 1820	M-100	U.S.S.R.	SHIRSHOV (SHIP) (20 00S 65 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/05/30 0435	NASA 14.524UE TU2-7719	PERU UNITED STATES	CHILCA	3A 3C 3E	LDLU SE UTVP	187	BOWHILL,S.A. SMITH,L.G.
75/05/30 1600	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/06/02 0511	NASA 14.525UE TU2-7720	PERU UNITED STATES	CHILCA	3A 3C 3E	LDLU SE UTVP	187	BOWHILL,S.A. SMITH,L.G.
*75/06/03 1614	NASA 18.149GE	PERU UNITED STATES	CHILCA	5A	BD GI LDLU MT MTBD MTUI	---	MAYNARD,N.C.
75/06/03 2300	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/06/04 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/06/04 1500	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/06/04 1500	M-100	U.S.S.R.	THUMBA	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/06/04 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/06/04 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
75/06/06 1500	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
75/06/06 1930	M-100	U.S.S.R.	SHIRSHOV (SHIP) (20 00S 65 00E)	2J	NP	81	CENTRAL AEROLOGICAL OBS
75/06/07 1607	NASA 18.150GE	PERU UNITED STATES	CHILCA	5A	BD GI LDLU MT MTBD MTUI	259	MAYNARD,N.C.
75/06/07 2110	M-100	U.S.S.R.	SHIRSHOV (SHIP) (14 00S 65 00E)	2J	NP	90	CENTRAL AEROLOGICAL OBS
75/06/08 1700	M-100	U.S.S.R.	SHIRSHOV (SHIP) (10 00S 65 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
*75/06/09 1842	NASA 13.112UA	UNITED STATES	WHITE SANDS	1C 6D 6E	QK	29	BARTH,C.A.
75/06/10 0800	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 65 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/06/10 1015	A03.103-01	UNITED STATES	WHITE SANDS	2F	QK	158	WEEKS,L.H.
75/06/10 1319	FERDINAND-042	AUSTRIA FED REP OF GERMANY NORWAY	ANDOYA	2B 2C 2F 2G 3C 3D 3E	GKZ LDIZ OHIQ PX PXDT SEBZ	100	KRANKOWSKY,D.K.H. RIEDLER,W.V. THRANE,E.V.
75/06/10 2300	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
75/06/11 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/06/11 1500	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/06/11 1500	M-100	U.S.S.R.	THUMBA	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/06/11 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/06/11 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	96	CENTRAL AEROLOGICAL OBS
75/06/11 1830	M-100	U.S.S.R.	SHIRSHOV (SHIP) (05 00N 65 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/06/12 1500	M-100	U.S.S.R.	SHOKALSKI (SHIP) (30 00S 108 00E)	2J	NP	78	CENTRAL AEROLOGICAL OBS
75/06/12 1800	M-100	U.S.S.R.	SHIRSHOV (SHIP) (10 00N 65 00E)	2J	NP	90	CENTRAL AEROLOGICAL OBS
*75/06/13 0019	PF-5-100	UNITED STATES	FAIRBANKS	0A 0C 0D	**	8	ALLEN,E.
75/06/13 1800	M-100	U.S.S.R.	SHIRSHOV (SHIP) (15 00N 65 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/06/14 1800	M-100	U.S.S.R.	SHIRSHOV (SHIP) (15 00N 70 00E)	2J	NP	83	CENTRAL AEROLOGICAL OBS
75/06/17 1500	M-100	U.S.S.R.	SHOKALSKI (SHIP) (30 00S 90 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/06/17 1900	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 70 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/06/17 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/06/17 2340	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/06/18 0730	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	---	CENTRAL AEROLOGICAL OBS
75/06/18 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/06/18 1000	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	95	CENTRAL AEROLOGICAL OBS
75/06/18 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/06/20 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (30 00S 90 00E)	2J	NP	81	CENTRAL AEROLOGICAL OBS
75/06/21 1500	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 70 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/06/24 1800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (06 00S 90 00E)	2J	NP	82	CENTRAL AEROLOGICAL OBS
75/06/25 1000	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS

*IDENTIFIES LAUNCHINGS THAT FAILED TO RETURN USEFUL DATA.
**NO SCIENTIFIC INSTRUMENTS USED.

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
75/06/25 1500	M-100	INDIA	THUMBA	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/06/25 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/06/26 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP)	2J	NP	87	CENTRAL AEROLOGICAL OBS
			(01 OOS 90 ODE)				
75/06/26 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP)	2J	NP	83	CENTRAL AEROLOGICAL OBS
			(01 OOS 90 ODE)				
*75/06/27 2010	NASA 29.002GT	UNITED STATES	WALLOPS ISLAND	0A	**	283	BOLSTER, W.J.
75/06/28 1540	M-100	U.S.S.R.	SHOKALSKI (SHIP)	2J	NP	83	CENTRAL AEROLOGICAL OBS
			(05 OON 90 ODE)				
75/07/02 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
75/07/02 1500	M-100	INDIA	THURGA	2J	NP	87	CENTRAL AEROLOGICAL OBS
		U.S.S.R.					
75/07/03 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	96	CENTRAL AEROLOGICAL OBS
75/07/04 0804	NASA 14.433GE	CANADA	FORT CHURCHILL	4A	GY	140	BERTSCH, D.L.
		UNITED STATES			GYPC		PRICE, P.B., JR.
							REAMES, D.V.
*75/07/05 2032	NASA 14.488GE	CANADA	FORT CHURCHILL	4A	GY	139	BERTSCH, D.L.
		UNITED STATES			GYPC		PRICE, P.B., JR.
							REAMES, D.V.
75/07/09 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/07/09 1500	M-100	INDIA	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
		U.S.S.R.					
75/07/09 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/07/10 0800	NASA 13.073GG	UNITED STATES	WHITE SANDS	7D	CRKE	179	BOHLIN, R.C.
					CRQH		
					QK		
					XG		
75/07/15 1503	NASA 23.002UE	UNITED STATES	WHITE SANDS	5B	PXMR	76	HALE, L.C.
75/07/15 1518	NASA 15.048WT	UNITED STATES	WHITE SANDS	5B	PXMR	---	MITCHELL, J.D.
							SILBERT, M.N.
75/07/16 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/07/16 1500	M-100	INDIA	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
		U.S.S.R.					
75/07/16 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/07/21 1531	NASA 21.025DS	UNITED STATES	WHITE SANDS	6E 7C	CRQH	220	BRUECKNER, G.E.
					QK		
					XG		
75/07/23 0930	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	83	CENTRAL AEROLOGICAL OBS
75/07/23 1500	M-100	INDIA	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
		U.S.S.R.					
75/07/23 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	83	CENTRAL AEROLOGICAL OBS
75/07/24 0400	E 1-7951	UNITED STATES	WALLOPS ISLAND	2G	00ZU	85	RANDHAWA, J.S.
	NASA 15.143						
75/07/24 0520	NASA 10.413GM	UNITED STATES	WALLOPS ISLAND	2A 2B 2C 2I	JH	120	WRIGHT, D.U., JR.
	T 2-7963						
75/07/28 1744	NASA 21.029US	FRANCE	WHITE SANDS	6D 6E	QK	278	BONNET, R.M.
		UNITED STATES			XG		BRUNER, E.C., JR.
75/07/29 1634	E 1-7952	UNITED STATES	WALLOPS ISLAND	2G	00ZU	81	RANDHAWA, J.S.
	NASA 15.144						
75/07/29 1717	T 1-7959	UNITED STATES	WALLOPS ISLAND	2G	00AC	72	KRUEGER, A.J.
75/07/29 1920	NASA 15.136GM	UNITED STATES	WALLOPS ISLAND	2G	00ZU	73	HILSENKRATH, E.
75/07/30 1100	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
75/07/30 1500	M-100	INDIA	THUMBA	2J	NP	88	CENTRAL AEROLOGICAL OBS
		U.S.S.R.					
75/07/30 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	93	CENTRAL AEROLOGICAL OBS
75/08/05 2300	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/08/06 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
75/08/06 1500	M-100	INDIA	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
		U.S.S.R.					
75/08/06 1700	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/08/07 0330	A04.308-01	UNITED STATES	WHITE SANDS	2F	QK	174	COHEN, H.A.
75/08/07 1610	NASA 10.407GM	UNITED STATES	WALLOPS ISLAND	2A 2B 2C 2I	JH	119	WRIGHT, D.U., JR.
	T 2-7962						
75/08/11 1651	T 1-8409	UNITED STATES	WALLOPS ISLAND	2G	00AC	54	KRUEGER, A.J.
75/08/13 1200	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/08/13 1500	M-100	INDIA	THUMBA	2J	NP	89	CENTRAL AEROLOGICAL OBS
		U.S.S.R.					
75/08/13 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	82	CENTRAL AEROLOGICAL OBS
75/08/13 1930	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/08/15 0521	A10.406-02	UNITED STATES	POINT ARGUELLO	2F	HP	272	FAIRE, A.C.
*75/08/16 0740	NASA 13.050UH	UNITED STATES	WHITE SANDS	7E 7F	QKSF	172	RAPPAPORT, S.
					XG		
75/08/18 1245	NASA 12.026G1	FED REP OF GERMANY	WHITE SANDS	0A 0C	CR	416	HONECKER, H.J., JR.
	NASA 12.02611	UNITED STATES			XGBD		KLETT, R.
75/08/19 1500	M-100	INDIA	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
		U.S.S.R.					
75/08/20 0040	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
75/08/20 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	80	CENTRAL AEROLOGICAL OBS
75/08/20 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
75/08/22 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
75/08/26 1040	K-09M-053	JAPAN	KAGOSHIMA	2F 3A 3X	LDHQ	351	HASHIMOTO, K.
					LDKF		ITOH, T.
					SEZA		KAMADA, T.
					SWQI		KIMURA, I.
							MAMBO, M.
							NAGANO, I.
							NAKAMURA, M.
							NAKAMURA, Y.
							OBAYASHI, T.
							OGAWA, T.
							ONO, T.
							OYA, H.

*IDENTIFIES LAUNCHINGS THAT FAILED TO RETURN USEFUL DATA.

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
75/08/26 1850	NASA 13-074UA	UNITED STATES	WHITE SANDS	1A 1C 1D 6D 6E	QK	180	BARTH,C.A.
75/08/27 0830	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	92	CENTRAL AEROLOGICAL OBS
75/08/27 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/08/27 1500	M-100	INDIA	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
75/08/29 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	80	CENTRAL AEROLOGICAL OBS
75/08/30 0410	S -310-002	JAPAN	KAGOSHIMA	3C 3E	LDKF LDTP SEBZ	191	MINAMI,S. MIYAMOTO,S. MORI,H. OGAWA,T. OYAMA,K. TAKEYA,Y.
75/09/02 0500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/09/02 1200	K -09M-051	JAPAN	KAGOSHIMA	3X	LDKF NX	311	KAWASHIMA,N. MATSUMOTO,H. MIYATAKE,S. SASAKI,S. YAMORI,A.
75/09/03 0800	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/09/03 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	80	CENTRAL AEROLOGICAL OBS
75/09/03 1500	M-100	INDIA	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
75/09/03 1710	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	94	CENTRAL AEROLOGICAL OBS
75/09/03 2000	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
75/09/04 1635	MR-12	U.S.S.R.	VOLGOGRAD	4X	MTYQ	170	JULIN,I.A. SAGDEEV,R.D. FLOWERS,B.J. ZIFF,E.C.,JR.
75/09/09 1932	NASA 12-028WT	UNITED STATES	WALLOPS ISLAND	0A 1A	QK	162	
75/09/09 2230	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/09/10 0800	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	85	CENTRAL AEROLOGICAL OBS
75/09/10 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	91	CENTRAL AEROLOGICAL OBS
75/09/10 1500	M-100	INDIA	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
75/09/11 0400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	82	CENTRAL AEROLOGICAL OBS
75/09/11 2040	MR-12	U.S.S.R.	VOLGOGRAD	4X	DC DCLA GI SHU UTVP	159	JULIN,I.A. SAGDEEV,R.D.
75/09/12 0400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	96	CENTRAL AEROLOGICAL OBS
75/09/16 2330	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/09/17 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	91	CENTRAL AEROLOGICAL OBS
75/09/17 1500	M-100	INDIA	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/09/17 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	85	CENTRAL AEROLOGICAL OBS
75/09/18 1947	A10-304-01	UNITED STATES	WHITE SANDS	2G	PX	128	PHILBRICK,C.R.
75/09/19 0400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/09/19 0515	A10-304-02	UNITED STATES	WHITE SANDS	2G	PX	128	PHILBRICK,C.R.
75/09/22 0800	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	81	CENTRAL AEROLOGICAL OBS
75/09/22 1000	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
75/09/23 1200	K -09M-052	JAPAN	KAGOSHIMA	2C 3E 7D	LDTP OHSF	336	HIRAO,K. IHO,T. MATSUMURA,S. NAGASE,F. OYAMA,K. YAMASHITA,K.
75/09/23 2220	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/09/24 0500	K -10 -011	JAPAN	KAGOSHIMA	3X 6E 7F	NX QKKQ UTSF	196	DOI,T. HIGASHI,K. KANEKO,O. KAWASHIMA,N. MURASATO,Y. NISHI,K. ODA,M. OGAWARA,Y. YAMAGUCHI,T.
75/09/24 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
75/09/24 1500	M-100	INDIA	THUMBA	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/09/24 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/09/24 2127	NASA 18-163UE	UNITED STATES	WALLOPS ISLAND	1B 3C	PX QKKQ SHQJ	273	HANSON,W.B.
75/09/30 1910	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	91	CENTRAL AEROLOGICAL OBS
75/10/01 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/10/01 1500	M-100	INDIA	THUMBA	2J	NP	83	CENTRAL AEROLOGICAL OBS
75/10/01 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
75/10/01 1535	MR-12	U.S.S.R.	VOLGOGRAD	2G 3D 4A 4B	DCOM PXST UTCZ UTIQ	162	INST OF APPLIED GEOPHYS INST OF EXP METEOROLOGY SSCNR
75/10/01 1730	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/10/02 0900	MR-12	U.S.S.R.	VOLGOGRAD	2G 3C 3D 3E 3F 4A 4B	AK LDKF LDLU PXST UTCZ UTIQ	168	INST OF APPLIED GEOPHYS INST OF EXP METEOROLOGY SSCNR

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DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
75/10/02 1535	MR-12	U.S.S.R.	VOLGOGRAD*	2G 3D 4A 4B	DCOM PXST UTCZ UTIQ	164	INST OF APPLIED GEOPHYS INST OF EXP METEOROLOGY SSCNR
75/10/02 2105	MR-12	U.S.S.R.	VOLGOGRAD	2G 3C 3D 3E 3F 4A 4B	AK LDKF LDLU PXST UTCZ UTIQ	160	INST OF APPLIED GEOPHYS INST OF EXP METEOROLOGY SSCNR
*75/10/03 0315	NASA 26.047DH	UNITED STATES	WHITE SANDS	7F	CR UTSF	212	FRITZ,G.G.
75/10/08 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/10/08 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/10/08 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	84	CENTRAL AEROLOGICAL OBS
75/10/08 1920	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
75/10/09 0449	H-GR -68	FED REP OF GERMANY SPAIN	EL ARENOSILLO	7B 7C 7D 8B	QKKQ SWOQ SWQI SWQJ	254	LEINERT,C. LINK,H. PITZ,E.
75/10/09 1045	NASA 13.117UL	UNITED STATES	WHITE SANDS	7E	QKKQ	203	LAWRENCE,G.
75/10/14 1030	A31.320-02	UNITED STATES	WHITE SANDS	7B	SW	265	MURDOCK,T.L. PIPHER,J.L.
75/10/14 2100	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/10/15 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
*75/10/15 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	---	CENTRAL AEROLOGICAL OBS
75/10/15 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2A	NP	93	CENTRAL AEROLOGICAL OBS
75/10/16 0210	MR-12	U.S.S.R.	VOLGOGRAD	2J	DCOM	165	INST OF EXP METEOROLOGY
75/10/18 0445	NASA 13.108UH	UNITED STATES	WHITE SANDS	7E 7F	QKSF XG	184	BRADY,H.V.D. RAPPAPORT,S.
75/10/21 1142	F -750C1	SPAIN	EL ARENOSILLO	0D	AF	240	MATEO,A. RODRIGUEZ,L. SIMON,J. VAZQUEZ,M.
75/10/22 1220	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
*75/10/22 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	---	CENTRAL AEROLOGICAL OBS
75/10/22 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/10/22 1700	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/10/29 0239	NASA 13.048GG	UNITED STATES	WHITE SANDS	7D 7E	CRKE CRQH QKKQ	186	SMITH,A.M.
75/10/29 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/10/29 1428	MR-12	U.S.S.R.	VOLGOGRAD	2A 2G 3D 4A 4B	DCOM PXST UTCZ UTIQ	164	INST OF APPLIED GEOPHYS INST OF EXP METEOROLOGY SSCNR
75/10/29 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
75/10/29 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/10/29 1700	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	83	CENTRAL AEROLOGICAL OBS
75/10/30 2352	PF-SGT-101 S-75-02	UNITED STATES	FAIRBANKS	0A 0D 0E	**	100	ALLEN,E.
75/10/31 0712	AKF-6 -007	CANADA	FORT CHURCHILL	1B	QKUH	61	VENKATESAN,D.
75/10/31 1117	MR-12	U.S.S.R.	VOLGOGRAD	2B 2G 3D	LG PXST	152	INST OF APPLIED GEOPHYS INST OF EXP METEOROLOGY SSCNR
75/11/04 2130	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/11/05 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/11/05 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	83	CENTRAL AEROLOGICAL OBS
75/11/05 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/11/08 0520	NASA 13.049UH	UNITED STATES	WHITE SANDS	7F	CRQH MT QKSF	177	KRAUSHAAR,W.L.
75/11/11 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
75/11/12 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	80	CENTRAL AEROLOGICAL OBS
75/11/12 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	93	CENTRAL AEROLOGICAL OBS
75/11/12 1700	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
*75/11/18 1630	NASA 10.409GM T 2-8083	UNITED STATES	WALLOPS ISLAND	2A 2B 2C	JH	21	WRIGHT,D.U.,JR.
75/11/18 1901	NASA 32.001WT T 2-7599	UNITED STATES	WALLOPS ISLAND	0A	**	163	BALLANCE,C.W.,JR.
75/11/18 1930	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/11/18 2130	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS

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DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
75/11/19 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
75/11/19 1500	M-100	INDIA	THUMBA	2J	NP	91	CENTRAL AEROLOGICAL OBS
75/11/19 1500	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	84	CENTRAL AEROLOGICAL OBS
75/11/19 1716	G 1-7935	UNITED STATES	WALLOPS ISLAND	2G	OOAC	70	KRUEGER, A. J.
75/11/19 1745	NASA 10.415GM T 2-8085	UNITED STATES	WALLOPS ISLAND	2A 2B 2C	JH	120	WRIGHT, D. U., JR.
75/11/21 0411	NASA 10.423GM T 2-8086	UNITED STATES	WALLOPS ISLAND	2A 2B 2C	JH	121	WRIGHT, D. U., JR.
75/11/21 1700	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/11/21 1900	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/11/26 1000	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/11/26 1500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/11/26 1700	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/11/28 1228	P--152H	UNITED KINGDOM	SOUTH UIST	3C	LDLU SEBZ LDLU QKPM	129	WILLIAMS, E. R.
75/11/28 1256	P--151H	UNITED KINGDOM	SOUTH UIST	2G 3C		147	DICKINSON, P. H. G.
75/11/28 1500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
75/11/29 1700	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
75/12/02 1256	A30.311-08	UNITED STATES	WHITE SANDS	1A	SWUV	120	BAKER, D. J. CONLEY, T. C.
75/12/02 1350	A30.311-05	UNITED STATES	WHITE SANDS	1A	SWUV	124	BAKER, D. J. CONLEY, T. C.
75/12/02 1600	A30.311-07	UNITED STATES	WHITE SANDS	1A	SWUV	125	BAKER, D. J. CONLEY, T. C.
75/12/03 0033	A30.413-05	UNITED STATES	WHITE SANDS	1A	SWUV	125	BAKER, D. J. CONLEY, T. C.
75/12/03 0059	A30.205-07	UNITED STATES	WHITE SANDS	1A	SWUV	125	BAKER, D. J. CONLEY, T. C.
75/12/03 0200	A30.413-04	UNITED STATES	WHITE SANDS	1A	SWUV	127	BAKER, D. J. CONLEY, T. C.
75/12/03 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/12/03 1500	M-100	INDIA	THUMBA	2J	NP	83	CENTRAL AEROLOGICAL OBS
75/12/03 1500	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/12/03 1657	NASA 10.424GM T 2-8127	UNITED STATES	WALLOPS ISLAND	2A 2B 2C	JH	122	WRIGHT, D. U., JR.
75/12/03 1950	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
75/12/04 0322	A35.191-01	UNITED STATES	WHITE SANDS	7B	SWOG	286	WALKER, R. G.
75/12/04 0525	NASA 10.410GM T 2-8084	UNITED STATES	WALLOPS ISLAND	2A 2B 2C	JH	120	WRIGHT, D. U., JR.
75/12/06 0605	NASA 17.016UH	UNITED STATES	WHITE SANDS	7F	CRQH XG NP	221	GORENSTEIN, P.
75/12/06 0630	M-100	INDIA	THUMBA	2J	NP	---	CENTRAL AEROLOGICAL OBS
75/12/06 0742	NASA 13.1180G	U.S.S.R.	WHITE SANDS	1C 7E	CRKE GYZ QKZ QKZ	186	CARRUTHERS, G. R.
75/12/10 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/12/10 1500	M-100	INDIA	THUMBA	2J	NP	90	CENTRAL AEROLOGICAL OBS
75/12/10 1500	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
75/12/10 1600	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/12/11 1615	NASA 21.032NP	UNITED STATES	WHITE SANDS	0C 0D	**	206	CHASSAY, R. P. GRINER, C. HEY, H. JOHNSTON, M. H. PAPAZIAN, J. M. PATTEN, J. W. POW, R. P. RAYMOND, L. SCHAFER, C. F. UHLMAN, D.
75/12/11 1650	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/12/12 0509	A09.406-02	UNITED STATES	POINT ARGUELLO	2F	NP	164	FAIRE, A. C.
75/12/16 0419	NASA 15.110GM	UNITED STATES	THULE/CAMP TUTO	0D	CX MT	77	HILSENATH, E.
75/12/16 1600	NASA 12.031GT	UNITED STATES	WHITE SANDS	0C	**	241	BOLSTER, W. J.
75/12/17 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/12/17 1104	S3CL -75001	FED REP OF GERMANY SPAIN	EL ARENOSILLO	2A 3C	CX LDLU	94	CISNEROS, J. M. ROSE, G.
*75/12/17 1500	M-100	INDIA	THUMBA	2J	NP	87	WIDDEL, H. U.
75/12/17 1600	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/12/17 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
75/12/17 2300	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
75/12/18 0210	NASA 15.145GM	UNITED STATES	THULE/CAMP TUTO	2G	002U	81	HILSENATH, E.
75/12/18 1500	M-100	INDIA	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/12/19 2035	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/12/19 2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	95	CENTRAL AEROLOGICAL OBS
*75/12/20 1624	FLIGHT 120	UNITED KINGDOM	ANTIGUA	2G	OOAC	49	KRUEGER, A. J.
75/12/22 0213	NASA 15.146GM	UNITED STATES	THULE/CAMP TUTO	2G	002U	78	HILSENATH, E.
75/12/23 1830	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
75/12/23 2100	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
75/12/24 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
75/12/24 1500	M-100	INDIA	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS

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** NO SCIENTIFIC INSTRUMENTS USED.

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75/12/24 1700	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	83	CENTRAL AEROLOGICAL OBS
75/12/27 2315	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
75/12/28 0935	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	91	CENTRAL AEROLOGICAL OBS
75/12/30 2100	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
75/12/31 0600	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	85	CENTRAL AEROLOGICAL OBS
75/12/31 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
75/12/31 1500	M-100	INDIA	THUMBA	2J	4P	81	CENTRAL AEROLOGICAL OBS
76/01/02 1459	S3CLO-76001	FED REP OF GERMANY SPAIN	EL ARENOSILLO	2A 2G 3C	CX LDLU QK	94	CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
76/01/04 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/01/04 1340	M P GA -76001	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3C	LD1Z NX	84	CISNEROS,J.M. ROSE,G.
76/01/04 1430	M N AE -76001	FED REP OF GERMANY NORWAY SPAIN	EL ARENOSILLO	1B 3C 3D	GKZ PK SEBZ	120	WIDDEL,H.U. KRANKOMSKY,D.K.H. THRANE,E.V. UNGER,L.
76/01/04 1530	SK -76001	FED REP OF GERMANY SPAIN	EL ARENOSILLO	1B 1C 2F 2G 3C 6F	GKZ LG PK PKGS QK QO SWQI	---	BERAN,D. BOLLE,H-J.J. LOIDL,A. OFFERMANN,D. PAPANIKAS SPENNER,K.
76/01/04 1547	M S3CLO-76002	FED REP OF GERMANY SPAIN	EL ARENOSILLO	2A 2G 3C	CX LDLU QK	103	CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
76/01/04 1600	UCLP -76001	SPAIN UNITED KINGDOM	EL ARENOSILLO	2A	DCOM	140	REES,D.
76/01/04 2258	M S4CL -76001	FED REP OF GERMANY SPAIN	EL ARENOSILLO	1C 2A 3C	CX QKPM SWQI	---	CISNEROS,J.M. DRESCHER,A. ROSE,G. WIDDEL,H.U.
76/01/05 1500	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 90 00E)	2J	NP	78	CENTRAL AEROLOGICAL OBS
76/01/06 1546	M S CL -76001	FED REP OF GERMANY SPAIN	EL ARENOSILLO	2A 3C	CX LDLU	96	CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
76/01/07 1430	ISRO-08.230	INDIA U.S.S.R.	THUMBA	2J	CX NP	83	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/01/07 1500	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	83	CENTRAL AEROLOGICAL OBS
76/01/07 1600	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 80 00E)	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/01/07 1700	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/01/09 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/01/09 1430	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/01/09 1600	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 70 00E)	2J	NP	92	CENTRAL AEROLOGICAL OBS
76/01/09 1711	M S CL -76002	FED REP OF GERMANY SPAIN	EL ARENOSILLO	2A 3C	CX LDLU	---	CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
76/01/10 1416	NASA 12.029GT	SWEDEN	WALLOPS ISLAND	0A 0C	**	290	ANDERSON,L. LANE,J.H.
76/01/10 1700	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 70 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/01/11 1700	M-100	U.S.S.R.	SHIRSHOV (SHIP) (05 00N 65 00E)	2J	NP	92	CENTRAL AEROLOGICAL OBS
76/01/12 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/01/12 1620	S3CLO-76003	FED REP OF GERMANY SPAIN	EL ARENOSILLO	2A 2G 3C	CX LDLU QK	91	CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
76/01/14 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/01/14 1430	ISRO-08.231	INDIA U.S.S.R.	THUMBA	2J	CX NP	88	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/01/14 1430	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	91	CENTRAL AEROLOGICAL OBS
76/01/14 1610	M S3CLO-76004	FED REP OF GERMANY SPAIN	EL ARENOSILLO	2A 2G 3C	CX LDLU QK	93	CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
76/01/14 1700	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/01/14 2000	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
*76/01/15 1830	NASA 12.034CT NASA 12.034GT	UNITED STATES	WALLOPS ISLAND	0A 0C 0D	**	81	BARTON,W.R. BOLSTER,W.J.
76/01/16 1800	M-100	U.S.S.R.	SHIRSHOV (SHIP) (10 00N 65 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/01/16 1835	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	80	CENTRAL AEROLOGICAL OBS
76/01/16 2100	K -09M-054	CANADA JAPAN	KAGOSHIMA	1A 1C 2F 3C 3E 4B	LDKF LDTP PKGS QKPM SWOG	367	HIRAO,K. MUKAI,T. OGAMA,T. OYAMA,K. SHEPHERD,G.G. SUZUKI,K. TOHMATSU,T. WATANABE,Y.

*IDENTIFIES LAUNCHINGS THAT FAILED TO RETURN USEFUL DATA.
**NO SCIENTIFIC INSTRUMENTS USED.

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
76/01/18 0520	K-10-012	JAPAN	KAGOSHIMA	1C 2G 3G 3X 4B 5A	BD DCLA GI PXGS PXSK QKPM SEZA	350	HISHINUMA,N. KANEDA,E. KUBO,H. MIYATAKE,S. NAKAMURA,J. OBAYASHI,T. OGAWA,T. SUITSU,T. TSURUDA,K. CENTRAL AEROLOGICAL OBS
76/01/18 1800	M-100	U.S.S.R.	SHIRSHOV (SHIP) (02 00N 65 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/01/18 1928	NASA 23.003UE T 1-8145	UNITED STATES	WALLOPS ISLAND	3C	LDIZ	76	HALE,L.C. SCHMERLING,E.R. CENTRAL AEROLOGICAL OBS
76/01/19 1600	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 65 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/01/20 0142	A16.501-01	CANADA UNITED STATES	FORT CHURCHILL	3A	SEZA	632	HARVEY,R.B.
76/01/20 1340	M P GA -76002	FED REP OF GERMANY SPAIN	EL ARENOSILLO	3C	LDIZ NR	60	CISNEROS,J.M. ROSE,G. WIDDEL,H.U. CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
76/01/20 1550	M S3CLO-76005	FED REP OF GERMANY SPAIN	EL ARENOSILLO	2A 2G 3C	CX LDLU QK	80	WIDDEL,H.U. CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
76/01/21 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/01/21 1332	T 1-8161	UNITED STATES	WALLOPS ISLAND	0C 2G	NP	57	KRUEGER,A.J.
76/01/21 1340	M P GA -76003	FED REP OF GERMANY SPAIN	EL ARENOSILLO	2A 2G 3C	CX LDLU QK	79	CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
76/01/21 1430	ISRO-08.232	INDIA U.S.S.R.	THUMBA	2J	CX NP	83	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/01/21 1432	M N AE -76002	FED REP OF GERMANY NORWAY SPAIN	EL ARENOSILLO	1B 3C 3D	GYZ PX SEBZ	120	KRANKOVSKY,D.K.H. THRANE,E.V. UNGER,L.
76/01/21 1500	M-100	U.S.S.R.	MOLODEZHNAJA	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/01/21 1531	SK -76002	FED REP OF GERMANY SPAIN	EL ARENOSILLO	1B 2F 2G 3C 6F	GYZ LD PX QKPM QO	---	BERAND, BOLLE,H-J.J. LOIDL,A. OFFERMAN,D. PAPANIKAS SPENNER,K. CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
76/01/21 1540	M S3CLO-76006	FED REP OF GERMANY SPAIN	EL ARENOSILLO	2A 2G 3C	CX LDLU QK	15	WIDDEL,H.U. REES,D.
76/01/21 1555	UCLP -76002	SPAIN UNITED KINGDOM	EL ARENOSILLO	2A	DCOM	140	REES,D.
76/01/21 1700	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	77	CENTRAL AEROLOGICAL OBS
76/01/21 1817	UCLP -76003	SPAIN UNITED KINGDOM	EL ARENOSILLO	2A	DCOM	138	REES,D.
76/01/21 2230	M S4CLO-76002	FED REP OF GERMANY SPAIN	EL ARENOSILLO	1B 2A 3C	CX PXDT SMOI	99	CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
76/01/22 1616	M S CL -76003	FED REP OF GERMANY SPAIN	EL ARENOSILLO	2A 3C	CX LDLU	93	CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
76/01/23 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/01/23 1610	M S CL -76004	FED REP OF GERMANY SPAIN	EL ARENOSILLO	2A 3C	CX LDLU	99	CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
76/01/23 1932	NASA 23.004UE T 1-8184	UNITED STATES	WALLOPS ISLAND	3C	LDIZ	76	HALE,L.C. SCHMERLING,E.R.
76/01/23 2234	A09.402-02	UNITED STATES	WALLOPS ISLAND	2G	PXSK	124	PHILBRICK,C.R.
76/01/23 2245	A08.608-01	UNITED STATES	WALLOPS ISLAND	2A	DC	117	VICKERY,W.K.
76/01/24 1600	M-100	UNITED STATES	SHIRSHOV (SHIP) (10 00S 56 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/01/25 2320	S -210-JA-022	JAPAN	SYOWA BASE	2F 3C 4B	LDLU OOAC UTSF	127	KODAMA,M. MIYAZAKI,S. TOHMATSU,T.
76/01/26 1619	M S CL -76005	FED REP OF GERMANY SPAIN	EL ARENOSILLO	2A 3C	CX LDLU	100	CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
*76/01/27 1730	K-GR -73	FED REP OF GERMANY SWEDEN	KIRUNA	0D	**	3	LORSCHIEDTER,J.
76/01/28 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/01/28 1400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/01/28 1430	ISRO-08.233	INDIA U.S.S.R.	THUMBA	2J	CX NP	85	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/01/28 1500	M-100	U.S.S.R.	MOLODEZHNAJA	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/01/28 1610	M S3CLO-76007	FED REP OF GERMANY SPAIN	EL ARENOSILLO	2A 2G 3C	CX LDLU QK	---	CISNEROS,J.M. ROSE,G. WIDDEL,H.U.
76/01/28 1630	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
76/01/29 1600	M-100	U.S.S.R.	SHIRSHOV (SHIP) (20 00S 65 00E)	2J	NP	90	CENTRAL AEROLOGICAL OBS
76/01/30 1000	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/01/30 1525	NASA 15.049UE	UNITED STATES	WALLOPS ISLAND	3C	LDIZ	86	MITCHELL,J.D. SCHMERLING,E.R.

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**NO SCIENTIFIC INSTRUMENTS USED.

