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

80-08

Launch Summary
for
1979

August 1980

NSSDC/WDC-A-R&S 80-08

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1979

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August 1980

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

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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*, 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. A fourth revision was published in June 1979.

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 data that may be related to researchers' needs.

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 pruposes 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
(301) 344-6695

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

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(301) 344-6695

Organization

This publication is a summary of launchings identified by NSSDC/WDC-A-R&S from launching reports received for the period January 1, 1979, through December 31, 1979. 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 welcomes comments regarding errors in this report. Recommendations directed to the appropriate address in reference to the overall contents and organization of this report would also be appreciated.

SOUNDING ROCKETS

Launch Listings

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, 1979, and December 31, 1979. 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 aboard 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 experiments 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. Additional codes are available for instruments not covered in the list. NSSDC/WDC-A-R&S will assign these as needed.

Some rocket launches are not reported 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 previously, 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 LAT	GEOGRAPHIC E LONG	GEOMAGNETIC LAT	GEOMAGNETIC E LONG	ADD FOR UNIVERSAL TIME
ABERPORTH	WALES	52.09	359.67	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	113.04	-1.0 HR.
ANTIGUA	WEST INDIES	17.15	298.22	28.55	7.05	+4.0 HR.
ARECIBO	PUERTO RICO	18.50	293.17	29.99	2.58	+4.0 HR.
ARENOSILLO	SEE EL ARENOSILLO					
ASCENSION ISLAND	EQUATORIAL ATLANTIC	-7.98	345.48	-1.24	55.83	+0.0
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	5.52	+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	113.46	-35.99	182.70	-8.0 HR.
CASSINO	BRAZIL	-32.28	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 HAMMAGHIR					
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	228.27	-9.0 HR.
EAST GUODDY	CANADA/NEWFOUNDLAND	44.90	296.58	56.33	7.16	+4.0 HR.
EASTERN TEST RANGE	SEE CAPE CANAVERAL					
EGLIN A'R FORCE BASE	USA/FLORIDA	30.38	273.38	41.26	339.58	+5.0 HR.
EL ARENOSILLO	SPAIN	37.10	353.27	41.69	70.98	-1.0 HR.
ESRANGE	SEE KIRUNA					
FAIRBANKS	USA/ALASKA	65.00	212.48	64.79	266.48	+10.0 HR.
FORT CHURCHILL	CANADA/MANITOBA	58.73	266.10	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	345.11	+5.0 HR.
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	311.24	+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
HEISS ISLAND	FRANZ JOSEF LAND	80.62	58.05	71.31	156.86	-3.0 HR.
HOLLOMAN AFB	SEE WHITE SANDS					
HUELVA	SEE EL ARENOSILLO					
ILE DU LEVANT	FRANCE	43.05	36.47	46.87	86.48	+0.0
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	125.84	+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	264.78	+11.0 HR.
KERGUELEN ISLAND	INDIAN OCEAN	-48.83	70.00	-56.79	127.95	-5.0 HR.
KEWEENAW	USA/MICHIGAN	47.43	272.38	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	36.27	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					
KRENKEL' (SHIP)	VARIOUS OCEANS AND SEAS					
KRONOGARD	SWEDEN	56.22	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	179.69	-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					
MCMURDO	ANTARCTICA	-77.50	165.00	-79.13	291.78	-11.0 HR.
MICHIKAWA	SEE AKITA					
MOLODEZHNAYA	ANTARCTICA	-67.67	45.87	-69.76	85.56	-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
NOVEKOV (SHIP)	VARIOUS OCEANS AND SEAS					
OMACHI	JAPAN	40.70	141.73	30.60	206.75	-9.0 HR.
OSTROV KHEYSA	SEE HEISS ISLAND					
PACIFIC MISSLE RANGE	SEE POINT ARGUELLO					
PERDASDEFOGU	SEE SARDINIA					
PLESETSK	U.S.S.R.	65.70	40.35	59.99	129.08	+4.0 HR.
PLYMOUTH ROCK (SHIP)	VARIOUS OCEANS AND SEAS					

Table 1. List of Launch Sites (concluded)

SITE NAME	SITE LOCATION	GEOGRAPHIC LAT	GEOGRAPHIC E LONG	GEOMAGNETIC LAT	GEOMAGNETIC E LONG	ADD FOR UNIVERSAL TIME
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
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	58.65	304.96	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	5.84	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	88.35	1.57	+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					
UCHINOURA	SEE KAGOSHIMA					
USHAKOV (SHIP)	VARIOUS OCEANS AND SEAS					
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.
WOOMERA	AUSTRALIA/SOUTHERN AUSTRALIA	-31.07	136.52	-42.18	209.55	-9.5 HR.
YUMA	USA/ARIZONA	32.87	245.68	40.51	308.27	+7.0 HR.

Table 2. Experiment Discipline Codes

1. Aurora and Airglow
   - 1A atmospheric radiations
   - 1B auroral emissions
   - 1C airglow emissions
   - 1D airglow composition
   - 1X subdiscipline unknown

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

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

4. Energetic Particles
   - 4A galactic or solar cosmic rays
   - 4B precipitating particles
   - 4C trapped radiation
   - 4X subdiscipline unknown

5. Magnetic and Electric Fields
   - 5A electric fields
   - 5B magnetic fields
   - 5C other
   - 5X subdiscipline unknown

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

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

8. Planetology
   - 8A micrometeorites
   - 8B zodiacal light or gegenschein
   - 8C gravity
   - 8D terrain photographs
   - 8X subdiscipline unknown

9. Biology
   - 9X subdiscipline unknown

0. Rocket/Satellite Test and Other
   - 0A performance
   - 0B communication systems
   - 0C experiment test/development
   - 0D engineering experiments
   - 0E other
   - 0X subdiscipline unknown

Table 3. Instrument Codes

AF	accelerometer
AK	air sample
BD	antenna
CR	camera
CRKE	image tubes (TV)
CRQH	photography
CX	chaff, needles, tracked parachute
DC	chemical releases
DCLA	ion cloud
DCOM	neutral cloud
DCYQ	vapor
GB	dust
GI	electric field meter (electrometer)
GY	energy deposition
GYKZ	ion chamber
GYPC	nuclear emulsions
HG	exobiology (extraterrestrial life)
HGCF	biological sample
HP	falling sphere
JE	gravity
JH	grenade
KD	hygrometer
LD	ion trap (probe or retarding potential analyzer)
LDBI	cold cathode gage
LDHQ	Faraday cup (planar trap)
LDIY	capacitance probe
LDIZ	Gerdien condenser
LDKF	impedance probe
LDLU	Langmuir probe
LDTP	resonance probe
LDVY	spherical traps
LDWU	suprathermal ion detector
LG	ionization gauge
LGAS	alphatron
LGBY	Bayard-Alpert
LGPH	omegatron
LGTF	redhead (magnetron)
LI	ionosondes (pulsed transmitter, receiver)
LIHU	fixed frequency
LIOG	multichannel
LIWY	swept frequency
MT	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
OHCW	Cerenkov
OHCZ	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 (Massenfilter)
PXST	radio frequency (Bennett tube)
PXYV	velocity filter (time of flight)
PXZU	chemiluminescence
QK	photon spectrometer (spectrograph)
QKCR	Bragg
QKKQ	interferometer (grating spectrometer)
QKPR	optical monochromator
QKSF	proportional
QKUH	scintillator
QO	Pitot tube
RW	pressure
SE	propagation
SEBZ	beacon
SESN	radar
SEZA	vlf/elf emissions
SW	radiometer
SWCN	bolometer
SWHU	fixed frequency
SWOG	multichannel
SWOZ	nonscanning
SWQI	photometer
SWQJ	photomultiplier
SWRO	polarimeter
SWUE	scanning
SWUV	single frequency
SWWY	swept frequency
UT	single element counter
UTCW	Cerenkov
UTCZ	channeltron (electron multiplier)
UTIQ	Geiger tube
UTOR	neutron monitor
UTPC	nuclear emulsions
UTQJ	photomultiplier
UTSF	proportional
UTUH	scintillator
UTVP	solid-state detector
XG	telescope
XGBD	antenna
XP	thermometer
XPCA	bead thermistor
ZZ	unknown instrument or instruments

Table 3. Instrument Codes

AF	accelerometer
AK	air sample
BD	antenna
CR	camera
CRKE	image tubes (TV)
CRQH	photography
CX	chaff, needles, tracked parachute
DC	chemical releases
DCLA	ion cloud
DCOR	neutral cloud
DCYQ	vapor
GB	dust
GI	electric field meter (electrometer)
GY	energy deposition
GYKZ	ion chamber
GYPC	nuclear emulsions
HG	exobiology (extraterrestrial life)
HGCF	biological sample
HP	falling sphere
JE	gravity
JH	grenade
KQ	hygrometer
LD	ion trap (probe or retarding potential analyzer)
LDDI	cold cathode gage
LDHQ	Faraday cup (planar trap)
LDIY	capacitance probe
LDIZ	Gerdien condenser
LDKF	impedance probe
LDLU	Langmuir probe
LDTP	resonance probe
LDVY	spherical traps
LDWU	suprathermal ion detector
LG	ionization gauge
LGAS	alphatron
LGBY	Bayard-Alpert
LGPH	omegatron
LGTF	redhead (magnetron)
LI	ionosondes (pulsed transmitter, receiver)
LIHU	fixed frequency
LIOG	multichannel
LIWY	swept frequency
MT	magnetometer
MTBD	antenna
MTHZ	fluxgate
MTSM	proton precession
MTUI	search coil
MTYQ	vapor
MP	meteorological rocketsonde
MR	micrometeorites
MX	other instrument or instruments
OH	multielement counter
OHCW	Cerenkov
OHCZ	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 (massenfilter)
PXST	radio frequency (Bennett tube)
PXYV	velocity filter (time of flight)
PXZU	chemiluminescence
QK	photon spectrometer (spectrograph)
QKCR	Bragg
QKKQ	interferometer (grating spectrometer)
QKPR	optical monochromator
QKSF	proportional
QKUH	scintillator
QQ	Pitot tube
QW	pressure
SE	propagation
SEBZ	beacon
SESN	radar
SEZA	vlf/elf emissions
SW	radiometer
SWCH	bolometer
SWHU	fixed frequency
SWOG	multichannel
SWOZ	nonscanning
SWQI	photometer
SWQJ	photomultiplier
SWRO	polarimeter
SWUE	scanning
SWUV	single frequency
SWWY	swept frequency
UT	single element counter
UTCW	Cerenkov
UTCZ	channeltron (electron multiplier)
UTIQ	Geiger tube
UTOR	neutron monitor
UTPC	nuclear emulsions
UTQJ	photomultiplier
UTSF	proportional
UTUH	scintillator
UTVP	solid-state detector
XG	telescope
XGBD	antenna
XP	thermometer
XPCA	bead thermistor
ZZ	unknown instrument or instruments