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DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
76/01/31 0644	NASA 21.027UE	UNITED STATES	FAIRBANKS	1B 2H 3B 4B 5A	CR GI LDLU OH NP	225	WINCKLER, J. R.
76/01/31 1600	M-100	U.S.S.R.	SHIRSHOV (SHIP) (30 00S 65 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/01/31 1800	M-100	U.S.S.R.	SHIRSHOV (SHIP) (30 00S 65 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/02/01 1700	M-100	U.S.S.R.	SHIRSHOV (SHIP) (35 00S 65 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/02/01 1929	FERDINAND-045 NASA 18.2081E	NORWAY UNITED STATES	ANDØYA	0A 0C 1B 2G 3A 3C 4A 4B 5A 6F 7C 7F	BP LD LDKF LIHU MTHZ OHUH OHVP SEZA SWQJ UT UTCZ UTQJ LDLU PX	216	AARSNES, K. EGELAND, A. MAELUM, B. N. MAEIDE, K. MAYNARD, N. C. SORAAS, F. STADSNES, J. THRANE, E. TROIM, J.
76/02/02 0208	AAD-5B-035	CANADA	FORT CHURCHILL	1B 3C 4B	LDLU PX	55	MCNAMARA, A. G. WHALEN, B. A. ZIPF, E. C., JR.
76/02/02 1600	M-100	U.S.S.R.	SHIRSHOV (SHIP) (40 00S 65 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/02/02 1800	M-100	U.S.S.R.	SHIRSHOV (SHIP) (40 00S 65 00E)	2J	NP	91	CENTRAL AEROLOGICAL OBS
76/02/03 1649	FLIGHT 122	UNITED KINGDOM	ANTIGUA	2G	00AC	54	KRUEGER, A. J.
76/02/03 1900	M-100	UNITED STATES U.S.S.R.	SHIRSHOV (SHIP) (45 00S 65 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/02/04 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
76/02/04 1400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/02/04 1430	ISRO-08.234	INDIA U.S.S.R.	THUMBA	2J	CX NP	84	FEDYNSKI, A. V. NARAYANAN, V. PISHAROTY, P. R. KRUEGER, A. J.
76/02/04 1431	FLIGHT 123	UNITED KINGDOM UNITED STATES	ANTIGUA	2G	00AC	55	
76/02/04 1500	M-100	U.S.S.R.	MOLODEZHNAJA	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/02/04 1530	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/02/05 0522	AAF-4B-033	CANADA	FORT CHURCHILL	0B 1B 3C 3G 4B	LD UT	750	KOHLER, J. A. MCNAMARA, A. G. WHALEN, B. A. CISNEROS, J. M. ROSE, G. WIDDEL, H. U. KRUEGER, A. J.
76/02/05 1551	M 5 CL -76006	FED REP OF GERMANY SPAIN	EL ARENOSILLO	2A 3C	CX LDLU	102	
76/02/05 1928	FLIGHT 124	UNITED KINGDOM UNITED STATES	ANTIGUA	2A 2G	00AC	54	
76/02/05 2100	M-100	U.S.S.R.	SHIRSHOV (SHIP) (50 00S 71 00E)	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/02/05 2230	M 54CL0-76003	FED REP OF GERMANY SPAIN	EL ARENOSILLO	1B 2A 3C	CX PKDT QKPM NP	101	CISNEROS, J. M. ROSE, G. WIDDEL, H. U.
76/02/05 2230	M-100	U.S.S.R.	SHIRSHOV (SHIP) (49 00S 71 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/02/06 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	76	CENTRAL AEROLOGICAL OBS
76/02/06 1600	M-100	U.S.S.R.	SHIRSHOV (SHIP) (45 00S 70 00E)	2J	NP	91	CENTRAL AEROLOGICAL OBS
76/02/06 1607	FLIGHT 125	UNITED KINGDOM UNITED STATES	ANTIGUA	2G	00AC	54	KRUEGER, A. J.
76/02/07 1500	M-100	U.S.S.R.	SHIRSHOV (SHIP) (40 00N 70 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/02/07 1700	M-100	U.S.S.R.	SHIRSHOV (SHIP) (40 00S 70 00E)	2J	NP	98	CENTRAL AEROLOGICAL OBS
76/02/08 1426	M P GA -76004	FED REP OF GERMANY SPAIN	EL ARENOSILLO	2A 2G 3C	CX LDLU	81	CISNEROS, J. M. ROSE, G. WIDDEL, H. U.
76/02/08 1534	M 5 CL -76007	FED REP OF GERMANY SPAIN	EL ARENOSILLO	2A 3C	CX LDLU	100	CISNEROS, J. M. ROSE, G. WIDDEL, H. U.
76/02/08 1600	M-100	U.S.S.R.	SHIRSHOV (SHIP) (35 00S 70 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/02/09 1500	M-100	U.S.S.R.	SHIRSHOV (SHIP) (30 00S 70 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/02/09 1700	M-100	U.S.S.R.	SHIRSHOV (SHIP) (30 00S 70 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/02/10 0700	MMR-06	U.S.S.R.	VOLNA (SHIP) (50 00N 160 00W)	2J	NP	57	CENTRAL AEROLOGICAL OBS
76/02/11 1040	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/02/11 1400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	92	CENTRAL AEROLOGICAL OBS
76/02/11 1430	ISRO-08.235	INDIA U.S.S.R.	THUMBA	2J	CX NP	83	FEDYNSKI, A. V. NARAYANAN, V. PISHAROTY, P. R.
76/02/11 1500	M-100	U.S.S.R.	MOLODEZHNAJA	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/02/11 1500	M-100	U.S.S.R.	SHIRSHOV (SHIP) (20 00S 70 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/02/12 0700	MMR-06	U.S.S.R.	VOLNA (SHIP) (45 00N 160 00W)	2J	NP	58	CENTRAL AEROLOGICAL OBS

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76/02/12 1430	ISRO-08.236	INDIA U.S.S.R.	THUMBA	2J	NP	86	FEDYNSKI, A.V. NARAYANAN, V. PISHAROTY, P.R.
76/02/13 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/02/13 0900	MMR-06	U.S.S.R.	VOLNA (SHIP) (40 00N 160 00W)	2J	NP	59	CENTRAL AEROLOGICAL OBS
76/02/13 0945	S-310-JA-001	JAPAN	SYOWA BASE	3C 4B 5A 5B	LDKF LDLU PKGS PXMR SEZA SWWY	---	ITOH, T. KAMADA, T. KIMURA, I. MATSUROTO, H. MIYAZAKI, S. OYA, H.
76/02/13 1600	M-100	U.S.S.R.	SHIRSHOV (SHIP) (10 00S 70 00E)	2J	NP	90	CENTRAL AEROLOGICAL OBS
76/02/14 1600	M-100	U.S.S.R.	SHIRSHOV (SHIP) (05 00S 70 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/02/15 1600	M-100	U.S.S.R.	SHIRSHOV (SHIP) (02 00S 70 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/02/16 0700	MMR-06	U.S.S.R.	VOLNA (SHIP) (30 00N 160 00W)	2J	NP	61	CENTRAL AEROLOGICAL OBS
76/02/16 1500	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 70 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/02/16 1843	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/02/17 0900	MMR-06	U.S.S.R.	VOLNA (SHIP) (25 00N 160 00W)	2J	NP	57	CENTRAL AEROLOGICAL OBS
76/02/18 0900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
76/02/18 1400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/02/18 1430	ISRO-08.237	INDIA U.S.S.R.	THUMBA	2J	CK NP	91	FEDYNSKI, A.V. NARAYANAN, V. PISHAROTY, P.R.
76/02/18 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	79	CENTRAL AEROLOGICAL OBS
76/02/18 1500	M-100	U.S.S.R.	SHOKALSKI (SHIP) (14 00N 90 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/02/18 1700	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/02/18 1740	NASA 21.0301S NASA 21.030US	UNITED STATES	WHITE SANDS	6D 6E	QK XG	282	BONNET, R.M. BRUNER, E.C., JR. ROTTMAN, G.J.
76/02/19 1500	M-100	U.S.S.R.	SHOKALSKI (SHIP) (10 00N 90 00E)	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/02/19 1500	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 70 00E)	2J	NP	91	CENTRAL AEROLOGICAL OBS
76/02/20 1000	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/02/20 1500	M-100	U.S.S.R.	SHOKALSKI (SHIP) (07 00N 90 00E)	2J	NP	83	CENTRAL AEROLOGICAL OBS
76/02/21 1400	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 90 00E)	2J	NP	91	CENTRAL AEROLOGICAL OBS
76/02/21 1500	M-100	U.S.S.R.	SHOKALSKI (SHIP) (03 00N 90 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/02/22 0118	A10.504-01	UNITED STATES	FAIRBANKS	2G 4B	SWQJ UTUH	248	WEEKS, L.H.
76/02/22 1500	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 90 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/02/22 2000	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 90 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/02/24 1500	M-100	U.S.S.R.	SHOKALSKI (SHIP) (05 00S 90 00E)	2J	NP	80	CENTRAL AEROLOGICAL OBS
76/02/24 1920	A04.305-01	UNITED STATES	WHITE SANDS	1D 3C 6E	LD QKKQ SWQI	221	HEROUX, L.J. HIGGINS, J.E. MCMAHON, W.J. VAN TASSEL, R.A.
76/02/24 2100	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/02/25 1400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
*76/02/25 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/02/25 1500	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	94	CENTRAL AEROLOGICAL OBS
76/02/25 1600	ISRO-08.238	INDIA U.S.S.R.	THUMBA	2J	CX NP	87	FEDYNSKI, A.V. NARAYANAN, V. PISHAROTY, P.R.
76/02/26 2100	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/02/27 0405	NASA 15.147GM	UNITED STATES	THULE/CAMP TUTO	2G	NP	84	HILSENATH, E.
76/02/27 0700	MMR-06	U.S.S.R.	VOLNA (SHIP) (30 00N 170 00W)	2J	NP	63	CENTRAL AEROLOGICAL OBS
76/02/28 0055	MR-12	U.S.S.R.	HEISS ISLAND	2C 2G 3D 4A 4B	DCOM PXST UTCZ UTIQ	185	INST OF APPLIED GEOPHYS SSCNR
76/02/28 1300	NASA 18.164UE NASW 18.1003UE	UNITED STATES	FAIRBANKS	1A 1B 1C 1D 3C 3D 5B 7E	LD MT PX QKKQ SWQJ DCOM PXST UTCZ UTIQ	281	CHRISTENSEN, A.B. HANSON, W.B. LIPPINCOTT, C.R.
76/02/28 1422	MR-12	U.S.S.R.	HEISS ISLAND	2C 2G 4A 4B	DCOM PXST UTCZ UTIQ	176	INST OF APPLIED GEOPHYS SSCNR
76/02/28 2301	MR-12	U.S.S.R.	HEISS ISLAND	1B	GI SWQI	190	IZMIRAN

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76/02/29 0115	MR-12	U.S.S.R.	HEISS ISLAND	2C 2G 3D 4A 4B 5A	DCOM GI PXST UTCZ UTIQ LDLU SWRI NP	180	INST OF APPLIED GEOPHYS SSCNR
76/02/29 1304	ISRO-05.029	INDIA	THUMBA	1C 3C	LDLU SWRI	56	KULKARNI,P.V. SUBBARAYA,B.H.
76/02/29 1500	M-100	U.S.S.R.	SHOKALSKI (SHIP) (20 D0S 90 O0E)	2J	NP	83	CENTRAL AEROLOGICAL OBS
76/03/01 1045	NASA 18.1002U1	UNITED STATES	FAIRBANKS	1A 4B 5A 5B	BD MTYQ UTCZ PX	246	ANDERSON,H.R. CLOUTIER,P.A.
*76/03/02 0324	NASA 14.461UE TH2-8080	CANADA UNITED STATES	FORT CHURCHILL	1B	PX	---	FELLOWS,R.F. ZIPF,E.C.,JR.
76/03/02 2100	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/03/03 0010	MR-12	U.S.S.R.	HEISS ISLAND	2C 2G 3D 4A 4B	DCOM PXST UTCZ UTIQ	164	INST OF APPLIED GEOPHYS SSCNR
*76/03/03 0900	MMR-06	U.S.S.R.	VOLNA (SHIP) (40 O0N 180 O0W)	2J	NP	---	CENTRAL AEROLOGICAL OBS
76/03/03 1430	ISRO-08.239	INDIA U.S.S.R.	THUMBA	2J	CX NP	84	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/03/03 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/03/03 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	91	CENTRAL AEROLOGICAL OBS
76/03/03 1500	M-100	U.S.S.R.	SHOKALSKI (SHIP) (30 D0S 90 O0E)	2J	NP	83	CENTRAL AEROLOGICAL OBS
76/03/03 1744	A10.507-D1	UNITED STATES	FAIRBANKS	2F 2G 4B	HP SWQJ UTUH	210	FAIRE,A.C. WEEKS,L.H.
76/03/04 0301	MR-12	U.S.S.R.	HEISS ISLAND	2C 2G 3D 4A 4B 5A	DCOM GI PXST UTCZ UTIQ ODZU	175	INST OF APPLIED GEOPHYS SSCNR
76/03/04 0522	NASA 15.148GM	UNITED STATES	THULE/CAMP TUTO	2G	ODZU	84	HILSENATH,E.
76/03/04 2100	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
76/03/05 1000	MMR-06	U.S.S.R.	VOLNA (SHIP) (40 O0N 180 O0W)	2J	NP	61	CENTRAL AEROLOGICAL OBS
76/03/05 1136	NASA 13.128UC	UNITED STATES	WHITE SANDS	6E	QK CRKE CRQH QK XG	215	BARTH,C.A.
76/03/05 1140	NASA 26.050UC	UNITED STATES	WHITE SANDS	7D 7E	CRKE CRQH QK XG	209	FELDMAN,P.D. OPAL,C.B.
76/03/06 1848	MR-12	U.S.S.R.	HEISS ISLAND	1B	GI SWRI	180	IZHIRAN
76/03/06 2345	MR-12	U.S.S.R.	HEISS ISLAND	2C 2G 3D 4A 4B 5A	DCOM GI PXST UTCZ UTIQ	176	INST OF APPLIED GEOPHYS SSCNR
76/03/07 0800	MMR-06	U.S.S.R.	VOLNA (SHIP) (45 O0N 180 O0E)	2J	NP	59	CENTRAL AEROLOGICAL OBS
76/03/07 2330	MR-12	U.S.S.R.	HEISS ISLAND	2B 2C 2G 3D 4A 4B 5A	DCOM GI LG PXST UTCZ UTIQ	142	INST OF APPLIED GEOPHYS SSCNR
*76/03/08 0800	MMR-06	U.S.S.R.	VOLNA (SHIP) (50 O0N 180 O0E)	2J	NP	---	CENTRAL AEROLOGICAL OBS
76/03/08 1500	M-100	U.S.S.R.	SHOKALSKI (SHIP) (30 D0S 110 O0E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/03/08 2256	MR-12	U.S.S.R.	HEISS ISLAND	2B 2C 2G 3D 4A 4B 5A	DCOM GI LG PXST UTCZ UTIQ	150	INST OF APPLIED GEOPHYS SSCNR
76/03/09 2100	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	80	CENTRAL AEROLOGICAL OBS
*76/03/10 0910	H-BB4 -74	FED REP OF GERMANY SPAIN	EL ARENOSILLO	7E	QKPM SWRI UTCZ CRKE CRQH QKQ UTCZ	---	FAHR,H.J. WULF-MATHIES,C.
76/03/10 1058	NASA 13.1296C	UNITED STATES	WHITE SANDS	6C 6D 6E	CRKE CRQH QKQ UTCZ	189	SMITH,A.M.
76/03/10 1400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	94	CENTRAL AEROLOGICAL OBS
76/03/10 1430	ISRO-08.240	INDIA U.S.S.R.	THUMBA	2J	CX NP	85	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/03/10 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/03/10 1500	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/03/11 0900	MMR-06	U.S.S.R.	VOLNA (SHIP) (50 O0N 160 O0E)	2J	NP	59	CENTRAL AEROLOGICAL OBS
76/03/11 1000	MMR-06	U.S.S.R.	VOLNA (SHIP) (50 O0N 160 O0E)	2J	NP	62	CENTRAL AEROLOGICAL OBS
76/03/11 1500	M-100	U.S.S.R.	SHOKALSKI (SHIP) (40 D0S 110 O0E)	2J	NP	76	CENTRAL AEROLOGICAL OBS

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DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
76/03/11 2100	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/03/13 1500	M-100	U.S.S.R.	SHOKALSKI (SHIP)	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/03/14 1500	M-100	U.S.S.R.	(47 ODS 110 ODE)	2J	NP	80	CENTRAL AEROLOGICAL OBS
76/03/14 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP)	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/03/15 0900	MMR-06	U.S.S.R.	(50 ODS 110 ODE)	2J	NP	61	CENTRAL AEROLOGICAL OBS
76/03/15 1000	MMR-06	U.S.S.R.	VOLNA (SHIP)	2J	NP	61	CENTRAL AEROLOGICAL OBS
76/03/15 1500	M-100	U.S.S.R.	(40 ODN 160 ODE)	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/03/16 1500	M-100	U.S.S.R.	VOLNA (SHIP)	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/03/16 2100	M-100	U.S.S.R.	(40 ODN 160 ODE)	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/03/17 1400	M-100	U.S.S.R.	SHOKALSKI (SHIP)	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/03/17 1430	ISRO-08.241	INDIA	HEISS ISLAND	2J	CX	78	FEDYNSKI, A.V.
		U.S.S.R.	VOLGOGRAD	2J	NP		NARAYANAN, V.
			THUMBA	2J	NP		PISHAROTY, P.R.
76/03/17 1500	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/03/17 1500	M-100	U.S.S.R.		2J	NP	85	CENTRAL AEROLOGICAL OBS
76/03/17 1500	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	83	CENTRAL AEROLOGICAL OBS
76/03/17 1730	I 1-8198	UNITED STATES	SHOKALSKI (SHIP)	2J	NP		
76/03/17 2035	MR-12	U.S.S.R.	(40 ODS 110 ODE)	2J	NP		
			WALLOPS ISLAND	2G	00AC	67	KRUEGER, A.J.
			HEISS ISLAND	2G 4A 4B	PXST	150	INST OF APPLIED GEOPHYS
					UTICZ		SSCNR
76/03/18 0028	MR-12	U.S.S.R.	HEISS ISLAND	4A 4B 5A	GI	150	INST OF APPLIED GEOPHYS
					UTICZ		SSCNR
76/03/18 0808	MR-12	U.S.S.R.	HEISS ISLAND	2G 4A 4B	UTIQ	150	INST OF APPLIED GEOPHYS
					PXST		SSCNR
76/03/19 1715	NASA 10.425UM	UNITED STATES	WALLOPS ISLAND	2G	00	90	HORVATH, J.J.
76/03/22 0643	NASA 13.116UE	CANADA	FORT CHURCHILL	1B 1D 4B 7D	PX	182	SHARP, W.E.
		UNITED STATES			QK		ZIPP, E.C., JR.
76/03/23 0600	NASA 26.0556G	UNITED STATES	WHITE SANDS	7D 7E	SWQJ	216	STECHEK, T.P.
					CRKE		
					QK		
76/03/23 2100	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/03/23 2320	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/03/24 0040	ISRO-05.030	INDIA	THUMBA	3A 3C 3E 5A	LDIZ	142	RAO, M.N.M.
		JAPAN			LDBU		SOMAYAJULU, Y.V.
					SE		TOHMATSU, T.
76/03/24 1500	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/03/24 1623	ISRO-08.242	INDIA	THUMBA	2J	CX	86	FEDYNSKI, A.V.
		U.S.S.R.			NP		NARAYANAN, V.
76/03/26 0125	ISRO-05.031	INDIA	THUMBA	3A 3C 3E 5A	LDIZ	139	PISHAROTY, P.R.
		JAPAN			LDBU		RAO, M.N.M.
					SE		SOMAYAJULU, Y.V.
76/03/26 0258	NASA 13.077UA	CANADA	FORT CHURCHILL	1B	QK	175	TOHMATSU, T.
76/03/26 1500	M-100	UNITED STATES	KERGUELEN ISLAND	2J	SWQJ	84	FASTIE, W.G.
76/03/26 1600	M-100	FRANCE		2J	NP	86	FELDMAN, P.D.
76/03/26 2100	NASA 26.017AS	U.S.S.R.	SHOKALSKI (SHIP)	2J	NP	86	CENTRAL AEROLOGICAL OBS
		UNITED STATES	(30 ODS 108 ODE)	6E 6F	CR	203	BLAKE, R.
			WHITE SANDS		QKQK		
76/03/27 0643	NASA 18.176GE	UNITED STATES	FAIRBANKS	3G 5A	UTSF	---	HEPPNER, J.P.
76/03/27 1250	NASA 18.194GE	UNITED STATES	FAIRBANKS	3G	CR	---	HEPPNER, J.P.
					DCOM		
76/03/27 2100	M-100	U.S.S.R.	MOLODEZHAYA	2J	QK	85	CENTRAL AEROLOGICAL OBS
76/03/28 1300	NASA 18.195GE	UNITED STATES	FAIRBANKS	3G	CR	---	HEPPNER, J.P.
					DCOM		
76/03/28 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP)	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/03/29 1500	M-100	FRANCE	(30 ODS 100 ODE)	2J	NP	87	CENTRAL AEROLOGICAL OBS
		U.S.S.R.	KERGUELEN ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/03/30 1230	NASA 18.177GE	UNITED STATES	FAIRBANKS	3G 5A	CR	---	HEPPNER, J.P.
					DC		
76/03/30 1650	NASA 25.013CS	UNITED STATES	WHITE SANDS	DE 6F	DCOM	230	ACTON, L.W.
76/03/30 2027	NASA 25.013NY	UNITED STATES	KIRUNA	5A 5B	QKCM	360	CHISEL, D.M.
	NASA 24.001IE	FED REP OF GERMANY			GJ		HAERENDEL, G.
		SWEDEN			XGBD		
76/03/30 2100	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS

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DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
76/03/31 0639	NASA 21-003U1	CANADA UNITED STATES	FORT CHURCHILL	1B 3C 3E 5A	LD LDLU LDWU PX SWQJ	231	CHRISTENSEN,A.B. HEIKKILA,W.J.
76/03/31 1435	ISRO-08-243	INDIA U.S.S.R.	THUMBA	2J	NP	90	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/03/31 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/03/31 1500	M-100	U.S.S.R.	SHOKALSKI (SHIP) (30 OOS 90 OOE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/03/31 1910	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/03/31 2100	M-100	U.S.S.R.	MOLDOEZHNAYA	2J	NP	83	CENTRAL AEROLOGICAL OBS
76/04/02 2300	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/04/03 1900	M-100	U.S.S.R.	SHOKALSKI (SHIP) (20 OOS 90 OOE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/04/06 2100	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/04/06 2100	M-100	U.S.S.R.	MOLDOEZHNAYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/04/07 1430	ISRO-08-244	INDIA U.S.S.R.	THUMBA	2J	CX NP	88	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/04/07 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/04/07 1500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/04/08 2100	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	83	CENTRAL AEROLOGICAL OBS
76/04/09 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (03 OON 80 OOE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/04/10 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/04/10 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (03 OON 80 OOE)	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/04/11 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (07 OON 90 OOE)	2J	NP	83	CENTRAL AEROLOGICAL OBS
76/04/12 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/04/12 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (10 OON 90 OOE)	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/04/13 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (14 OON 90 OOE)	2J	NP	90	CENTRAL AEROLOGICAL OBS
76/04/13 2100	M-100	U.S.S.R.	MOLDOEZHNAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/04/13 2330	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	61	CENTRAL AEROLOGICAL OBS
76/04/14 1430	ISRO-08-245	INDIA U.S.S.R.	THUMBA	2J	CX NP	83	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/04/14 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/04/14 1500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/04/14 1643	T 1-8199	UNITED STATES	WALLOPS ISLAND	2G	OOAC	89	KRUEGER,A.J.
76/04/15 2100	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/04/16 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	---	CENTRAL AEROLOGICAL OBS
76/04/18 2355	ISRO-05-032	INDIA	THUMBA	2A 3G	DC	152	DESAI,J.N.
76/04/20 2100	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	81	CENTRAL AEROLOGICAL OBS
76/04/20 2100	M-100	U.S.S.R.	MOLDOEZHNAYA	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/04/21 0300	MNR-06	U.S.S.R.	USHAKOV (SHIP) (46 OON 22 OOW)	2J	NP	---	CENTRAL AEROLOGICAL OBS
76/04/21 1000	NASA 25-049DH	UNITED STATES	WHITE SANDS	7F	CRGH UTSF	202	FRITZ,G.G.
76/04/21 1430	ISRO-08-246	INDIA U.S.S.R.	THUMBA	2J	CX NP	88	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/04/21 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	91	CENTRAL AEROLOGICAL OBS
76/04/21 1500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/04/21 1720	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	95	CENTRAL AEROLOGICAL OBS
76/04/22 2100	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	83	CENTRAL AEROLOGICAL OBS
76/04/26 0547	A10-403-04	CANADA UNITED STATES	FORT CHURCHILL	2G	PX	19	NARCISI,R.S. SHERMAN,C.
76/04/27 2100	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	83	CENTRAL AEROLOGICAL OBS
76/04/27 2100	M-100	U.S.S.R.	MOLDOEZHNAYA	2J	NP	91	CENTRAL AEROLOGICAL OBS
76/04/28 0200	MNR-06	U.S.S.R.	USHAKOV (SHIP) (30 OON 35 OOW)	2J	NP	63	CENTRAL AEROLOGICAL OBS
76/04/28 1430	ISRO-08-247	INDIA U.S.S.R.	THUMBA	2J	CX NP	87	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/04/28 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/04/28 2100	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/04/29 1120	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/05/01 0435	A10-001-02	CANADA UNITED STATES	FORT CHURCHILL	2G	PX	218	NARCISI,R.S. SHERMAN,C.
76/05/03 0200	MNR-06	U.S.S.R.	USHAKOV (SHIP) (53 OON 35 OOW)	2J	NP	61	CENTRAL AEROLOGICAL OBS
76/05/04 2100	M-100	U.S.S.R.	MOLDOEZHNAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/05/04 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/05/05 1430	ISRO-08-248	INDIA U.S.S.R.	THUMBA	2J	CX NP	85	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/05/05 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS

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76/05/05 1500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/05/06 1144	P--186H	UNITED KINGDOM	SOUTH UIST	3D	PX	149	NORMAN, K.
76/05/06 1221	P--115H	UNITED KINGDOM	SOUTH UIST	3A 3C 6E	GKZ SE	137	WILLIAMS, E. R.
76/05/06 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	83	CENTRAL AEROLOGICAL OBS
76/05/11 0855	NASA 26.038GH	UNITED STATES	WHITE SANDS	7F	CRQH	175	GARRIRE, G. P.
76/05/11 1549	ARF-6-010	CANADA	FORT CHURCHILL	00	UTSF	60	HOLT, S. S.
76/05/11 1708	NASA 26.045CS	UNITED STATES	WHITE SANDS	6F	** CR OK UTSF	248	ROBERTS, H. MCKENZIE, D.
76/05/11 2100	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/05/11 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/05/12 0300	MMR-06	U.S.S.R.	USHAKOV (SHIP)	2J	NP	60	CENTRAL AEROLOGICAL OBS
76/05/12 1430	ISRO-08.249	INDIA U.S.S.R.	THUMBA	2J	CX NP	88	FEDYNSKI, A. V. NARAYANAN, V. PISHAROTY, P. R.
76/05/12 1500	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/05/12 1500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/05/17 1600	NASA 21.033MP	FED REP OF GERMANY UNITED STATES	WHITE SANDS	0C 0D	**	188	AHLBORN, H. CHASSATY, R. P. GELLES, S. JOHNSTON, M. H. PATTEN, J. V. POND, R. P. RAYMOND, L.
76/05/18 2100	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/05/18 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	74	CENTRAL AEROLOGICAL OBS
76/05/19 0200	MMR-06	U.S.S.R.	USHAKOV (SHIP)	2J	NP	59	CENTRAL AEROLOGICAL OBS
76/05/19 0900	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	94	CENTRAL AEROLOGICAL OBS
76/05/19 1430	ISRO-08.250	INDIA U.S.S.R.	THUMBA	2J	CX NP	75	FEDYNSKI, A. V. NARAYANAN, V. PISHAROTY, P. R.
76/05/19 1500	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/05/19 1600	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/05/19 1700	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/05/19 1734	T 1-8286	UNITED STATES	WALLOPS ISLAND	2G	0QAC	71	KRUEGER, A. J.
76/05/19 1937	T 1-8288	UNITED STATES	WALLOPS ISLAND	3C	LD	71	HALE, L. C.
76/05/20 1702	T 1-8287	UNITED STATES	WALLOPS ISLAND	2G	0QAC	71	KRUEGER, A. J.
76/05/21 1435	ISRO-08.251	INDIA U.S.S.R.	THUMBA	2J	CX NP	86	FEDYNSKI, A. V. NARAYANAN, V. PISHAROTY, P. R.
76/05/21 1540	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/05/21 1700	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/05/23 0930	NASA 21.048MP	UNITED STATES	KAUAI	0B	**	196	MASON, P. V. WILLIAMSON, K. D.
76/05/24 1430	ISRO-08.252	INDIA U.S.S.R.	THUMBA	2J	CX NP	84	FEDYNSKI, A. V. NARAYANAN, V. PISHAROTY, P. R.
76/05/25 0300	MMR-06	U.S.S.R.	USHAKOV (SHIP)	2J	NP	58	CENTRAL AEROLOGICAL OBS
76/05/25 2100	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/05/25 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/05/25 2130	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	83	CENTRAL AEROLOGICAL OBS
76/05/26 0110	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/05/26 1430	ISRO-08.2353	INDIA U.S.S.R.	THUMBA	2J	CX NP	86	FEDYNSKI, A. V. NARAYANAN, V. PISHAROTY, P. R.
76/05/27 0300	MMR-06	U.S.S.R.	USHAKOV (SHIP)	2J	NP	60	CENTRAL AEROLOGICAL OBS
76/05/28 1433	ISRO-08.254	INDIA U.S.S.R.	THUMBA	2J	CX NP	83	FEDYNSKI, A. V. NARAYANAN, V. PISHAROTY, P. R.
76/05/31 1430	ISRO-08.255	INDIA U.S.S.R.	THUMBA	2J	CX NP	83	FEDYNSKI, A. V. NARAYANAN, V. PISHAROTY, P. R.
76/06/01 2100	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/06/01 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/06/02 1438	ISRO-08.256	INDIA U.S.S.R.	THUMBA	2J	CX NP	85	FEDYNSKI, A. V. NARAYANAN, V. PISHAROTY, P. R.
76/06/02 1500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	92	CENTRAL AEROLOGICAL OBS
76/06/04 0423	P--187H	UNITED KINGDOM	SOUTH UIST	3A 3C	LDLU SEZA	143	BULLOUGH, K. GIBBONS, W. HEARD, N. A.
76/06/04 0439	P--144H	UNITED KINGDOM	SOUTH UIST	3A 3C	LDLU SEZA	132	BULLOUGH, K. RYCROFT, M. J.
76/06/08 2100	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/06/08 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	53	CENTRAL AEROLOGICAL OBS
76/06/09 0300	MMR-06	U.S.S.R.	USHAKOV (SHIP)	2J	NP	62	CENTRAL AEROLOGICAL OBS
76/06/09 1512	ISRO-08.257	INDIA U.S.S.R.	THUMBA	2J	CX NP	85	FEDYNSKI, A. V. NARAYANAN, V. PISHAROTY, P. R.
76/06/09 2130	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	81	CENTRAL AEROLOGICAL OBS

**NO SCIENTIFIC INSTRUMENTS USED.

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OF POOR QUALITY

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
76/06/15 0500	MHR-06	U.S.S.R.	USHAKOV (SHIP) (41 00N 44 00W)	2J	NP	62	CENTRAL AEROLOGICAL OBS
76/06/15 2100	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/06/15 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/06/16 1430	ISRO-08.258	INDIA	THUMBA	2J	CX NP	56	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/06/16 1500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	78	CENTRAL AEROLOGICAL OBS
76/06/17 0530	NASA 17.017UH	UNITED STATES	WHITE SANDS	7F	CRQH UTSF XG	232	GORENSTEIN,P.
76/06/17 0600	MHR-06	U.S.S.R.	USHAKOV (SHIP) (43 00N 45 00W)	2J	NP ₁	61	CENTRAL AEROLOGICAL OBS
76/06/18 1141	GP-A	UNITED STATES	WALLOPS ISLAND	8C	JE NX	10230	DECHER,R. VESSOT,R.F.C.
76/06/22 1800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 89 00E)	2J	NP	90	CENTRAL AEROLOGICAL OBS
76/06/22 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	83	CENTRAL AEROLOGICAL OBS
76/06/23 0900	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/06/23 1435	ISRO-08.259	INDIA	THUMBA	2J	CX NP	79	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/06/23 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 86 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/06/23 1701	T 1-8332	UNITED STATES	WALLOPS ISLAND	2G	OOAC	57	KRUEGER,A.J.
76/06/25 1800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 81 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/06/25 2100	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/06/26 1800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 78 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/06/27 0858	H-BD4B-76	FED REP OF GERMANY SPAIN	EL ARENOSILLO	7E	QKPM SW01 UTCZ	700	FAHR,H.J. WULF-MATHIES,C.
76/06/28 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 70 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/06/29 1437	T 1-8289	UNITED STATES	WALLOPS ISLAND	3C	LD	71	HALE,L.C.
76/06/29 1820	NASA 13.130GS	UNITED STATES	WHITE SANDS	0C 6E	6B 6C 6D SW	225	CONE,A. HICKEY,J.R. KENDALL,J.M.,SR. THEKAEKARA,M.P. WILLSON,R.C.
76/06/29 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/06/29 2200	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	91	CENTRAL AEROLOGICAL OBS
76/06/30 1434	ISRO-08.260	INDIA	THUMBA	2J	CX NP	85	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/06/30 1800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 65 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/07/01 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (03 00S 65 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/07/02 2100	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
*76/07/05 1144	P--188H	UNITED KINGDOM	SOUTH UIST	2G 3C	LdLU QKPM	135	DICKINSON,P.H.G.
76/07/06 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	80	CENTRAL AEROLOGICAL OBS
76/07/06 2106	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/07/07 1500	ISRO-08.261	INDIA	THUMBA	2J	CX NP	86	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/07/07 2220	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	94	CENTRAL AEROLOGICAL OBS
76/07/08 0130	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
76/07/08 0300	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
76/07/09 2106	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	93	CENTRAL AEROLOGICAL OBS
76/07/13 1748	NASA 12.032GT	UNITED STATES	WHITE SANDS	0E	**	183	KRAFT,G.E.
76/07/13 2100	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/07/13 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/07/14 1450	ISRO-08.262	INDIA	THUMBA	2J	CX NP	85	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/07/14 1754	T 1-8333	UNITED STATES	WALLOPS ISLAND	2G	OOAC	72	KRUEGER,A.J.
76/07/14 1800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (30 00S 65 00E)	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/07/16 2300	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/07/17 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (40 00S 66 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
*76/07/18 0123	NASW 12.1776GT	UNITED STATES	WALLOPS ISLAND	0B 0C	BD CRQH DCOM SE	25	HEPPNER,J.P. PETERSON,N.E.,JR.
76/07/19 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (47 00S 65 00E)	2J	NP	92	CENTRAL AEROLOGICAL OBS
76/07/20 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (49 00S 65 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/07/20 1800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (49 00S 65 00E)	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/07/20 2100	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	95	CENTRAL AEROLOGICAL OBS
76/07/20 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/07/21 1445	ISRO-08.263	INDIA	THUMBA	2J	CX NP	85	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/07/21 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (46 00S 65 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS