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: United States

REPORT DATE: YEAR 19 79 MONTH 01 DAY 04

AGENCY ROCKET IDENTIFICATION: Flight 218 T1-9630

LAUNCH SITE COUNTRY: United States

PROJECT NAME OR NUMBER: Field Measurements Support Office

LAUNCH SITE (SHIP) NAME: Wallops Island, Virginia

ROCKET TYPE: Super Loki

LAUNCH SITE LATITUDE: 37 ° 51 ' " ☒ NORTH ☐ SOUTH

OTHER ROCKET IDENTIFICATION: Optical Ozonesonde

LAUNCH SITE LONGITUDE: 75 ° 29 ' " ☐ EAST ☒ WEST

UT LAUNCH DATE AND TIME: YEAR 19 78 MONTH 12 DAY 20 HOUR 15 MINUTES 42

LOCAL ZONE LAUNCH TIME: DAY 20 HOUR 10 MINUTES 42

ROCKET VEHICLE

PROJECT SCIENTIST	AFFILIATION	PERFORMANCE		PEAK ALTITUDE	
				KM	STATUTE MILES
Mr. David U. Wright, Jr.	NASA/GSFC Code 912.0	☒ SUCCESS ☐ PARTIAL ☐ FAILURE		65.6	40.8

EXPERIMENTS

NUMBER	EXPERIMENTER	EXPERIMENTER AFFILIATION		DISCIPLINE*	INSTRUMENT OR OBSERVING TECHNIQUE*
1	Mr. David U. Wright, Jr.	NASA/GSFC Code 912.0	☒ SUCCESS ☐ PARTIAL ☐ FAILURE	2G	OOAC
			☐ SUCCESS ☐ PARTIAL ☐ FAILURE		
			☐ SUCCESS ☐ PARTIAL ☐ FAILURE		
			☐ SUCCESS ☐ PARTIAL ☐ FAILURE		
			☐ SUCCESS ☐ PARTIAL ☐ FAILURE		

CHECK (✓) IF REQUIRED FOR LAUNCH

☐ AIRGLOW/AURORA ☐ NIGHT/DAY ☐ STRATWARM
☐ ECLIPSE ☐ NOCTILUCENT CLOUD ☐ METEOR SHOWER
☐ DAWN/DUSK ☐ SUN/MAG QUIET ☐ OTHER _____
☐ SPORADIC E ☐ ARTIFICIAL EVENT _____
☐ SPREAD F ☐ SOLAR FLARE
☐ SID, PCA, OR AZA ☒ Nimbus 7 SATELLITE OVERFLY
☐ MAGNETIC STORM ☐ ACTIVE SUN

*SEE REVERSE SIDE FOR CODES

PREPARED BY G. Foster
AGENCY NASA/WFC
FTS 928-5240

REMARKS/RESULTS: This was a monthly launch for stratospheric ozone climatology and to support a Nimbus 7 overpass. A good rocket ozone profile was obtained. This flight was supported by a Super Loki Datasonde, a balloon-borne ECC ozonesonde and Dobson Spectrophotometer observations.

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	ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
78/06/14	1433	M-100B	INDIA U.S.S.R.	THUMBA	2G	KD	78	CENTRAL AEROLOGICAL OBS
*78/06/22	1412	M-100B	INDIA U.S.S.R.	THUMBA	2G	KD	84	CENTRAL AEROLOGICAL OBS
78/07/05	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	76	CENTRAL AEROLOGICAL OBS
78/07/05	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
78/07/05	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
78/07/05	1600	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	80	CENTRAL AEROLOGICAL OBS
78/07/07	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
78/07/07	1800	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/07/10	1600	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/07/12	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	---	CENTRAL AEROLOGICAL OBS
78/07/12	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
78/07/12	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	93	CENTRAL AEROLOGICAL OBS
*78/07/12	1407	M-100B	INDIA U.S.S.R.	THUMBA	2G	KD	---	CENTRAL AEROLOGICAL OBS
78/07/12	1600	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
78/07/13	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/07/14	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
78/07/15	1400	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/07/19	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	81	CENTRAL AEROLOGICAL OBS
78/07/19	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
78/07/19	1434	M-100B	INDIA U.S.S.R	THUMBA	2G	KD	82	CENTRAL AEROLOGICAL OBS
78/07/19	1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	82	CENTRAL AEROLOGICAL OBS
78/07/19	1600	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	76	CENTRAL AEROLOGICAL OBS
78/07/21	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
78/07/26	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	82	CENTRAL AEROLOGICAL OBS
78/07/26	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
78/07/26	1600	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
78/07/28	1500	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (36 00N 36 00W)	2J	NP	59	CENTRAL AEROLOGICAL OBS
78/07/28	1600	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (36 00N 36 00W)	2J	NP	58	CENTRAL AEROLOGICAL OBS
78/07/30	1500	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (36 00N 36 00W)	2J	NP	59	CENTRAL AEROLOGICAL OBS
78/07/30	1600	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (36 00N 46 00W)	2J	NP	57	CENTRAL AEROLOGICAL OBS
78/08/02	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/08/02	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
78/08/02	1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/08/02	1600	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
78/08/02	1800	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (36 00N 64 00W)	2J	NP	58	CENTRAL AEROLOGICAL OBS
78/08/04	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	83	CENTRAL AEROLOGICAL OBS
78/08/09	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
78/08/09	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/08/09	1400	M-100B	INDIA U.S.S.R.	THUMBA	2G	KD	83	CENTRAL AEROLOGICAL OBS
78/08/09	1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	83	CENTRAL AEROLOGICAL OBS
78/08/09	1600	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
78/08/09	1900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
78/08/10	1420	M-100B	U.S.S.R.	VOLGOGRAD	2A 2C 3C	LDLU XP	---	PAKHOMOV,S.V.
78/08/10	1430	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	83	CENTRAL AEROLOGICAL OBS
78/08/11	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	83	CENTRAL AEROLOGICAL OBS
78/08/14	1420	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	91	CENTRAL AEROLOGICAL OBS
78/08/14	1420	M-100B	U.S.S.R.	VOLGOGRAD	2A 2C 3C	LDLU XP	---	PAKHOMOV,S.V.
78/08/14	1530	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
78/08/16	1300	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	8.	CENTRAL AEROLOGICAL OBS
78/08/16	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	74	CENTRAL AEROLOGICAL OBS
78/08/16	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/08/16	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	83	CENTRAL AEROLOGICAL OBS
78/08/16	1630	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	94	CENTRAL AEROLOGICAL OBS
78/08/16	1930	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
78/08/16	2230	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	91	CENTRAL AEROLOGICAL OBS
78/08/18	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/08/18	1530	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
78/08/19	1700	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
78/08/23	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/08/23	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	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	ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
78/08/23	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	78	CENTRAL AEROLOGICAL OBS
78/08/23	1412	M-100B	INDIA U.S.S.R.	THUMBA	2G	ED	85	CENTRAL AEROLOGICAL OBS
78/08/23	1625	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/08/23	1700	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
78/08/24	0145	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	79	CENTRAL AEROLOGICAL OBS
78/08/25	1417	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	82	CENTRAL AEROLOGICAL OBS
78/08/28	1300	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/08/29	1606	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
78/08/30	0420	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	92	CENTRAL AEROLOGICAL OBS
78/08/30	0420	M-100B	U.S.S.R.	VOLGOGRAD	2A 2C 3C	LDLU XP	---	PAKHOMOV,S.V.
78/08/30	1300	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
78/08/30	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/08/30	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	82	CENTRAL AEROLOGICAL OBS
78/08/30	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	79	CENTRAL AEROLOGICAL OBS
78/09/01	0140	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/09/01	0200	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (53 00N 36 00W)	2J	NP	59	CENTRAL AEROLOGICAL OBS
78/09/01	1410	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/09/04	0430	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	89	CENTRAL AEROLOGICAL OBS
78/09/04	1800	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
78/09/05	0200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/09/05	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
78/09/06	0200	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (53 00N 35 00W)	2J	NP	57	CENTRAL AEROLOGICAL OBS
78/09/06	0420	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	91	CENTRAL AEROLOGICAL OBS
78/09/06	1417	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/09/06	1505	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	83	CENTRAL AEROLOGICAL OBS
78/09/06	1600	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
78/09/08	0300	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (53 00N 36 00W)	2J	NP	61	CENTRAL AEROLOGICAL OBS
78/09/09	1536	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	82	CENTRAL AEROLOGICAL OBS
78/09/12	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
78/09/13	0220	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	91	CENTRAL AEROLOGICAL OBS
78/09/13	0600	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (53 00N 35 00W)	2J	NP	60	CENTRAL AEROLOGICAL OBS
78/09/13	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	81	CENTRAL AEROLOGICAL OBS
78/09/13	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
78/09/15	0800	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (53 00N 35 00W)	2J	NP	60	CENTRAL AEROLOGICAL OBS
78/09/15	1630	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
78/09/15	1930	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
78/09/20	0800	MMR-06	U.S.S.R.	KREMKEL' (SHIP) (53 00N 36 00W)	2J	NP	59	CENTRAL AEROLOGICAL OBS
78/09/20	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
78/09/20	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
78/09/20	1607	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
78/09/21	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/09/22	0900	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (53 00N 35 00W)	2J	NP	60	CENTRAL AEROLOGICAL OBS
78/09/26	2132	M-100B	U.S.S.R.	VOLGOGRAD	9X	HGCF	---	LYSENKO
78/09/27	0900	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (52 00N 35 00W)	2J	NP	57	CENTRAL AEROLOGICAL OBS
78/09/27	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
78/09/27	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
78/09/27	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	82	CENTRAL AEROLOGICAL OBS
78/09/29	0800	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (52 00N 35 00W)	2J	NP	60	CENTRAL AEROLOGICAL OBS
78/10/04	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/10/04	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
78/10/04	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	85	CENTRAL AEROLOGICAL OBS
78/10/04	2125	M-100B	U.S.S.R.	VOLGOGRAD	9X	HGCF	---	LYSENKO
78/10/04	2317	M-100B	U.S.S.R.	VOLGOGRAD	2E	NR	84	CENTRAL AEROLOGICAL OBS
78/10/05	2000	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
78/10/11	1330	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	83	CENTRAL AEROLOGICAL OBS
78/10/11	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
78/10/11	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
78/10/11	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
78/10/18	0400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	92	CENTRAL AEROLOGICAL OBS
78/10/18	0500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
78/10/18	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	83	CENTRAL AEROLOGICAL OBS
78/10/18	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
78/10/18	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/10/18	1805	FLIGHT 210 TH1-9307	CANADA UNITED STATES	FORT CHURCHILL	2G	OOAC	53	WRIGHT,R.D.,JR.

DATE AND TIME OF LAUNCH (UT)		AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
78/08/23	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	76	CENTRAL AEROLOGICAL OBS
78/08/23	1412	M-100B	INDIA U.S.S.R.	THUMBA	2G	KD	85	CENTRAL AEROLOGICAL OBS
78/08/23	1625	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/08/23	1700	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
78/08/24	0145	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	79	CENTRAL AEROLOGICAL OBS
78/08/25	1417	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	82	CENTRAL AEROLOGICAL OBS
78/08/28	1300	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/08/29	1606	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
78/08/30	0420	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	92	CENTRAL AEROLOGICAL OBS
78/08/30	0420	M-100B	U.S.S.R.	VOLGOGRAD	2A 2C 3C	LDLU XP	---	PAKHOMOV&S.V.
78/08/30	1300	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	92	CENTRAL AEROLOGICAL OBS
78/08/30	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/08/30	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	82	CENTRAL AEROLOGICAL OBS
78/08/30	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	79	CENTRAL AEROLOGICAL OBS
78/09/01	0140	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/09/01	0200	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (53 00N 36 00W)	2J	NP	59	CENTRAL AEROLOGICAL OBS
78/09/01	1410	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/09/04	0430	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	89	CENTRAL AEROLOGICAL OBS
78/09/04	1800	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
78/09/05	0200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/09/05	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
78/09/06	0200	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (53 00N 36 00W)	2J	NP	57	CENTRAL AEROLOGICAL OBS
78/09/06	0420	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	91	CENTRAL AEROLOGICAL OBS
78/09/06	1417	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/09/06	1505	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	83	CENTRAL AEROLOGICAL OBS
78/09/06	1600	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
78/09/08	0300	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (53 00N 36 00W)	2J	NP	61	CENTRAL AEROLOGICAL OBS
78/09/08	1536	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	82	CENTRAL AEROLOGICAL OBS
78/09/12	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
78/09/13	0220	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	91	CENTRAL AEROLOGICAL OBS
78/09/13	0800	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (53 00N 35 00W)	2J	NP	60	CENTRAL AEROLOGICAL OBS
78/09/13	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	81	CENTRAL AEROLOGICAL OBS
78/09/13	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
78/09/15	0800	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (53 00N 35 00W)	2J	NP	60	CENTRAL AEROLOGICAL OBS
78/09/15	1630	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
78/09/15	1930	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
78/09/20	0800	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (53 00N 36 00W)	2J	NP	59	CENTRAL AEROLOGICAL OBS
78/09/20	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
78/09/20	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
78/09/20	1607	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
78/09/21	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/09/22	0900	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (53 00N 35 00W)	2J	NP	60	CENTRAL AEROLOGICAL OBS
78/09/26	2132	M-100B	U.S.S.R.	VOLGOGRAD	9X	HGCF	---	LYSENKO
78/09/27	0900	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (52 00N 35 00W)	2J	NP	57	CENTRAL AEROLOGICAL OBS
78/09/27	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	87	CENTRAL AEROLOGICAL OBS
78/09/27	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
78/09/27	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	82	CENTRAL AEROLOGICAL OBS
78/09/29	0800	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (52 00N 35 00W)	2J	NP	60	CENTRAL AEROLOGICAL OBS
78/10/04	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/10/04	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
78/10/04	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	85	CENTRAL AEROLOGICAL OBS
78/10/04	2125	M-100B	U.S.S.R.	VOLGOGRAD	9X	HGCF	---	LYSENKO
78/10/04	2317	M-100B	U.S.S.R.	VOLGOGRAD	2E	NR	84	CENTRAL AEROLOGICAL OBS
78/10/05	2000	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
78/10/11	1330	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	83	CENTRAL AEROLOGICAL OBS
78/10/11	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
78/10/11	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
78/10/11	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
78/10/18	0400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	92	CENTRAL AEROLOGICAL OBS
78/10/18	0500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
78/10/18	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	83	CENTRAL AEROLOGICAL OBS
78/10/18	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
78/10/18	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/10/18	1805	FLIGHT 210 TH1-9307	CANADA UNITED STATES	FORT CHURCHILL	2G	OOAC	53	WRIGHT&U.&JR.