*IDENTIFIES LAUNCHINGS THAT FAILED TO RETURN USEFUL DATA.
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DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
76/07/23 1500	M-100	U.S.S.R.	SHOKALSKI (SHIP) (39 ODS 65 ODE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/07/23 2100	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	92	CENTRAL AEROLOGICAL OBS
76/07/26 1559	NASA 12.033GT	UNITED STATES	WHITE SANDS	0C	**	170	KRAFT,G.E.
76/07/26 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (30 ODS 65 ODE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/07/27 0445	ISRO-05.033	INDIA	THUMBA	0C	**	97	ABDUL KALAM,A.P.J.
76/07/27 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/07/27 2200	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	72	CENTRAL AEROLOGICAL OBS
76/07/28 1430	ISRO-08.264	INDIA	THUMBA	2J	CX	83	FEDYNSKI,A.V.
		U.S.S.R.			NP		NARAYANAN,V.
							PISHAROTY,P.R.
76/07/28 1455	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	66	CENTRAL AEROLOGICAL OBS
76/07/28 1910	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/07/28 2100	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/07/29 0020	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/07/29 0305	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/07/29 0615	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
76/07/29 0900	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/07/29 1145	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/07/29 1530	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/07/29 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (42 ODS 65 ODE)	2J	NP	83	CENTRAL AEROLOGICAL OBS
76/07/29 1740	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/07/29 2100	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/07/30 0020	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	83	CENTRAL AEROLOGICAL OBS
76/07/30 0240	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/07/30 0900	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/07/30 1150	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/07/30 1459	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/07/30 1615	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/07/30 1706	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/07/30 2100	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	81	CENTRAL AEROLOGICAL OBS
76/07/31 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (47 ODS 65 ODE)	2J	NP	76	CENTRAL AEROLOGICAL OBS
76/08/01 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (50 ODS 65 ODE)	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/08/01 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (50 ODS 65 ODE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/08/03 1800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (42 ODS 65 ODE)	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/08/03 1916	A35.191-04	UNITED STATES	WHITE SANDS	1A 8B	SWOG	257	MURDOCK,T.L.
							SCHURIN,B.D.
76/08/03 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/08/03 2200	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/08/04 1433	ISRO-08.265	INDIA	THUMBA	2J	CX	84	FEDYNSKI,A.V.
		U.S.S.R.			NP		NARAYANAN,V.
							PISHAROTY,P.R.
76/08/04 1500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/08/04 1739	NASA 26.043US	UNITED STATES	WHITE SANDS	6B 6C 6D	CRKE CR0H QKKQ	222	JEFFERIES,J.T.
76/08/05 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (39 ODS 65 ODE)	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/08/06 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (36 ODS 65 ODE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/08/06 2100	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	83	CENTRAL AEROLOGICAL OBS
76/08/08 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (30 ODS 65 ODE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/08/08 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (30 ODS 65 ODE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/08/10 2100	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	80	CENTRAL AEROLOGICAL OBS
76/08/10 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/08/11 1430	ISRO-08.266	INDIA	THUMBA	2J	CX	85	FEDYNSKI,A.V.
		U.S.S.R.			NP		NARAYANAN,V.
							PISHAROTY,P.R.
76/08/11 1700	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/08/11 1912	NASA 12.036GT	UNITED STATES	WALLOPS ISLAND	0A	**	612	HOLSTER,W.J.
76/08/12 0200	MHR-06	U.S.S.R.	USHAKOV (SHIP) (36 ODS 31 ODS)	2J	NP	60	CENTRAL AEROLOGICAL OBS
76/08/12 1554	NASA 18.108UE NASA 18.1006UE	SWITZERLAND UNITED STATES	WALLOPS ISLAND	3A 3C 3E	LDLU PX SE UTVP	148	BOWHILL,S.A.
							EBERHARDT,P.X.
							KOPP,E.
							SMITH,L.G.
76/08/13 2100	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
76/08/17 1015	S-127 S-210-011	JAPAN	KAGOSHIMA	1C 3A 3C 3E	LDKF LDTP SE SWQJ	112	HATSUOKA,M.
							NAGANO,I.
							OYAMA,K.
							WATANABE,T.
							WATANABE,Y.
76/08/17 2100	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/08/17 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/08/18 1427	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/08/18 1430	ISRO-08.267	INDIA	THUMBA	2J	CX	85	FEDYNSKI,A.V.
		U.S.S.R.			NP		NARAYANAN,V.
							PISHAROTY,P.R.
76/08/18 1659	MR-12	U.S.S.R.	VOLGOGRAD	2A 2B 2G 3D 4A 4B	DCOM LG PXST UTZ UTIQ	160	CENTRAL AEROLOGICAL OBS INST OF APPLIED GEOPHYS INST OF EXP METEOROLOGY SSCNR

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**NO SCIENTIFIC INSTRUMENTS USED.

DATE AND TIME OF LAUNCH	TIME (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
76/08/18	1805	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	92	CENTRAL AEROLOGICAL OBS
76/08/18	2030	ISRO-08.268	INDIA U.S.S.R.	THUMBA	2J	CX NP	83	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/08/18	2040	MR-12	U.S.S.R.	VOLGOGRAD	2A 2B 2G 3D 4A 4B	DCOM LG PXST UTCZ UTIQ	160	CENTRAL AEROLOGICAL OBS INST OF APPLIED GEOPHYS INST OF EXP METEOROLOGY SSCNR
76/08/18	2100	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
76/08/18	2315	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	91	CENTRAL AEROLOGICAL OBS
76/08/19	0043	MR-12	U.S.S.R.	VOLGOGRAD	2A 2B 2G 3D 4A 4B	DCOM LG PXST UTCZ UTIQ	160	CENTRAL AEROLOGICAL OBS INST OF APPLIED GEOPHYS INST OF EXP METEOROLOGY SSCNR
76/08/19	0148	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	95	CENTRAL AEROLOGICAL OBS
76/08/19	0230	ISRO-08.269	INDIA U.S.S.R.	THUMBA	2J	CX NP	84	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/08/19	0515	MR-12	U.S.S.R.	VOLGOGRAD	2A 2B 2C 2G 3D	LG MT PXST	160	CENTRAL AEROLOGICAL OBS
76/08/19	0610	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	93	CENTRAL AEROLOGICAL OBS
76/08/19	0847	ISRO-08.270	INDIA U.S.S.R.	THUMBA	2J	CX NP	83	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/08/19	0900	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	92	CENTRAL AEROLOGICAL OBS
76/08/19	0900	MR-12	U.S.S.R.	VOLGOGRAD	2A 2C 2F 4B	LG MT UTIQ	160	CENTRAL AEROLOGICAL OBS
76/08/19	1045	MR-12	U.S.S.R.	VOLGOGRAD	2A 2C 2F 2G 3D 4B	LG MT PXST UTIQ	160	CENTRAL AEROLOGICAL OBS
76/08/19	1146	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	---	CENTRAL AEROLOGICAL OBS
76/08/19	1400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/08/19	1430	ISRO-08.271	INDIA U.S.S.R.	THUMBA	2J	CX NP	68	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/08/19	1548	ISRO-08.272	INDIA U.S.S.R.	THUMBA	2J	CX NP	85	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
*76/08/19	1650	M-100	U.S.S.R.	SHOKALSKI (SHIP) (16 D0S 65 D0E)	2J	NP	---	CENTRAL AEROLOGICAL OBS
76/08/19	1652	MR-12	U.S.S.R.	VOLGOGRAD	2A 2B 2G 3D 4A 4B	DCOM LG PXST UTCZ UTIQ	160	CENTRAL AEROLOGICAL OBS INST OF APPLIED GEOPHYS INST OF EXP METEOROLOGY SSCNR
76/08/19	1730	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/08/19	2030	ISRO-08.273	INDIA U.S.S.R.	THUMBA	2J	CX NP	84	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/08/19	2035	MR-12	U.S.S.R.	VOLGOGRAD	2A 2B 2G 3D 4A 4B	DCOM LG PXST UTCZ UTIQ	160	CENTRAL AEROLOGICAL OBS INST OF APPLIED GEOPHYS INST OF EXP METEOROLOGY SSCNR
76/08/19	2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/08/19	2200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/08/19	2315	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/08/20	0042	MR-12	U.S.S.R.	VOLGOGRAD	2A 2B 2G 3D 4A 4B	DCOM LG PXST UTCZ UTIQ	160	CENTRAL AEROLOGICAL OBS INST OF APPLIED GEOPHYS INST OF EXP METEOROLOGY SSCNR
76/08/20	0215	MR-12	U.S.S.R.	VOLGOGRAD	2A 2C 2F 4A 4B	HP LG UTIQ	160	CENTRAL AEROLOGICAL OBS
76/08/20	0230	ISRO-08.274	INDIA U.S.S.R.	THUMBA	2J	CX NP	86	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/08/20	0333	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/08/20	0515	MR-12	U.S.S.R.	VOLGOGRAD	2A 2C 2D 2F 2G 4A 4B	LG MT PXST UTIQ	160	CENTRAL AEROLOGICAL OBS
76/08/20	0612	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/08/20	0825	ISRO-08.275	INDIA U.S.S.R.	THUMBA	2J	CX NP	86	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/08/20	0900	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
76/08/20	0900	MR-12	U.S.S.R.	VOLGOGRAD	2A 2C 2F 4A 4B	LG MT UTIQ	160	CENTRAL AEROLOGICAL OBS
76/08/20	1144	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/08/20	1345	MR-12	U.S.S.R.	VOLGOGRAD	2A 2C 2F 4A 4B	LG MT UTIQ	160	CENTRAL AEROLOGICAL OBS
76/08/20	1442	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	92	CENTRAL AEROLOGICAL OBS

*IDENTIFIES LAUNCHINGS THAT FAILED TO RETURN USEFUL DATA.

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
76/08/20 1742	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/08/20 2100	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/08/21 0047	MR-12	U.S.S.R.	VOLGOGRAD	2A 2B 2G 4A 4B	DCOM LG MT PXST UTCZ UTIQ	160	CENTRAL AEROLOGICAL OBS INST OF APPLIED GEOPHYS INST OF EXP METEOROLOGY SSCNR
*76/08/21 0340	A11.605	UNITED STATES	KWAJALEIN	2F	HP	15	FAIRE, A.C.
76/08/21 1210	S-128 S-310-003	JAPAN	KAGOSHIMA	3C 3E 3X	LDHQ LDKF LDLU	195	AMEIYA, M. ITO, T. NAKAMURA, Y. OYAMA, K. WATANABE, Y.
76/08/21 1750	M-100	U.S.S.R.	SHOKALSKI (SHIP) (10 OOS 65 OOE)	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/08/22 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (07 OOS 65 OOE)	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/08/22 1755	NASA 18.2091E	DENMARK	SONDRE STROMFJORD	3B 3C 3E 3G	ZZ	---	JESPERSEN, M.
76/08/23 1700	M-100	UNITED STATES U.S.S.R.	SHOKALSKI (SHIP) (03 OOS 65 OOE)	2J	NP	92	CENTRAL AEROLOGICAL OBS
76/08/24 1458	T 1-8439	UNITED STATES	WALLOPS ISLAND	3C	LD	66	HALE, L.C.
76/08/24 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 OON 65 OOE)	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/08/24 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 OON 65 OOE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/08/24 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	93	CENTRAL AEROLOGICAL OBS
76/08/24 2106	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/08/25 1430	ISRO-08.276	INDIA U.S.S.R.	THUMBA	2J	CX NP	80	FEDYNSKI, A.V. NARAYANAN, V. PISHAROTY, P.R.
76/08/25 1445	T 1-8440	UNITED STATES	WALLOPS ISLAND	3C	LD	66	HALE, L.C.
76/08/25 1610	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
76/08/25 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (03 OON 65 OOE)	2J	NP	84	CENTRAL AEROLOGICAL OBS
*76/08/26 1457	T 1-8437	UNITED STATES	WALLOPS ISLAND	3C	LD	67	HALE, L.C.
76/08/26 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (07 OON 65 OOE)	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/08/26 1604	T 1-8450	UNITED STATES	WALLOPS ISLAND	3C	LD	67	HALE, L.C.
76/08/26 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (07 OON 65 OOE)	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/08/26 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	93	CENTRAL AEROLOGICAL OBS
76/08/27 1108	NASA 18.2101E	DENMARK	SONDRE STROMFJORD	3B 3C 3E 3G	ZZ	---	JESPERSEN, M.
76/08/27 1700	M-100	UNITED STATES U.S.S.R.	SHOKALSKI (SHIP) (10 OON 65 OOE)	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/08/28 0200	MRR-06	U.S.S.R.	USHAKOV (SHIP) (40 OON 68 OOW)	2J	NP	61	CENTRAL AEROLOGICAL OBS
76/08/28 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (10 OON 65 OOE)	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/08/28 1800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (13 OON 65 OOE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/08/30 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (20 OON 65 OOE)	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/08/30 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (20 OON 65 OOE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/08/30 1955	K-09M-057 S-129	JAPAN	KAGOSHIMA	3C 3E 3X 5A	DCOM DCYQ LDKF LDTP SEZA	288	KANEKO, O. KAWASHIMA, N. MIYATAKE, S. MURAOKA MURATA, Y. NAKAMURA, J. OYAMA, K. SAKAI, T.
76/08/31 0340	A11.408-01 SAMSO 1202-B	UNITED STATES	KWAJALEIN	2F	HP	188	FAIRE, A.C.
76/08/31 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	81	CENTRAL AEROLOGICAL OBS
76/08/31 2106	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/09/01 1430	ISRO-08.277	INDIA U.S.S.R.	THUMBA	2J	CX NP	81	FEDYNSKI, A.V. NARAYANAN, V. PISHAROTY, P.R.
76/09/01 1500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
76/09/02 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/09/04 0300	MRR-06	U.S.S.R.	USHAKOV (SHIP) (48 OON 50 OOW)	2J	NP	62	CENTRAL AEROLOGICAL OBS
76/09/07 2100	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/09/08 0300	MRR-06	U.S.S.R.	USHAKOV (SHIP) (54 OON 35 OOW)	2J	NP	61	CENTRAL AEROLOGICAL OBS
76/09/08 1730	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/09/09 0200	MRR-06	U.S.S.R.	USHAKOV (SHIP) (52 OON 35 OOW)	2J	NP	61	CENTRAL AEROLOGICAL OBS
*76/09/09 1416	T 1-8454	UNITED STATES	WALLOPS ISLAND	3C	LD	70	HALE, L.C.
76/09/09 1430	ISRO-08.278	INDIA U.S.S.R.	THUMBA	2J	CX NP	84	FEDYNSKI, A.V. NARAYANAN, V. PISHAROTY, P.R.
76/09/09 1530	T 1-8455	UNITED STATES	WALLOPS ISLAND	3C	LD	68	HALE, L.C.
76/09/09 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/09/14 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
76/09/14 2200	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	80	CENTRAL AEROLOGICAL OBS

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OF POOR QUALITY

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
76/09/15 0200	MMR-06	U.S.S.R.	USHAKOV (SHIP) (53 ODN 36 OOW)	2J	NP	61	CENTRAL AEROLOGICAL OBS
76/09/15 1430	ISRO-08.279	INDIA U.S.S.R.	THUMBA	2J	CX NP	84	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/09/15 1500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	---	CENTRAL AEROLOGICAL OBS
76/09/15 1826	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/09/16 0200	K-09M-055 S-131	JAPAN	KAGOSHIMA	3C 3E 5A 5B	GI LD LDKF LDTP MTYO	359	EJIRI,M. IKEDA,S. MORI,H. OBAYASHI,T. OGAWA,T. OYAMA,K. YABUZAKI,T.
76/09/16 1700	NASA 13.134CS	UNITED STATES	WHITE SANDS	6F	CRQH GKQK XG	177	DAVIS,J.H.
76/09/17 0220	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
76/09/21 0200	MMR-06	U.S.S.R.	USHAKOV (SHIP) (52 ODN 35 OOW)	2J	NP	61	CENTRAL AEROLOGICAL OBS
76/09/21 1252	NASA 18.178GE	UNITED STATES	FAIRBANKS	1B 3C 3E 4B	LDLU OH1Q UTUH	253	BARCUS,J.R. GOLDBERG,R.A. JONES,W.H. SZUSZCZEWICZ,E.
76/09/21 1403	TM1-8169	UNITED STATES	FAIRBANKS	2G	OOZU	70	HILSENATH,E.
76/09/21 2100	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/09/21 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/09/22 1454	ISRO-08.280	INDIA U.S.S.R.	THUMBA	2J	CX NP	86	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/09/22 1600	T 1-8401	UNITED STATES	WALLOPS ISLAND	2G	OOAC	70	KRUEGER,A.J.
76/09/22 1640	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/09/23 1137	NASA 18.179GE	UNITED STATES	FAIRBANKS	1B 3C 3E 4B	LDLU OH1Q UTUH	235	BARCUS,J.R. GOLDBERG,R.A. JONES,W.H. SZUSZCZEWICZ,E.
76/09/23 1255	TM1-8170	UNITED STATES	FAIRBANKS	2G	OOZU	86	HILSENATH,E.
76/09/23 1430	ISRO-08.281	INDIA U.S.S.R.	THUMBA	2J	NP	87	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/09/24 1550	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/09/24 1710	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	83	CENTRAL AEROLOGICAL OBS
76/09/24 1920	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/09/24 2050	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/09/25 0715	ISRO-08.282	INDIA U.S.S.R.	THUMBA	6D	QK SWOG	90	SUBBARAYA,B.H.
76/09/25 0756	TM1-8171	UNITED STATES	FAIRBANKS	2G	OOZU	82	HILSENATH,E.
76/09/28 1947	TM1-8521	UNITED STATES	FAIRBANKS	2G	OOAC	70	KRUEGER,A.J.
76/09/28 2100	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/09/28 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/09/29 0300	MMR-06	U.S.S.R.	USHAKOV (SHIP) (53 ODN 36 OOW)	2J	NP	61	CENTRAL AEROLOGICAL OBS
76/09/29 1430	ISRO-08.283	INDIA U.S.S.R.	THUMBA	2J	CX NP	86	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/09/29 1700	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	79	CENTRAL AEROLOGICAL OBS
*76/09/30 1253	NASA 18.180GE	UNITED STATES	FAIRBANKS	1B 4B	OH1Q UTUH	65	BARCUS,J.R. GOLDBERG,R.A. JONES,W.H.
76/09/30 2140	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	---	CENTRAL AEROLOGICAL OBS
76/10/01 0130	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/10/01 0300	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/10/01 1915	TM1-8522	UNITED STATES	FAIRBANKS	2G	OOAC	74	KRUEGER,A.J.
76/10/05 0200	MMR-06	U.S.S.R.	USHAKOV (SHIP) (53 ODN 35 OOW)	2J	NP	60	CENTRAL AEROLOGICAL OBS
76/10/05 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/10/05 2200	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
76/10/06 1430	ISRO-08.284	INDIA U.S.S.R.	THUMBA	2J	CX NP	66	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/10/06 1500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	76	CENTRAL AEROLOGICAL OBS
76/10/06 1640	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	---	CENTRAL AEROLOGICAL OBS
76/10/06 1830	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	---	CENTRAL AEROLOGICAL OBS
*76/10/06 1930	NASA 10.317U1 T 2-8020	UNITED STATES	WALLOPS ISLAND	3C 3D	LDLU PXSK	20	KENDALL,B.R.
76/10/08 1652	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	---	CENTRAL AEROLOGICAL OBS
76/10/08 1744	ISRO-05.034	INDIA	THUMBA	4C	UTSF	120	RAO,U.R.
76/10/12 2100	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
76/10/12 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/10/13 0200	MMR-06	U.S.S.R.	USHAKOV (SHIP) (52 ODN 35 OOW)	2J	NP	61	CENTRAL AEROLOGICAL OBS
76/10/13 1005	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/10/13 1430	ISRO-08.285	INDIA U.S.S.R.	THUMBA	2J	CX NP	80	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/10/14 1100	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	---	CENTRAL AEROLOGICAL OBS
*76/10/14 1717	ISRO-05.035	INDIA	THUMBA	4C	UTSF	---	NARANAN,S.
76/10/15 1615	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	---	CENTRAL AEROLOGICAL OBS
76/10/16 0800	MMR-06	U.S.S.R.	PRILIV (SHIP) (45 ODN 160 OOW)	2J	NP	61	CENTRAL AEROLOGICAL OBS
76/10/19 1000	MMR-06	U.S.S.R.	PRILIV (SHIP) (40 ODN 160 OOE)	2J	NP	64	CENTRAL AEROLOGICAL OBS

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76/10/19 2100	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	81	CENTRAL AEROLOGICAL OBS
76/10/19 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/10/20 1055	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/10/20 1100	M-100	U.S.S.R.	SHIRSHOV (SHIP) (30 OON 160 OOE)	2J	NP	78	CENTRAL AEROLOGICAL OBS
76/10/20 1410	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	---	CENTRAL AEROLOGICAL OBS
76/10/20 1430	ISRO-08.286	INDIA U.S.S.R.	THUMBA	2J	CX NP	82	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/10/21 1700	T 1-8402	UNITED STATES	WALLOPS ISLAND	2G	00AC	70	WRIGHT,D.U.,J.R.
*76/10/22 1140	M-100	U.S.S.R.	SHIRSHOV (SHIP) (20 OON 160 OOE)	2J	NP	---	CENTRAL AEROLOGICAL OBS
76/10/22 1500	NASA 21.0360S	UNITED STATES	WHITE SANDS	6E	CRQH QKKQ	239	BRUECKNER,G.E.
76/10/24 1300	M-100	U.S.S.R.	SHIRSHOV (SHIP) (11 OON 160 OOE)	2J	NP	76	CENTRAL AEROLOGICAL OBS
*76/10/26 1320	M-100	U.S.S.R.	SHIRSHOV (SHIP) (03 OON 160 OOE)	2J	NP	---	CENTRAL AEROLOGICAL OBS
76/10/26 2100	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/10/26 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/10/27 1000	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/10/27 1110	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	---	CENTRAL AEROLOGICAL OBS
*76/10/27 1200	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 OON 160 OOE)	2J	NP	---	CENTRAL AEROLOGICAL OBS
76/10/27 1430	ISRO-08.287	INDIA U.S.S.R.	THUMBA	2J	CX NP	82	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/10/27 1626	ISRO-05.036	INDIA	THUMBA	4C	UTSF	148	NARANAN,S.
76/10/28 1200	M-100	U.S.S.R.	SHIRSHOV (SHIP) (02 OOS 160 OOE)	2J	NP	76	CENTRAL AEROLOGICAL OBS
76/10/29 2211	NASA 18.155UA	UNITED STATES	WALLOPS ISLAND	1C 2F	QK SWQJ	123	BARTH,C.A.
76/10/30 0330	NASA 26.0560G	UNITED STATES	WHITE SANDS	7E	CPKE	182	CARRUTHERS,G.R.
76/10/30 1400	M-100	U.S.S.R.	SHIRSHOV (SHIP) (12 OOS 158 OOE)	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/11/02 1300	M-100	U.S.S.R.	SHIRSHOV (SHIP) (23 OOS 162 OOE)	2J	NP	80	CENTRAL AEROLOGICAL OBS
76/11/02 2100	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	81	CENTRAL AEROLOGICAL OBS
76/11/02 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/11/03 0950	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/11/03 1430	ISRO-08.288	INDIA U.S.S.R.	THUMBA	2J	CX NP	83	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/11/06 1100	M-100	U.S.S.R.	SHIRSHOV (SHIP) (40 OOS 160 OOE)	2J	NP	83	CENTRAL AEROLOGICAL OBS
76/11/09 1232	APD-5B-042	AUSTRALIA CANADA	WOOMERA	3G 4A 7D	LD OHSF QKKQ	215	KOehler,J.A. NICHOLLS,R.W. WILSON,B.G.
76/11/09 2100	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	---	CENTRAL AEROLOGICAL OBS
76/11/09 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	91	CENTRAL AEROLOGICAL OBS
76/11/10 0100	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
*76/11/10 1215	T 1-8404	UNITED STATES	WALLOPS ISLAND	2G	00AC	70	WRIGHT,D.U.,J.R.
76/11/10 1500	ISRO-08.289	INDIA U.S.S.R.	THUMBA	2J	CX NP	83	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/11/10 1545	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/11/11 1216	T 1-8407	UNITED STATES	WALLOPS ISLAND	2G	00AC	71	WRIGHT,D.U.,J.R.
76/11/11 1400	T 1-8403	UNITED STATES	WALLOPS ISLAND	0D	**	71	WRIGHT,D.U.,J.R.
76/11/14 1000	MMR-06	U.S.S.R.	PRILIV (SHIP) (40 OON 179 OOW)	2J	NP	60	CENTRAL AEROLOGICAL OBS
*76/11/16 1100	M-100	U.S.S.R.	SHIRSHOV (SHIP) (40 OOS 160 OOE)	2J	NP	80	CENTRAL AEROLOGICAL OBS
76/11/16 2100	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
76/11/16 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/11/17 1430	ISRO-08.290	INDIA U.S.S.R.	THUMBA	2J	CX NP	85	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/11/17 1621	T 1-8405	UNITED STATES	WALLOPS ISLAND	2G	00AC	68	WRIGHT,D.U.,J.R.
76/11/17 1633	T 1-8406	UNITED STATES	WALLOPS ISLAND	2G	00AC	70	WRIGHT,D.U.,J.R.
76/11/17 1700	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	81	CENTRAL AEROLOGICAL OBS
76/11/17 1830	NASA 27.001CS	UNITED STATES	WHITE SANDS	6F	CRKE CRQH QKCH UTSF XG	261	DAVIS,J.M.
76/11/18 0425	ISRO-05.037	INDIA	THUMBA	3C 3D	PXSK	128	REDDY,C.A. SUDHARKAR,V.
*76/11/18 0700	MMR-06	U.S.S.R.	PRILIV (SHIP) (40 OON 159 OOW)	2J	NP	---	CENTRAL AEROLOGICAL OBS
*76/11/18 1300	M-100	U.S.S.R.	SHIRSHOV (SHIP) (30 OOS 162 OOE)	2J	NP	---	CENTRAL AEROLOGICAL OBS
76/11/19 0925	NASA 27.002UH	UNITED STATES	WHITE SANDS	7E 7F	CRKE CRQH XG	295	BOWYER,C.S.
76/11/21 2114	SL-1422	NORWAY UNITED KINGDOM	ANDOYA	0A 3D 4B 5C	GI MTHZ OH CZ PX PXGS	715	BRITISH AIRCRA CORP LTD BRYANT,D.A. JOHNSTONE,A.D. MARTELLI,G.A.G. ROTHWELL,P.H.M.

*IDENTIFIES LAUNCHINGS THAT FAILED TO RETURN USEFUL DATA.
**NO SCIENTIFIC INSTRUMENTS USED.

ORIGINAL PAGE IS
OF POOR QUALITY

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
76/11/21 2115	F--002	NORWAY UNITED KINGDOM	ANDOYA	0A 4B 5C	GI MTHZ OHCZ PKGS NP	145	BRYANT,D.A. MARTELLI,G.A.G.
76/11/22 1300	M-100	U.S.S.R.	SHIRSHOV (SHIP) (12 00s 158 00E)	2J	NP	---	CENTRAL AEROLOGICAL OBS
76/11/23 2100	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	83	CENTRAL AEROLOGICAL OBS
76/11/23 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	83	CENTRAL AEROLOGICAL OBS
76/11/23 2231	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/11/24 1430	ISRO-08.291	INDIA U.S.S.R.	THUMBA	2J	CX NP	82	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/11/24 1540	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/11/25 1100	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 160 00E)	2J	NP	77	CENTRAL AEROLOGICAL OBS
76/11/25 2231	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	78	CENTRAL AEROLOGICAL OBS
76/11/26 1500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	90	CENTRAL AEROLOGICAL OBS
76/11/27 1400	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 160 00E)	2J	NP	81	CENTRAL AEROLOGICAL OBS
76/11/27 2053	FERDINAND-038 NASA 29.0051E	AUSTRIA NORWAY UNITED KINGDOM UNITED STATES	ANDOYA	0A 1B 3A 3B 3C 3E 3G 4B 5A 6F	BD LDKF MTHZ OHCZ OHIQ OHUH OHVP SEZA SWQJ UTCZ UTIQ UTQJ	538	NORWEGIAN DEF RES ESTAB AARSNES,K. EGELAND,A. FRIEDRICH,M. HALL,D.S. HOLTET,J.A. JOHNSTONE,A.D. KARLSEN,N. MASEIDE,K. MAYNARD,N.C. SOJKA,J.J. SORAAS,F. STADSNES,J.
76/11/27 2053	FERDINAND-039 NASA 18.2061E	AUSTRIA NORWAY UNITED KINGDOM UNITED STATES	ANDOYA	0A 1B 3B 3C 3E 3G 4B 5A	BD LDKF MTHZ OHCZ OHIQ OHVP SWQJ UTCZ UTQJ	210	NORWEGIAN DEF RES ESTAB AARSNES,K. EGELAND,A. FRIEDRICH,M. HALL,D.S. HOLTET,J.A. JOHNSTONE,A.D. MASEIDE,K. MAYNARD,N.C. SOJKA,J.J. SORAAS,F. STADSNES,J.
76/11/30 2100	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
76/11/30 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/12/01 1430	ISRO-08.292	INDIA U.S.S.R.	THUMBA	2J	CX NP	81	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/12/01 1710	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	79	CENTRAL AEROLOGICAL OBS
76/12/01 1800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 66 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/12/01 1900	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 66 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/12/02 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (02 00S 65 00E)	2J	NP	79	CENTRAL AEROLOGICAL OBS
76/12/03 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (05 00S 65 00E)	2J	NP	81	CENTRAL AEROLOGICAL OBS
76/12/04 1253	FLIGHT-141 TA1-8410	UNITED KINGDOM UNITED STATES	ANTIGUA	2G	00AC	51	WRIGHT,D.U.,JR.
76/12/05 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (11 00S 65 00E)	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/12/06 1300	M-100	U.S.S.R.	SHIRSHOV (SHIP) (01 00N 169 00E)	2J	NP	93	CENTRAL AEROLOGICAL OBS
76/12/06 1410	FLIGHT-142 TA1-8411	UNITED KINGDOM UNITED STATES	ANTIGUA	2G	00AC	55	WRIGHT,D.U.,JR.
76/12/07 0830	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/12/07 1120	MR-12	GERMAN DEMOCRAT REP U.S.S.R.	VOLGOGRAD	6D 6E	00UF SWQI	165	CENTRAL AEROLOGICAL OBS DEUTSCHE AKAD DER WISS
76/12/07 2100	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/12/07 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/12/08 1120	MR-12	GERMAN DEMOCRAT REP U.S.S.R.	VOLGOGRAD	6D 6E	00UF SWQI	165	CENTRAL AEROLOGICAL OBS DEUTSCHE AKAD DER WISS
76/12/08 1150	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/12/08 1430	ISRO-08.293	INDIA U.S.S.R.	THUMBA	2J	CX NP	86	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/12/08 1710	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	---	CENTRAL AEROLOGICAL OBS
76/12/09 1200	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 179 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/12/10 1440	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/12/10 1930	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	81	CENTRAL AEROLOGICAL OBS
76/12/11 0015	SL-1425	NORWAY UNITED KINGDOM	ANDOYA	0A 2A 3B 3C 3E 4B 5A 5B	BD DCYQ LDLU LDWU MTHZ MTYQ UTCZ	694	BRYANT,D.A. JOHNSTONE,A.D. MAEHLUM,B.N. MAYNARD,N.C. REES,D. THOMAS,L.