DATE AND TIME OF LAUNCH	(UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
78/10/25	0130	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
78/10/25	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	83	CENTRAL AEROLOGICAL OBS
78/10/25	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	90	CENTRAL AEROLOGICAL OBS
78/10/26	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
78/11/01	0800	MMR-06	U.S.S.R.	MUSSON (SHIP) (53 00N 35 00W)	2J	NP	59	CENTRAL AEROLOGICAL OBS
78/11/01	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	82	CENTRAL AEROLOGICAL OBS
78/11/01	1427	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
78/11/01	1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	81	CENTRAL AEROLOGICAL OBS
78/11/01	1630	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
78/11/01	2000	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	83	CENTRAL AEROLOGICAL OBS
78/11/03	0700	MMR-06	U.S.S.R.	MUSSON (SHIP) (52 00N 35 00W)	2J	NP	59	CENTRAL AEROLOGICAL OBS
78/11/08	0700	MMR-06	U.S.S.R.	MUSSON (SHIP) (53 00N 35 00W)	2J	NP	58	CENTRAL AEROLOGICAL OBS
78/11/08	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/11/08	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	82	CENTRAL AEROLOGICAL OBS
78/11/08	1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
78/11/09	0400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	83	CENTRAL AEROLOGICAL OBS
78/11/10	0800	MMR-06	U.S.S.R.	MUSSON (SHIP) (53 00N 35 00W)	2J	NP	62	CENTRAL AEROLOGICAL OBS
*78/11/13	1711	FLIGHT 211 TH1-9618	CANADA UNITED STATES	FORT CHURCHILL	2G	OOAC	---	WRIGHT,D.U.,JR.
78/11/15	0400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
78/11/15	0800	MMR-06	U.S.S.R.	MUSSON (SHIP) (53 00N 35 00W)	2J	NP	63	CENTRAL AEROLOGICAL OBS
78/11/15	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
78/11/15	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
78/11/15	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	83	CENTRAL AEROLOGICAL OBS
78/11/17	0700	MMR-06	U.S.S.R.	MUSSON (SHIP) (53 00N 35 00W)	2J	NP	60	CENTRAL AEROLOGICAL OBS
78/11/19	1508	FLIGHT 212 TN1-9646	BRAZIL UNITED STATES	NATAL	2G	OOAC	74	WRIGHT,D.U.,JR.
78/11/19	1700	FLIGHT 213 TH1-9619	CANADA UNITED STATES	FORT CHURCHILL	2G	OOAC	75	WRIGHT,D.U.,JR.
78/11/22	0400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	72	CENTRAL AEROLOGICAL OBS
78/11/22	1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
78/11/22	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
78/11/22	1408	FLIGHT 214 TN1-9647	BRAZIL UNITED STATES	NATAL	2G	OOAC	73	WRIGHT,D.U.,JR.
78/11/22	1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
78/11/25	1510	FLIGHT 215 TN1-9648	BRAZIL UNITED STATES	NATAL	2G	OOAC	73	WRIGHT,D.U.,JR.
78/11/27	1855	FERDINAND 40 NASA 18.216	AUSTRIA NORWAY UNITED KINGDOM UNITED STATES	ANDOYA	0A 1B 2H 3C 3E 3X 4B 5A	BD GI LDHQ LDIY LDLU OHCZ OHVP SWOG SWQI SWUE	193	FRIEDRICH,M. GOUGH,P. HOLTET,J.A. JACOBSEN,T. MAEHLUM,B.N. MARTELLI,G.A.G. MASEIDE,K. MAYNARD,N.C. SMITH,P.N. SORAAS,F. THRANE,E.V. TROIM,J.
78/11/27	1855	FERDINAND 41 NASA 18.207	AUSTRIA NORWAY UNITED KINGDOM UNITED STATES	ANDOYA	0A 1B 1X 2H 3C 3E 4B 5A	BD GI LDIY LDLU OHCZ OHVP SWQI SWUE UTUH	202	AARSNES,K. EVANS,D.S. FRIEDRICH,M. GOUGH,P. HOLTET,J.A. JACOBSEN,T. MAEHLUM,B.N. MARTELLI,G.A.G. MASEIDE,K. MAYNARD,N.C. SMITH,P.N. SORAAS,F. STADSNES,J. TROIM,J.
78/11/28	1358	FLIGHT 216 TN1-9649	BRAZIL UNITED STATES	NATAL	2G	OOAC	73	WRIGHT,D.U.,JR.
78/11/29	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
78/11/29	1520	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
78/11/29	1613	FLIGHT 217 T 1-9319	UNITED STATES	WALLOPS ISLAND	2G	OOAC	74	WRIGHT,D.U.,JR.
78/11/29	1938	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
78/11/30	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	83	CENTRAL AEROLOGICAL OBS
78/12/06	0400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS
78/12/06	1200	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
78/12/06	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	81	CENTRAL AEROLOGICAL OBS
78/12/06	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	82	CENTRAL AEROLOGICAL OBS
78/12/13	0430	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
78/12/13	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	81	CENTRAL AEROLOGICAL OBS
78/12/13	1400	M-100	U.S.S.R.	MOLODEZHNAYA	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
*58/12/13	1440	M-100	U.S.S.R.	HEISS ISLAND	23	MP	84	CENTRAL AEROLOGICAL OBS
*58/12/15	0541	NASA 19.149GM TWI-9663	UNITED STATES	WHITE SANDS	26	OOZU	70	NILSENRATH,E.
*58/12/20	0400	M-100	U.S.S.R.	VOLGOGRAD	23	MP	85	CENTRAL AEROLOGICAL OBS
*58/12/20	1400	M-100	INDIA U.S.S.R.	THUMBA	23	MP	85	CENTRAL AEROLOGICAL OBS
*58/12/20	1400	M-100	U.S.S.R.	HEISS ISLAND	23	MP	87	CENTRAL AEROLOGICAL OBS
*58/12/20	1400	M-100	U.S.S.R.	MOLODEZHNAYA	23	MP	80	CENTRAL AEROLOGICAL OBS
*58/12/20	1542	FLIGHT 218 T 1-9630	UNITED STATES	WALLOPS ISLAND	26	OOAC	66	WRIGHT,D.U.,JR.
*58/12/20	1715	FLIGHT 219 TNI-9620	CANADA UNITED STATES	FORT CHURCHILL	26	OOAC	77	WRIGHT,D.U.,JR.
*58/12/27	0500	M-100	U.S.S.R.	VOLGOGRAD	23	MP	85	CENTRAL AEROLOGICAL OBS
*58/12/27	1400	M-100	INDIA U.S.S.R.	THUMBA	23	MP	87	CENTRAL AEROLOGICAL OBS
*58/12/27	1400	M-100	U.S.S.R.	HEISS ISLAND	23	MP	86	CENTRAL AEROLOGICAL OBS
*58/12/27	1400	M-100	U.S.S.R.	MOLODEZHNAYA	23	MP	82	CENTRAL AEROLOGICAL OBS
*59/01/02	1400	M-100	U.S.S.R.	HEISS ISLAND	23	MP	89	CENTRAL AEROLOGICAL OBS
*59/01/05	0400	M-100	U.S.S.R.	VOLGOGRAD	23	MP	86	CENTRAL AEROLOGICAL OBS
*59/01/05	0900	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (55 00N 35 00W)	23	MP	60	CENTRAL AEROLOGICAL OBS
*59/01/05	1400	M-100	INDIA U.S.S.R.	THUMBA	23	MP	86	CENTRAL AEROLOGICAL OBS
*59/01/05	1500	M-100	U.S.S.R.	MOLODEZHNAYA	23	MP	84	CENTRAL AEROLOGICAL OBS
*59/01/05	1400	M-100	U.S.S.R.	HEISS ISLAND	23	MP	88	CENTRAL AEROLOGICAL OBS
*59/01/07	1727	FLIGHT 220 T 1-9631	UNITED STATES	WALLOPS ISLAND	26	OOAC	64	KRUEGER,A.J.
*59/01/07	1749	FLIGHT 221 T 1-9645	UNITED STATES	WALLOPS ISLAND	26	OOAC	65	KRUEGER,A.J.
*59/01/09	1155	NASA 25.052UL	UNITED STATES	WHITE SANDS	1C 10	XG	214	HARTH,C.A.
*59/01/09	1628	FLIGHT 222 T 1-9632	UNITED STATES	WALLOPS ISLAND	26	OOAC	64	KRUEGER,A.J.
*59/01/10	0400	M-100	U.S.S.R.	VOLGOGRAD	23	MP	80	CENTRAL AEROLOGICAL OBS
*59/01/10	1400	M-100	INDIA U.S.S.R.	THUMBA	23	MP	84	CENTRAL AEROLOGICAL OBS
*59/01/10	1400	M-100	U.S.S.R.	HEISS ISLAND	23	MP	85	CENTRAL AEROLOGICAL OBS
*59/01/10	1400	M-100	U.S.S.R.	MOLODEZHNAYA	23	MP	85	CENTRAL AEROLOGICAL OBS
*59/01/10	1550	M-100	U.S.S.R.	KORDLEV (SHIP) (00 00N 90 00E)	23	MP	88	CENTRAL AEROLOGICAL OBS
*59/01/11	1714	FLIGHT 223 TNI-9621	CANADA UNITED STATES	FORT CHURCHILL	26	OOAC	76	KRUEGER,A.J.
*59/01/12	0400	M-100	U.S.S.R.	VOLGOGRAD	23	MP	87	CENTRAL AEROLOGICAL OBS
*59/01/12	1400	M-100	INDIA U.S.S.R.	THUMBA	23	MP	81	CENTRAL AEROLOGICAL OBS
*59/01/12	1400	M-100	U.S.S.R.	HEISS ISLAND	23	MP	84	CENTRAL AEROLOGICAL OBS
*59/01/13	1550	M-100	U.S.S.R.	KORDLEV (SHIP) (00 00N 90 00E)	23	MP	87	CENTRAL AEROLOGICAL OBS
*59/01/14	1550	M-100	U.S.S.R.	KORDLEV (SHIP) (00 00N 90 00E)	23	MP	85	CENTRAL AEROLOGICAL OBS
*59/01/15	1400	M-100	U.S.S.R.	HEISS ISLAND	23	MP	92	CENTRAL AEROLOGICAL OBS
*59/01/16	1550	M-100	U.S.S.R.	KORDLEV (SHIP) (00 00N 90 00E)	23	MP	87	CENTRAL AEROLOGICAL OBS
*59/01/16	2050	K-9M-065 S-145	JAPAN	KAGOSHIMA	1C 3C 3E	LDLU SWQI SWQJ UTCZ	355	EJIRI,M. HIRAO,K. ISHII,S. IWAGAMI,N. OBAYASHI,T. OGAWA,T. OYAMA,K. SHEPHERD,G.G. SUZURI,K. WATANABE,T.
*59/01/17	0400	M-100	U.S.S.R.	VOLGOGRAD	23	MP	88	CENTRAL AEROLOGICAL OBS
*59/01/17	1400	M-100	U.S.S.R.	HEISS ISLAND	23	MP	85	CENTRAL AEROLOGICAL OBS
*59/01/17	1500	M-100	U.S.S.R.	MOLODEZHNAYA	23	MP	82	CENTRAL AEROLOGICAL OBS
*59/01/17	1600	M-100	INDIA U.S.S.R.	THUMBA	23	MP	79	CENTRAL AEROLOGICAL OBS
*59/01/17	1600	M-100	U.S.S.R.	VOLGOGRAD	23	MP	88	CENTRAL AEROLOGICAL OBS
*59/01/17	2000	NASA 25.010AS	UNITED STATES	WHITE SANDS	6F	CR GA	226	BLAKE,R.
*59/01/18	1550	M-100	U.S.S.R.	KORDLEV (SHIP) (00 00N 90 00E)	23	MP	80	CENTRAL AEROLOGICAL OBS
*59/01/19	0540	M-100	U.S.S.R.	VOLGOGRAD	23	MP	91	CENTRAL AEROLOGICAL OBS
*59/01/19	0850	S-310/006 S-144	JAPAN	KAGOSHIMA	1C 2F 3C 3E	LDIZ LDLU OOAC SWQI	212	EJIRI,M. HIRAO,K. ISHII,S. ITOH,T. KONDO,Y. MAKINO,T. OBAYASHI,T. OGAWA,T. OYAMA,K. TAKAGI,M. WATANABE,T. WATANABE,T. YAMAMOTO,H.
*59/01/19	1400	M-100	INDIA U.S.S.R.	THUMBA	23	MP	86	CENTRAL AEROLOGICAL OBS
*59/01/19	1550	M-100	U.S.S.R.	KORDLEV (SHIP) (00 00N 90 00E)	23	MP	81	CENTRAL AEROLOGICAL OBS
*59/01/19	1550	M-100	U.S.S.R.	HEISS ISLAND	23	MP	90	CENTRAL AEROLOGICAL OBS
*59/01/20	1525	M-100	U.S.S.R.	KORDLEV (SHIP) (00 00N 90 00E)	23	MP	80	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
79/01/21 0936	K-09M-066 S-145	JAPAN	KAGOSHIMA	0C 2A 5A 5C 5E 6B 9A	BD DCLA LDRF LIWV PRGS SEZA SWOG	55E	ARIKAWA,T. FURUUCHI,M. IZAWA,M. KAMADA,T. KANEKO,O. KAWASHIRA,N. MIURA,S. MORIOKA,A. NAKAMURA,J. ONCHI,N. ONO,T. OYA,H.
79/01/21 1530	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	82	CENTRAL AEROLOGICAL OBS
79/01/22 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
79/01/22 1530	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
79/01/23 1510	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/01/24 1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	98	CENTRAL AEROLOGICAL OBS
79/01/24 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/01/24 1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	91	CENTRAL AEROLOGICAL OBS
79/01/24 1535	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/01/24 1630	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	86	CENTRAL AEROLOGICAL OBS
79/01/25 1455	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	80	CENTRAL AEROLOGICAL OBS
79/01/25 2107	P--216K	SWEDEN UNITED KINGDOM	KIRUNA	4B	PRGS UTCZ UTIQ	179	BRYANT,D.A.
79/01/26 0500	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (55 00N 25 00W)	2J	NP	77	CENTRAL AEROLOGICAL OBS
*79/01/26 1101	NASA 29.213UE	UNITED STATES	FAIRBANKS	1B	GI LDLU MTHZ MTYQ UTCZ	186	ANDERSON,M.R. BERING,E.A.,3RD
79/01/26 1500	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/01/27 0700	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/01/27 1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	93	CENTRAL AEROLOGICAL OBS
79/01/27 1455	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	81	CENTRAL AEROLOGICAL OBS
79/01/27 1525	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	81	CENTRAL AEROLOGICAL OBS
79/01/27 2004	P--215K	SWEDEN UNITED KINGDOM	KIRUNA	4B	PRGS UTCZ UTIQ	180	BRYANT,D.A.
79/01/27 2005	NASA 15.150GM TM1-9830	UNITED STATES	FAIRBANKS	2G	OOZU	60	HILSENRATH,E.
*79/01/28 0507	NASA 29.041UE	CANADA UNITED STATES	FORT CHURCHILL	1B	PR SWQJ	---	SHARP,W.E.
*79/01/28 0606	A24.752-01	UNITED STATES	WHITE SANDS	7B	SWQ6	401	PRICE,S.D.
79/01/28 0833	NASA 15.151GM TM1-9831	UNITED STATES	FAIRBANKS	2G	OOZU	69	HILSENRATH,E.
79/01/28 1535	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/01/29 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	81	CENTRAL AEROLOGICAL OBS
79/01/29 1535	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	82	CENTRAL AEROLOGICAL OBS
79/01/30 1755	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	82	CENTRAL AEROLOGICAL OBS
79/01/31 0200	S-310-009 S-146	JAPAN	KAGOSHIMA	3B 3C 3E 5C	LDRF LDLU MTYQ SEZA	185	AMEMIYA,M. DOTE,T. EJIRI,M. HIRAO,K. ISHII,S. NAKAMURA,Y. NOMURA,Y. OBAYASHI,T. OYAMA,K. SHIMIZU,H. WATANABE,Y. YABUZAKI,T. YOSHINO,T.
79/01/31 0400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/01/31 0800	MMR-06	U.S.S.R.	KRENKEL' (SHIP) (55 00N 25 00W)	2J	NP	78	CENTRAL AEROLOGICAL OBS
79/01/31 1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
79/01/31 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/01/31 1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	98	CENTRAL AEROLOGICAL OBS
79/01/31 1500	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/02/01 1500	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	82	CENTRAL AEROLOGICAL OBS
79/02/02 0400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/02/02 0500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/02/02 0800	MMR-06	U.S.S.R.	MUSSON (SHIP) (55 00N 25 00E)	2J	NP	61	CENTRAL AEROLOGICAL OBS