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
76/12/11 0240	F--005	FED REP OF GERMANY NORWAY UNITED KINGDOM	ANDOYA	1B 1C 2A 2C 3B 5B	DCVQ MTHZ SWOG SNUE	214	REES,D. THELLE,B. THOMAS,L.
76/12/12 1100	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 170 00W)	2J	NP	80	CENTRAL AEROLOGICAL OBS
76/12/12 1200	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 170 00W)	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/12/13 1100	M-100	U.S.S.R.	SHIRSHOV (SHIP) (03 00S 170 00W)	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/12/13 1430	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	74	CENTRAL AEROLOGICAL OBS
76/12/13 1730	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	---	CENTRAL AEROLOGICAL OBS
76/12/14 1935	NASA 21.034NP	UNITED STATES	WHITE SANDS	0D	**	174	CHASSAY,R.P. LIND,M.D. PAPAZIAN,J.M. SCHAFFER,C.F. UHLMAN,D. WOUGH,G.
76/12/14 2100	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/12/14 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/12/15 1400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/12/15 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (21 00S 65 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/12/16 1430	ISRO-08.294	INDIA U.S.S.R.	THUMBA	2J	NP	85	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/12/16 1900	M-100	U.S.S.R.	SHOKALSKI (SHIP) (27 00S 65 00E)	2J	NP	83	CENTRAL AEROLOGICAL OBS
76/12/17 0736	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/12/17 0900	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/12/17 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (30 00S 65 00E)	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/12/17 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (30 00S 65 00E)	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/12/18 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (27 00S 65 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/12/20 1500	M-100	U.S.S.R.	SHOKALSKI (SHIP) (20 00S 65 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/12/21 0900	MMR-06	U.S.S.R.	PRILIV (SHIP) (40 00N 180 00W)	2J	NP	65	CENTRAL AEROLOGICAL OBS
76/12/21 2100	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/12/21 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	93	CENTRAL AEROLOGICAL OBS
76/12/22 0830	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/12/22 0935	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	83	CENTRAL AEROLOGICAL OBS
76/12/22 1430	ISRO-08.295	INDIA U.S.S.R.	THUMBA	2J	CX NP	81	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/12/22 1604	T 1-8408	UNITED STATES	WALLOPS ISLAND	2G	00AC	70	WRIGHT,D.U.,JR.
76/12/23 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (10 00S 65 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/12/23 1800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (10 00S 65 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/12/25 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (04 00S 65 00E)	2J	NP	90	CENTRAL AEROLOGICAL OBS
76/12/25 1600	M-100	U.S.S.R.	SHIRSHOV (SHIP) (10 00S 163 00W)	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/12/25 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (04 00S 65 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/12/26 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (01 00S 65 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/12/26 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (01 00S 65 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
76/12/27 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 68 00E)	2J	NP	81	CENTRAL AEROLOGICAL OBS
76/12/27 1800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 69 00E)	2J	NP	87	CENTRAL AEROLOGICAL OBS
76/12/28 1300	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 162 00W)	2J	NP	88	CENTRAL AEROLOGICAL OBS
76/12/28 1400	M-100	U.S.S.R.	SHIRSHOV (SHIP) (00 00N 162 00W)	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/12/28 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	82	CENTRAL AEROLOGICAL OBS
76/12/29 0100	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/12/29 0900	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	79	CENTRAL AEROLOGICAL OBS
76/12/29 1430	ISRO-08.296	INDIA U.S.S.R.	THUMBA	2J	CX NP	83	FEDYNSKI,A.V. NARAYANAN,V. PISHAROTY,P.R.
76/12/30 1100	M-100	U.S.S.R.	SHIRSHOV (SHIP) (08 00N 160 00W)	2J	NP	84	CENTRAL AEROLOGICAL OBS
76/12/30 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 80 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/12/30 1800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 80 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
76/12/31 0900	MMR-06	U.S.S.R.	PRILIV (SHIP) (40 00N 169 00W)	2J	NP	60	CENTRAL AEROLOGICAL OBS
76/12/31 1000	MMR-06	U.S.S.R.	PRILIV (SHIP) (40 00N 170 00W)	2J	NP	61	CENTRAL AEROLOGICAL OBS
77/01/01 0900	M-100	U.S.S.R.	SHIRSHOV (SHIP) (18 00N 161 00W)	2J	NP	85	CENTRAL AEROLOGICAL OBS
77/01/02 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 90 00E)	2J	NP	83	CENTRAL AEROLOGICAL OBS

**NO SCIENTIFIC INSTRUMENTS USED.

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
77/01/02 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 ODN 90 ODE)	2J	NP	83	CENTRAL AEROLOGICAL OBS
77/01/03 0900	M-100	U.S.S.R.	SHIRSHOV (SHIP) (30 ODN 160 OOW)	2J	NP	87	CENTRAL AEROLOGICAL OBS
77/01/03 1100	MNR-06	U.S.S.R.	PRILIV (SHIP) (40 ODN 155 ODE)	2J	NP	58	CENTRAL AEROLOGICAL OBS
77/01/04 1240	M-100	U.S.S.R.	KOROLEV (SHIP) (36 ODN 180 ODE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
77/01/04 2100	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
77/01/04 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	81	CENTRAL AEROLOGICAL OBS
77/01/05 0900	M-100	U.S.S.R.	SHIRSHOV (SHIP) (39 ODN 160 OOW)	2J	NP	86	CENTRAL AEROLOGICAL OBS
77/01/05 0950	M-100	U.S.S.R.	KOROLEV (SHIP) (40 ODN 180 ODE)	2J	NP	87	CENTRAL AEROLOGICAL OBS
77/01/05 1000	MNR-06	U.S.S.R.	PRILIV (SHIP) (40 ODN 150 ODE)	2J	NP	59	CENTRAL AEROLOGICAL OBS
77/01/05 1030	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	78	CENTRAL AEROLOGICAL OBS
77/01/05 1140	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	78	CENTRAL AEROLOGICAL OBS
77/01/05 1500	M-100	INDIA	THUMBA	2J	NP	81	CENTRAL AEROLOGICAL OBS
77/01/07 0745	AED-58-046	CANADA	FORT CHURCHILL	1B 2G 5A 5B 8A	GI NR PXZU OK SWQ1 NP	261	DAVIES, W.E.R. DE LEEU, J.H. HARRIS, F.R. KOEHLER, J.A. WLOCHOWICZ, R. CENTRAL AEROLOGICAL OBS
77/01/07 0840	M-100	U.S.S.R.	KOROLEV (SHIP) (40 ODN 170 OOW)	2J	NP	78	CENTRAL AEROLOGICAL OBS
77/01/08 1903	NASA 18.1008UE T 2-8564	SWITZERLAND UNITED STATES	WALLOPS ISLAND	3A 3C 3E	LDLU PX SE UTVP LDIZ	138	BOWHILL, S.A. EBERHARDT, P.X. KOPP, E. SMITH, L.G. HALE, L.C.
77/01/08 1938	NASA 23.008UE T 1-8660	UNITED STATES	WALLOPS ISLAND	2G	LDIZ	83	MITCHELL, J.D.
77/01/08 2021	NASA 15.152UE T 1-8293	UNITED STATES	WALLOPS ISLAND	3G	LDIZ	86	MITCHELL, J.D.
77/01/11 2100	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/01/11 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	79	CENTRAL AEROLOGICAL OBS
77/01/12 0530	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	83	CENTRAL AEROLOGICAL OBS
77/01/12 0840	M-100	U.S.S.R.	KOROLEV (SHIP) (25 ODN 160 OOW)	2J	NP	79	CENTRAL AEROLOGICAL OBS
77/01/12 1500	M-100	INDIA	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
77/01/13 0422	ADD-5A-045	U.S.S.R. CANADA	FORT CHURCHILL	1B 3C 4B	LDLU OH OK SWQ1	152	ANGER, C.D. LLEWELLYN, E.J. MCEWEN, D.J. MCNAMARA, A.G. SHEPHERD, G.G. BERNSTEIN, W. BRACE, L.H. EVANS, D.S. FAN, C-Y. KOONS, H.C. BARTH, C.A.
77/01/14 1018	NASA 29.003AE	UNITED STATES	FAIRBANKS	1B 2G 3C 3E 4B 5A 5B	AF BD LDLU MTBD PXGS KQPM UTCZ UTQJ CR MT UTSF	500	KAWASHIMA, N. MATSUMOTO, T. MATSUOKA, M.
77/01/15 0140	NASA 21.049UL	UNITED STATES	WHITE SANDS	7D	PXGS KQPM UTCZ UTQJ	268	KRAUSHAAR, W.L.
77/01/15 0617	NASA 13.122UH	UNITED STATES	WHITE SANDS	7F	CR MT UTSF	196	KRAUSHAAR, W.L.
77/01/16 1245	K-09M-058 S-132	JAPAN	KAGOSHIMA	0C 1X 3X 5X 7B	LDLU SWHU SWQ1 SWQJ	324	KAWASHIMA, N. MATSUMOTO, T. MATSUOKA, M.
77/01/17 0730	M-100	U.S.S.R.	KOROLEV (SHIP) (30 ODN 160 OOW)	2J	NP	85	CENTRAL AEROLOGICAL OBS
*77/01/18 0543	NASA 29.004UE	UNITED STATES	FAIRBANKS	1B 4B	MT PX PXGS	11	EVANS, D.S. SCHERB, F.
77/01/18 2100	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	85	CENTRAL AEROLOGICAL OBS
77/01/18 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/01/19 0800	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	83	CENTRAL AEROLOGICAL OBS
77/01/19 1500	M-100	INDIA	THUMBA	2J	NP	81	CENTRAL AEROLOGICAL OBS
77/01/19 1730	T 1-8414	UNITED STATES	WALLOPS ISLAND	2G	DOAC	71	WRIGHT, D.U., JR.
77/01/20 0700	M-100	U.S.S.R.	SHIRSHOV (SHIP) (50 ODN 160 OOW)	2J	NP	87	CENTRAL AEROLOGICAL OBS
77/01/21 0900	M-100	U.S.S.R.	KOROLEV (SHIP) (25 ODN 180 ODE)	2J	NP	78	CENTRAL AEROLOGICAL OBS
77/01/22 2128	AF6-F2 EUV-002	FED REP OF GERMANY NORWAY SWEDEN	ANDOYA	1B 3B 3C 3D 3E 4B 5A	GI LD LDKF NTHZ PX PXGS OK	277	BOSTROM, R. DUMBS, A. FAHLESON, U.V. FISCHER, A. KRANKOWSKY, D.K.H. NESKE, E. THEILE, B. WILHELM, K.
77/01/23 0700	M-100	U.S.S.R.	SHIRSHOV (SHIP) (49 ODN 180 ODE)	2J	NP	84	CENTRAL AEROLOGICAL OBS

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DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
77/01/23 1036	M-100	U.S.S.R.	KOROLEV (SHIP) (25 DGN 170 OOE)	2J	NP	77	CENTRAL AEROLOGICAL OBS
77/01/23 1510	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	82	CENTRAL AEROLOGICAL OBS
77/01/23 1918	NASA 18.1005UE	DENMARK NORWAY UNITED STATES	ANDOYA	0A 1B 3B 4B	GI MTHZ MTSH OHCZ OHIQ PXGS SWQI UTQJ	222	ARNOLDY,R.L. CAHILL,L.J.,J.R. PRIMDAHL,F.
77/01/24 1500	M-100	U.S.S.R.	SHIRSHOV (SHIP) (41 DGN 180 OOE)	2J	NP	87	CENTRAL AEROLOGICAL OBS
77/01/25 2100	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	83	CENTRAL AEROLOGICAL OBS
77/01/26 0800	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/01/26 0910	M-100	U.S.S.R.	KOROLEV (SHIP) (24 DGN 169 OOE)	2J	NP	83	CENTRAL AEROLOGICAL OBS
77/01/26 1020	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	82	CENTRAL AEROLOGICAL OBS
77/01/27 0810	M-100	U.S.S.R.	KOROLEV (SHIP) (40 DGN 169 OOE)	2J	NP	81	CENTRAL AEROLOGICAL OBS
77/01/27 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
77/01/28 1450	M-100	U.S.S.R.	KOROLEV (SHIP) (39 DGN 160 OOE)	2J	NP	77	CENTRAL AEROLOGICAL OBS
77/02/01 2100	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/02/01 2200	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
77/02/02 1030	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	77	CENTRAL AEROLOGICAL OBS
77/02/02 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
77/02/03 0900	M-100	U.S.S.R.	SHIRSHOV (SHIP) (25 DGN 160 OOE)	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/02/03 1000	M-100	U.S.S.R.	SHIRSHOV (SHIP) (25 DGN 160 OOE)	2J	NP	82	CENTRAL AEROLOGICAL OBS
77/02/03 2100	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
77/02/04 0900	M-100	U.S.S.R.	SHIRSHOV (SHIP) (30 DGN 160 OOE)	2J	NP	85	CENTRAL AEROLOGICAL OBS
77/02/04 1000	M-100	U.S.S.R.	SHIRSHOV (SHIP) (30 DGN 160 OOE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
77/02/06 0200	MNR-06	U.S.S.R.	KRENKEL (SHIP) (33 DGN 28 OOW)	2J	NP	60	CENTRAL AEROLOGICAL OBS
77/02/06 0900	M-100	U.S.S.R.	SHIRSHOV (SHIP) (40 DGN 160 OOE)	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/02/06 1000	M-100	U.S.S.R.	SHIRSHOV (SHIP) (40 DGN 160 OOE)	2J	NP	86	CENTRAL AEROLOGICAL OBS
77/02/06 2051	NASA 18.1004UE	DENMARK NORWAY UNITED STATES	ANDOYA	0A 1B 3B 4B	GI MTHZ MTSH OHCZ OHIQ PXGS SWQI UTQJ	224	ARNOLDY,R.L. CAHILL,L.J.,J.R. PRIMDAHL,F.
77/02/07 2140	MOP-001	UNITED KINGDOM	SOUTH UIST	1C 2J 3C	LDLU OOAC SWQI LDIZ LG PXSK LDLU QKPM LDHQ LDLU UTIQ	127	DE JONCKHEERE,C.G. WILLIAMS,E.R.
*77/02/07 2205	P--195H	FED REP OF GERMANY UNITED KINGDOM	SOUTH UIST	2B 3C 3D	LDIZ LG PXSK LDLU QKPM LDHQ LDLU UTIQ	46	KRANKOWSKY,D.K.H.
77/02/07 2309	P--192H	UNITED KINGDOM	SOUTH UIST	2G 3C	LDLU QKPM LDHQ LDLU UTIQ	146	DICKINSON,P.H.G.
77/02/07 2326	P--193H	UNITED KINGDOM	SOUTH UIST	3C 4B	LDLU QKPM LDHQ LDLU UTIQ	135	WILLIAMS,E.R.
77/02/08 2100	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
77/02/08 2100	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	83	CENTRAL AEROLOGICAL OBS
77/02/08 2212	AF6-F1 EUV-001	FED REP OF GERMANY NORWAY SWEDEN	ANDOYA	1B 3B 3C 3D 3E 4B 5A	GI LD LDKF MTHZ PX PXGS QK	272	BOSTROM,R. DUMBS,A. FAHLESON,U.V. FISCHER,A. KRANKOWSKY,D.K.H. NESKE,E. THEILE,B. WILHELM,K.
77/02/09 0930	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/02/09 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	36	CENTRAL AEROLOGICAL OBS
77/02/09 1600	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	79	CENTRAL AEROLOGICAL OBS
*77/02/10 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	---	CENTRAL AEROLOGICAL OBS
77/02/10 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
77/02/11 1233	P--194H	FED REP OF GERMANY UNITED KINGDOM	SOUTH UIST	2B 3C 3D	LDIZ LG PXSK LDLU QKPM	---	KRANKOWSKY,D.K.H.
77/02/11 1318	P--191H	UNITED KINGDOM	SOUTH UIST	2B 3C	LDLU QKPM	132	WILLIAMS,E.R.
77/02/11 1359	P--189H	UNITED KINGDOM	SOUTH UIST	2G 3C	LDLU QKPM	142	DICKINSON,P.H.G.

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OF POOR QUALITY.

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
77/02/11 2049	NASA 18.2131E	SWEDEN UNITED STATES	KIRUNA	1B 3B 3C 4B 5A	CRKE DCLA GI MT SWQJ NP	---	HOLMGREN,G. KELLY,H.
77/02/13 0300	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (36 00N 61 00W)	2J	NP	61	CENTRAL AEROLOGICAL OBS
77/02/15 1438	NASA 26.054UH	AUSTRALIA UNITED STATES	WOOMERA	7F	CRQH MT UTSF	176	NOVICK,R.
77/02/15 1710	NASA 26.052DH	AUSTRALIA UNITED STATES	WOOMERA	7F	CR UTSF	~189	FRITZ,G.G.
77/02/15 2100	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
77/02/15 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
*77/02/16 0300	NASA 25.015GG	UNITED STATES	WHITE SANDS	7D 7E	CRKE SWQJ XG	198	STECHER,T.P.
77/02/16 1030	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	82	CENTRAL AEROLOGICAL OBS
77/02/16 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	83	CENTRAL AEROLOGICAL OBS
*77/02/16 1732	T 1-8415	UNITED STATES	WALLOPS ISLAND	2G	00AC	73	WRIGHT,D.U.,J.R.
77/02/16 1807	TH1-8708	CANADA UNITED STATES	FORT CHURCHILL	2G	00AC	73	WRIGHT,D.U.,J.R.
*77/02/16 1812	T 1-8418	UNITED STATES	WALLOPS ISLAND	2G	00AC	51	WRIGHT,D.U.,J.R.
77/02/16 2045	FERDINAND-046 NASA 18.212GE NASA 18.212IE	AUSTRIA FED REP OF GERMANY NORWAY UNITED STATES	ANDOYA	0A 1B 2F 2G 3C 3E 4B 5A	GI LDIY LDLU LDWU MTHZ PXGS PXSK SE SEZA UTCZ UTUH UTVP	248	FRIEDRICH,M. HOLJET,J.A. JACOBSEN,T. KRANKOWSKY,D.K.H. MAEHLUM,B.N. MAYNARD,N.C. SORAAS,F. STADSNESS,J. TROIIM,J.
77/02/17 1330	NASA 13.124UG	AUSTRALIA UNITED STATES	WOOMERA	7D 7E	CRQH XG QK	192	FELDMAN,P.D.
77/02/17 1405	NASA 26.057GG	AUSTRALIA UNITED STATES	WOOMERA	7E	CRKE CRQH QKKQ XG NP	197	SMITH,A.M.
77/02/17 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/02/17 2112	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
77/02/18 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
77/02/20 2114	AB3-F3	FED REP OF GERMANY NORWAY SWEDEN	ANDOYA	1B 3B 3C 3D 3E 4B 5A	GI LD LDKF MTHZ PX PXGS QKKQ	256	BOSTROM,R. DUMBS,A. FAHLESON,U.V. KRANKOWSKY,D.K.H. NESKE,E. OFFERMANN,D. THEILE,B. WILHELM,K.
77/02/21 0137	MR-12	FRANCE U.S.S.R.	HEISS ISLAND	2C 5A	DCOM GI	153	CNRS, SERV D' AERONOMIE INST OF APPLIED GEOPHYS
77/02/21 1430	NASA 26.051UG	AUSTRALIA UNITED STATES	WOOMERA	7E	QK SWQJ XG	174	MOOS,H.W.
77/02/21 2106	NASA 13.123IS	AUSTRALIA UNITED STATES	WOOMERA	1C 6E	GYKZ PX QK QKPM QKSF SWQJ	177	CARVER,J.H. SCHAEFFER,R.
77/02/22 2100	M-100	U.S.S.R.	MOLODEZHNYA	2J	NP	66	CENTRAL AEROLOGICAL OBS
77/02/22 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/02/22 2130	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/02/23 1320	NASA 26.053DH	AUSTRALIA UNITED STATES	WOOMERA	7F	CR UTSF	184	FRITZ,G.G.
77/02/23 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/02/23 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	83	CENTRAL AEROLOGICAL OBS
77/02/23 1700	FLIGHT 148 T 1-8417	UNITED STATES	WALLOPS ISLAND	2G	00AC	71	WRIGHT,D.U.,J.R.
77/02/24 0130	MR-12	FRANCE U.S.S.R.	HEISS ISLAND	2C 5A	DCOM GI	170	CNRS, SERV D' AERONOMIE INST OF APPLIED GEOPHYS
77/02/24 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	95	CENTRAL AEROLOGICAL OBS
77/02/25 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/02/27 0200	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (50 00N 46 00W)	2J	NP	60	CENTRAL AEROLOGICAL OBS
77/02/28 0520	AQF-6 -005	CANADA	FORT CHURCHILL	2I	SESN	95	FORSYTH,P.A.
77/03/01 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
77/03/02 0200	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (53 00N 35 00W)	2J	NP	62	CENTRAL AEROLOGICAL OBS
77/03/02 1020	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	81	CENTRAL AEROLOGICAL OBS
77/03/02 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	81	CENTRAL AEROLOGICAL OBS

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77/03/02 1600	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
77/03/02 2100	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/03/03 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
77/03/04 0200	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (53 00N 35 00W)	2J	NP	62	CENTRAL AEROLOGICAL OBS
77/03/04 2130	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	81	CENTRAL AEROLOGICAL OBS
77/03/05 0447	AAF-NSB-002	CANADA UNITED STATES	FORT CHURCHILL	1B 3G 5A 5H	GI LD NK SE	327	HARRIS, F.R. KELLOGG, P.J. KOEHLER, J.A. MCNAMARA, A.G. WHALEN, B.A.
77/03/05 0447	AKF-6 -009	CANADA	FORT CHURCHILL	1B	SUOI UTOJ	60	VENKATESAN, D.
77/03/08 0401	AAF-4B-034	CANADA	FORT CHURCHILL	0D 1B 3G 4B	LD PX SESN	700	KOEHLER, J.A. MCNAMARA, A.G. WHALEN, B.A.
77/03/08 0406	AKF-6 -008	CANADA	FORT CHURCHILL	1B	UTQJ	60	VENKATESAN, D.
77/03/08 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
77/03/08 2200	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/03/09 0300	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (53 00N 35 00W)	2J	NP	64	CENTRAL AEROLOGICAL OBS
77/03/09 1032	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	78	CENTRAL AEROLOGICAL OBS
77/03/09 1500	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	94	CENTRAL AEROLOGICAL OBS
77/03/09 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/03/09 1640	NASA 21.041US	UNITED STATES	WHITE SANDS	6D 6E	QKKQ SUQJ	191	RENSE, W.A.
77/03/10 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
77/03/11 0200	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (53 00N 35 00W)	2J	NP	61	CENTRAL AEROLOGICAL OBS
77/03/11 1500	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
77/03/12 0330	NASA 25.020UG	UNITED STATES	WHITE SANDS	7E	QKKQ XG	225	LILLIE, C.F.
77/03/12 0500	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 80 00E)	2J	NP	78	CENTRAL AEROLOGICAL OBS
77/03/14 0500	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 69 00E)	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/03/14 1500	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
77/03/15 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	81	CENTRAL AEROLOGICAL OBS
77/03/16 1320	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
77/03/16 1400	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	85	CENTRAL AEROLOGICAL OBS
77/03/16 1500	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
77/03/16 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	78	CENTRAL AEROLOGICAL OBS
77/03/16 1530	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	93	CENTRAL AEROLOGICAL OBS
77/03/16 1700	T 1-8416	UNITED STATES	WALLOPS ISLAND	2G	OOAC	71	WRIGHT, D.U., JR.
77/03/16 1810	MR-12	FRANCE	HEISS ISLAND	2C 5A	DCOM GI	172	CNRS, SERV D' AERONOMIE INST OF APPLIED GEOPHYS
77/03/16 1819	TH1-8709	CANADA UNITED STATES	FORT CHURCHILL	2G	OOAC	73	WRIGHT, D.U., JR.
77/03/16 2205	AB 03-F4	FED REP OF GERMANY NORWAY SWEDEN	ANDOYA	1B 3B 3C 3D 3E 4D 5A	GI LD LDKF MTHZ PX PXGS QKKQ	263	BOSTROM, R. DUMBS, A. FAHLESON, U.V. KRANKOWSKY, D.K.H. NESKE, E. OFFERMANN, D. THEILE, D. WILHELM, K.
77/03/17 0300	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (53 00N 35 00W)	2J	NP	60	CENTRAL AEROLOGICAL OBS
77/03/17 0359	MR-12	FRANCE U.S.S.R.	HEISS ISLAND	3C 3E 5A	GI LDTP SNWY	170	CNRS-CRPE HYDROMETEOROL SERV USSR INST OF APPLIED GEOPHYS INST OF EXP METEOROLOGY INST UNIV DE TECHNOL LAB DE GEOPHYS EXTERNE
77/03/17 1000	MMR-06	U.S.S.R.	VOLNA (SHIP) (50 00N 160 00E)	2J	NP	60	CENTRAL AEROLOGICAL OBS
77/03/17 2106	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	82	CENTRAL AEROLOGICAL OBS
77/03/18 0600	M-100	U.S.S.R.	KOROLEV (SHIP) (15 00N 64 00E)	2J	NP	82	CENTRAL AEROLOGICAL OBS
77/03/18 0900	MMR-06	U.S.S.R.	VOLNA (SHIP) (45 00N 160 00E)	2J	NP	61	CENTRAL AEROLOGICAL OBS
77/03/18 1410	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
77/03/18 1520	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
77/03/18 1640	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
77/03/18 2105	MR-12	FRANCE	HEISS ISLAND	2C 5A	DCOM GI	170	CNRS, SERV D' AERONOMIE INST OF APPLIED GEOPHYS
77/03/19 0600	M-100	U.S.S.R.	KOROLEV (SHIP) (10 00N 64 00E)	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/03/19 0606	NASA 25.025UE	CANADA UNITED STATES	FORT CHURCHILL	1B 4B	LDLU PX SUQJ	195	SHARP, W.E. ZIPF, E.C., JR.
77/03/20 0600	M-100	U.S.S.R.	KOROLEV (SHIP) (05 00N 65 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS

* IDENTIFIES LAUNCHINGS THAT FAILED TO RETURN USEFUL DATA.

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OF POOR QUALITY

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
77/03/20 1922	NASA 24.0021E	FED REP OF GERMANY SWEDEN THE NETHERLANDS UNITED STATES	KIRUNA	3B 3C 3E 5A 5B	BD GI LD MT MTUI	460	HAERENDEL, G. HAUSLER, B. KELLEY, M. C. PEDERSEN, A. SPENNER, K. THEILE, B.
77/03/21 0600	M-100	U.S.S.R.	KOROLEV (SHIP) (00 ODN 65 OOE)	2J	NP	83	CENTRAL AEROLOGICAL OBS
77/03/21 0622	AND-5B-D44	CANADA	FORT CHURCHILL	6B	GKKQ	178	GUSH, H. P.
77/03/21 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	91	CENTRAL AEROLOGICAL OBS
77/03/22 0600	M-100	U.S.S.R.	KOROLEV (SHIP) (05 ODS 65 OOE)	2J	NP	83	CENTRAL AEROLOGICAL OBS
77/03/22 0630	NASA 26.059UG	UNITED STATES	WHITE SANDS	7E	CRKE GKKQ SWQJ UTCZ	189	BLESS, R. C. CODE, A. D.
77/03/22 2100	M-100	U.S.S.R.	MOLDEZHNAYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
77/03/23 0400	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (53 ODN 36 OOW)	2J	NP	64	CENTRAL AEROLOGICAL OBS
77/03/23 0600	M-100	U.S.S.R.	KOROLEV (SHIP) (10 ODS 65 OOE)	2J	NP	85	CENTRAL AEROLOGICAL OBS
77/03/23 1100	MMR-06	U.S.S.R.	VOLNA (SHIP) (35 ODN 160 OOE)	2J	NP	62	CENTRAL AEROLOGICAL OBS
77/03/23 1320	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	83	CENTRAL AEROLOGICAL OBS
77/03/23 1500	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	93	CENTRAL AEROLOGICAL OBS
77/03/23 1500	M-100	INDIA	THUMBA	2J	NP	75	CENTRAL AEROLOGICAL OBS
77/03/23 1530	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	83	CENTRAL AEROLOGICAL OBS
77/03/24 1310	MR-12	FRANCE U.S.S.R.	HEISS ISLAND	3C 4B 5A	GI LQTP OHVP NP	160	INST OF APPLIED GEOPHYS INST UNIV DE TECHNOL
77/03/25 0200	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (54 ODN 36 OOW)	2J	NP	62	CENTRAL AEROLOGICAL OBS
77/03/25 1000	MMR-06	U.S.S.R.	VOLNA (SHIP) (40 ODN 165 OOE)	2J	NP	57	CENTRAL AEROLOGICAL OBS
77/03/25 1401	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
77/03/25 1500	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
77/03/26 0600	M-100	U.S.S.R.	KOROLEV (SHIP) (23 ODS 65 OOE)	2J	NP	85	CENTRAL AEROLOGICAL OBS
77/03/28 0700	M-100	U.S.S.R.	KOROLEV (SHIP) (30 ODS 65 OOE)	2J	NP	82	CENTRAL AEROLOGICAL OBS
77/03/28 0900	M-100	U.S.S.R.	KOROLEV (SHIP) (30 ODS 65 OOE)	2J	NP	81	CENTRAL AEROLOGICAL OBS
77/03/30 1000	MMR-06	U.S.S.R.	VOLNA (SHIP) (40 ODN 170 OOE)	2J	NP	59	CENTRAL AEROLOGICAL OBS
77/03/30 1320	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
77/03/30 1401	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
77/03/30 1500	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
77/03/30 1500	M-100	INDIA	THUMBA	2J	NP	81	CENTRAL AEROLOGICAL OBS
77/03/30 1500	M-100	U.S.S.R.	MOLDEZHNAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
77/03/31 0400	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (53 ODN 36 OOW)	2J	NP	59	CENTRAL AEROLOGICAL OBS
77/03/31 0600	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (53 ODN 36 OOW)	2J	NP	61	CENTRAL AEROLOGICAL OBS
77/04/01 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
77/04/01 1440	T 1-8722	UNITED STATES	WALLOPS ISLAND	2G	ODAC	72	WRIGHT, D. U., JR.
77/04/03 0300	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (47 ODN 23 OOW)	2J	NP	62	CENTRAL AEROLOGICAL OBS
77/04/04 0400	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (45 ODN 21 OOW)	2J	NP	60	CENTRAL AEROLOGICAL OBS
77/04/06 0155	MR-12	FRANCE U.S.S.R.	HEISS ISLAND	3C 4A 4B 5A	GI LQTP	174	INST OF APPLIED GEOPHYS INST UNIV DE TECHNOL
77/04/06 0301	MR-12	FRANCE U.S.S.R.	HEISS ISLAND	2G 3C 3E	LDKF LDLU LDTP PXST	171	INST OF APPLIED GEOPHYS INST OF EXP METEOROLOGY INST UNIV DE TECHNOL
77/04/06 0930	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
77/04/06 1110	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
77/04/06 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
77/04/06 1400	M-100	U.S.S.R.	MOLDEZHNAYA	2J	NP	83	CENTRAL AEROLOGICAL OBS
77/04/06 1500	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
77/04/06 1500	M-100	INDIA	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
77/04/07 0624	NASA 18.10136A	CANADA UNITED STATES	FORT CHURCHILL	1B	GKPM SWQI	157	GENTIEU, E. P.
77/04/08 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
77/04/13 0300	MMR-06	U.S.S.R.	USHAKOV (SHIP) (36 ODN 41 OOW)	2J	NP	61	CENTRAL AEROLOGICAL OBS
77/04/13 0740	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/04/13 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	83	CENTRAL AEROLOGICAL OBS
77/04/13 1500	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
77/04/13 1500	M-100	INDIA	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
77/04/14 0500	M-100	U.S.S.R.	MOLDEZHNAYA	2J	NP	77	CENTRAL AEROLOGICAL OBS

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
77/04/14 1000	MMR-06	U.S.S.R.	VOLNA (SHIP) (30 ODN 160 OOE)	2J	NP	60	CENTRAL AEROLOGICAL OBS
77/04/15 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	93	CENTRAL AEROLOGICAL OBS
77/04/16 0500	NASA 21.054UG	UNITED STATES	WHITE SANDS	7E	CRKE QKKQ XG	136	DAVIDSEN, A. FASTIE, W.G.
77/04/16 1500	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	91	CENTRAL AEROLOGICAL OBS
77/04/18 1600	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
77/04/19 1000	MMR-06	U.S.S.R.	VOLNA (SHIP)	2J	NP	59	CENTRAL AEROLOGICAL OBS
77/04/20 0900	MMR-06	U.S.S.R.	(36 ODN 180 OOE) VOLNA (SHIP)	2J	NP	60	CENTRAL AEROLOGICAL OBS
77/04/20 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	79	CENTRAL AEROLOGICAL OBS
77/04/20 1500	M-100	FRANCE	KERGUELEN ISLAND	2J	NP	91	CENTRAL AEROLOGICAL OBS
77/04/20 1500	M-100	INDIA	THUMBA	2J	NP	80	CENTRAL AEROLOGICAL OBS
77/04/20 1636	T 1-8721	UNITED STATES	WALLOPS ISLAND	2G	OOAC	49	WRIGHT, D.U., JR.
77/04/20 1704	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	67	CENTRAL AEROLOGICAL OBS
77/04/20 1800	TH1-8710	CANADA	FORT CHURCHILL	2G	OOAC	73	WRIGHT, D.U., JR.
77/04/20 2000	M-100	U.S.S.R.	MOLDEZHAYNA	2J	NP	71	CENTRAL AEROLOGICAL OBS
77/04/21 0900	MMR-06	U.S.S.R.	VOLNA (SHIP) (40 ODN 180 OOE)	2J	NP	59	CENTRAL AEROLOGICAL OBS
77/04/21 1700	AO4-410-02	UNITED STATES	WHITE SANDS	6D 6E	QKKQ	237	BEDO, D.E.
77/04/22 0920	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
77/04/22 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	79	CENTRAL AEROLOGICAL OBS
77/04/23 0900	MMR-06	U.S.S.R.	VOLNA (SHIP) (45 ODN 180 OOE)	2J	NP	62	CENTRAL AEROLOGICAL OBS
77/04/26 0900	MMR-06	U.S.S.R.	VOLNA (SHIP) (50 ODN 180 OOE)	2J	NP	63	CENTRAL AEROLOGICAL OBS
77/04/27 0930	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	82	CENTRAL AEROLOGICAL OBS
77/04/27 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/04/27 1400	M-100	U.S.S.R.	MOLDEZHAYNA	2J	NP	87	CENTRAL AEROLOGICAL OBS
*77/04/27 1500	M-100	INDIA	THUMBA	2J	NP	---	CENTRAL AEROLOGICAL OBS
77/04/29 0500	MMR-06	U.S.S.R.	USHAKOV (SHIP) (51 ODN 43 OOW)	2J	NP	65	CENTRAL AEROLOGICAL OBS
*77/04/30 1000	MMR-06	U.S.S.R.	VOLNA (SHIP)	2J	NP	---	CENTRAL AEROLOGICAL OBS
77/04/30 1100	MMR-06	U.S.S.R.	VOLNA (SHIP) (50 ODN 160 OOE)	2J	NP	68	CENTRAL AEROLOGICAL OBS
77/05/03 1100	MMR-06	U.S.S.R.	VOLNA (SHIP) (40 ODN 160 OOE)	2J	NP	62	CENTRAL AEROLOGICAL OBS
77/05/04 0200	MMR-06	U.S.S.R.	USHAKOV (SHIP) (53 ODN 36 OOW)	2J	NP	59	CENTRAL AEROLOGICAL OBS
77/05/04 0900	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	83	CENTRAL AEROLOGICAL OBS
77/05/04 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/05/04 1500	M-100	INDIA	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/05/04 1500	M-100	U.S.S.R.	MOLDEZHAYNA	2J	NP	87	CENTRAL AEROLOGICAL OBS
77/05/06 0500	MMR-06	U.S.S.R.	USHAKOV (SHIP) (53 ODN 36 OOW)	2J	NP	62	CENTRAL AEROLOGICAL OBS
77/05/08 1400	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 ODN 88 OOE)	2J	NP	87	CENTRAL AEROLOGICAL OBS
77/05/11 0200	MMR-06	U.S.S.R.	USHAKOV (SHIP) (53 ODN 36 OOW)	2J	NP	61	CENTRAL AEROLOGICAL OBS
77/05/11 0900	M-100	U.S.S.R.	MOLDEZHAYNA	2J	NP	85	CENTRAL AEROLOGICAL OBS
77/05/11 0900	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/05/11 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	91	CENTRAL AEROLOGICAL OBS
77/05/11 1500	M-100	INDIA	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/05/11 1500	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 ODN 83 OOE)	2J	NP	85	CENTRAL AEROLOGICAL OBS
77/05/14 1400	M-100	INDIA	THUMBA	2J	NP	82	CENTRAL AEROLOGICAL OBS
77/05/16 1500	M-100	INDIA	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/05/17 1800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 ODN 63 OOE)	2J	NP	82	CENTRAL AEROLOGICAL OBS
77/05/18 0200	MMR-06	U.S.S.R.	USHAKOV (SHIP) (53 ODN 36 OOW)	2J	NP	65	CENTRAL AEROLOGICAL OBS
77/05/18 1343	A11.712-01	UNITED STATES	KWAJALEIN	2F	HP	188	FAIRE, A.C. PHILBRICK, C.N.
77/05/18 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/05/18 1400	M-100	U.S.S.R.	MOLDEZHAYNA	2J	NP	89	CENTRAL AEROLOGICAL OBS
77/05/18 1500	M-100	INDIA	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/05/18 1500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	80	CENTRAL AEROLOGICAL OBS
77/05/18 1638	FLIGHT 154 T 1-8723	UNITED STATES	WALLOPS ISLAND	2G	OOAC	70	WRIGHT, D.U., JR.
77/05/18 1813	FLIGHT 155 TH1-8711	CANADA	FORT CHURCHILL	2G	OOAC	70	WRIGHT, D.U., JR.
77/05/19 1400	M-100	UNITED STATES	FORT CHURCHILL	2G	OOAC	70	WRIGHT, D.U., JR.
77/05/19 1400	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 ODN 66 OOE)	2J	NP	85	CENTRAL AEROLOGICAL OBS
77/05/20 1500	M-100	INDIA	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS

*IDENTIFIES LAUNCHINGS THAT FAILED TO RETURN USEFUL DATA.

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*77/05/20 2309	NASA 13.131DA	UNITED STATES	WHITE SANDS	1C	CRKE MT QKKQ SW	23	CARRUTHERS,G.R. OPAL,C.B.
*77/05/21 1900	M-100	U.S.S.R.	SHOKALSKI (SHIP) (20 00N 48 00E)	2J	NP	---	CENTRAL AEROLOGICAL OBS
77/05/21 2200	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 47 00E)	2J	NP	80	CENTRAL AEROLOGICAL OBS
77/05/23 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	81	CENTRAL AEROLOGICAL OBS
*77/05/25 0320	MMR-06	U.S.S.R.	USHAKOV (SHIP) (53 00N 36 00W)	2J	NP	---	CENTRAL AEROLOGICAL OBS
77/05/25 0725	NASA 26.061UH	UNITED STATES	WHITE SANDS	7F	MT UTSF	192	KRAUSHAAR,W.L.
77/05/25 1400	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	83	CENTRAL AEROLOGICAL OBS
77/05/25 1500	M-100	INDIA	THUMBA	2J	NP	64	CENTRAL AEROLOGICAL OBS
77/05/25 1500	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
77/05/25 1730	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	82	CENTRAL AEROLOGICAL OBS
77/05/27 1500	M-100	INDIA	THUMBA	2J	NP	76	CENTRAL AEROLOGICAL OBS
77/05/30 1500	M-100	U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
77/06/01 0200	MMR-06	U.S.S.R.	USHAKOV (SHIP) (53 00N 32 00W)	2J	NP	63	CENTRAL AEROLOGICAL OBS
77/06/01 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
77/06/01 1400	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	81	CENTRAL AEROLOGICAL OBS
77/06/01 1500	M-100	INDIA	THUMBA	2J	NP	90	CENTRAL AEROLOGICAL OBS
77/06/01 1500	M-100	U.S.S.R.	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
77/06/01 1500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	81	CENTRAL AEROLOGICAL OBS
77/06/02 0200	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (23 00N 20 00W)	2J	NP	56	CENTRAL AEROLOGICAL OBS
77/06/03 0400	MMR-06	U.S.S.R.	USHAKOV (SHIP) (47 00N 25 00W)	2J	NP	60	CENTRAL AEROLOGICAL OBS
77/06/04 0400	MMR-06	U.S.S.R.	USHAKOV (SHIP) (44 00N 20 00W)	2J	NP	61	CENTRAL AEROLOGICAL OBS
77/06/04 1900	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 55 00E)	2J	NP	80	CENTRAL AEROLOGICAL OBS
77/06/04 2300	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 55 00E)	2J	NP	81	CENTRAL AEROLOGICAL OBS
77/06/08 0200	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (02 00N 33 00W)	2J	NP	61	CENTRAL AEROLOGICAL OBS
77/06/08 0300	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (02 00N 33 00W)	2J	NP	62	CENTRAL AEROLOGICAL OBS
77/06/08 0930	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	82	CENTRAL AEROLOGICAL OBS
77/06/08 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	79	CENTRAL AEROLOGICAL OBS
77/06/08 1400	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
77/06/08 1500	M-100	INDIA	THUMBA	2J	NP	83	CENTRAL AEROLOGICAL OBS
*77/06/09 0540	NASA 27.008UH	UNITED STATES	WHITE SANDS	7F	CRQH UTSF	205	GORENSTEIN,P.
77/06/15 0300	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (01 00S 35 00W)	2J	NP	59	CENTRAL AEROLOGICAL OBS
77/06/15 0400	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (01 00S 35 00W)	2J	NP	59	CENTRAL AEROLOGICAL OBS
77/06/15 1210	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	80	CENTRAL AEROLOGICAL OBS
77/06/15 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
77/06/15 1400	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	92	CENTRAL AEROLOGICAL OBS
77/06/15 1500	M-100	INDIA	THUMBA	2J	NP	83	CENTRAL AEROLOGICAL OBS
77/06/15 1636	FLIGHT 156 T 1-8427	UNITED STATES	WALLOPS ISLAND	2G	OOAC	70	WRIGHT,D.U.,JR.
77/06/17 0200	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (05 00N 35 00W)	2J	NP	58	CENTRAL AEROLOGICAL OBS
77/06/17 1400	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
77/06/21 0200	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (17 00N 35 00W)	2J	NP	57	CENTRAL AEROLOGICAL OBS
77/06/21 1600	NASA 21.045NP	UNITED STATES	WHITE SANDS	0D	**	179	CHASSAY,R.P. PAPAZIAN,J.M. UHLMAN,D. WANG,T. VOUCH,G.
77/06/22 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	83	CENTRAL AEROLOGICAL OBS
77/06/22 1400	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	91	CENTRAL AEROLOGICAL OBS
77/06/22 1400	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (23 00N 35 00W)	2J	NP	60	CENTRAL AEROLOGICAL OBS
*77/06/22 1500	M-100	INDIA	THUMBA	2J	NP	80	CENTRAL AEROLOGICAL OBS
77/06/22 1640	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (23 00N 35 00W)	2J	NP	59	CENTRAL AEROLOGICAL OBS
*77/06/22 1800	FLIGHT 157 TH1-8712	CANADA UNITED STATES	FORT CHURCHILL	2G	OOAC	---	WRIGHT,D.U.,JR.
77/06/22 1911	FLIGHT 158 TH1-8713	CANADA UNITED STATES	FORT CHURCHILL	2G	OOAC	72	WRIGHT,D.U.,JR.
77/06/24 1400	M-100	U.S.S.R.	MOLODEZHNYAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
77/06/26 0200	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (36 00N 35 00W)	2J	NP	58	CENTRAL AEROLOGICAL OBS
77/06/29 0300	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (47 00N 35 00W)	2J	NP	59	CENTRAL AEROLOGICAL OBS

*IDENTIFIES LAUNCHES THAT FAILED TO RETURN USEFUL DATA.
**NO SCIENTIFIC INSTRUMENTS USED.

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
77/06/29 0400	MRR-06	U.S.S.R.	KRENKEL (SHIP) (47 00N 35 00W)	2J	NP	59	CENTRAL AEROLOGICAL OBS
77/06/29 1040	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	83	CENTRAL AEROLOGICAL OBS
77/06/29 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
77/06/29 1400	M-100	U.S.S.R.	MOLODEZHAYA	2J	NP	92	CENTRAL AEROLOGICAL OBS
77/06/29 1500	M-100	INDIA	THUMBA	2J	NP	76	CENTRAL AEROLOGICAL OBS
77/07/12 0545	NASA 31.905UA TW2-8658	UNITED STATES	WHITE SANDS	6C 6D 6E	SWQ1 SWQJ	113	FARWELL, L. THOMAS, R. J.
77/07/14 1230	NASA 12.027GT	UNITED STATES	WHITE SANDS	0A 0D	**	59	MAKSIMOVIC, V.
77/07/19 1500	NASA 12.1001WT	UNITED STATES	WALLOPS ISLAND	0C	**	---	NEEDLEMAN, H. C.
77/07/19 1703	FLIGHT 159 T 1-9093	UNITED STATES	WALLOPS ISLAND	2G	00AC	73	WRIGHT, D. U., JR.
77/07/20 1706	FLIGHT 160 T 1-9094	UNITED STATES	WALLOPS ISLAND	2G	00AC	73	WRIGHT, D. U., JR.
77/07/20 1820	FLIGHT 161 TH1-8714	CANADA	FORT CHURCHILL	2G	00AC	73	WRIGHT, D. U., JR.
*77/07/20 2213	FLIGHT 162 T 1-9095	UNITED STATES	WALLOPS ISLAND	2G	00AC	72	WRIGHT, D. U., JR.
77/07/21 1154	FLIGHT 163 T 1-9096	UNITED STATES	WALLOPS ISLAND	2G	00AC	73	WRIGHT, D. U., JR.
77/07/21 1428	FLIGHT 164 T 1-9097	UNITED STATES	WALLOPS ISLAND	2G	00AC	73	WRIGHT, D. U., JR.
77/07/21 1703	FLIGHT 165 T 1-9098	UNITED STATES	WALLOPS ISLAND	2G	00AC	74	WRIGHT, D. U., JR.
77/07/21 1938	FLIGHT 166 T 1-9099	UNITED STATES	WALLOPS ISLAND	2G	00AC	74	WRIGHT, D. U., JR.
77/07/21 2213	FLIGHT 167 T 1-9100	UNITED STATES	WALLOPS ISLAND	2G	00AC	73	WRIGHT, D. U., JR.
77/07/22 1210	FLIGHT 168 T 1-9101	UNITED STATES	WALLOPS ISLAND	2G	00AC	74	WRIGHT, D. U., JR.
77/07/22 1442	T 1-9105	UNITED STATES	WALLOPS ISLAND	2G	00ZU	85	HILSEN RATH, E.
77/07/22 1722	FLIGHT 169 T 1-9102	UNITED STATES	WALLOPS ISLAND	2G	00AC	72	WRIGHT, D. U., JR.
77/07/23 0402	T 1-9103	UNITED STATES	WALLOPS ISLAND	2G	00ZU	72	HILSEN RATH, E.
77/07/23 0415	T 1-9104	UNITED STATES	WALLOPS ISLAND	2G	00ZU	71	HILSEN RATH, E.
77/07/27 0440	NASA 27.031UH	UNITED STATES	WHITE SANDS	7F	CRQH UTSF XG	203	GORENSTEIN, P.
77/07/27 0535	NASA 25.021UH	UNITED STATES	WHITE SANDS	7F	CRQH UTSF XG	190	BRADT, H. V. D. RAPPAPORT, S.
77/08/09 1610	A03.509-01	UNITED STATES	WHITE SANDS	6D 6E	QKKQ	168	BEDO, D. E.
77/08/10 0501	NASA 14.534UE T 2-8662	UNITED STATES	WALLOPS ISLAND	3A 3B 3C	LDLU SE SWQ1 UTVP 00AC	200	SCHMERLING, E. R. SMITH, L. G.
77/08/17 1700	FLIGHT 170 T 1-8725	UNITED STATES	WALLOPS ISLAND	2G	00AC	73	WRIGHT, D. U., JR.
*77/08/17 1710	NASA 18.182GA	UNITED STATES	WHITE SANDS	6C 6D 6E	MT QKPM SWQJ 00AC	198	GUENTHER, B. W.
77/08/17 1800	FLIGHT 171 TH1-8715	CANADA	FORT CHURCHILL	2G	00AC	72	WRIGHT, D. U., JR.
*77/08/18 2335	NASA 18.1009UE	UNITED STATES	WHITE SANDS	1D	QKKQ	267	CHRISTENSEN, A. B.
77/09/14 1802	FLIGHT 172 T 1-8727	UNITED STATES	WALLOPS ISLAND	2G	00AC	68	WRIGHT, D. U., JR.
77/09/21 1810	FLIGHT 173 TH1-8716	CANADA	FORT CHURCHILL	2G	00AC	72	WRIGHT, D. U., JR.
77/09/24 1155	A07.707-01	UNITED STATES	WHITE SANDS	2A 2C	DC	189	VICKERY, H. K.
77/09/24 1215	A10.705-01	UNITED STATES	WHITE SANDS	2G	PXSK	195	PHILBRICK, C. R.
77/09/29 1745	NASA 25.022UL	UNITED STATES	WHITE SANDS	7E	GKZ QKKQ SWQJ 00AC	257	JUDGE, D. L.
77/09/29 1822	FLIGHT 174 TH1-8733	UNITED STATES	WHITE SANDS	2G	00AC	84	WRIGHT, D. U., JR.
77/10/02 0300	NASA 26.065IH NASA 26.065UH	UNITED STATES	WHITE SANDS	7F	UTSF XG	198	GORENSTEIN, P. SPADA, G.
77/10/12 1700	FLIGHT 175 T 1-8728	UNITED STATES	WALLOPS ISLAND	2G	00AC	73	WRIGHT, D. U., JR.
77/10/13 2126	A-GRC -85 1/NL 3A	AUSTRIA FED REP OF GERMANY NORWAY THE NETHERLANDS	ANDOYA	3C 3E 4B 4C 5A 5B	GI LD MTHZ MTUI OHVP PXGS	536	DEHMEL, G. FISCHER, H. M. GRABOWSKI, R. PEDERSEN, A. RIEDLER, W. W. SPENNER, K. STUEMANN, W. THEILE, B. WILHELM, K.
77/10/13 2159	SL-1423	NORWAY UNITED KINGDOM	ANDOYA	0A 1B 2A 3A 3C 3E 4B 5A 5B	AF BD DCYQ LDLU MTBD MTHZ OHZC OHIG PXGS SEZA	788	BRITISH AIRCRA CORP LTD BRYANT, D. A. REES, D. SOJKA, J. J. WOOLLISCROFT, L. J. C.

* IDENTIFIES LAUNCHINGS THAT FAILED TO RETURN USEFUL DATA.
** NO SCIENTIFIC INSTRUMENTS USED.

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DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
77/10/16 2223	F--003	NORWAY UNITED KINGDOM	ANDOYA	0A 1B 1C 2A 2C 4B 5A	BD MTHZ OHCZ PXGS SWOG SWUE DCYQ	247	BRYANT,D.A. REES,D.
77/10/16 2233	P--207A	NORWAY UNITED KINGDOM	ANDOYA	2A	DCYQ	2C7	REES,D.
77/10/21 1800	FLIGHT 176 TH1-8717	CANADA	FORT CHURCHILL	2G	00AC	72	WRIGHT,D.U.,J.R.
77/11/02 2015	A-GRC -87 T/NLF 1B	AUSTRIA FED REP OF GERMANY NORWAY THE NETHERLANDS	ANDOYA	3C 3E 4B 4C 5A 5B	GI LD MTHZ MTUI OHVP PXGS	541	DEHMEL,G. FISCHER,H.M. GRABOWSKI,R. PEDERSEN,A. RIEDLER,W.W. SPENNER,K. STUEMANN,W. THEILE,B. WILHELM,K. HUFFMAN,R.E. MCINTYRE,A.,J.R. MILLER,W.B. OPAL,C.B. STEEVES,R.G. WHEELER,N.B.
77/11/11 0400	A24.609-01	UNITED STATES	WHITE SANDS	0A 0C 0D 1C 7B 7D 7E	CRKE CRQH QK QKPM SWOG SWOI SWUE UTCZ	228	HUFFMAN,R.E. MCINTYRE,A.,J.R. MILLER,W.B. OPAL,C.B. STEEVES,R.G. WHEELER,N.B.
77/11/13 0855	1C730_009-01	UNITED STATES	FAIRBANKS	1A 1B 4B	QKKQ	141	ULWICK,J.C.
77/11/17 2132	SL-1421	NORWAY UNITED KINGDOM UNITED STATES	ANDOYA	0A 3A 3C 3D 3E 3G 4B 5A	AF BD LDLU MTHZ OHCZ OHIQ PXGS PXMR SWUV SWUY	723	BRITISH AIRCRA CORP LTD BRYANT,D.A. JOHNSTONE,A.D. MARTELLI,G.A.G. MAYNARD,N.C. NORMAN,K.
77/11/17 2134	F--001	NORWAY UNITED KINGDOM	ANDOYA	0A 3A 4B 5A	AF BD MTHZ OHCZ PXGS SWUV SWUY	261	ATOMIC WEAPON RES ESTAB BRYANT,D.A. MARTELLI,G.A.G. MASON,R.W.
77/12/05 0208	F--004	NORWAY UNITED KINGDOM	ANDOYA	0A 0E 1B 3A 3C 3E 5A 5B	AF BD LDLU MTBD SEZA	255	ATOMIC WEAPON RES ESTAB GIBBONS,W. WOOLLISCROFT,L.J.C.
77/12/13 0550	A04.602	UNITED STATES	WHITE SANDS	1A 1B	GY QKKQ SWOI	102	O'NEIL,R.R.

Experimenters

This listing gives (in alphabetical order) the names of the experimenters associated with the sounding rocket launchings. The current organizational affiliation and address of the person is also given. Because NSSDC/WDC-A-R&S does not acquire experiment data from these launchings, please contact the experimenters for further information about these data.

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ARTIFICIAL EARTH SATELLITES AND SPACE PROBES

The summary of satellite and space probe launchings that follows was compiled from information received from several sources. Primary sources of information were contained in the national launching announcements and the reports of satellite and space probe launchings. These were submitted to the International Ursigram and World Days Service and to the World Data Centers in accordance with the revised "COSPAR Guide to Rocket and Satellite Information and Data Exchange" adopted at the XVth Plenary Meeting of COSPAR, Madrid, May 1972 (COSPAR Transactions No. 8); the former version was published as Part I of COSPAR Transactions No. 4 in December 1967. These announcements and reports are published every month in the SPACEWARN Bulletin. Requests for information on the availability of the bulletin should be directed to:

Iuuds World Warning Agency for Satellites
World Data Center A for Rockets and Satellites
Goddard Space Flight Center
Code 601
Greenbelt, Maryland 20771
U.S.A.

Additional information was obtained from the Table of Artificial Earth Satellites, published by the Royal Aircraft Establishment, Farnborough, Hants, England. A report on the U.S. scientific satellite GOES 2 is shown in Figure 2. This sample illustrates the type of information in these reports. More detailed narrative descriptions are submitted to COSPAR and published in COSPAR Information Bulletin when information on spacecraft experiments is available.

The entries in this summary are for satellites and space probes launched during the period January 1, 1973, to December 31, 1977. The information is arranged sequentially by launch date. Apoapsis and periapsis entries are in kilometers except for satellites and space probes with heliocentric orbits, where the entries are in astronomical units. Periods are in minutes except for satellites and space probes with heliocentric orbits, where the entries are in days. All inclinations are in degrees. International organizations are included under the country heading. An 'R' after the name of a country indicates that it was reimbursed for the launch.

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REPORT OF SATELLITE OR SPACE PROBE LAUNCHING

<u>COSPAR Designation</u>	<u>Popular Name</u>	<u>Launching Site</u>	<u>Launching Date</u>	<u>Universal Time</u>
1977-048A	GOES 2 (GOES-B)	Eastern Test Range	June 16, 1977	1051

<u>Transfer Orbital Elements on June 16, 1977</u>	<u>Apogee (km)</u>	<u>Perigee (km)</u>	<u>Period (min)</u>	<u>Inclination (degrees)</u>
	36,856	188	651.7	23.7

GOES 2, the second operational spacecraft of a series of Geostationary Operational Environmental Satellites, is intended to extend the knowledge and understanding of the atmosphere and its processes by viewing the evolution and motion of storms and other atmospheric phenomena. Both day and night information on the Earth's weather is provided to regional data-user stations through the use of a visual and infrared imaging instrument. The design life is 5 years. NASA launched the satellite with a Delta launch vehicle and is performing instrument checkout. After the spacecraft is declared operational, NOAA will operationally control the spacecraft.

Physical Characteristics (size, shape, weight)

The geometric shape of the GOES 2 spacecraft is a cylinder 191 cm in diameter and 345 cm in length from the top of the magnetometer to the bottom of the apogee boost motor. The weight is approximately 628 kg.

Transmitters (frequency and power)

Transmitting frequencies are 136.38 MHz at 2 to 8 W on VHF and 1694 MHz at 20 W on S-band.

Scientific Experiments

<u>Objectives</u>	<u>Instruments</u>	<u>Experimenter(s) and Institution</u>
1. <u>Visible and Infrared Spin-Scan Radiometer (VISSR):</u> To provide day and night information on the Earth's weather using eight identical channels for visible scan operation in the 0.55- to 0.70- μ m band and two channels for the infrared scan operation in the 10.5- to 12.6- μ m band	Spin-scan radiometer	NESS Staff NOAA/NESS Suitland, Maryland
2. <u>Meteorological Data System (DCS):</u> To provide a capability for collecting data in a routine or emergency manner from remotely located collection platforms	Data collection and transmission systems	NESS Staff NOAA/NESS Suitland, Maryland
3. <u>Solar Energetic Particles:</u> To measure protons in the range of 1 to 500 MeV, alpha particles in the range of 4 to 400 MeV, and electrons greater than 0.5 MeV	Silicon solid-state detectors	Dr. D. J. Williams NOAA/ERL Boulder, Colorado
4. <u>Solar X-Ray Monitor:</u> To measure solar X rays in a range of 1 to 8 A	Collimator, two ionization chambers, and two electrometers	Dr. D. J. Williams NOAA/ERL Boulder, Colorado
5. <u>Magnetic Field Monitor:</u> To measure magnetic fields at 50, 100, 200, and 400 gamma	Biaxial, closed-loop, fluxgate magnetometer with two sensors	Dr. D. J. Williams NOAA/ERL Boulder, Colorado

Figure 2. Sample of Report of Satellite or Space Probe Launching

COSPAR DESIGNATION	SPACECRAFT NAME	COUNTRY	LAUNCH DATE	EPOCH DATE	ORBIT TYPE	APOAPSIS	PERIAPSIS	INCLINATION	PERIOD
1973-001A	LUNA 21	U.S.S.R.	01/08/73	01/09/73	LUNAR LANDER				
1973-002A	COSMOS 543	U.S.S.R.	01/11/73	01/12/73	GEOCENTRIC	309.	203.	65.	89.7
1973-003A	COSMOS 544	U.S.S.R.	01/20/73	01/21/73	GEOCENTRIC	561.	513.	74.	95.3
1973-004A	COSMOS 545	U.S.S.R.	01/24/73	01/25/73	GEOCENTRIC	521.	279.	71.	92.2
1973-005A	COSMOS 546	U.S.S.R.	01/26/73	01/27/73	GEOCENTRIC	639.	585.	51.7	96.6
1973-006A	COSMOS 547	U.S.S.R.	02/01/73	02/02/73	GEOCENTRIC	330.	208.	65.	89.7
1973-007A	MOLNIYA 1 (73-007A)	U.S.S.R.	02/03/73	02/04/73	GEOCENTRIC	39200.	470.	65.	703.0
1973-008A	COSMOS 548	U.S.S.R.	02/08/73	02/09/73	GEOCENTRIC	322.	214.	65.4	89.6
1973-009A	PROGNOZ 3	U.S.S.R.	02/15/73	02/16/73	GEOCENTRIC	200000.	590.	65.	5783.
1973-010A	COSMOS 549	U.S.S.R.	02/28/73	03/01/73	GEOCENTRIC	556.	513.	74.	95.2
1973-011A	COSMOS 550	U.S.S.R.	03/01/73	03/02/73	GEOCENTRIC	325.	217.	65.4	89.6
1973-012A	COSMOS 551	U.S.S.R.	03/06/73	03/07/73	GEOCENTRIC	316.	210.	65.	89.5
1973-013A	1973-013A	UNITED STATES	03/06/73	04/01/73	GEOCENTRIC	139660.0	32100.0	10.1	1441.0
1973-014A	DB-7	UNITED STATES	03/09/73	03/10/73	GEOCENTRIC	270.0	152.0	95.7	88.8
1973-015A	METEOR 1 (73-015A)	U.S.S.R.	03/20/73	03/20/73	GEOCENTRIC	882.0	873.0	81.3	102.6
1973-016A	COSMOS 552	U.S.S.R.	03/22/73	03/23/73	GEOCENTRIC	312.	204.	72.84	89.7
1973-017A	SALUTE 2	U.S.S.R.	04/04/73	04/08/73	GEOCENTRIC	278.0	257.0	51.6	89.8
1973-018A	MOLNIYA 2 (73-018A)	U.S.S.R.	04/05/73	04/18/73	GEOCENTRIC	39822.0	532.0	65.0	702.0
1973-019A	PIONEER 11	UNITED STATES	04/06/73	04/06/73	JUPITER FLYBY				
1973-020A	COSMOS 553	U.S.S.R.	04/12/73	04/13/73	GEOCENTRIC	519.	282.	71.	92.2
1973-021A	COSMOS 554	U.S.S.R.	04/19/73	04/20/73	GEOCENTRIC	308.	212.	72.9	89.5
1973-022A	INTERCOSMOS 9	U.S.S.R.	04/19/73	04/20/73	GEOCENTRIC	1552.	202.	48.5	102.2
1973-023A	TELESAT 2	CANADA	04/19/73	06/01/73	GEOCENTRIC	35788.0	35781.0	0.1	1436.0
1973-024A	COSMOS 555	U.S.S.R.	04/25/73	04/26/73	GEOCENTRIC	253.	216.	81.3	89.
1973-025A	COSMOS 556	U.S.S.R.	05/05/73	05/06/73	GEOCENTRIC	252.	209.	81.3	89.
1973-026A	COSMOS 557	U.S.S.R.	05/11/73	05/12/73	GEOCENTRIC	266.	218.	51.6	89.1
1973-027A	SKYLAB	UNITED STATES	05/14/73	05/14/73	GEOCENTRIC	442.0	434.0	50.0	93.4
1973-028A	1973-028A	UNITED STATES	05/16/73	05/17/73	GEOCENTRIC	399.0	139.0	110.5	89.9
1973-029A	COSMOS 558	U.S.S.R.	05/17/73	05/17/73	GEOCENTRIC	501.0	269.0	71.0	92.3
1973-030A	COSMOS 559	U.S.S.R.	05/18/73	05/19/73	GEOCENTRIC	345.	217.	65.4	89.8
1973-031A	COSMOS 560	U.S.S.R.	05/23/73	05/24/73	GEOCENTRIC	336.	211.	72.9	89.7
1973-032A	SKYLAB CSM 1	UNITED STATES	05/25/73	05/25/73	GEOCENTRIC	438.0	428.0	50.0	93.2
1973-033A	COSMOS 561	U.S.S.R.	05/25/73	05/26/73	GEOCENTRIC	317.	215.	65.4	89.5
1973-034A	METEOR 1 (73-034A)	U.S.S.R.	05/29/73	05/30/73	GEOCENTRIC	896.0	853.0	81.2	102.5
1973-035A	COSMOS 562	U.S.S.R.	06/05/73	06/06/73	GEOCENTRIC	510.	282.	71.	92.1
1973-036A	COSMOS 563	U.S.S.R.	06/06/73	06/07/73	GEOCENTRIC	320.	312.	65.4	89.5
1973-037A	COSMOS 564	U.S.S.R.	06/08/73	06/09/73	GEOCENTRIC	1507.	1392.	74.	114.5
1973-037B	COSMOS 565	U.S.S.R.	06/08/73	06/09/73	GEOCENTRIC	1507.	1392.	74.	114.5
1973-037C	COSMOS 566	U.S.S.R.	06/08/73	06/09/73	GEOCENTRIC	1507.	1392.	74.	114.5
1973-037D	COSMOS 567	U.S.S.R.	06/08/73	06/09/73	GEOCENTRIC	1507.	1392.	74.	114.5
1973-037E	COSMOS 568	U.S.S.R.	06/08/73	06/09/73	GEOCENTRIC	1507.	1392.	74.	114.5
1973-037F	COSMOS 569	U.S.S.R.	06/08/73	06/09/73	GEOCENTRIC	1507.	1392.	74.	114.5
1973-037G	COSMOS 570	U.S.S.R.	06/08/73	06/09/73	GEOCENTRIC	1507.	1392.	74.	114.5
1973-037H	COSMOS 571	U.S.S.R.	06/08/73	06/09/73	GEOCENTRIC	1507.	1392.	74.	114.5
1973-038A	COSMOS 572	U.S.S.R.	06/10/73	06/11/73	GEOCENTRIC	294.	211.	51.7	89.3
1973-039A	RAE-B	UNITED STATES	06/10/73	06/21/73	GEOCENTRIC	1063.84	1052.98	55.7	221.17
1973-040A	1973-040A	UNITED STATES	06/12/73	07/01/73	GEOCENTRIC	35901.0	35533.0	0.5	1431.9
1973-041A	COSMOS 573	U.S.S.R.	06/15/73	06/16/73	GEOCENTRIC	329.2	196.2	51.6	89.5
1973-042A	COSMOS 574	U.S.S.R.	06/20/73	06/21/73	GEOCENTRIC	1026.	996.	83.	105.
1973-043A	COSMOS 575	U.S.S.R.	06/21/73	06/22/73	GEOCENTRIC	299.	208.	65.4	89.3
1973-044A	COSMOS 576	U.S.S.R.	06/27/73	06/28/73	GEOCENTRIC	356.	212.	72.9	89.9
1973-045A	MOLNIYA 2 (73-045A)	U.S.S.R.	07/11/73	07/27/73	GEOCENTRIC	39285.0	441.0	65.4	705.1
1973-046A	DB-8	UNITED STATES	07/13/73	07/15/73	GEOCENTRIC	269.0	156.0	96.2	88.8
1973-047A	MARS 4	U.S.S.R.	07/21/73	02/01/74	MARS FLYBY				
1973-048A	COSMOS 577	U.S.S.R.	07/25/73	07/26/73	GEOCENTRIC	312.	209.	65.4	89.5
1973-049A	MARS 5	U.S.S.R.	07/25/73	02/01/74	AREOCENTRIC				
1973-050A	SKYLAB CSM 2	UNITED STATES	07/28/73	07/28/73	GEOCENTRIC	441.0	423.0	50.0	93.2
1973-051A	COSMOS 578	U.S.S.R.	08/01/73	08/02/73	GEOCENTRIC	308.	207.	65.4	89.4
1973-052A	MARS 6	U.S.S.R.	08/05/73	03/01/74	MARS LANDER				
1973-053A	MARS 7	U.S.S.R.	08/09/73	03/01/74	MARS FLYBY				
1973-054A	DMSP(73-054A)	UNITED STATES	08/17/73	08/17/73	GEOCENTRIC	852.0	811.0	98.9	101.6
1973-055A	COSMOS 579	U.S.S.R.	08/21/73	08/22/73	GEOCENTRIC	315.	209.	65.4	89.5
1973-056A	1973-056A	UNITED STATES	08/21/73	09/01/73	GEOCENTRIC	39296.0	460.0	63.3	705.7
1973-057A	COSMOS 580	U.S.S.R.	08/22/73	08/23/73	GEOCENTRIC	518.	283.	71.	92.2
1973-058A	INTELSAT 4 F-7	INTERNATIONAL	08/23/73	08/28/73	GEOCENTRIC	36612.0	597.0	27.5	655.2
1973-059A	COSMOS 581	U.S.S.R.	08/24/73	08/25/73	GEOCENTRIC	303.	211.	51.6	89.4
1973-060A	COSMOS 582	U.S.S.R.	08/28/73	08/29/73	GEOCENTRIC	559.	521.	74.	95.3
1973-061A	MOLNIYA 1 (73-061A)	U.S.S.R.	08/30/73	08/31/73	GEOCENTRIC	37970.	480.	65.3	619.
1973-062A	COSMOS 583	U.S.S.R.	08/30/73	08/31/73	GEOCENTRIC	316.	208.	65.	89.5
1973-063A	COSMOS 584	U.S.S.R.	09/06/73	09/07/73	GEOCENTRIC	360.	213.	72.9	89.9
1973-064A	COSMOS 585	U.S.S.R.	09/08/73	09/09/73	GEOCENTRIC	1416.	1385.	74.	113.6
1973-065A	COSMOS 586	U.S.S.R.	09/14/73	09/15/73	GEOCENTRIC	1020.	986.	83.	105.
1973-066A	COSMOS 587	U.S.S.R.	09/21/73	09/22/73	GEOCENTRIC	330.	215.	65.4	89.6
1973-067A	SOYUZ 12	U.S.S.R.	09/27/73	09/28/73	GEOCENTRIC	249.	194.	51.6	88.6
1973-068A	1973-068A	UNITED STATES	09/27/73	09/28/73	GEOCENTRIC	385.0	131.0	110.5	89.7
1973-069A	COSMOS 588	U.S.S.R.	10/02/73	10/03/73	GEOCENTRIC	312.	204.	72.84	89.68
1973-069B	COSMOS 589	U.S.S.R.	10/02/73	10/03/73	GEOCENTRIC	312.	204.	72.84	89.68
1973-069C	COSMOS 590	U.S.S.R.	10/02/73	10/03/73	GEOCENTRIC	312.	204.	72.84	89.68
1973-069D	COSMOS 591	U.S.S.R.	10/02/73	10/03/73	GEOCENTRIC	312.	204.	72.84	89.68
1973-069E	COSMOS 592	U.S.S.R.	10/02/73	10/03/73	GEOCENTRIC	312.	204.	72.84	89.68
1973-069F	COSMOS 593	U.S.S.R.	10/02/73	10/03/73	GEOCENTRIC	312.	204.	72.84	89.68
1973-069G	COSMOS 594	U.S.S.R.	10/02/73	10/03/73	GEOCENTRIC	312.	204.	72.84	89.68
1973-069H	COSMOS 595	U.S.S.R.	10/02/73	10/03/73	GEOCENTRIC	312.	204.	72.84	89.68
1973-070A	COSMOS 596	U.S.S.R.	10/03/73	10/04/73	GEOCENTRIC	312.	204.	72.84	89.68
1973-071A	COSMOS 597	U.S.S.R.	10/06/73	10/07/73	GEOCENTRIC	312.	212.	65.4	89.5
1973-072A	COSMOS 598	U.S.S.R.	10/10/73	10/11/73	GEOCENTRIC	360.	213.	72.9	90.
1973-073A	COSMOS 599	U.S.S.R.	10/15/73	10/16/73	GEOCENTRIC	294.	206.	65.	89.3
1973-074A	COSMOS 600	U.S.S.R.	10/16/73	10/17/73	GEOCENTRIC	366.	215.	72.9	90.
1973-075A	COSMOS 601	U.S.S.R.	10/16/73	10/17/73	GEOCENTRIC	1561.	210.	82.	102.3
1973-076A	MOLNIYA 2 (73-076A)	U.S.S.R.	10/19/73	10/19/73	GEOCENTRIC	40600.	509.	62.8	736.
1973-077A	COSMOS 602	U.S.S.R.	10/20/73	10/21/73	GEOCENTRIC	365.	213.	72.9	90.
1973-078A	IMP-J	UNITED STATES	10/26/73	10/27/73	GEOCENTRIC	28894.0	142284.	28.7	17286.
1973-079A	COSMOS 603	U.S.S.R.	10/27/73	10/28/73	GEOCENTRIC	380.	213.5	72.9	90.1
1973-080A	COSMOS 604	U.S.S.R.	10/29/73	10/30/73	GEOCENTRIC	647.	624.	81.2	97.2
1973-081A	OSCAR (NAV) 20	UNITED STATES	10/30/73	10/31/73	GEOCENTRIC	1139.	902.	90.18	106.
1973-082A	INTERCOSMOS 10	U.S.S.R.	10/30/73	10/31/73	GEOCENTRIC	1477.	265.	74.	102.
1973-083A	COSMOS 605	U.S.S.R.	10/31/73	11/01/73	GEOCENTRIC	424.	221.	62.8	90.7
1973-084A	COSMOS 606	U.S.S.R.	11/02/73	11/03/73	GEOCENTRIC	39310.0	657.	62.9	709.9