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*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
79/02/02 1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	8e	CENTRAL AEROLOGICAL OBS
79/02/02 1500	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	81	CENTRAL AEROLOGICAL OBS
79/02/03 1800	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	81	CENTRAL AEROLOGICAL OBS
79/02/04 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (04 00N 5C 00E)	2J	NP	8e	CENTRAL AEROLOGICAL OBS
79/02/04 2000	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/02/05 1800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 5C 00E)	2J	NP	8e	CENTRAL AEROLOGICAL OBS
79/02/05 2120	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	81	CENTRAL AEROLOGICAL OBS
79/02/06 1900	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 5C 00E)	2J	NP	81	CENTRAL AEROLOGICAL OBS
79/02/07 0400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/02/07 0700	MMR-06	U.S.S.R.	MUSSON (SHIP) (55 00N 35 00E)	2J	NP	61	CENTRAL AEROLOGICAL OBS
79/02/07 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	82	CENTRAL AEROLOGICAL OBS
79/02/07 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/02/07 1500	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	8?	CENTRAL AEROLOGICAL OBS
79/02/07 1850	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	7e	CENTRAL AEROLOGICAL OBS
79/02/09 0820	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
79/02/09 0700	MMR-06	U.S.S.R.	MUSSON (SHIP) (55 00N 35 00E)	2J	NP	61	CENTRAL AEROLOGICAL OBS
79/02/09 1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/02/09 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 8C 00E)	2J	NP	8C	CENTRAL AEROLOGICAL OBS
79/02/09 2020	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 5C 00E)	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/02/10 1930	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 5C 00E)	2J	NP	82	CENTRAL AEROLOGICAL OBS
79/02/11 1950	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 5C 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/02/12 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	8e	CENTRAL AEROLOGICAL OBS
79/02/12 2250	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/02/13 2000	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 6C 00E)	2J	NP	8C	CENTRAL AEROLOGICAL OBS
79/02/13 2010	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/02/14 0700	MMR-06	U.S.S.R.	MUSSON (SHIP) (55 00N 35 00E)	2J	NP	e0	CENTRAL AEROLOGICAL OBS
79/02/14 1350	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/02/14 1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/02/14 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
79/02/14 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
79/02/14 1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	82	CENTRAL AEROLOGICAL OBS
79/02/14 1600	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/02/14 1900	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/02/14 2200	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 6C 00E)	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/02/15 1900	M-100	U.S.S.R.	SHOKALSKI (SHIP) (06 00N 6C 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/02/16 1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/02/16 1920	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/02/16 2000	M-100	U.S.S.R.	VOLGOGRAD (03 00N 6C 00E)	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/02/16 2000	M-100	U.S.S.R.	SHOKALSKI (SHIP) (03 00N 6C 00E)	2J	NP	81	CENTRAL AEROLOGICAL OBS
79/02/17 1900	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 6C 00E)	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/02/18 1900	M-100	U.S.S.R.	SHOKALSKI (SHIP) (03 00N 6C 00E)	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/02/21 0430	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
79/02/21 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/02/21 1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/02/21 1600	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	8e	CENTRAL AEROLOGICAL OBS
79/02/23 1800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (20 00N 67 00E)	2J	NP	8e	CENTRAL AEROLOGICAL OBS
79/02/23 2315	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/02/24 1800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (30 00N 6? 00E)	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/02/27 1340	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	78	CENTRAL AEROLOGICAL OBS
79/02/28 0700	M-100	U.S.S.R.	MUSSON (SHIP)	2J	NP	57	CENTRAL AEROLOGICAL OBS
79/02/28 1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	80	CENTRAL AEROLOGICAL OBS
79/02/28 1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	8e	CENTRAL AEROLOGICAL OBS
79/02/28 1400	MMR-06	U.S.S.R.	MOLODEZHNAYA (55 00N 35 00E)	2J	NP	57	CENTRAL AEROLOGICAL OBS
79/02/28 1410	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
79/02/28 1750	FLIGHT 224 I 1-9634	UNITED STATES	WALLOPS ISLAND	2G	OOAC	e?	KRUEGER,A.J.

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
79/02/02 1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
79/02/02 1500	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	81	CENTRAL AEROLOGICAL OBS
79/02/03 1500	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	81	CENTRAL AEROLOGICAL OBS
79/02/04 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (04 00N 90 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
79/02/04 2000	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/02/05 1800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 90 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
79/02/05 2100	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	81	CENTRAL AEROLOGICAL OBS
79/02/06 1900	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	81	CENTRAL AEROLOGICAL OBS
79/02/07 0400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/02/07 0700	MMR-06	U.S.S.R.	MUSSON (SHIP) (55 00N 35 00E)	2J	NP	61	CENTRAL AEROLOGICAL OBS
79/02/07 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	82	CENTRAL AEROLOGICAL OBS
79/02/07 1500	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/02/07 1500	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	81	CENTRAL AEROLOGICAL OBS
79/02/07 1800	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	78	CENTRAL AEROLOGICAL OBS
79/02/09 0400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
79/02/09 0700	MMR-06	U.S.S.R.	MUSSON (SHIP) (55 00N 35 00E)	2J	NP	61	CENTRAL AEROLOGICAL OBS
79/02/09 1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/02/09 1700	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 80 00E)	2J	NP	80	CENTRAL AEROLOGICAL OBS
79/02/09 2000	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/02/10 1930	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	82	CENTRAL AEROLOGICAL OBS
79/02/11 1900	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/02/12 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
79/02/12 2200	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/02/13 2000	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 65 00E)	2J	NP	80	CENTRAL AEROLOGICAL OBS
79/02/13 2010	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/02/14 0700	MMR-06	U.S.S.R.	MUSSON (SHIP) (55 00N 35 00E)	2J	NP	60	CENTRAL AEROLOGICAL OBS
79/02/14 1300	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 90 00E)	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/02/14 1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/02/14 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
79/02/14 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
79/02/14 1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	82	CENTRAL AEROLOGICAL OBS
79/02/14 1600	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/02/14 1900	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/02/14 2000	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 65 00E)	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/02/15 1900	M-100	U.S.S.R.	SHOKALSKI (SHIP) (06 00N 65 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/02/16 1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/02/16 1900	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/02/16 2000	M-100	U.S.S.R.	VOLGOGRAD (03 00N 65 00E)	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/02/16 2000	M-100	U.S.S.R.	SHOKALSKI (SHIP) (03 00N 65 00E)	2J	NP	91	CENTRAL AEROLOGICAL OBS
79/02/17 1900	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 65 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/02/18 1900	M-100	U.S.S.R.	SHOKALSKI (SHIP) (03 00N 65 00E)	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/02/21 0130	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
79/02/21 1400	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/02/21 1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/02/21 1600	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
79/02/23 1800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (00 00N 67 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
79/02/25 2315	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/02/26 1800	M-100	U.S.S.R.	SHOKALSKI (SHIP) (50 00N 65 00E)	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/02/27 1540	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	78	CENTRAL AEROLOGICAL OBS
79/02/28 0700	M-100	U.S.S.R.	MUSSON (SHIP)	2J	NP	57	CENTRAL AEROLOGICAL OBS
79/02/28 1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	80	CENTRAL AEROLOGICAL OBS
79/02/28 1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	66	CENTRAL AEROLOGICAL OBS
79/02/28 1400	MMR-06	U.S.S.R.	MOLODEZHNAYA (55 00N 35 00E)	2J	NP	57	CENTRAL AEROLOGICAL OBS
79/02/28 1410	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
79/02/28 1750	FLIGHT 224 1 1-9634	UNITED STATES	WALLOPS ISLAND	2G	OOAC	67	KRUEGER,A.J.