COSPAR DESIGNATION	SPACECRAFT NAME	COUNTRY	LAUNCH DATE	EPOCH DATE	ORBIT TYPE	APOAPSIS	PERIAPSIS	INCLINATION	PERIOD
1973-085A	MARINER 10	UNITED STATES	11/03/73	11/03/73	MERCURY FLYBY				
1973-086A	NDA 3	UNITED STATES	11/06/73	11/07/73	GEOCENTRIC	1509.0	1500.0	102.1	116.1
1973-087A	COSMOS 607	U.S.S.R.	11/10/73	11/11/73	GEOCENTRIC	364.	214.	72.9	90.7
1973-088A	DB-9	UNITED STATES	11/10/73	11/11/73	GEOCENTRIC	275.0	159.0	96.9	88.6
1973-088B	1973-088B	UNITED STATES	11/10/73	11/11/73	GEOCENTRIC	257.0	159.0	96.9	88.7
1973-088D	1973-088D	UNITED STATES	11/10/73	11/11/73	GEOCENTRIC	508.0	486.0	96.3	94.6
1973-089A	MOLNIYA 1 (73-089A)	U.S.S.R.	11/14/73	11/15/73	GEOCENTRIC	30140.0	480.	65.	39197.
1973-090A	SKYLAB CSM 3	UNITED STATES	11/16/73	11/17/73	GEOCENTRIC	437.	422.	50.04	93.11
1973-091A	COSMOS 608	U.S.S.R.	11/20/73	11/21/73	GEOCENTRIC	528.	281.	71.	92.3
1973-092A	COSMOS 609	U.S.S.R.	11/21/73	11/22/73	GEOCENTRIC	370.	207.	70.	90.
1973-093A	COSMOS 610	U.S.S.R.	11/27/73	11/28/73	GEOCENTRIC	560.	515.	74.	95.2
1973-094A	COSMOS 611	U.S.S.R.	11/28/73	11/29/73	GEOCENTRIC	507.	280.	71.	92.
1973-095A	COSMOS 612	U.S.S.R.	11/28/73	11/29/73	GEOCENTRIC	371.	214.	72.9	90.1
1973-096A	COSMOS 613	U.S.S.R.	11/30/73	12/01/73	GEOCENTRIC	295.	195.	51.6	89.1
1973-097A	MOLNIYA 1 (73-097A)	U.S.S.R.	11/30/73	12/01/73	GEOCENTRIC	40900.	460.	62.7	40829.
1973-098A	COSMOS 614	U.S.S.R.	12/04/73	12/05/73	GEOCENTRIC	830.	770.	74.	100.7
1973-099A	COSMOS 615	U.S.S.R.	12/13/73	12/13/73	GEOCENTRIC	859.0	280.0	71.0	95.7
1973-100A	1973-100A	UNITED STATES	12/13/73	01/05/74	GEOCENTRIC	36475.0	35065.0	2.7	1435.2
1973-100B	1973-100B	UNITED STATES	12/13/73	01/07/74	GEOCENTRIC	36299.0	35349.0	2.3	1436.0
1973-101A	AE-C	UNITED STATES	12/16/73	12/16/73	GEOCENTRIC	4294.0	149.0	68.1	132.3
1973-102A	COSMOS 616	U.S.S.R.	12/17/73	12/18/73	GEOCENTRIC	355.0	214.0	72.9	89.9
1973-103A	SOYUZ 13	U.S.S.R.	12/18/73	12/19/73	GEOCENTRIC	272.0	225.0	51.6	89.2
1973-104A	COSMOS 617	U.S.S.R.	12/19/73	12/20/73	GEOCENTRIC	1571.0	1404.0	74.	114.8
1973-104B	COSMOS 618	U.S.S.R.	12/19/73	12/20/73	GEOCENTRIC	1511.0	1404.0	74.	114.8
1973-104C	COSMOS 619	U.S.S.R.	12/19/73	12/20/73	GEOCENTRIC	1511.0	1404.0	74.	114.8
1973-104D	COSMOS 620	U.S.S.R.	12/19/73	12/21/73	GEOCENTRIC	1511.0	1404.0	74.	114.8
1973-104E	COSMOS 621	U.S.S.R.	12/19/73	12/20/73	GEOCENTRIC	1511.0	1404.0	74.	114.8
1973-104F	COSMOS 622	U.S.S.R.	12/19/73	12/20/73	GEOCENTRIC	1511.0	1404.0	74.	114.8
1973-104G	COSMOS 623	U.S.S.R.	12/19/73	12/20/73	GEOCENTRIC	1511.0	1404.0	74.	114.8
1973-104H	COSMOS 624	U.S.S.R.	12/19/73	12/20/73	GEOCENTRIC	1511.0	1404.0	74.	114.8
1973-105A	COSMOS 625	U.S.S.R.	12/21/73	12/27/73	GEOCENTRIC	346.0	214.0	72.8	89.8
1973-106A	MOLNIYA 2 (73-106A)	U.S.S.R.	12/25/73	12/26/73	GEOCENTRIC	40865.0	466.0	62.8	737.
1973-107A	OREOL 2	U.S.S.R.	12/26/73	12/28/73	GEOCENTRIC	1995.0	407.0	74.	109.2
1973-108A	COSMOS 626	U.S.S.R.	12/27/73	12/29/73	GEOCENTRIC	259.0	257.0	65.0	89.7
1973-109A	COSMOS 627	U.S.S.R.	12/29/73	12/30/73	GEOCENTRIC	1019.0	974.0	85.0	105.1
1974-001A	COSMOS 628	U.S.S.R.	01/17/74	01/18/74	GEOCENTRIC	1026.	975.	83.0	105.
1974-002A	SKYNET 2A	UNITED KINGDOM	01/19/74	01/20/74	GEOCENTRIC	3406.0	96.0	37.6	121.5
1974-003A	COSMOS 629	U.S.S.R.	01/24/74	01/25/74	GEOCENTRIC	315.	202.	62.8	89.4
1974-004A	COSMOS 630	U.S.S.R.	01/30/74	01/31/74	GEOCENTRIC	367.	213.	72.9	90.
1974-005A	COSMOS 631	U.S.S.R.	02/06/74	02/07/74	GEOCENTRIC	565.	522.	74.	95.3
1974-006A	COSMOS 632	U.S.S.R.	02/12/74	02/13/74	GEOCENTRIC	333.	184.	65.	89.4
1974-007A	1974-007A	UNITED STATES	02/13/74	02/15/74	GEOCENTRIC	393.0	134.0	110.4	89.8
1974-008A	TANSEI 2	JAPAN	02/16/74	02/17/74	GEOCENTRIC	3238.	288.	31.2	121.85
1974-009A	SAN MARCO 4	ITALY	02/18/74	02/19/74	GEOCENTRIC	905.0	232.0	2.9	96.3
1974-010A	COSMOS 633	U.S.S.R.	02/27/74	02/27/74	GEOCENTRIC	516.	280.	71.	92.2
1974-011A	METEOR 1 (74-011A)	U.S.S.R.	03/05/74	03/09/74	GEOCENTRIC	894.0	832.0	81.2	102.2
1974-012A	COSMOS 634	U.S.S.R.	03/05/74	03/07/74	GEOCENTRIC	491.0	271.0	70.9	92.2
1974-013A	UK-4	UNITED KINGDOM	03/08/74	03/13/74	GEOCENTRIC	716.0	714.0	97.8	101.2
1974-014A	COSMOS 635	U.S.S.R.	03/14/74	03/15/74	GEOCENTRIC	350.	212.	72.9	89.8
1974-015A	DNSP (74-015A)	UNITED STATES	03/16/74	03/16/74	GEOCENTRIC	877.0	782.0	98.9	101.5
1974-016A	COSMOS 636	U.S.S.R.	03/20/74	03/21/74	GEOCENTRIC	409.	174.	65.	90.
1974-017A	COSMOS 637	U.S.S.R.	03/26/74	03/27/74	GEOCENTRIC	35600.0	35600.0	0.3	1426.0
1974-018A	COSMOS 638	U.S.S.R.	04/03/74	04/04/74	GEOCENTRIC	325.	195.	51.8	89.4
1974-019A	COSMOS 639	U.S.S.R.	04/04/74	04/05/74	GEOCENTRIC	238.	209.	81.3	89.
1974-020A	1974-020A	UNITED STATES	04/10/74	04/12/74	GEOCENTRIC	285.0	153.0	94.5	88.9
1974-020B	1974-020B	UNITED STATES	04/10/74	04/13/74	GEOCENTRIC	830.0	786.0	94.6	101.1
1974-020C	1974-020C	UNITED STATES	04/10/74	04/12/74	GEOCENTRIC	531.0	503.0	94.0	95.0
1974-021A	COSMOS 640	U.S.S.R.	04/11/74	04/12/74	GEOCENTRIC	236.	205.	81.3	88.9
1974-022A	WESTAR 1	INTERNATIONAL	04/13/74	05/01/74	GEOCENTRIC	35786.0	35786.0	0.0	1436.0
1974-023A	MOLNIYA 1 (74-023A)	U.S.S.R.	04/20/74	04/21/74	GEOCENTRIC	40713.	646.	62.9	738.
1974-024A	COSMOS 641	U.S.S.R.	04/23/74	04/24/74	GEOCENTRIC	1508.	1385.	74.	114.5
1974-024B	COSMOS 642	U.S.S.R.	04/23/74	04/24/74	GEOCENTRIC	1508.	1385.	74.	114.5
1974-024C	COSMOS 643	U.S.S.R.	04/23/74	04/24/74	GEOCENTRIC	1508.	1385.	74.	114.5
1974-024D	COSMOS 644	U.S.S.R.	04/23/74	04/24/74	GEOCENTRIC	1508.	1385.	74.	114.5
1974-024E	COSMOS 645	U.S.S.R.	04/23/74	04/24/74	GEOCENTRIC	1508.	1385.	74.	114.5
1974-024F	COSMOS 646	U.S.S.R.	04/23/74	04/24/74	GEOCENTRIC	1508.	1385.	74.	114.5
1974-024G	COSMOS 647	U.S.S.R.	04/23/74	04/24/74	GEOCENTRIC	1508.	1385.	74.	114.5
1974-024H	COSMOS 648	U.S.S.R.	04/23/74	04/24/74	GEOCENTRIC	1508.	1385.	74.	114.5
1974-025A	METEOR 1 (74-025A)	U.S.S.R.	04/24/74	04/25/74	GEOCENTRIC	907.	877.	81.2	102.6
1974-026A	MOLNIYA 2 (74-026A)	U.S.S.R.	04/26/74	04/27/74	GEOCENTRIC	40850.	463.	62.9	737.
1974-027A	COSMOS 649	U.S.S.R.	04/29/74	04/30/74	GEOCENTRIC	320.	189.	62.8	89.3
1974-028A	COSMOS 650	U.S.S.R.	04/29/74	04/30/74	GEOCENTRIC	1413.	1380.	74.	113.5
1974-029A	COSMOS 651	U.S.S.R.	05/15/74	05/16/74	GEOCENTRIC	276.	256.	65.	89.6
1974-030A	COSMOS 652	U.S.S.R.	05/15/74	05/16/74	GEOCENTRIC	362.	180.	51.8	89.6
1974-031A	COSMOS 653	U.S.S.R.	05/15/74	05/16/74	GEOCENTRIC	309.	196.	62.8	89.3
1974-032A	COSMOS 654	U.S.S.R.	05/17/74	05/18/74	GEOCENTRIC	277.	261.	65.	89.7
1974-033A	SMS 1	UNITED STATES	05/17/74	05/23/74	GEOCENTRIC	35439.0	32345.0	1.9	1340.4
1974-034A	INTERCOSMOS 11	U.S.S.R.	05/17/74	05/18/74	GEOCENTRIC	526.	484.	50.7	94.5
1974-035A	COSMOS 655	U.S.S.R.	05/21/74	05/22/74	GEOCENTRIC	549.	520.	74.	95.2
1974-036A	COSMOS 656	U.S.S.R.	05/27/74	05/28/74	GEOCENTRIC	354.	194.	51.6	89.7
1974-037A	LUNA 22	U.S.S.R.	05/29/74	06/02/74	SELENOCENTRIC	221.0	219.0	19.6	130.0
1974-038A	COSMOS 657	U.S.S.R.	05/30/74	05/31/74	GEOCENTRIC	317.	182.	62.8	89.2
1974-039A	ATS 6	UNITED STATES	05/30/74	05/31/74	GEOCENTRIC	35818.0	35763.0	1.8	1436.3
1974-040A	HAWKEYE 1	UNITED STATES	06/03/74	06/04/74	GEOCENTRIC	125570.	469.0	19.8	3032.4
1974-041A	COSMOS 658	U.S.S.R.	06/06/74	06/07/74	GEOCENTRIC	304.	206.	65.	89.4
1974-042A	1974-042A	UNITED STATES	06/06/74	06/07/74	GEOCENTRIC	394.0	136.0	110.5	89.8
1974-043A	COSMOS 659	U.S.S.R.	06/13/74	06/14/74	GEOCENTRIC	360.	190.	62.8	89.7
1974-044A	COSMOS 660	U.S.S.R.	06/18/74	06/19/74	GEOCENTRIC	1995.	409.	83.	109.2
1974-045A	COSMOS 661	U.S.S.R.	06/21/74	06/22/74	GEOCENTRIC	555.	513.	74.	95.
1974-046A	SALUTE 3	U.S.S.R.	06/25/74	06/26/74	GEOCENTRIC	270.	219.	51.6	89.1
1974-047A	COSMOS 662	U.S.S.R.	06/26/74	06/29/74	GEOCENTRIC	799.0	276.0	70.9	95.4
1974-048A	COSMOS 663	U.S.S.R.	06/27/74	06/30/74	GEOCENTRIC	1007.0	972.0	83.0	104.9
1974-049A	COSMOS 664	U.S.S.R.	06/29/74	06/30/74	GEOCENTRIC	341.0	205.0	72.9	90.0
1974-050A	COSMOS 665	U.S.S.R.	06/29/74	06/30/74	GEOCENTRIC	39.384.	633.	62.9	1210.
1974-051A	SOYUZ 14	U.S.S.R.	07/03/74	07/04/74	GEOCENTRIC	277.	250.0	51.6	89.7
1974-052A	METEOR 1 (74-052A)	U.S.S.R.	07/09/74	07/10/74	GEOCENTRIC	905.	877.	81.2	102.6

COSPAR DESIGNATION	SPACECRAFT NAME	COUNTRY	LAUNCH DATE	EPOCH DATE	ORBIT TYPE	APOAPSIS	PERIAPSIS	INCLINATION	PERIOD
1974-053A	COSMOS 666	U.S.S.S.R.	07/12/74	07/13/74	GEOCENTRIC	351.	191.	62.8	89.6
1974-054A	1974-054A	UNITED STATES	07/14/74	07/22/74	GEOCENTRIC	13767.0	13445.0	125.1	468.4
1974-055A	AEROS 2	FED REP OF GERMANY	07/16/74	07/17/74	GEOCENTRIC	868.	217.	97.4	95.5
1974-056A	MOLNIYA 2 (74-056A)	U.S.S.S.R.	07/23/74	07/24/74	GEOCENTRIC	40900.	460.	62.8	737.
1974-057A	COSMOS 667	U.S.S.S.R.	07/25/74	07/26/74	GEOCENTRIC	342.	182.	65.	89.5
1974-058A	COSMOS 668	U.S.S.S.R.	07/25/74	07/26/74	GEOCENTRIC	519.	281.	71.	92.2
1974-059A	COSMOS 669	U.S.S.S.R.	07/26/74	07/27/74	GEOCENTRIC	230.0	209.0	81.3	88.9
1974-060A	MOLNIYA 1-S	U.S.S.S.R.	07/29/74	07/30/74	GEOCENTRIC	35850.0	35850.0	0.	1039.
1974-061A	COSMOS 670	U.S.S.S.R.	08/06/74	08/07/74	GEOCENTRIC	307.	217.	50.6	89.5
1974-062A	COSMOS 671	U.S.S.S.R.	08/07/74	08/08/74	GEOCENTRIC	369.	191.	62.8	89.7
1974-063A	DMSF(74-063A)	UNITED STATES	08/09/74	08/10/74	GEOCENTRIC	872.0	803.0	98.9	101.7
1974-064A	COSMOS 672	U.S.S.S.R.	08/12/74	08/13/74	GEOCENTRIC	239.	198.	51.8	88.6
1974-065A	1974-065A	UNITED STATES	08/14/74	08/16/74	GEOCENTRIC	402.0	135.0	110.5	89.9
1974-066A	COSMOS 673	U.S.S.S.R.	08/16/74	08/17/74	GEOCENTRIC	648.	620.	81.	97.
1974-067A	SOFUZ 15	U.S.S.S.R.	08/26/74	08/27/74	GEOCENTRIC	275.	254.	51.6	89.6
1974-068A	COSMOS 674	U.S.S.S.R.	08/29/74	08/30/74	GEOCENTRIC	343.	182.	65.	89.5
1974-069A	COSMOS 675	U.S.S.S.R.	08/29/74	08/30/74	GEOCENTRIC	1426.0	1365.0	74.1	113.7
1974-070A	ANS	THE NETHERLANDS	08/30/74	08/31/74	GEOCENTRIC	1167.0	254.0	98.1	99.0
1974-071A	COSMOS 676	U.S.S.S.R.	09/11/74	09/12/74	GEOCENTRIC	840.	799.	74.	101.
1974-072A	COSMOS 677	U.S.S.S.R.	09/19/74	09/20/74	GEOCENTRIC	1519.	1451.	74.	115.3
1974-072B	COSMOS 678	U.S.S.S.R.	09/19/74	09/20/74	GEOCENTRIC	1519.	1451.	74.	115.3
1974-072C	COSMOS 679	U.S.S.S.R.	09/19/74	09/20/74	GEOCENTRIC	1519.	1451.	74.	115.3
1974-072D	COSMOS 680	U.S.S.S.R.	09/19/74	09/20/74	GEOCENTRIC	1519.	1451.	74.	115.3
1974-072E	COSMOS 681	U.S.S.S.R.	09/19/74	09/20/74	GEOCENTRIC	1519.	1451.	74.	115.3
1974-072F	COSMOS 682	U.S.S.S.R.	09/19/74	09/20/74	GEOCENTRIC	1519.	1451.	74.	115.3
1974-072G	COSMOS 683	U.S.S.S.R.	09/19/74	09/20/74	GEOCENTRIC	1519.	1451.	74.	115.3
1974-072H	COSMOS 684	U.S.S.S.R.	09/19/74	09/20/74	GEOCENTRIC	1519.	1451.	74.	115.3
1974-073A	COSMOS 685	U.S.S.S.R.	09/20/74	09/21/74	GEOCENTRIC	303.	208.	65.	89.4
1974-074A	COSMOS 686	U.S.S.S.R.	09/26/74	09/27/74	GEOCENTRIC	515.	281.	71.	92.2
1974-075A	WESTA 2	INTERNATIONAL	10/10/74	10/14/74	GEOCENTRIC	35800.0	35800.0	0.0	1436.0
1974-076A	COSMOS 687	U.S.S.S.R.	10/11/74	10/12/74	GEOCENTRIC	717.	292.	74.	94.5
1974-077A	UK 5	UNITED KINGDOM	10/15/74	10/16/74	GEOCENTRIC	557.0	512.0	2.9	95.3
1974-078A	COSMOS 688	U.S.S.S.R.	10/18/74	10/19/74	GEOCENTRIC	371.	188.	62.8	89.8
1974-079A	COSMOS 689	U.S.S.S.R.	10/19/74	10/20/74	GEOCENTRIC	1032.	992.	83.	105.1
1974-080A	COSMOS 690	U.S.S.S.R.	10/22/74	10/23/74	GEOCENTRIC	389.	223.	62.8	90.4
1974-081A	MOLNIYA 1 (74-081A)	U.S.S.S.R.	10/24/74	10/25/74	GEOCENTRIC	40614.0	656.0	62.8	736.4
1974-082A	COSMOS 691	U.S.S.S.R.	10/25/74	10/26/74	GEOCENTRIC	352.	180.	65.	89.5
1974-083A	METEOR 1 (74-083A)	U.S.S.S.R.	10/26/74	10/29/74	GEOCENTRIC	917.	855.	81.2	102.5
1974-084A	LUNA 23	U.S.S.S.R.	10/28/74	11/06/74	LUNAR LANDER				
1974-085A	1974-085A	UNITED STATES	10/29/74	10/30/74	GEOCENTRIC	271.0	162.0	96.7	88.9
1974-085B	1974-085B	UNITED STATES	10/29/74	11/03/74	GEOCENTRIC	535.0	520.0	96.1	95.2
1974-085C	S3-1	UNITED STATES	10/29/74	10/31/74	GEOCENTRIC	3795.0	152.0	97.0	126.6
1974-086A	INTERCOSMOS 12	U.S.S.S.R.	10/31/74	11/01/74	GEOCENTRIC	708.	264.	74.1	94.1
1974-087A	COSMOS 692	U.S.S.S.R.	11/01/74	11/02/74	GEOCENTRIC	315.	201.	62.8	89.4
1974-088A	COSMOS 693	U.S.S.S.R.	11/04/74	11/05/74	GEOCENTRIC	243.0	219.0	81.3	89.1
1974-089A	NOAA 6	UNITED STATES	11/15/74	11/16/74	GEOCENTRIC	14570.0	1443.0	101.7	114.9
1974-089B	OSCAR 7	INTERNATIONAL	11/15/74	11/16/74	GEOCENTRIC	1455.0	1450.0	101.7	114.9
1974-089C	INTASAT	SPAIN	11/15/74	11/16/74	GEOCENTRIC	1457.0	1440.0	101.7	114.9
1974-090A	COSMOS 694	U.S.S.S.R.	11/16/74	11/17/74	GEOCENTRIC	344.	213.	72.9	89.8
1974-091A	COSMOS 695	U.S.S.S.R.	11/20/74	11/21/74	GEOCENTRIC	493.	283.	71.	92.
1974-092A	MOLNIYA 3 (74-092A)	U.S.S.S.R.	11/21/74	11/22/74	GEOCENTRIC	4069.	650.	62.	737.
1974-093A	INTELSAT 4 F-8	INTERNATIONAL	11/21/74	11/22/74	GEOCENTRIC	35899.1	289.7	26.0	639.8
1974-094A	SKYNET 2B	UNITED KINGDOM	11/23/74	11/24/74	GEOCENTRIC	36595.	35896.	2.2	899.4
1974-095A	COSMOS 696	U.S.S.S.R.	11/27/74	11/28/74	GEOCENTRIC	345.	212.	72.9	89.8
1974-096A	SOFUZ 16	U.S.S.S.R.	12/02/74	12/03/74	GEOCENTRIC	223.	177.	51.7	88.4
1974-097A	HELLIOS-A	FED REP OF GERMANY	12/10/74	01/16/75	HELIOCENTRIC	0.985	0.3095	0.02	190.15
1974-098A	COSMOS 697	U.S.S.S.R.	12/13/74	12/14/74	GEOCENTRIC	415.	182.	62.8	90.2
1974-099A	METEOR 1 (74-099A)	U.S.S.S.R.	12/17/74	12/18/74	GEOCENTRIC	910.	861.	81.2	102.4
1974-100A	COSMOS 698	U.S.S.S.R.	12/18/74	12/19/74	GEOCENTRIC	566.	515.	74.	95.3
1974-101A	SYMPHONIE 1	FED REP OF GERMANY	12/19/74	12/21/74	GEOCENTRIC	40918.	38705.	1.2	1646.6
1974-102A	MOLNIYA 2 (74-102A)	U.S.S.S.R.	12/21/74	12/22/74	GEOCENTRIC	40675.	641.	62.9	737.
1974-103A	COSMOS 699	U.S.S.S.R.	12/24/74	12/25/74	GEOCENTRIC	454.	436.	65.	93.2
1974-104A	SALUTE 4	U.S.S.S.R.	12/26/74	12/27/74	GEOCENTRIC	270.	219.	51.6	89.1
1974-105A	COSMOS 700	U.S.S.S.R.	12/26/74	12/27/74	GEOCENTRIC	1012.	976.	85.	105.
1974-106A	COSMOS 701	U.S.S.S.R.	12/27/74	12/28/74	GEOCENTRIC	339.	210.	71.4	89.8
1975-001A	SOFUZ 17	U.S.S.S.R.	01/11/75	01/12/75	GEOCENTRIC	354.	293.	51.6	91.7
1975-002A	COSMOS 702	U.S.S.S.R.	01/17/75	01/18/75	GEOCENTRIC	334.	210.	71.4	89.7
1975-003A	COSMOS 703	U.S.S.S.R.	01/21/75	01/22/75	GEOCENTRIC	1518.	197.	81.96	102.11
1975-004A	LANDSAT 2	UNITED STATES	01/22/75	01/25/75	GEOCENTRIC	918.	907.	99.09	103.28
1975-005A	COSMOS 704	U.S.S.S.R.	01/23/75	01/24/75	GEOCENTRIC	329.	213.	72.9	89.6
1975-006A	COSMOS 705	U.S.S.S.R.	01/28/75	01/29/75	GEOCENTRIC	524.	281.	71.	92.3
1975-007A	COSMOS 706	U.S.S.S.R.	01/30/75	01/31/75	GEOCENTRIC	39812.	635.	62.8	719.
1975-008A	COSMOS 707	U.S.S.S.R.	02/05/75	02/06/75	GEOCENTRIC	550.	505.	74.	95.2
1975-009A	MOLNIYA 2 (75-009A)	U.S.S.S.R.	02/06/75	02/07/75	GEOCENTRIC	40685.	640.	62.8	737.
1975-010A	STARLETTE	FRANCE	02/06/75	02/20/75	GEOCENTRIC	1108.	806.	49.82	104.13
1975-011A	SMS 2	UNITED STATES	02/06/75	04/01/75	GEOCENTRIC	35799.	35778.	1.0	1436.2
1975-012A	COSMOS 708	U.S.S.S.R.	02/12/75	02/13/75	GEOCENTRIC	1423.	1387.	69.2	113.6
1975-013A	COSMOS 709	U.S.S.S.R.	02/12/75	02/13/75	GEOCENTRIC	333.	188.	62.8	89.4
1975-014A	SRATS	JAPAN	02/24/75	02/25/75	GEOCENTRIC	3129.	249.	31.54	120.06
1975-015A	COSMOS 710	U.S.S.S.R.	02/26/75	02/27/75	GEOCENTRIC	355.	180.	65.	89.6
1975-016A	COSMOS 711	U.S.S.S.R.	02/28/75	03/01/75	GEOCENTRIC	1530.	1449.	74.	111.5
1975-016B	COSMOS 712	U.S.S.S.R.	02/28/75	03/01/75	GEOCENTRIC	1530.	1449.	74.	115.5
1975-016C	COSMOS 713	U.S.S.S.R.	02/28/75	03/01/75	GEOCENTRIC	1530.	1449.	74.	115.5
1975-016D	COSMOS 714	U.S.S.S.R.	02/28/75	03/01/75	GEOCENTRIC	1530.	1449.	74.	115.5
1975-016E	COSMOS 715	U.S.S.S.R.	02/28/75	03/01/75	GEOCENTRIC	1530.	1449.	74.	115.5
1975-016F	COSMOS 716	U.S.S.S.R.	02/28/75	03/01/75	GEOCENTRIC	1530.	1449.	74.	115.5
1975-016G	COSMOS 717	U.S.S.S.R.	02/28/75	03/01/75	GEOCENTRIC	1530.	1449.	74.	115.5
1975-016H	COSMOS 718	U.S.S.S.R.	02/28/75	03/01/75	GEOCENTRIC	1530.	1449.	74.	115.5
1975-017A	1975-017A	UNITED STATES	03/10/75	03/15/75	GEOCENTRIC	39337.	295.	63.5	702.
1975-018A	COSMOS 719	U.S.S.S.R.	03/12/75	03/13/75	GEOCENTRIC	329.	182.	65.	89.3

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COSPAR DESIGNATION	SPACECRAFT NAME	COUNTRY	LAUNCH DATE	EPOCH DATE	ORBIT TYPE	APOAPSIS	PERIAPSIS	INCLINATION	PERIOD
1975-019A	COSMOS 720	U.S.S.R.	03/21/75	03/22/75	GEOCENTRIC	280.	223.	62.8	89.4
1975-020A	COSMOS 721	U.S.S.R.	03/26/75	03/27/75	GEOCENTRIC	241.	210.	81.3	88.9
1975-021A	COSMOS 722	U.S.S.R.	03/27/75	03/28/75	GEOCENTRIC	359.0	210.0	71.4	89.9
1975-022A	INTERCOSMOS 13	U.S.S.R.	03/27/75	03/28/75	GEOCENTRIC	1687.0	284.0	82.9	104.8
1975-023A	METEOR 1 (75-023A)	U.S.S.R.	04/01/75	04/02/75	GEOCENTRIC	906.0	877.0	81.2	102.6
1975-024A	COSMOS 723	U.S.S.R.	04/02/75	04/03/75	GEOCENTRIC	277.0	256.0	65.0	89.6
1975-025A	COSMOS 724	U.S.S.R.	04/07/75	04/08/75	GEOCENTRIC	276.0	258.0	65.0	89.7
1975-026A	COSMOS 725	U.S.S.R.	04/08/75	04/09/75	GEOCENTRIC	508.0	283.0	71.0	92.1
1975-027A	GEOS 3	UNITED STATES	04/09/75	04/10/75	GEOCENTRIC	853.	839.	114.96	101.82
1975-028A	COSMOS 726	U.S.S.R.	04/11/75	04/12/75	GEOCENTRIC	1088.	972.	83.	104.7
1975-029A	MOLNIYA 3 (75-029A)	U.S.S.R.	04/14/75	04/15/75	GEOCENTRIC	40660.	636.	65.	736.
1975-030A	COSMOS 727	U.S.S.R.	04/16/75	04/17/75	GEOCENTRIC	358.	180.	65.	89.6
1975-031A	COSMOS 728	U.S.S.R.	04/18/75	04/19/75	GEOCENTRIC	350.	211.	72.8	89.8
1975-032A	1975-032A	UNITED STATES	04/18/75	04/20/75	GEOCENTRIC	401.	134.	110.54	89.86
1975-033A	ARYABHATA	INDIA	04/19/75	04/20/75	GEOCENTRIC	611.	568.	50.7	96.9
1975-034A	COSMOS 729	U.S.S.R.	04/22/75	04/23/75	GEOCENTRIC	1023.	995.	83.	105.
1975-035A	COSMOS 730	U.S.S.R.	04/24/75	04/25/75	GEOCENTRIC	251.	212.	81.3	89.
1975-036A	MOLNIYA 1 (75-036A)	U.S.S.R.	04/29/75	04/30/75	GEOCENTRIC	40848.	468.	63.	737.
1975-037A	SAS-C	UNITED STATES	05/07/75	05/08/75	GEOCENTRIC	516.	509.	3.0	94.9
1975-038A	TELESAT 3	CANADA	05/07/75	05/08/75	GEOCENTRIC	35919.	231.	24.8	634.3
1975-039A	DS-A	UNITED STATES-R	05/17/75	05/18/75	GEOCENTRIC	1258.	299.	30.0	100.4
1975-039B	DS-B	FRANCE	05/17/75	05/18/75	GEOCENTRIC	1271.	272.	29.90	100.3
1975-040A	1975-040A	UNITED STATES	05/20/75	05/21/75	GEOCENTRIC	249.	150.	28.58	88.34
1975-040B	1975-040B	UNITED STATES	05/20/75	05/21/75	GEOCENTRIC	222.	141.	28.59	88.0
1975-041A	COSMOS 731	U.S.S.R.	05/21/75	05/22/75	GEOCENTRIC	313.	207.	65.	89.5
1975-042A	INTELSAT 4 F-1	INTERNATIONAL	05/22/75	05/23/75	GEOCENTRIC	36184.	35704.	0.47	1444.2
1975-043A	DMSP(75-043A)	UNITED STATES	05/24/75	05/24/75	GEOCENTRIC	892.	813.	98.93	102.0
1975-044A	SOYUZ 18	U.S.S.R.	05/24/75	05/25/75	GEOCENTRIC	247.	193.	51.6	88.6
1975-045A	COSMOS 732	U.S.S.R.	05/28/75	05/29/75	GEOCENTRIC	1532.	1475.	74.	115.8
1975-045B	COSMOS 733	U.S.S.R.	05/28/75	05/29/75	GEOCENTRIC	1532.	1475.	74.	115.8
1975-045C	COSMOS 734	U.S.S.R.	05/28/75	05/29/75	GEOCENTRIC	1532.	1475.	74.	115.8
1975-045D	COSMOS 735	U.S.S.R.	05/28/75	05/29/75	GEOCENTRIC	1532.	1475.	74.	115.8
1975-045E	COSMOS 736	U.S.S.R.	05/28/75	05/29/75	GEOCENTRIC	1532.	1475.	74.	115.8
1975-045F	COSMOS 737	U.S.S.R.	05/28/75	05/29/75	GEOCENTRIC	1532.	1475.	74.	115.8
1975-045G	COSMOS 738	U.S.S.R.	05/28/75	05/29/75	GEOCENTRIC	1532.	1475.	74.	115.8
1975-045H	COSMOS 739	U.S.S.R.	05/28/75	05/29/75	GEOCENTRIC	1532.	1475.	74.	115.8
1975-046A	COSMOS 740	U.S.S.R.	05/28/75	05/29/75	GEOCENTRIC	347.	181.	65.	89.5
1975-047A	COSMOS 741	U.S.S.R.	05/30/75	05/31/75	GEOCENTRIC	246.	210.	81.4	89.
1975-048A	COSMOS 742	U.S.S.R.	06/03/75	06/04/75	GEOCENTRIC	375.	189.	62.8	89.8
1975-049A	MOLNIYA 2 (75-049A)	U.S.S.R.	06/05/75	06/06/75	GEOCENTRIC	40890.	450.	63.	737.
1975-049B	SRET 2	FRANCE	06/05/75	06/06/75	GEOCENTRIC	40890.	450.	63.	737.
1975-050A	VENERA 9	U.S.S.R.	06/08/75	10/22/75	VENUSCENTRIC	112000.	1560.	29.5	2898.
1975-050D	VENERA 9 DESCENT CRAFT	U.S.S.R.	06/08/75	06/08/75	VENUS LANDER				
1975-051A	1975-051A	UNITED STATES	06/08/75	06/09/75	GEOCENTRIC	269.0	154.0	96.38	88.77
1975-051C	SSU 1/1	UNITED STATES	06/08/75	06/09/75	GEOCENTRIC	269.0	154.0	96.38	88.77
1975-052A	NIMBUS 6	UNITED STATES	06/12/75	06/12/75	GEOCENTRIC	1101.00	1093.00	100.	107.3
1975-053A	COSMOS 743	U.S.S.R.	06/12/75	06/13/75	GEOCENTRIC	355.	190.	62.8	89.6
1975-054A	VENERA 10	U.S.S.R.	06/14/75	10/25/75	VENUSCENTRIC	113900.	1620.	29.5	2963.
1975-054D	VENERA 10 DESCENT CRAFT	U.S.S.R.	06/14/75	06/14/75	VENUS LANDER				
1975-055A	1975-055A	UNITED STATES	06/18/75	07/01/75	GEOCENTRIC	35855.	35680.	0.2	1435.1
1975-056A	COSMOS 744	U.S.S.R.	06/20/75	06/21/75	GEOCENTRIC	650.	612.	81.2	97.1
1975-057A	OSO 8	UNITED STATES	06/21/75	06/22/75	GEOCENTRIC	559.	544.	32.9	95.7
1975-058A	COSMOS 745	U.S.S.R.	06/24/75	06/25/75	GEOCENTRIC	540.	274.	71.	92.4
1975-059A	COSMOS 746	U.S.S.R.	06/25/75	06/26/75	GEOCENTRIC	346.	188.	62.8	89.5
1975-060A	COSMOS 747	U.S.S.R.	06/27/75	06/28/75	GEOCENTRIC	309.	197.	62.8	89.3
1975-061A	COSMOS 748	U.S.S.R.	07/03/75	07/04/75	GEOCENTRIC	339.	184.	62.8	89.3
1975-062A	COSMOS 749	U.S.S.R.	07/04/75	07/05/75	GEOCENTRIC	557.	511.	74.	95.3
1975-063A	MOLNIYA 2 (75-063A)	U.S.S.R.	07/08/75	07/09/75	GEOCENTRIC	40864.	465.	62.8	737.
1975-064A	METEOR 2 (75-064A)	U.S.S.R.	07/11/75	07/12/75	GEOCENTRIC	903.	872.	81.3	102.5
1975-065A	ASTP-SOYUZ	U.S.S.R.	07/15/75	07/16/75	GEOCENTRIC	231.	218.	51.76	88.92
1975-066A	ASTP-APOLLO	UNITED STATES	07/15/75	07/18/75	GEOCENTRIC	231.	217.	51.75	88.91
1975-067A	COSMOS 750	U.S.S.R.	07/17/75	07/18/75	GEOCENTRIC	830.	281.	71.	95.4
1975-068A	COSMOS 751	U.S.S.R.	07/23/75	07/24/75	GEOCENTRIC	335.	203.	62.8	89.6
1975-069A	COSMOS 752	U.S.S.R.	07/24/75	07/25/75	GEOCENTRIC	526.	480.	65.9	94.6
1975-070A	1975-070A	PEOPLE'S REP OF CHINA	07/26/75	07/26/75	GEOCENTRIC	464.	186.	69.	91.
1975-071A	COSMOS 753	U.S.S.R.	07/31/75	08/01/75	GEOCENTRIC	351.	189.	62.8	89.6
1975-072A	COS-B	ESA	08/09/75	08/12/75	GEOCENTRIC	99876.	339.6	90.13	2227.0
1975-073A	COSMOS 754	U.S.S.R.	08/13/75	08/14/75	GEOCENTRIC	345.	210.	71.4	89.8
1975-074A	COSMOS 755	U.S.S.R.	08/14/75	08/15/75	GEOCENTRIC	1025.	991.	82.9	105.
1975-075A	VIKING 1 ORBITER	UNITED STATES	08/20/75	06/21/76	AREOCENTRIC	32400.	1513.	37.9	1479.
1975-075C	VIKING 1 LANDER	UNITED STATES	08/20/75	07/20/76	MARS LANDER				
1975-076A	COSMOS 756	U.S.S.R.	08/22/75	08/23/75	GEOCENTRIC	649.	627.	81.2	97.3
1975-077A	SYMPHONIE 2	FED REP OF GERMANY	08/27/75	08/29/75	GEOCENTRIC	38241.	427.	13.1	683.7
1975-078A	COSMOS 757	UNITED STATES-R	08/27/75	08/28/75	GEOCENTRIC	337.	190.	62.8	89.5
1975-079A	COSMOS 758	U.S.S.R.	09/02/75	09/03/75	GEOCENTRIC	40681.	639.	62.8	737.
1975-080A	COSMOS 758	U.S.S.R.	09/05/75	09/06/75	GEOCENTRIC	351.	181.	67.2	89.5
1975-081A	MOLNIYA 2 (75-081A)	U.S.S.R.	09/09/75	09/10/75	GEOCENTRIC	40836.	479.	62.8	736.
1975-082A	ETS	JAPAN	09/09/75	09/10/75	GEOCENTRIC	1092.51	962.573	46.993	105.7
1975-083A	VIKING 2 ORBITER	UNITED STATES	09/09/75	08/09/76	AREOCENTRIC	35800.	1499.	55.2	1639.
1975-083C	VIKING 2 LANDER	UNITED STATES	09/09/75	09/03/76	MARS LANDER				
1975-084A	COSMOS 759	U.S.S.R.	09/12/75	09/13/75	GEOCENTRIC	281.	234.	62.8	89.6
1975-085A	COSMOS 760	U.S.S.R.	09/16/75	09/17/75	GEOCENTRIC	355.	181.	65.	89.6
1975-086A	COSMOS 761	U.S.S.R.	09/17/75	09/18/75	GEOCENTRIC	1537.	1454.	74.	115.5
1975-086B	COSMOS 762	U.S.S.R.	09/17/75	09/18/75	GEOCENTRIC	1537.	1454.	74.	115.5
1975-086C	COSMOS 763	U.S.S.R.	09/17/75	09/18/75	GEOCENTRIC	1537.	1454.	74.	115.5
1975-086D	COSMOS 764	U.S.S.R.	09/17/75	09/18/75	GEOCENTRIC	1537.	1454.	74.	115.5
1975-086E	COSMOS 765	U.S.S.R.	09/17/75	09/18/75	GEOCENTRIC	1537.	1454.	74.	115.5
1975-086F	COSMOS 766	U.S.S.R.	09/17/75	09/18/75	GEOCENTRIC	1537.	1454.	74.	115.5
1975-086G	COSMOS 767	U.S.S.R.	09/17/75	09/18/75	GEOCENTRIC	1537.	1454.	74.	115.5
1975-086H	COSMOS 768	U.S.S.R.	09/17/75	09/18/75	GEOCENTRIC	1537.	1454.	74.	115.5
1975-087A	METEOR 1 (75-087A)	U.S.S.R.	09/18/75	09/19/75	GEOCENTRIC	918.	867.	81.2	102.3
1975-088A	COSMOS 769	U.S.S.R.	09/23/75	09/24/75	GEOCENTRIC	331.	211.	72.9	89.6
1975-089A	COSMOS 770	U.S.S.R.	09/24/75	09/25/75	GEOCENTRIC	1222.	1188.	83.	109.2

COSPAR DESIGNATION	SPACECRAFT NAME	COUNTRY	LAUNCH DATE	EPOCH DATE	ORBIT TYPE	APOAPSIS	PERIAPSIS	INCLINATION	PERIOD
1975-090A	COSMOS 771	U.S.S.R.	09/25/75	09/26/75	GEOCENTRIC	247.	219.	81.3	88.9
1975-091A	INTELSAT 4A F-1	INTERNATIONAL UNITED STATES-R	09/26/75	09/27/75	GEOCENTRIC	3603.	547.	21.9	642.6
1975-092A	D2B	FRANCE	09/27/75	09/28/75	GEOCENTRIC	707.	477.	37.1	96.5
1975-093A	COSMOS 772	U.S.S.R.	09/29/75	09/30/75	GEOCENTRIC	320.	201.	51.8	89.4
1975-094A	COSMOS 773	U.S.S.R.	09/30/75	10/01/75	GEOCENTRIC	828.	791.	74.1	100.9
1975-095A	COSMOS 774	U.S.S.R.	10/01/75	10/02/75	GEOCENTRIC	333.	212.	71.4	89.7
1975-096A	AE-D	UNITED STATES	10/06/75	10/07/75	GEOCENTRIC	3816.	154.	90.1	126.9
1975-097A	COSMOS 775	U.S.S.R.	10/08/75	10/09/75	GEOCENTRIC	35900.	35900.	0.1	144.2
1975-098A	1975-098A	UNITED STATES	10/09/75	10/12/75	GEOCENTRIC	356.	125.	96.41	89.34
1975-099A	TIP 2	UNITED STATES	10/12/75	10/13/75	GEOCENTRIC	703.	360.	90.7	95.3
1975-100A	GOES 1	UNITED STATES	10/16/75	10/17/75	GEOCENTRIC	36458.	34165.	1.0	1412.0
1975-101A	COSMOS 776	U.S.S.R.	10/17/75	10/18/75	GEOCENTRIC	300.	203.	62.8	89.4
1975-102A	COSMOS 777	U.S.S.R.	10/29/75	10/30/75	GEOCENTRIC	456.	437.	65.	93.3
1975-103A	COSMOS 778	U.S.S.R.	11/04/75	11/05/75	GEOCENTRIC	1018.	989.	83.	104.9
1975-104A	COSMOS 779	U.S.S.R.	11/04/75	11/05/75	GEOCENTRIC	334.	188.	62.8	89.4
1975-105A	MOLNIYA 3 (75-105A)	U.S.S.R.	11/14/75	11/15/75	GEOCENTRIC	40830.	470.	62.	736.
1975-106A	SOYUZ 20	U.S.S.R.	11/17/75	11/18/75	GEOCENTRIC	263.5	199.7	51.6	88.8
1975-107A	AE-E	UNITED STATES	11/20/75	11/25/75	GEOCENTRIC	2983.	156.	19.7	117.29
1975-108A	COSMOS 780	U.S.S.R.	11/21/75	11/22/75	GEOCENTRIC	298.	206.	65.	89.3
1975-109A	COSMOS 781	U.S.S.R.	11/21/75	11/22/75	GEOCENTRIC	557.	508.	74.	95.2
1975-110A	COSMOS 782	U.S.S.R.	11/25/75	11/26/75	GEOCENTRIC	405.	227.	62.8	90.5
1975-111A	1975-111A	PEOPLE'S REP OF CHINA	11/26/75	11/28/75	GEOCENTRIC	479.	179.	62.95	91.09
1975-112A	COSMOS 783	U.S.S.R.	11/28/75	11/29/75	GEOCENTRIC	838.	797.	74.	101.
1975-113A	COSMOS 784	U.S.S.R.	12/03/75	12/04/75	GEOCENTRIC	252.	216.	81.3	89.
1975-114A	1975-114A	UNITED STATES	12/04/75	12/06/75	GEOCENTRIC	234.	157.	96.27	88.44
1975-114B	S3-2	UNITED STATES	12/03/75	00/00/77	GEOCENTRIC	900.	230.	97.	96.
1975-115A	INTERCOSMOS 14	U.S.S.R.	12/11/75	12/12/75	GEOCENTRIC	1707.	345.	74.	105.3
1975-116A	COSMOS 785	U.S.S.R.	12/12/75	12/13/75	GEOCENTRIC	278.	259.	65.	89.7
1975-117A	RCA-A	INTERNATIONAL UNITED STATES-R	12/13/75	12/14/75	GEOCENTRIC	35993.	185.	27.2	634.8
1975-118A	1975-118A	UNITED STATES	12/14/75	12/14/75	GEOCENTRIC	35840.	295.	26.3	633.
1975-119A	1975-119A	PEOPLE'S REP OF CHINA	12/16/75	12/17/75	GEOCENTRIC	387.	186.	69.	90.26
1975-120A	COSMOS 786	U.S.S.R.	12/16/75	12/17/75	GEOCENTRIC	347.	180.	65.	89.5
1975-121A	MOLNIYA 2 (75-121A)	U.S.S.R.	12/17/75	12/25/75	GEOCENTRIC	39931.	436.	62.86	717.99
1975-122A	PROGNOZ 4	U.S.S.R.	12/22/75	12/23/75	GEOCENTRIC	199000.	634.	65.	5740.
1975-123A	RADUGA 1	U.S.S.R.	12/22/75	12/23/75	GEOCENTRIC	35800.	35800.	0.3	1434.
1975-124A	METEOR 1 (75-124A)	U.S.S.R.	12/25/75	12/26/75	GEOCENTRIC	913.	857.	81.3	102.4
1975-125A	MOLNIYA 3 (75-125A)	U.S.S.R.	12/27/75	12/28/75	GEOCENTRIC	40800.	470.	62.8	736.
1976-001A	COSMOS 787	U.S.S.R.	01/06/76	01/07/76	GEOCENTRIC	564.	519.	74.	95.3
1976-002A	COSMOS 788	U.S.S.R.	01/07/76	01/08/76	GEOCENTRIC	343.	191.	62.8	89.5
1976-003A	HELIOS-B	FED REP OF GERMANY	01/15/76	07/21/76	HELIOCENTRIC	0.983	0.289	0.	185.6
1976-004A	HERMES	UNITED STATES CANADA	01/17/76	01/18/76	GEOCENTRIC	36022.	33814.	0.7	1392.
1976-005A	COSMOS 789	U.S.S.R.	01/20/76	01/21/76	GEOCENTRIC	1029.	993.	83.	105.
1976-006A	MOLNIYA 1 (76-006A)	U.S.S.R.	01/22/76	01/23/76	GEOCENTRIC	38934.	491.	62.5	698.
1976-007A	COSMOS 790	U.S.S.R.	01/22/76	01/24/76	GEOCENTRIC	559.	513.	74.	95.2
1976-008A	COSMOS 791	U.S.S.R.	01/28/76	01/29/76	GEOCENTRIC	1538.	1453.	74.	115.6
1976-008B	COSMOS 792	U.S.S.R.	01/28/76	01/29/76	GEOCENTRIC	1538.	1453.	74.	115.6
1976-008C	COSMOS 793	U.S.S.R.	01/28/76	01/29/76	GEOCENTRIC	1538.	1453.	74.	115.6
1976-008D	COSMOS 794	U.S.S.R.	01/28/76	01/29/76	GEOCENTRIC	1538.	1453.	74.	115.6
1976-008E	COSMOS 795	U.S.S.R.	01/28/76	01/29/76	GEOCENTRIC	1538.	1453.	74.	115.6
1976-008F	COSMOS 796	U.S.S.R.	01/28/76	01/29/76	GEOCENTRIC	1538.	1453.	74.	115.6
1976-008G	COSMOS 797	U.S.S.R.	01/28/76	01/29/76	GEOCENTRIC	1538.	1453.	74.	115.6
1976-008H	COSMOS 798	U.S.S.R.	01/28/76	01/29/76	GEOCENTRIC	1538.	1453.	74.	115.6
1976-009A	COSMOS 799	U.S.S.R.	01/29/76	01/30/76	GEOCENTRIC	328.	210.	71.4	89.6
1976-010A	INTELSAT 4A F-2	INTERNATIONAL UNITED STATES-R	01/29/76	01/30/76	GEOCENTRIC	35869.	35084.	0.1	1420.2
1976-011A	COSMOS 800	U.S.S.R.	02/03/76	02/04/76	GEOCENTRIC	1027.	1000.	83.	105.
1976-012A	COSMOS 801	U.S.S.R.	02/05/76	02/06/76	GEOCENTRIC	823.	279.	71.	95.3
1976-013A	COSMOS 802	U.S.S.R.	02/11/76	02/12/76	GEOCENTRIC	355.	180.	65.	89.6
1976-014A	COSMOS 803	U.S.S.R.	02/12/76	02/13/76	GEOCENTRIC	624.	554.	66.	96.4
1976-015A	COSMOS 804	U.S.S.R.	02/16/76	02/17/76	GEOCENTRIC	698.	149.	65.1	92.8
1976-016A	1976-016A	UNITED STATES	02/19/76	02/19/76	GEOCENTRIC	355.	90.	98.87	88.97
1976-017A	MARISAT 1	UNITED STATES	02/19/76	02/20/76	GEOCENTRIC	35867.	35703.	2.4	1436.1
1976-018A	COSMOS 805	U.S.S.R.	02/20/76	02/21/76	GEOCENTRIC	372.	181.	67.2	89.7
1976-019A	ISS 1	JAPAN	02/29/76	03/01/76	GEOCENTRIC	1017.	984.	69.7	105.
1976-020A	COSMOS 806	U.S.S.R.	03/10/76	03/11/76	GEOCENTRIC	353.	182.	71.4	89.7
1976-021A	MOLNIYA 1 (76-021A)	U.S.S.R.	03/11/76	03/12/76	GEOCENTRIC	40863.	518.	62.5	734.
1976-022A	COSMOS 807	U.S.S.R.	03/12/76	03/13/76	GEOCENTRIC	1985.	403.	83.	109.1
1976-023A	LES 8	UNITED STATES	03/15/76	04/01/76	GEOCENTRIC	35787.	35787.	25.	1436.1
1976-023B	LES 9	UNITED STATES	03/15/76	04/01/76	GEOCENTRIC	35787.	35787.	25.	1436.1
1976-023C	SOLRAD 11A	UNITED STATES	03/15/76	07/01/76	GEOCENTRIC	119180.	118383.	25.7	7344.3
1976-023D	SOLRAD 11B	UNITED STATES	03/15/76	07/01/76	GEOCENTRIC	116645.	115720.	25.6	7116.7
1976-024A	COSMOS 808	U.S.S.R.	03/16/76	03/17/76	GEOCENTRIC	647.	618.	81.3	97.1
1976-025A	COSMOS 809	U.S.S.R.	03/18/76	03/19/76	GEOCENTRIC	322.	210.	65.	89.6
1976-026A	MOLNIYA 1 (76-026A)	U.S.S.R.	03/19/76	03/20/76	GEOCENTRIC	38984.	494.	63.	699.
1976-027A	1976-027A	UNITED STATES	03/22/76	03/24/76	GEOCENTRIC	347.	125.	96.40	89.25
1976-028A	COSMOS 810	U.S.S.R.	03/26/76	03/27/76	GEOCENTRIC	358.	188.	62.8	89.7
1976-029A	RCA-B	INTERNATIONAL UNITED STATES-R	03/26/76	03/27/76	GEOCENTRIC	36032.	185.	27.2	635.6
1976-030A	COSMOS 811	U.S.S.R.	03/31/76	04/01/76	GEOCENTRIC	361.	212.	72.9	89.9
1976-031A	COSMOS 812	U.S.S.R.	04/06/76	04/07/76	GEOCENTRIC	558.	504.	74.	95.2
1976-032A	METEOR 1 (76-032A)	U.S.S.R.	04/07/76	04/08/76	GEOCENTRIC	906.	863.	81.2	102.3
1976-033A	COSMOS 813	U.S.S.R.	04/09/76	04/10/76	GEOCENTRIC	250.	212.	81.3	89.
1976-034A	COSMOS 814	U.S.S.R.	04/13/76	04/14/76	GEOCENTRIC	474.	150.	65.1	90.6
1976-035A	NATO 3-A	INTERNATIONAL UNITED STATES-R	04/22/76	05/01/76	GEOCENTRIC	35863.	35209.	2.9	1423.4
1976-036A	COSMOS 815	U.S.S.R.	04/28/76	04/29/76	GEOCENTRIC	254.	218.	81.3	89.
1976-037A	COSMOS 816	U.S.S.R.	04/28/76	04/29/76	GEOCENTRIC	525.	482.	65.9	94.6
1976-038A	1976-038A	UNITED STATES	04/30/76	05/01/76	GEOCENTRIC	1128.	1092.	63.46	107.47
1976-038C	SSU 1/2	UNITED STATES	04/30/76	05/20/76	GEOCENTRIC	1129.	1093.	63.44	107.49
1976-038D	SSU 2	UNITED STATES	04/30/76	05/20/76	GEOCENTRIC	1130.	1093.	63.43	107.5
1976-038J	SSU 3	UNITED STATES	04/30/76	07/01/76	GEOCENTRIC	1139.	1083.	63.45	107.49
1976-039A	LAGEOS	UNITED STATES	05/04/76	05/05/76	GEOCENTRIC	5945.	5837.	109.86	225.41
1976-040A	COSMOS 817	U.S.S.R.	05/05/76	05/06/76	GEOCENTRIC	347.	178.	65.	89.5
1976-041A	MOLNIYA 3 (76-041A)	U.S.S.R.	05/12/76	05/13/76	GEOCENTRIC	40660.	652.	62.8	736.
1976-042A	COMSTAR 1	INTERNATIONAL UNITED STATES-R	05/13/76	08/01/76	GEOCENTRIC	35788.	35782.	0.1	1436.0

COSPAR DESIGNATION	SPACECRAFT NAME	COUNTRY	LAUNCH DATE	EPOCH DATE	ORBIT TYPE	APOAPSIS	PERIAPSIS	INCLINATION	PERIOD
1976-043A	METEOR 1 (76-D43A)	U.S.S.R.	05/15/76	05/16/76	GEOCENTRIC	907.7	865.6	81.2	102.4
1976-044A	COSMOS 818	U.S.S.R.	05/18/76	05/19/76	GEOCENTRIC	506.	281.	71.	92.1
1976-045A	COSMOS 819	U.S.S.R.	05/20/76	05/21/76	GEOCENTRIC	307.	206.	65.	89.5
1976-046A	COSMOS 820	U.S.S.R.	05/21/76	05/22/76	GEOCENTRIC	236.	214.	81.4	82.2
1976-047A	P76-5	UNITED STATES	05/22/76	05/23/76	GEOCENTRIC	1056.	996.	99.7	105.7
1976-048A	COSMOS 821	U.S.S.R.	05/26/76	05/27/76	GEOCENTRIC	338.	212.	72.8	89.7
1976-049A	COSMOS 822	U.S.S.R.	05/28/76	05/29/76	GEOCENTRIC	729.	284.	74.	94.5
1976-050A	1976-050A	UNITED STATES	06/02/76	06/10/76	GEOCENTRIC	39315.	380.	63.3	703.8
1976-051A	COSMOS 823	U.S.S.R.	06/03/76	06/09/76	GEOCENTRIC	1023.	996.	83.	105.
1976-052A	COSMOS 824	U.S.S.R.	06/08/76	06/09/76	GEOCENTRIC	345.	209.	71.4	89.8
1976-053A	MARISAT 2	UNITED STATES	06/10/76	06/11/76	GEOCENTRIC	35807.	35788.	2.5	1436.6
1976-054A	COSMOS 825	U.S.S.R.	06/15/76	06/16/76	GEOCENTRIC	1530.	1450.	74.	115.5
1976-054B	COSMOS 826	U.S.S.R.	06/15/76	06/16/76	GEOCENTRIC	1530.	1450.	74.	115.5
1976-054C	COSMOS 827	U.S.S.R.	06/15/76	06/16/76	GEOCENTRIC	1530.	1450.	74.	115.5
1976-054D	COSMOS 828	U.S.S.R.	06/15/76	06/16/76	GEOCENTRIC	1530.	1450.	74.	115.5
1976-054E	COSMOS 829	U.S.S.R.	06/15/76	06/16/76	GEOCENTRIC	1530.	1450.	74.	115.5
1976-054F	COSMOS 830	U.S.S.R.	06/15/76	06/16/76	GEOCENTRIC	1530.	1450.	74.	115.5
1976-054G	COSMOS 831	U.S.S.R.	06/15/76	06/16/76	GEOCENTRIC	1530.	1450.	74.	115.5
1976-054H	COSMOS 832	U.S.S.R.	06/15/76	06/16/76	GEOCENTRIC	1530.	1450.	74.	115.5
1976-055A	COSMOS 833	U.S.S.R.	06/16/76	06/17/76	GEOCENTRIC	335.	189.	62.8	89.5
1976-056A	INTERCOSMOS 15	U.S.S.R.	06/19/76	06/20/76	GEOCENTRIC	521.	487.	74.	94.6
1976-057A	SALYUT 5	U.S.S.R.	06/22/76	06/23/76	GEOCENTRIC	260.	223.	81.4	89.
1976-058A	COSMOS 834	U.S.S.R.	06/24/76	06/25/76	GEOCENTRIC	263.	223.	81.4	89.1
1976-059A	USAF OPERATIONAL SAT-76	UNITED STATES	06/26/76	06/00/76	GEOCENTRIC	36000.	36000.	0.	1436.6
1976-060A	COSMOS 835	U.S.S.R.	06/29/76	06/30/76	GEOCENTRIC	338.	180.	65.	89.4
1976-061A	COSMOS 836	U.S.S.R.	06/29/76	06/30/76	GEOCENTRIC	843.	796.	74.	101.
1976-062A	COSMOS 837	U.S.S.R.	07/01/76	07/02/76	GEOCENTRIC	860.	505.	62.8	98.1
1976-063A	COSMOS 838	U.S.S.R.	07/02/76	07/03/76	GEOCENTRIC	456.	438.	65.	93.3
1976-064A	SOYUZ 21	U.S.S.R.	07/06/76	07/07/76	GEOCENTRIC	253.	193.	51.6	88.7
1976-065A	1976-065A	UNITED STATES	07/08/76	07/10/76	GEOCENTRIC	242.	159.	97.	88.54
1976-065B	S3-3	UNITED STATES	07/08/76	07/08/76	GEOCENTRIC	7856.	246.	97.5	176.6
1976-065C	1976-065C	UNITED STATES	07/08/76	07/18/76	GEOCENTRIC	632.	628.	96.38	97.34
1976-066A	PALAPA 1	INDONESIA	07/08/76	09/01/76	GEOCENTRIC	35809.	35764.	0.05	1436.1
1976-067A	COSMOS 839	U.S.S.R.	07/09/76	07/10/76	GEOCENTRIC	2102.	984.	65.9	117.
1976-068A	COSMOS 840	U.S.S.R.	07/14/76	07/15/76	GEOCENTRIC	343.	212.	72.9	89.7
1976-069A	COSMOS 841	U.S.S.R.	07/15/76	07/16/76	GEOCENTRIC	826.	789.	74.	101.
1976-070A	COSMOS 842	U.S.S.R.	07/21/76	07/22/76	GEOCENTRIC	1023.	987.	83.	105.
1976-071A	COSMOS 843	U.S.S.R.	07/21/76	07/22/76	GEOCENTRIC	360.	149.	65.1	89.4
1976-072A	COSMOS 844	U.S.S.R.	07/22/76	07/23/76	GEOCENTRIC	385.	181.	87.1	89.8
1976-073A	CONSTAR 2	INTERNATIONAL	07/22/76	11/01/76	GEOCENTRIC	35795.	35780.	0.1	1436.2
1976-074A	MOLNIYA 1 (76-074A)	U.S.S.R.	07/23/76	07/23/76	GEOCENTRIC	39059.	499.	62.9	701.
1976-075A	COSMOS 845	U.S.S.R.	07/27/76	07/28/76	GEOCENTRIC	546.	514.	74.06	95.25
1976-076A	INTERCOSMOS 16	U.S.S.R.	07/27/76	07/28/76	GEOCENTRIC	523.	465.	50.6	94.4
1976-077A	NOAA 5	UNITED STATES	07/29/76	07/30/76	GEOCENTRIC	1520.	1502.	102.1	116.2
1976-078A	COSMOS 846	U.S.S.R.	07/29/76	07/30/76	GEOCENTRIC	1025.	967.	63.	105.
1976-079A	COSMOS 847	U.S.S.R.	08/04/76	08/05/76	GEOCENTRIC	342.	189.	62.8	89.5
1976-080A	1976-080A	UNITED STATES	08/06/76	08/14/76	GEOCENTRIC	39315.	380.	63.3	703.8
1976-081A	LUNA 24	U.S.S.R.	08/09/76	08/09/76	LUNAR LANDER				
1976-081E	LUNAR 24 DESCENT CRAFT	U.S.S.R.	08/09/76	08/09/76	LUNAR LANDER				
1976-082A	COSMOS 848	U.S.S.R.	08/12/76	08/13/76	GEOCENTRIC	325.	214.	62.8	89.6
1976-083A	COSMOS 849	U.S.S.R.	08/18/76	08/19/76	GEOCENTRIC	889.	276.	71.	96.
1976-084A	COSMOS 850	U.S.S.R.	08/26/76	08/27/76	GEOCENTRIC	518.	280.	71.	92.
1976-085A	COSMOS 851	U.S.S.R.	08/27/76	08/28/76	GEOCENTRIC	649.	592.	81.	96.2
1976-086A	COSMOS 852	U.S.S.R.	08/28/76	08/29/76	GEOCENTRIC	354.	179.	65.	89.5
1976-087A	1976-087A	PEOPLE'S REP OF CHINA	08/30/76	08/31/76	GEOCENTRIC	2145.	195.	69.16	108.77
1976-088A	COSMOS 853	U.S.S.R.	09/01/76	09/02/76	GEOCENTRIC	498.	243.	62.8	91.7
1976-089A	TIP 3	UNITED STATES	09/01/76	09/02/76	GEOCENTRIC	787.	341.	90.3	96.
1976-090A	COSMOS 854	U.S.S.R.	09/03/76	09/04/76	GEOCENTRIC	337.	177.	81.4	89.3
1976-091A	DMSP-F1	UNITED STATES	09/11/76	09/14/76	GEOCENTRIC	848.	818.	98.7	101.6
1976-092A	RADUGA 2	U.S.S.R.	09/11/76	09/12/76	GEOCENTRIC	35900.	35900.	0.3	1440.
1976-093A	SOYUZ 22	U.S.S.R.	09/15/76	09/16/76	GEOCENTRIC	280.	250.	65.	89.6
1976-094A	1976-094A	UNITED STATES	09/15/76	09/16/76	GEOCENTRIC	330.	135.	96.39	89.18
1976-095A	COSMOS 855	U.S.S.R.	09/21/76	09/22/76	GEOCENTRIC	366.	212.	72.9	89.9
1976-096A	COSMOS 856	U.S.S.R.	09/22/76	09/23/76	GEOCENTRIC	322.	210.	65.	89.5
1976-097A	COSMOS 857	U.S.S.R.	09/24/76	09/25/76	GEOCENTRIC	346.	185.	62.8	89.5
1976-098A	COSMOS 858	U.S.S.R.	09/29/76	09/30/76	GEOCENTRIC	833.	792.	74.	101.
1976-099A	COSMOS 859	U.S.S.R.	10/10/76	10/11/76	GEOCENTRIC	360.	180.	65.	89.6
1976-100A	SOYUZ 23	U.S.S.R.	10/14/76	10/15/76	GEOCENTRIC	275.	243.	51.6	89.5
1976-101A	MARISAT 3	UNITED STATES	10/14/76	10/15/76	GEOCENTRIC	36525.	35051.	2.6	1436.2
1976-102A	METEOR (76-102A)	U.S.S.R.	10/16/76	10/17/76	GEOCENTRIC	904.	871.	81.3	102.5
1976-103A	COSMOS 860	U.S.S.R.	10/17/76	10/18/76	GEOCENTRIC	278.	260.	65.	89.6
1976-104A	COSMOS 861	U.S.S.R.	10/21/76	10/22/76	GEOCENTRIC	280.	256.	65.	89.6
1976-105A	COSMOS 862	U.S.S.R.	10/22/76	10/23/76	GEOCENTRIC	39300.	610.	62.8	709.
1976-106A	COSMOS 863	U.S.S.R.	10/25/76	10/25/76	GEOCENTRIC	370.	187.	62.8	89.8
1976-107A	EKRAN	U.S.S.R.	10/26/76	10/27/76	GEOCENTRIC	35600.	35600.	0.3	1422.
1976-108A	COSMOS 864	U.S.S.R.	10/29/76	10/30/76	GEOCENTRIC	1021.	980.	83.	104.9
1976-109A	COSMOS 865	U.S.S.R.	11/01/76	11/02/76	GEOCENTRIC	350.	212.	72.9	89.8
1976-110A	COSMOS 866	U.S.S.R.	11/11/76	11/12/76	GEOCENTRIC	306.	182.	65.	89.1
1976-111A	COSMOS 867	U.S.S.R.	11/23/76	11/24/76	GEOCENTRIC	418.	258.	62.8	91.
1976-112A	PROGNOS 5	U.S.S.R.	11/25/76	11/26/76	GEOCENTRIC	199000.	510.	65.	5713.
1976-113A	COSMOS 868	U.S.S.R.	11/26/76	11/27/76	GEOCENTRIC	457.	438.	65.	95.3
1976-114A	COSMOS 869	U.S.S.R.	11/29/76	11/30/76	GEOCENTRIC	307.	202.	51.8	89.3
1976-115A	COSMOS 870	U.S.S.R.	12/02/76	12/03/76	GEOCENTRIC	560.	514.	74.	95.3
1976-116A	MOLNIYA 2 (76-116A)	U.S.S.R.	12/02/76	12/03/76	GEOCENTRIC	40608.	657.	62.8	736.
1976-117A	1976-117A	PEOPLE'S REP OF CHINA	12/07/76	12/11/76	GEOCENTRIC	479.	172.	59.42	91.01
1976-118A	COSMOS 871	U.S.S.R.	12/07/76	12/10/76	GEOCENTRIC	1466.	1420.	74.03	114.74
1976-118B	COSMOS 872	U.S.S.R.	12/07/76	12/08/76	GEOCENTRIC	1520.	1450.	74.	115.3
1976-118C	COSMOS 873	U.S.S.R.	12/07/76	12/08/76	GEOCENTRIC	1520.	1450.	74.	115.3
1976-118D	COSMOS 874	U.S.S.R.	12/07/76	12/08/76	GEOCENTRIC	1520.	1450.	74.	115.3
1976-118E	COSMOS 875	U.S.S.R.	12/07/76	12/08/76	GEOCENTRIC	1520.	1450.	74.	115.3
1976-118F	COSMOS 876	U.S.S.R.	12/07/76	12/08/76	GEOCENTRIC	1520.	1450.	74.	115.3
1976-118G	COSMOS 877	U.S.S.R.	12/07/76	12/08/76	GEOCENTRIC	1520.	1450.	74.	115.3
1976-118H	COSMOS 878	U.S.S.R.	12/07/76	12/08/76	GEOCENTRIC	1520.	1450.	74.	115.3
1976-119A	COSMOS 879	U.S.S.R.	12/09/76	12/10/76	GEOCENTRIC	241.	217.	81.4	88.9
1976-120A	COSMOS 880	U.S.S.R.	12/09/76	12/10/76	GEOCENTRIC	624.	526.	66.	96.4
1976-121A	COSMOS 881	U.S.S.R.	12/15/76	12/16/76	GEOCENTRIC	248.	198.	51.6	88.75
1976-121B	COSMOS 882	U.S.S.R.	12/15/76	12/16/76	GEOCENTRIC	248.	189.	51.6	88.46
1976-122A	COSMOS 883	U.S.S.R.	12/15/76	12/16/76	GEOCENTRIC	1023.	975.	83.	105.