DATE AND TIME OF LAUNCH (UT)	AGENCY ROCKET IDENTIFICATION	SPONSORING COUNTRIES	LAUNCHING SITE	EXPERIMENT DISCIPLINES	INSTRUMENTS	PEAK ALT. (KM)	EXPERIMENTERS OR INSTITUTIONS
79/04/18 0200	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
79/04/18 0909	NASA 29.012GE	UNITED STATES	FAIRBANKS	1B	DC	---	HEPPNER,J.P.
79/04/18 0915	NASA 18.217GE	UNITED STATES	FAIRBANKS	4B 5A	GI	---	BUSBOSO,E.
					GYKZ		HEPPNER,J.P.
					LDLU		HOFFMAN,R.A.
							MAYNARD,N.C.
79/04/18 1400	M-100	INDIA	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
		U.S.S.R.					
79/04/19 1400	M-100	INDIA	THUMBA	2J	NP	82	CENTRAL AEROLOGICAL OBS
		U.S.S.R.					
79/04/20 1900	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
79/04/21 1358	FLIGHT 234	BRAZIL	NATAL	2G	OOAC	67	KRUEGER,A.J.
	TN1-9652	UNITED STATES					
79/04/21 2100	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	78	CENTRAL AEROLOGICAL OBS
			(00 00N 88 00E)				
79/04/22 2000	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	82	CENTRAL AEROLOGICAL OBS
			(00 00N 87 00E)				
79/04/23 1700	MMR-06	U.S.S.R.	PRILIV (SHIP)	2J	NP	60	CENTRAL AEROLOGICAL OBS
			(02 00N 85 00E)				
79/04/24 2010	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	84	CENTRAL AEROLOGICAL OBS
			(00 00N 78 00E)				
79/04/25 0300	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/04/25 1224	P--201H	UNITED KINGDOM	SOUTH UIST	2C 3C 6E	GYKZ	130	WILLIAMS,E.R.
					XP		
79/04/25 1400	M-100	INDIA	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
		U.S.S.R.					
79/04/25 1700	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/04/26 2300	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	84	CENTRAL AEROLOGICAL OBS
			(00 00N 71 00E)				
79/04/29 2000	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	85	CENTRAL AEROLOGICAL OBS
			(00 00N 78 00E)				
79/05/01 2000	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	85	CENTRAL AEROLOGICAL OBS
			(00 00N 58 00E)				
79/05/02 1130	M-100	INDIA	THUMBA	2J	NP	82	CENTRAL AEROLOGICAL OBS
		U.S.S.R.					
79/05/02 1900	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
79/05/02 2200	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	82	CENTRAL AEROLOGICAL OBS
			(00 00N 51 00E)				
79/05/03 0200	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/05/03 0300	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
79/05/03 1636	FLIGHT 235	UNITED STATES	WALLOPS ISLAND	2G	OOAC	64	KRUEGER,A.J.
	T 1-9635						
79/05/03 1805	FLIGHT 236	CANADA	PRIMROSE LAKE	2G	OOAC	68	KRUEGER,A.J.
	TH1-9625	UNITED STATES					
79/05/09 0200	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/05/09 1400	M-100	INDIA	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
		U.S.S.R.					
79/05/09 1700	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
79/05/10 0100	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/05/10 0300	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	82	CENTRAL AEROLOGICAL OBS
79/05/12 1746	FLIGHT 237	UNITED STATES	WALLOPS ISLAND	2G	OOAC	65	KRUEGER,A.J.
	T 1-9638						
79/05/13 2200	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	83	CENTRAL AEROLOGICAL OBS
			(00 00N 51 00E)				
79/05/16 0040	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/05/16 0200	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/05/16 0220	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	61	CENTRAL AEROLOGICAL OBS
79/05/16 0940	M-100	INDIA	THUMBA	2J	NP	94	CENTRAL AEROLOGICAL OBS
		U.S.S.R.					
79/05/16 1400	M-100	INDIA	THUMBA	2J	NP	88	CENTRAL AEROLOGICAL OBS
		U.S.S.R.					
79/05/16 1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
79/05/16 2100	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	82	CENTRAL AEROLOGICAL OBS
			(06 00N 55 00E)				
79/05/16 2100	MMR-06	U.S.S.R.	PRILIV (SHIP)	2J	NP	55	CENTRAL AEROLOGICAL OBS
			(04 00N 57 00E)				
79/05/18 0040	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/05/18 1440	M-100	INDIA	THUMBA	2J	NP	81	CENTRAL AEROLOGICAL OBS
		U.S.S.R.					
79/05/18 2000	MMR-06	U.S.S.R.	PRILIV (SHIP)	2J	NP	58	CENTRAL AEROLOGICAL OBS
			(04 00N 57 00E)				
79/05/18 2200	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	84	CENTRAL AEROLOGICAL OBS
			(06 00N 54 00E)				
79/05/19 2200	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	88	CENTRAL AEROLOGICAL OBS
			(06 00N 55 00E)				
79/05/21 0500	NASA 25.043GG	UNITED STATES	WHITE SANDS	7D 7E	CRKE	226	STECHER,T.P.
					SWQJ		
					XG		
79/05/21 0640	NASA 25.044GG	UNITED STATES	WHITE SANDS	7D 7E	CRKE	240	SMITH,A.M.
					SWQJ		
					UTCZ		
79/05/21 2000	MMR-06	U.S.S.R.	PRILIV (SHIP)	2J	NP	59	CENTRAL AEROLOGICAL OBS
			(04 00N 57 00E)				
79/05/21 2200	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	84	CENTRAL AEROLOGICAL OBS
			(06 00N 54 00E)				
79/05/21 2200	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	84	CENTRAL AEROLOGICAL OBS
			(06 00N 54 00E)				
79/05/21 2200	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	84	CENTRAL AEROLOGICAL OBS
			(06 00N 54 00E)				
79/05/22 2220	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	82	CENTRAL AEROLOGICAL OBS
79/05/23 0200	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	82	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
79/03/28 0400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/03/28 0600	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/03/28 1140	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/03/28 1538	P--208A	NORWAY UNITED KINGDOM	ANDOYA	0A 0E 1B 3A 3C 3E 5A 5E	AF BD LDLU MTBD SEZA	169	GIBBONS,M. JONES,S. WOOLLISCROFT,L.J.C.
79/03/28 1700	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/03/28 1722	FLIGHT 228 T 1-9636	UNITED STATES	WALLOPS ISLAND	2G	OOAC	65	KRUEGER,A.J.
79/03/28 1840	T 1-9640	UNITED STATES	WALLOPS ISLAND	2G	OOZU	59	BOLLAHAN,B.
79/03/29 0555	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/03/30 0400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/03/30 0545	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/03/30 1140	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/03/31 0500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/03/31 0535	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
79/03/31 1500	M-100	U.S.S.R.	SHOKALSKI (SHIP) (20 DON 65 00E)	2J	NP	86	CENTRAL AEROLOGICAL OBS
79/03/31 1600	M-100	U.S.S.R.	SHOKALSKI (SHIP) (20 DON 65 00E)	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/03/31 2229	NASA 24.006IE	SWEDEN UNITED STATES	KIRUNA	5X	ZZ	452	HAERANDEL,G.
79/04/01 0400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/04/01 0525	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/04/01 1200	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/04/02 0400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
79/04/02 0515	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
79/04/03 0400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	82	CENTRAL AEROLOGICAL OBS
79/04/03 0510	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
79/04/03 1200	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
79/04/04 0400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
79/04/04 0500	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
79/04/04 1800	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
79/04/05 0400	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/04/05 0450	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/04/05 1200	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/04/05 1838	FLIGHT 229 TH1-9623	CANADA UNITED STATES	PRIMROSE LAKE	2G	OOAC	70	KRUEGER,A.J.
*79/04/05 2154	FLIGHT 230 T 1-9637	UNITED STATES	WALLOPS ISLAND	2G	OOAC	67	KRUEGER,A.J.
79/04/05 2213	FLIGHT 231 T 1-9695	UNITED STATES	WALLOPS ISLAND	2G	OOAC	65	KRUEGER,A.J.
*79/04/05 2314	NASA 15.176GM T 1-9832	UNITED STATES	WALLOPS ISLAND	2G	OOZU	81	HILSENRATH,E.
79/04/06 0440	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/04/06 0440	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
79/04/06 0500	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	81	CENTRAL AEROLOGICAL OBS
79/04/07 0340	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	81	CENTRAL AEROLOGICAL OBS
79/04/07 0430	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/04/07 1200	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/04/07 1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/04/08 0340	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/04/08 0425	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
79/04/09 0340	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/04/09 0415	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
79/04/09 0600	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	95	CENTRAL AEROLOGICAL OBS
79/04/09 1200	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/04/10 0305	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/04/10 0340	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
79/04/10 0450	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/04/11 0330	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/04/11 0355	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
79/04/11 1100	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/04/11 1700	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/04/11 1752	FLIGHT 232 TH1-9624	CANADA UNITED STATES	PRIMROSE LAKE	2G	OOAC	68	KRUEGER,A.J.
79/04/12 0330	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/04/13 1810	FLIGHT 233 TN1-9651	BRAZIL UNITED STATES	NATAL	2G	OOAC	65	KRUEGER,A.J.
79/04/13 2205	NASA 27.033AS NASA 27.033US	UNITED STATES	WHITE SANDS	6X	QKKQ XG	268	MACQUEEN,R.M.
79/04/14 1201	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/04/15 0925	NASA 18.218GE	UNITED STATES	FAIRBANKS	1B	DC	---	HEPPNER,J.P.
79/04/15 0931	NASA 29.011GE	UNITED STATES	FAIRBANKS	4B 5A	GI GYKZ LDLU	671	BUSBOSO,E. HEPPNER,J.P. HOFFMAN,R.A. MAYNARD,N.C.
79/04/17 2131	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	88	CENTRAL AEROLOGICAL OBS