COSPAR DESIGNATION	SPACECRAFT NAME	COUNTRY	LAUNCH DATE	EPOCH DATE	ORBIT TYPE	APOAPSIS	PERIAPSIS	INCLINATION	PERIOD
1976-123A	COSMOS 884	U.S.S.R.	12/17/76	12/18/76	GEOCENTRIC	346.	178.	65.	89.6
1976-124A	COSMOS 885	U.S.S.R.	12/17/76	12/18/76	GEOCENTRIC	513.	470.	66.	94.4
1976-125A	1976-125A	UNITED STATES	12/19/76	12/22/76	GEOCENTRIC	533.	247.	96.95	92.37
1976-126A	COSMOS 886	U.S.S.R.	12/27/76	12/28/76	GEOCENTRIC	2328.	581.	66.	115.
1976-127A	MOLNIYA 3 (76-127A)	U.S.S.R.	12/28/76	12/29/76	GEOCENTRIC	40630.	640.	62.8	736.
1976-128A	COSMOS 887	U.S.S.R.	12/28/76	12/29/76	GEOCENTRIC	1030.	973.	63.	104.8
1977-001A	COSMOS 888	U.S.S.R.	01/06/77	01/07/77	GEOCENTRIC	346.	178.	65.	89.5
1977-002A	METEOR 2 (77-002A)	U.S.S.R.	01/07/77	01/08/77	GEOCENTRIC	932.1	892.9	81.3	103.
1977-003A	COSMOS 889	U.S.S.R.	01/20/77	01/21/77	GEOCENTRIC	353.	210.	71.4	89.8
1977-004A	COSMOS 890	U.S.S.R.	01/20/77	01/21/77	GEOCENTRIC	1032.	1000.	83.	105.
1977-005A	ASTO 3-B	INTERNATIONAL UNITED STATES-R	01/28/77	01/29/77	GEOCENTRIC	35962.	35463.	2.8	1432.3
1977-006A	COSMOS 891	U.S.S.R.	02/02/77	02/03/77	GEOCENTRIC	518.	466.	65.8	94.4
1977-007A	USAF OPERATIONAL SAT-77	UNITED STATES	02/06/77	00/00/77	GEOCENTRIC	36000.	36000.	0.	1436.
1977-008A	SOYUZ 24	U.S.S.R.	02/07/77	02/08/77	GEOCENTRIC	281.	218.	51.6	89.2
1977-009A	COSMOS 892	U.S.S.R.	02/09/77	02/10/77	GEOCENTRIC	454.	170.	72.9	90.4
1977-010A	MOLNIYA 2 (77-010A)	U.S.S.R.	02/11/77	02/12/77	GEOCENTRIC	40757.	493.	62.5	735.
1977-011A	COSMOS 893	U.S.S.R.	02/15/77	02/16/77	GEOCENTRIC	1703.	341.	74.	105.25
1977-012A	TANSEI 3	JAPAN	02/19/77	02/20/77	GEOCENTRIC	3813.	791.	65.8	134.1
1977-013A	COSMOS 894	U.S.S.R.	02/21/77	02/22/77	GEOCENTRIC	1026.	988.	83.	105.1
1977-014A	ETS 2	JAPAN	02/23/77	03/01/77	GEOCENTRIC	35790.	35780.	0.1	1436.
1977-015A	COSMOS 895	U.S.S.R.	02/27/77	02/28/77	GEOCENTRIC	648.	613.	81.2	97.2
1977-016A	COSMOS 896	U.S.S.R.	03/03/77	03/04/77	GEOCENTRIC	216.	194.	72.9	88.5
1977-017A	COSMOS 897	U.S.S.R.	03/10/77	03/11/77	GEOCENTRIC	371.	182.	72.9	89.7
1977-018A	PALAPA 2	INDONESIA	03/10/77	05/01/77	GEOCENTRIC	35809.	35764.	0.1	1436.1
1977-019A	1977-019A	UNITED STATES-R	03/13/77	03/15/77	GEOCENTRIC	348.	124.	96.4	89.25
1977-020A	COSMOS 898	U.S.S.R.	03/17/77	03/18/77	GEOCENTRIC	258.	222.	81.4	89.
1977-021A	MOLNIYA 1 (77-021A)	U.S.S.R.	03/24/77	03/25/77	GEOCENTRIC	40816.	484.	62.8	736.
1977-022A	COSMOS 899	U.S.S.R.	03/25/77	03/26/77	GEOCENTRIC	522.	505.	74.1	95.2
1977-023A	COSMOS 900	U.S.S.R.	03/30/77	03/31/77	GEOCENTRIC	523.	460.	83.	94.4
1977-024A	METEOR (77-024A)	U.S.S.R.	04/05/77	04/06/77	GEOCENTRIC	909.	869.	81.2	102.5
1977-025A	COSMOS 901	U.S.S.R.	04/05/77	04/06/77	GEOCENTRIC	845.	279.	71.	95.5
1977-026A	COSMOS 902	U.S.S.R.	04/07/77	04/08/77	GEOCENTRIC	307.	179.	81.4	89.
1977-027A	COSMOS 903	U.S.S.R.	04/11/77	04/12/77	GEOCENTRIC	40170.	630.	62.83	726.
1977-028A	COSMOS 904	U.S.S.R.	04/20/77	04/21/77	GEOCENTRIC	350.	210.	71.4	89.8
1977-029A	ESA GEOS	ESA	04/20/77	04/25/77	GEOCENTRIC	38357.	2110.	26.25	720.06
1977-030A	COSMOS 905	U.S.S.R.	04/26/77	04/26/77	GEOCENTRIC	366.	179.	67.1	89.7
1977-031A	COSMOS 906	U.S.S.R.	04/27/77	04/28/77	GEOCENTRIC	523.	466.	50.7	94.3
1977-032A	MOLNIYA 3 (77-032A)	U.S.S.R.	04/28/77	04/29/77	GEOCENTRIC	40817.	467.	62.8	736.
1977-033A	COSMOS 907	U.S.S.R.	05/05/77	05/06/77	GEOCENTRIC	388.	187.	62.8	89.9
1977-034A	1977-034A	UNITED STATES	05/12/77	05/24/77	GEOCENTRIC	35782.	35438.	2.44	1426.7
1977-034B	1977-034B	UNITED STATES	05/12/77	05/24/77	GEOCENTRIC	35792.	35781.	2.43	1436.1
1977-035A	COSMOS 908	U.S.S.R.	05/17/77	05/18/77	GEOCENTRIC	307.	180.	51.8	89.1
1977-036A	COSMOS 909	U.S.S.R.	05/19/77	05/20/77	GEOCENTRIC	212.	99.9	65.9	91.
1977-037A	COSMOS 910	U.S.S.R.	05/23/77	05/24/77	GEOCENTRIC	506.	149.	65.1	91.
1977-038A	1977-038A	UNITED STATES	05/23/77	06/01/77	GEOCENTRIC	35855.	35679.	0.2	1435.9
1977-039A	COSMOS 911	U.S.S.R.	05/25/77	05/26/77	GEOCENTRIC	1018.	984.	82.6	104.9
1977-040A	COSMOS 912	U.S.S.R.	05/26/77	05/27/77	GEOCENTRIC	257.	219.	81.4	89.
1977-041A	INTELSAT IVA F-4	INTERNATIONAL UNITED STATES-R	05/26/77	05/27/77	GEOCENTRIC	35755.	35346.	0.28	1425.
1977-042A	COSMOS 913	U.S.S.R.	05/31/77	06/01/77	GEOCENTRIC	523.	475.	74.	94.5
1977-043A	COSMOS 914	U.S.S.R.	05/31/77	06/01/77	GEOCENTRIC	327.	210.	65.	89.6
1977-044A	DMSF-F2	UNITED STATES	06/05/77	06/06/77	GEOCENTRIC	869.	811.	99.	101.7
1977-045A	COSMOS 915	U.S.S.R.	06/08/77	06/09/77	GEOCENTRIC	306.	182.	62.8	89.1
1977-046A	COSMOS 916	U.S.S.R.	06/10/77	06/11/77	GEOCENTRIC	307.	250.	62.8	89.5
1977-047A	COSMOS 917	U.S.S.R.	06/16/77	06/17/77	GEOCENTRIC	40150.	625.	62.9	729.
1977-048A	GOES 2	UNITED STATES	06/16/77	06/21/77	GEOCENTRIC	36304.	35266.	0.88	1436.
1977-049A	SIGNE-3	FRANCE	06/17/77	06/19/77	GEOCENTRIC	522.54	457.33	50.67	94.395
1977-050A	COSMOS 918	U.S.S.R.	06/17/77	06/18/77	GEOCENTRIC	265.	131.	65.1	88.4
1977-051A	COSMOS 919	U.S.S.R.	06/18/77	06/19/77	GEOCENTRIC	847.	278.	71.	95.6
1977-052A	COSMOS 920	U.S.S.R.	06/22/77	06/23/77	GEOCENTRIC	364.	180.	65.	89.7
1977-053A	1977-053A	UNITED STATES	06/23/77	06/27/77	GEOCENTRIC	20887.	19545.	63.28	705.18
1977-054A	MOLNIYA 1 (77-054A)	U.S.S.R.	06/24/77	06/25/77	GEOCENTRIC	39016.	480.	62.9	700.
1977-055A	COSMOS 921	U.S.S.R.	06/24/77	06/25/77	GEOCENTRIC	711.	644.	76.	98.
1977-056A	1977-056A	UNITED STATES	06/27/77	06/28/77	GEOCENTRIC	239.	155.	97.02	88.47
1977-057A	METEOR (77-057A)	U.S.S.R.	06/29/77	06/30/77	GEOCENTRIC	685.	602.	98.	97.5
1977-058A	COSMOS 922	U.S.S.R.	06/30/77	07/01/77	GEOCENTRIC	323.	212.	62.8	89.5
1977-059A	COSMOS 923	U.S.S.R.	07/01/77	07/02/77	GEOCENTRIC	842.	804.	74.	101.4
1977-060A	COSMOS 924	U.S.S.R.	07/05/77	07/06/77	GEOCENTRIC	560.	514.	74.	95.3
1977-061A	COSMOS 925	U.S.S.R.	07/07/77	07/08/77	GEOCENTRIC	645.	622.	81.2	97.2
1977-062A	COSMOS 926	U.S.S.R.	07/08/77	07/09/77	GEOCENTRIC	1025.	997.	82.9	105.1
1977-063A	COSMOS 927	U.S.S.R.	07/12/77	07/13/77	GEOCENTRIC	403.	178.	72.9	90.
1977-064A	COSMOS 928	U.S.S.R.	07/13/77	07/14/77	GEOCENTRIC	1022.	977.	83.	104.8
1977-065A	GMS	JAPAN	07/14/77	07/15/77	GEOCENTRIC	36745.	187.	27.4	649.7
1977-066A	COSMOS 929	U.S.S.R.	07/17/77	07/18/77	GEOCENTRIC	298.	221.	51.6	89.4
1977-067A	COSMOS 930	U.S.S.R.	07/19/77	07/20/77	GEOCENTRIC	528.	482.	74.	94.6
1977-068A	COSMOS 931	U.S.S.R.	07/20/77	07/21/77	GEOCENTRIC	40100.	600.	62.8	726.
1977-069A	COSMOS 932	U.S.S.R.	07/20/77	07/21/77	GEOCENTRIC	342.	180.	65.	89.5
1977-070A	COSMOS 933	U.S.S.R.	07/22/77	07/23/77	GEOCENTRIC	418.	385.	65.8	92.5
1977-071A	RADUGA (77-071A)	U.S.S.R.	07/24/77	07/25/77	GEOCENTRIC	36000.	36000.	0.4	1477.
1977-072A	COSMOS 934	U.S.S.R.	07/27/77	07/28/77	GEOCENTRIC	264.	238.	62.8	89.4
1977-073A	COSMOS 935	U.S.S.R.	07/29/77	07/29/77	GEOCENTRIC	276.	225.	81.3	89.2
1977-074A	COSMOS 936	U.S.S.R.	08/03/77	08/04/77	GEOCENTRIC	419.	224.	62.8	90.7
1977-075A	HEAD 1	UNITED STATES	08/12/77	08/13/77	GEOCENTRIC	452.	440.	22.8	93.5
1977-076A	VOYAGER 2	UNITED STATES	08/20/77	08/20/77	JUPITER FLYBY				
1977-077A	COSMOS 937	U.S.S.R.	08/24/77	08/25/77	GEOCENTRIC	457.	438.	85.	93.3
1977-078A	COSMOS 938	U.S.S.R.	08/24/77	08/25/77	GEOCENTRIC	365.	189.	62.8	89.7
1977-079A	COSMOS 939	U.S.S.R.	08/24/77	08/25/77	GEOCENTRIC	1518.	1448.	74.	115.2
1977-079B	COSMOS 940	U.S.S.R.	08/24/77	08/25/77	GEOCENTRIC	1518.	1448.	74.	115.2
1977-079C	COSMOS 941	U.S.S.R.	08/24/77	08/25/77	GEOCENTRIC	1518.	1448.	74.	115.2
1977-079D	COSMOS 942	U.S.S.R.	08/24/77	08/25/77	GEOCENTRIC	1518.	1448.	74.	115.2
1977-079E	COSMOS 943	U.S.S.R.	08/24/77	08/25/77	GEOCENTRIC	1518.	1448.	74.	115.2
1977-079F	COSMOS 944	U.S.S.R.	08/24/77	08/25/77	GEOCENTRIC	1518.	1448.	74.	115.2
1977-079G	COSMOS 945	U.S.S.R.	08/24/77	08/25/77	GEOCENTRIC	1518.	1448.	74.	115.2
1977-079H	COSMOS 946	U.S.S.R.	08/24/77	08/25/77	GEOCENTRIC	1518.	1448.	74.	115.2
1977-080A	SIRIO-A	ITALY	08/25/77	08/26/77	GEOCENTRIC	37229.	236.	23.0	660.0

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OF POOR QUALITY

COSPAR DESIGNATION	SPACECRAFT NAME	COUNTRY	LAUNCH DATE	EPOCH DATE	ORBIT TYPE	APOAPSIS	PERIAPSIS	INCLINATION	PERIOD
1977-081A	COSMOS 947	U.S.S.R.	08/27/77	08/28/77	GEOCENTRIC	346.	211.	72.8	89.7
1977-082A	MOLNIYA 1 (77-082A)	U.S.S.R.	08/30/77	08/31/77	GEOCENTRIC	40800.	480.	62.8	736.
1977-083A	COSMOS 948	U.S.S.R.	09/02/77	09/02/77	GEOCENTRIC	265.	217.	81.4	89.
1977-084A	VOYAGER 1	UNITED STATES	09/05/77	09/05/77	JUPITER FLYBY				
1977-085A	COSMOS 949	U.S.S.R.	09/06/77	09/07/77	GEOCENTRIC	348.	184.	62.8	89.5
1977-086A	COSMOS 950	U.S.S.R.	09/13/77	09/14/77	GEOCENTRIC	305.	213.	62.8	89.4
1977-087A	COSMOS 951	U.S.S.R.	09/13/77	09/14/77	GEOCENTRIC	1029.	989.	83.	105.
1977-088A	COSMOS 952	U.S.S.R.	09/16/77	09/17/77	GEOCENTRIC	278.	258.	65.	89.7
1977-089A	COSMOS 953	U.S.S.R.	09/16/77	09/17/77	GEOCENTRIC	354.	188.	62.8	89.6
1977-090A	COSMOS 954	U.S.S.R.	09/18/77	09/19/77	GEOCENTRIC	277.	259.	65.	89.6
1977-091A	COSMOS 955	U.S.S.R.	09/20/77	09/21/77	GEOCENTRIC	664.	631.	81.2	97.5
1977-092A	EKRAN	U.S.S.R.	09/20/77	09/21/77	GEOCENTRIC	35560.	35560.	0.4	1425.
1977-093A	PROGNOZ 6	U.S.S.R.	09/22/77	09/23/77	GEOCENTRIC	197900.	498.	65.	3888.
1977-094A	1977-094A	UNITED STATES	09/23/77	09/26/77	GEOCENTRIC	352.	125.	96.49	89.3
1977-095A	COSMOS 956	U.S.S.R.	09/23/77	09/24/77	GEOCENTRIC	865.	358.	75.8	96.9
1977-096A	INTERCOSMOS 17	U.S.S.R.	09/24/77	09/25/77	GEOCENTRIC	519.	468.	81.	94.4
1977-097A	SALYUT 6	U.S.S.R.	09/29/77	09/30/77	GEOCENTRIC	275.	219.	51.6	85.1
1977-098A	COSMOS 957	U.S.S.R.	09/30/77	10/01/77	GEOCENTRIC	361.	171.	65.	89.8
1977-099A	SOYUZ 25	U.S.S.R.	10/09/77	10/10/77	GEOCENTRIC	318.	280.	51.6	90.2
1977-100A	COSMOS 958	U.S.S.R.	10/11/77	10/12/77	GEOCENTRIC	354.	265.	62.8	90.5
1977-101A	COSMOS 959	U.S.S.R.	10/21/77	10/22/77	GEOCENTRIC	850.	146.	65.84	94.57
1977-102A	ISEE 1	UNITED STATES	10/22/77	10/23/77	GEOCENTRIC	138120.	281.	28.7	3446.4
1977-102B	ISEE 2	ESA	10/22/77	10/23/77	GEOCENTRIC	138317.	280.	28.7	3454.1
		UNITED STATES							
1977-103A	COSMOS 960	U.S.S.R.	10/25/77	10/28/77	GEOCENTRIC	546.	502.	74.04	95.13
1977-104A	COSMOS 961	U.S.S.R.	10/26/77	10/27/77	GEOCENTRIC	302.	125.	66.	88.5
1977-105A	MOLNIYA 3	U.S.S.R.	10/28/77	10/29/77	GEOCENTRIC	40764.	478.	62.8	735.
1977-106A	NAVY TRANSAT	UNITED STATES	10/28/77	10/29/77	GEOCENTRIC	1109.	1064.	89.9	107.
1977-107A	COSMOS 962	U.S.S.R.	10/28/77	10/29/77	GEOCENTRIC	1022.	983.	83.	104.9
1977-108A	METEOSAT 1	ESA	11/23/77	11/24/77	GEOCENTRIC	35692.	34913.	0.7	1411.5
		UNITED STATES-R							
1977-109A	COSMOS 963	U.S.S.R.	11/24/77	11/25/77	GEOCENTRIC	1220.	1190.	82.9	109.3
1977-110A	COSMOS 964	U.S.S.R.	12/04/77	12/05/77	GEOCENTRIC	391.	180.	72.9	89.9
1977-111A	COSMOS 965	U.S.S.R.	12/08/77	12/09/77	GEOCENTRIC	520.	469.	74.	94.4
1977-112A	1977-112A	UNITED STATES	12/08/77	12/19/77	GEOCENTRIC	1169.	1054.	63.43	107.5
1977-113A	SOYUZ 26	U.S.S.R.	12/10/77	12/11/77	GEOCENTRIC	329.	267.	51.6	90.2
1977-114A	1977-114A	UNITED STATES	12/11/77	12/12/77	GEOCENTRIC	41002.	191.	28.2	733.2
1977-115A	COSMOS 966	U.S.S.R.	12/12/77	12/13/77	GEOCENTRIC	316.	210.	65.	89.5
1977-116A	COSMOS 967	U.S.S.R.	12/13/77	12/14/77	GEOCENTRIC	1013.	973.	66.	105.
1977-117A	MEYER 2	U.S.S.R.	12/14/77	12/15/77	GEOCENTRIC	906.	872.	81.2	102.5
1977-118A	JAPANESE COMMUN. SAT.	JAPAN	12/15/77	12/16/77	GEOCENTRIC	35749.7	169.051	28.815	629.76
		UNITED STATES-R							
1977-119A	COSMOS 968	U.S.S.R.	12/16/77	12/17/77	GEOCENTRIC	822.	783.	74.	101.
1977-120A	COSMOS 969	U.S.S.R.	12/20/77	12/21/77	GEOCENTRIC	340.	188.	62.8	89.5
1977-121A	COSMOS 970	U.S.S.R.	12/21/77	12/21/77	GEOCENTRIC	861.	144.	65.16	94.67
1977-122A	COSMOS 971	U.S.S.R.	12/23/77	12/24/77	GEOCENTRIC	1021.	993.	83.	105.
1977-123A	COSMOS 972	U.S.S.R.	12/27/77	12/28/77	GEOCENTRIC	1189.	722.	75.8	104.
1977-124A	COSMOS 973	U.S.S.R.	12/27/77	12/28/77	GEOCENTRIC	348.	210.	71.4	89.8

APPENDIXES

Appendix 1 - World Data Centers

World Data Centers conduct international exchange of geophysical observations in accordance with the principles set forth by the International Council of Scientific Unions (ICSU). They were established in 1957 by the International IGY Committee (CSAGI) as part of the fundamental international planning for the International Geophysical Year program to collect data from the numerous and widespread IGY observational programs and to make such data readily accessible to interested scientists and scholars for an indefinite period of time. WDC-A was established in the U.S.A.; WDC-B, in the U.S.S.R.; and WDC-C, in Western Europe, Australia, and Japan. This new system for exchanging geophysical data was found to be very effective, and the operations of the World Data Centers were extended by ICSU on a continuing basis to other international programs; the WDC's were under the supervision of the Comité International de Géophysique (CIG) for the period 1960 to 1967 and are now supervised by the ICSU Panel on World Data Centers.

The current plans for continued international exchange of data through the World Data Centers are set forth in the Third Consolidated Guide to International Data Exchange through the World Data Centres, issued by the ICSU Panel on World Data Centres, December 1973. These plans are broadly similar to those adopted under ICSU auspices for the IGY and IQSY.

Functions and Responsibilities of WDC's

The World Data Centers collect data and publications for the following disciplines: Glaciology, Meteorology, Oceanography, Rockets and Satellites, Solar-Terrestrial Physics disciplines (Solar and Interplanetary Phenomena, Ionospheric Phenomena, Flare Associated Events, Geomagnetic Phenomena, Aurora, Cosmic Rays, Airglow), and Solid-Earth Geophysics disciplines (Seismology, Tsunamis, Marine Geology and Geophysics, Gravimetry, Earth Tides, Recent Movements of the Earth's Crust, Rotation of the Earth, Magnetic Measurements, Paleomagnetism and Archeomagnetism, Volcanology, Geothermics). In planning for the various scientific programs, decisions on data exchange were made by the scientific community through the international scientific unions and committees. In each discipline the specialists themselves determined the nature and form of data exchange, based on their needs as research workers. Thus the type and amount of data in the WDC's differ from discipline to discipline.

The objects of establishing several World Data Centers for collecting observational data were: (1) to insure against loss of data by the catastrophic destruction of a single center; (2) to meet the geographical convenience of, and provide easy communication for, workers in different parts

of the world. Each WDC is responsible for: (1) endeavoring to collect a complete set of data in the field or discipline for which it is responsible; (2) safekeeping of the incoming data; (3) correct copying and reproduction of data, maintaining adequate standards of clarity and durability; (4) supplying copies to other WDC's of data not received directly; (5) preparation of catalogues of all data in its charge; (6) making data in the WDC's available to the scientific community. The WDC's conduct their operation at no expense to ICSU or to the ICSU family of unions and committees.

World Data Center A

World Data Center A, for which the National Academy of Sciences through the Geophysics Research Board (GRB) and its Committee on Data Interchange and Data Centers has overall responsibility, consists of the WDC-A Coordination Office and seven subcenters at scientific institutions in various parts of the United States. The GRB periodically reviews the activities of WDC-A and has conducted several studies on the effectiveness of the WDC system. As a result of these reviews and studies some of the subcenters of WDC-A have been relocated so that they could more effectively serve the scientific community. The addresses of the WDC-A subcenters and Coordination Office are given in Appendix 2. There are very close connections between WDC-A for Solar-Terrestrial Physics and WDC-A for Rockets and Satellites, which exchange solar-terrestrial geophysical data; if it is more convenient, data may be sent to one WDC-A subcenter through the other one.

The data received by WDC-A have been made available to the scientific community in various ways: (1) reports containing data and results of experiments have been compiled, published, and widely distributed; (2) synoptic type data on cards, microfilm, or tables are available for use at the subcenters and for loan to scientists; and (3) copies of data and reports are provided upon request.

Appendix 2 - WDC-A Coordination Office and Subcenters

WORLD DATA CENTER A
National Academy of Sciences
2101 Constitution Avenue, N.W.
Washington, D.C. 20418
U.S.A.

World Data Center A consists of the Coordination Office
and seven Subcenters:

World Data Center A
Coordination Office
National Academy of Sciences
2101 Constitution Avenue, N.W.
Washington, D.C. 20418
U.S.A.
[Telephone: (202) 389-6478]

Glaciology:

World Data Center A: Glaciology
[Snow and Ice]
Inst. of Arctic & Alpine Research
University of Colorado
Boulder, Colorado 80309
U.S.A.
[Telephone: (303) 492-5171]

Meteorology (and Nuclear Radiation):

World Data Center A: Meteorology
National Climatic Center
Federal Building
Asheville, North Carolina 28801
U.S.A.
[Telephone: (704) 258-2850]

Oceanography:

World Data Center A: Oceanography
National Oceanic and Atmospheric
Administration
Washington, D.C. 20235
U.S.A.
[Telephone: (202) 634-7249]

Rockets and Satellites:

World Data Center A for Rockets and
Satellites
Goddard Space Flight Center
Code 601
Greenbelt, Maryland 20771
U.S.A.
[Telephone: (301) 982-6695]

Rotation of the Earth:

World Data Center A: Rotation
of the Earth
U.S. Naval Observatory
Washington, D.C. 20390
U.S.A.
[Telephone: (202) 254-4023]

Solar-Terrestrial Physics (Solar and
Interplanetary Phenomena, Ionospheric
Phenomena, Flare-Associated Events,
Geomagnetic Variations, Magnetospheric
and Interplanetary Magnetic Phenomena,
Aurora, Cosmic Rays, Airglow):

World Data Center A
for Solar-Terrestrial Physics
Environmental Data Service, NOAA
Boulder, Colorado 80303
U.S.A.
[Telephone: (303) 499-1000, Ext. 6467]

Solid-Earth Geophysics (Seismology,
Tsunamis, Gravimetry, Earth Tides,
Recent Movements of the Earth's
Crust, Magnetic Measurements,
Paleomagnetism and Archeomagnetism,
Volcanology, Geothermics):

World Data Center A
for Solid-Earth Geophysics
Environmental Data Service, NOAA
Boulder, Colorado 80303
U.S.A.
[Telephone: (303) 499-1000, Ext. 6521]

NOTES:

1. Communications regarding data interchange matters in general and World Data Center A as a whole should be addressed to: World Data Center A, Coordination Office (see address above).
2. Inquiries and communications concerning data in specific disciplines should be addressed to the appropriate subcenter listed above.