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*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
79/04/18 0200	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
79/04/18 0909	NASA 29.012GE	UNITED STATES	FAIRBANKS	1B	DC	---	HEPPNER,J.P.
79/04/18 0915	NASA 18.217GE	UNITED STATES	FAIRBANKS	4B 5A	GI	---	BUSBOSO,E.
					GYRZ		HEPPNER,J.P.
					LDLU		HOFFMAN,R.A.
							MAYNARD,N.C.
79/04/18 1400	M-100	INDIA	THUMBA	2J	NP	83	CENTRAL AEROLOGICAL OBS
		U.S.S.R.					
79/04/19 1400	M-100	INDIA	THUMBA	2J	NP	82	CENTRAL AEROLOGICAL OBS
		U.S.S.R.					
79/04/20 1900	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	90	CENTRAL AEROLOGICAL OBS
79/04/21 1358	FLIGHT 234	BRAZIL	NATAL	2G	OOAC	67	KRUEGER,A.J.
	TN1-9652	UNITED STATES					
79/04/21 2100	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	78	CENTRAL AEROLOGICAL OBS
			(00 00N 88 00E)				
79/04/22 2000	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	82	CENTRAL AEROLOGICAL OBS
			(00 00N 87 00E)				
79/04/23 1700	MMR-06	U.S.S.R.	PRILIV (SHIP)	2J	NP	60	CENTRAL AEROLOGICAL OBS
			(02 00N 85 00E)				
79/04/24 2010	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	84	CENTRAL AEROLOGICAL OBS
			(00 00N 78 00E)				
79/04/25 0300	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/04/25 1224	P--201H	UNITED KINGDOM	SOUTH UIST	2C 3C 6E	GYKZ	130	WILLIAMS,E.R.
					XP		
79/04/25 1400	M-100	INDIA	THUMBA	2J	NP	85	CENTRAL AEROLOGICAL OBS
		U.S.S.R.					
79/04/25 1700	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/04/26 2300	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	84	CENTRAL AEROLOGICAL OBS
			(00 00N 71 00E)				
79/04/29 2000	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	85	CENTRAL AEROLOGICAL OBS
			(00 00N 78 00E)				
79/05/01 2000	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	85	CENTRAL AEROLOGICAL OBS
			(00 00N 58 00E)				
79/05/02 1130	M-100	INDIA	THUMBA	2J	NP	82	CENTRAL AEROLOGICAL OBS
		U.S.S.R.					
79/05/02 1900	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
79/05/02 2200	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	82	CENTRAL AEROLOGICAL OBS
			(00 00N 51 00E)				
79/05/03 0200	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/05/03 0300	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	89	CENTRAL AEROLOGICAL OBS
79/05/03 1656	FLIGHT 235	UNITED STATES	WALLOPS ISLAND	2G	OOAC	64	KRUEGER,A.J.
	T 1-9635						
79/05/03 1805	FLIGHT 236	CANADA	PRIMROSE LAKE	2G	OOAC	68	KRUEGER,A.J.
	TN1-9625	UNITED STATES					
79/05/09 0200	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/05/09 1400	M-100	INDIA	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
		U.S.S.R.					
79/05/09 1700	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	89	CENTRAL AEROLOGICAL OBS
79/05/10 0100	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/05/10 0300	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	82	CENTRAL AEROLOGICAL OBS
79/05/12 1746	FLIGHT 237	UNITED STATES	WALLOPS ISLAND	2G	OOAC	65	KRUEGER,A.J.
	T 1-9638						
79/05/13 2200	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	83	CENTRAL AEROLOGICAL OBS
			(00 00N 51 00E)				
79/05/16 0040	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/05/16 0200	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/05/16 0220	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	61	CENTRAL AEROLOGICAL OBS
79/05/16 0940	M-100	INDIA	THUMBA	2J	NP	94	CENTRAL AEROLOGICAL OBS
		U.S.S.R.					
79/05/16 1400	M-100	INDIA	THUMBA	2J	NP	88	CENTRAL AEROLOGICAL OBS
		U.S.S.R.					
79/05/16 1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
79/05/16 2100	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	82	CENTRAL AEROLOGICAL OBS
			(06 00N 55 00E)				
79/05/16 2100	MMR-06	U.S.S.R.	PRILIV (SHIP)	2J	NP	55	CENTRAL AEROLOGICAL OBS
			(04 00N 57 00E)				
79/05/18 0040	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/05/18 1440	M-100	INDIA	THUMBA	2J	NP	81	CENTRAL AEROLOGICAL OBS
		U.S.S.R.					
79/05/18 2000	MMR-06	U.S.S.R.	PRILIV (SHIP)	2J	NP	58	CENTRAL AEROLOGICAL OBS
			(04 00N 57 00E)				
79/05/18 2200	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	84	CENTRAL AEROLOGICAL OBS
			(06 00N 54 00E)				
79/05/19 2200	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	88	CENTRAL AEROLOGICAL OBS
			(06 00N 55 00E)				
79/05/21 0500	NASA 25.043GG	UNITED STATES	WHITE SANDS	7D 7E	CRKE	226	STECHER,T.P.
					SWQJ		
					XG		
79/05/21 0640	NASA 25.044GG	UNITED STATES	WHITE SANDS	7D 7E	CRKE	240	SMITH,A.M.
					SWQJ		
					UTCZ		
79/05/21 2000	MMR-06	U.S.S.R.	PRILIV (SHIP)	2J	NP	59	CENTRAL AEROLOGICAL OBS
			(04 00N 57 00E)				
79/05/21 2200	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	84	CENTRAL AEROLOGICAL OBS
			(06 00N 54 00E)				
79/05/21 2200	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	84	CENTRAL AEROLOGICAL OBS
			(06 00N 54 00E)				
79/05/21 2200	M-100	U.S.S.R.	KOROLEV (SHIP)	2J	NP	84	CENTRAL AEROLOGICAL OBS
			(06 00N 54 00E)				
79/05/22 2220	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	82	CENTRAL AEROLOGICAL OBS
79/05/23 0200	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	82	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
79/05/23 0200	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	77	CENTRAL AEROLOGICAL OBS
79/05/23 1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/05/23 1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/05/23 2000	MMR-06	U.S.S.R.	PRILIV (SHIP) (03 00N 57 00E)	2J	NP	58	CENTRAL AEROLOGICAL OBS
79/05/23 2300	M-100	U.S.S.R.	KOROLEV (SHIP) (06 00N 54 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
79/05/24 2000	MMR-06	U.S.S.R.	PRILIV (SHIP) (04 00N 57 00E)	2J	NP	60	CENTRAL AEROLOGICAL OBS
79/05/24 2200	M-100	U.S.S.R.	KOROLEV (SHIP) (06 00N 54 00E)	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/05/25 1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/05/26 0040	M-100	U.S.S.R.	KOROLEV (SHIP) (06 00N 54 00E)	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/05/26 2200	M-100	U.S.S.R.	KOROLEV (SHIP) (06 00N 54 00E)	2J	NP	89	CENTRAL AEROLOGICAL OBS
79/05/27 0800	MMR-06	U.S.S.R.	MUSSON (SHIP) (00 00N 25 00E)	2J	NP	58	CENTRAL AEROLOGICAL OBS
79/05/27 2000	MMR-06	U.S.S.R.	PRILIV (SHIP) (04 00N 57 00E)	2J	NP	59	CENTRAL AEROLOGICAL OBS
79/05/27 2130	M-100	U.S.S.R.	KOROLEV (SHIP) (06 00N 54 00E)	2J	NP	---	CENTRAL AEROLOGICAL OBS
79/05/28 2000	MMR-06	U.S.S.R.	PRILIV (SHIP) (04 00N 57 00E)	2J	NP	56	CENTRAL AEROLOGICAL OBS
79/05/29 2000	MMR-06	U.S.S.R.	PRILIV (SHIP) (04 00N 57 00E)	2J	NP	58	CENTRAL AEROLOGICAL OBS
79/05/29 2130	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/05/29 2130	M-100	U.S.S.R.	KOROLEV (SHIP) (06 00N 54 00E)	2J	NP	81	CENTRAL AEROLOGICAL OBS
79/05/30 1440	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
79/05/30 1700	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/05/30 1900	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	80	CENTRAL AEROLOGICAL OBS
79/06/01 0800	MMR-06	U.S.S.R.	MUSSON (SHIP) (53 00N 35 00E)	2J	NP	59	CENTRAL AEROLOGICAL OBS
79/06/01 1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	---	CENTRAL AEROLOGICAL OBS
79/06/02 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
79/06/05 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
79/06/05 1715	NASA 27.028US	UNITED STATES	WHITE SANDS	6E	QK XG	325	ROTTMAN,G.J.
79/06/05 2130	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	82	CENTRAL AEROLOGICAL OBS
79/06/06 0200	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/06/06 0800	M-100	INDIA U.S.S.R.	MUSSON (SHIP) (53 00N 35 00E)	2J	NP	59	CENTRAL AEROLOGICAL OBS
79/06/06 0800	MMR-06	U.S.S.R.	MUSSON (SHIP) (53 00N 35 00E)	2J	NP	59	CENTRAL AEROLOGICAL OBS
79/06/06 1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
79/06/06 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
79/06/08 0700	MMR-06	U.S.S.R.	MUSSON (SHIP) (53 00N 35 00E)	2J	NP	59	CENTRAL AEROLOGICAL OBS
79/06/08 1140	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	82	CENTRAL AEROLOGICAL OBS
79/06/08 1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	88	CENTRAL AEROLOGICAL OBS
79/06/08 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	86	CENTRAL AEROLOGICAL OBS
79/06/09 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
79/06/10 1340	M-100	U.S.S.R.	SHOKALSKI (SHIP) (40 00N 17 00E)	2J	NP	75	CENTRAL AEROLOGICAL OBS
79/06/13 0800	MMR-06	U.S.S.R.	MUSSON (SHIP) (53 00N 35 00E)	2J	NP	58	CENTRAL AEROLOGICAL OBS
79/06/13 1030	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/06/13 1340	M-100	U.S.S.R.	SHOKALSKI (SHIP) (40 00N 18 00E)	2J	NP	75	CENTRAL AEROLOGICAL OBS
79/06/13 1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	82	CENTRAL AEROLOGICAL OBS
79/06/13 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
79/06/13 1900	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	83	CENTRAL AEROLOGICAL OBS
79/06/15 0700	MMR-06	U.S.S.R.	MUSSON (SHIP) (53 00N 35 00E)	2J	NP	59	CENTRAL AEROLOGICAL OBS
79/06/15 1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	86	CENTRAL AEROLOGICAL OBS
79/06/16 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
79/06/18 1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	73	CENTRAL AEROLOGICAL OBS
79/06/20 0210	M-100	U.S.S.R.	HEISS ISLAND	2J	NP	82	CENTRAL AEROLOGICAL OBS
79/06/20 0800	MMR-06	U.S.S.R.	MUSSON (SHIP) (53 00N 35 00E)	2J	NP	60	CENTRAL AEROLOGICAL OBS
79/06/20 1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	86	CENTRAL AEROLOGICAL OBS
79/06/20 1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	91	CENTRAL AEROLOGICAL OBS
79/06/20 1440	M-100	U.S.S.R.	SHOKALSKI (SHIP) (19 00N 18 00E)	2J	NP	86	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
79/06/20	1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
79/06/20	2030	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
79/06/21	0525	NASA 27.040UG	UNITED STATES	WHITE SANDS	6F	QKCM	215	KRAUSHAAR,W.L.
79/06/22	0700	MMR-06	U.S.S.R.	MUSSON (SHIP) (53 00N 35 00E)	2J	NP	59	CENTRAL AEROLOGICAL OBS
79/06/22	1400	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	87	CENTRAL AEROLOGICAL OBS
79/06/23	1400	M-100	U.S.S.R.	SHOKALSKI (SHIP) (10 00N 18 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
79/06/23	1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/06/24	1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	87	CENTRAL AEROLOGICAL OBS
79/06/24	2100	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 77 00E)	2J	NP	82	CENTRAL AEROLOGICAL OBS
79/06/25	1240	M-100	U.S.S.R.	SHOKALSKI (SHIP) (50 00N 18 00E)	2J	NP	88	CENTRAL AEROLOGICAL OBS
79/06/26	2100	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 79 00E)	2J	NP	92	CENTRAL AEROLOGICAL OBS
79/06/26	2130	M-100	U.S.S.R.	VOLGOGRAD	2J	NP	87	CENTRAL AEROLOGICAL OBS
79/06/27	0700	MMR-06	U.S.S.R.	MUSSON (SHIP) (53 00N 35 00E)	2J	NP	61	CENTRAL AEROLOGICAL OBS
79/06/27	1400	M-100	INDIA U.S.S.R.	THUMBA	2J	NP	84	CENTRAL AEROLOGICAL OBS
79/06/27	1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
79/06/27	1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	89	CENTRAL AEROLOGICAL OBS
79/06/27	1500	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	85	CENTRAL AEROLOGICAL OBS
79/06/29	0815	NASA 21.059UG	UNITED STATES	WHITE SANDS	7E	CRKE QKKQ XG	238	DAVIDSEN,A. FASTIE,W.G.
79/06/29	1500	M-100	FRANCE U.S.S.R.	KERGUELEN ISLAND	2J	NP	88	CENTRAL AEROLOGICAL OBS
79/06/29	1500	M-100	U.S.S.R.	MOLODEZHNAYA	2J	NP	82	CENTRAL AEROLOGICAL OBS
79/07/03	1630	NASA 27.032CS	UNITED STATES	WHITE SANDS	6F	QKKQ XG	300	ACTON,L.W.
*79/07/16	1213	NASA 15.194GM TM1-9839	UNITED STATES	FAIRBANKS	2G	OOZU	---	HILSENRATH,E.
79/07/16	1320	NASA 15.196GM TM1-9880	UNITED STATES	FAIRBANKS	2G	OOZU	72	HILSENRATH,E.
79/07/17	1223	NASA 15.195GM TM1-9840	UNITED STATES	FAIRBANKS	2G	OOZU	81	HILSENRATH,E.
79/08/03	0920	A31.702	UNITED STATES	WHITE SANDS	1C 7B	QKKQ	172	ULWICK,J.C. WHEELER,N.B.
79/08/07	1950	A18.805	UNITED STATES	WHITE SANDS	0D	CRKE CRQH	219	MCKENNA,E.F.
79/08/14	1650	A08.705-02	UNITED STATES	WHITE SANDS	2F 2G	PX	190	PHILBRICK,C.R.
*79/08/14	1940	A08.706-02	UNITED STATES	WHITE SANDS	2B 2C 2F 3C 3E	AF LDLU	---	PHILBRICK,C.R. SMITH,L.G.
79/08/14	2020	A04.703	UNITED STATES	WHITE SANDS	1C 3C 6E	PXGS QKKQ SWQI	177	HEROUX,L.J. MCMAHON,W.J. VAN TASSEL,R.A.
79/08/17	2115	NASA 25.011AS	UNITED STATES	WHITE SANDS	6F	CR QK	225	BLAKE,R.
79/08/18	1600	K -09M-067 S-147	JAPAN	KAGOSHIMA	3A 3C 3E	BD LDHQ LDLU LIHU SEZA SWHU SWOG	365	AMEMIYA,H. DOTE,T. FUKAMI,T. HIRAO,K. ISHII,S. MAMBO,M. MINAMI,S. NAGANO,I. NAKAMURA,Y. NOMURA,Y. ONO,T. OYA,H. SHIMIZU,K. TAKEYA,Y.
79/08/20	1400	M-100	U.S.S.R.	KOROLEV (SHIP) (00 00N 88 00E)	2J	NP	82	CENTRAL AEROLOGICAL OBS
79/08/27	1610	FLIGHT 244 T 1-9322	UNITED STATES	WALLOPS ISLAND	2G	OOAC	66	KRUEGER,A.J.
79/09/11	1000	K -09M-068 S-148	JAPAN	KAGOSHIMA	1C 2B 3C 3E 6E	LDKF LDLU LG8Y QK QKPM	353	EJIRI,M. HIGASHI,K. KAYA,N. KITUTA,N. MATSUMOTO,H. NISHI,K. OBAYASHI,T. SUZUKI,K. TANAKA,Y. WATANABE,Y. YAMAGUCHI,A.
79/09/15	2000	S -310-007 S-149	JAPAN	KAGOSHIMA	2C	SWCH	166	ISHIDO,M. KAWASHIMA,N. TOYODA,T.
79/09/20	2100	NASA 21.057UL	UNITED STATES	WHITE SANDS	7E	GYKZ QKKQ SWQJ	278	CARLSON,R.W. JUDGE,D.L. MALOY,J.O. PHILLIPS,E.

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*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
*79/09/24 0532	P--217E	SPAIN UNITED KINGDOM	EL ARENOSILLO	3X	DC	30	MARTELLI,G.A.G.
79/09/24 1115	NASA 25.039UG	UNITED STATES	WHITE SANDS	1C	CR QK XG	246	FASTIE,W.G. FELDMAN,P.D.
79/09/24 2020	NASA 27.039UE	SWEDEN UNITED STATES	KIRUNA	5A	DCLA QK	397	KELLEY,M.
79/09/27 1130	NASA 21.062GS	UNITED STATES	WHITE SANDS	6E	QKKQ XG	247	BEHLING,W.E.
79/10/03 1842	P--218E	SPAIN UNITED KINGDOM	EL ARENOSILLO	3X	DC	145	MARTELLI,G.A.G.
79/10/19 0546	A51.970	UNITED STATES	FAIRBANKS	1X	CRKE CRQH MTHZ QKKQ	128	BURT,D.A. CALLINAN,T. FRODSHAM,G. KEMP,J. O'NEIL,R.R. SHEPHARD,O. SUDER,R.
79/10/21 1537	NASA 15.203GM T 1-7040	UNITED STATES	WALLOPS ISLAND	2G	OOZU	74	NILSENRATH,E.
79/10/21 1630	NASA 15.204GM T 1-7041	UNITED STATES	WALLOPS ISLAND	2G	OOZU	82	NILSENRATH,E.
79/10/21 1715	NASA 15.205GM T 1-7042	UNITED STATES	WALLOPS ISLAND	2G	OOZU	75	NILSENRATH,E.
79/10/23 0315	NASA 25.049GG	UNITED STATES	WHITE SANDS	7D	SWOG XG	227	BOHLIN,R.C. STECHER,T.P.
79/10/23 2304	A45.803-01	PERU UNITED STATES	PUNTA LOBOS	2A	DCOM	50	QUESADA,A.F. VICKERY,W.K.
79/10/24 2324	A45.803-02	PERU UNITED STATES	PUNTA LOBOS	2A	DCOM	50	QUESADA,A.F. VICKERY,W.K.
79/10/29 2304	A45.803-03	PERU UNITED STATES	PUNTA LOBOS	2A	DCOM	50	QUESADA,A.F. VICKERY,W.K.
*79/11/04 0850	NASA 15.209GM T 1-7046	UNITED STATES	WALLOPS ISLAND	2G	OOZU	78	NILSENRATH,E.
79/11/04 0925	NASA 15.208GM T 1-7045	UNITED STATES	WALLOPS ISLAND	2G	OOZU	82	NILSENRATH,E.
79/11/04 1000	NASA 15.207GM T 1-7044	UNITED STATES	WALLOPS ISLAND	2G	OOZU	81	NILSENRATH,E.
79/11/07 2050	NASA 27.030CS	UNITED STATES	WHITE SANDS	6F	CR QK XG	271	DAVIS,J.M.
79/11/16 1700	NASA 04.337CS	UNITED STATES	WHITE SANDS	6F	CRQH QKKQ XG	154	DAVIS,J.M.

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*IDENTIFIES LAUNCHINGS THAT FAILED TO RETURN USEFUL DATA.

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 are 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 Meetings 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*. Additional information was obtained from the *Table of Artificial Earth Satellites*, published by the Royal Aircraft Establishment, Farnborough, Hants, England. Requests for information on the availability of the bulletin should be directed to:

iuwds 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.

A report on the U.S. scientific satellite Magsat 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, 1979, to December 31, 1979. 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.

REPORT OF SATELLITE OR SPACE PROBE LAUNCHING

COSPAR Designation	Popular Name	Launching Site	Launching Date	Universal Time
1979-094A	Magsat (Magsat A)	Western Test Range	Oct. 30, 1979	1416

The Magsat project was a joint NASA/United States Geological Survey (USGS) effort to measure near-Earth magnetic fields on a global basis. Objectives include obtaining an accurate description of the Earth's magnetic field, obtaining data for use in the update and refinement of world and regional magnetic charts, compilation of a global crustal magnetic anomaly map, and interpretation of that map in terms of geologic/geophysical models of the Earth's crust.

Physical Characteristics

The basic spacecraft is made up of two distinct parts--the instrument module that contains a vector and a scalar magnetometer and their unique supporting gear; and the base module that contains the necessary data handling, power, communications, command, and attitude control subsystems to support the instrument module. The base module, complete with its subsystems, is made up of residual Small Astronomy Satellite (SAS-C) hardware. The magnetometers were deployed after launch to a position 6 m behind the spacecraft. At this distance, the influence of magnetic materials from the instrument and base module (chiefly from the star cameras) is less than 1 nT.

Transmitters

Tracking and telemetry is at 2283.5 MHz.

Scientific Experiments

Objectives	Instruments	Principal Investigators and Institutions
1. Scalar Magnetometer: To measure the Earth's magnetic field at an accuracy of 0.5 nT	Two dual-cell, cesium-vapor sensor heads	Dr. R. A. Langel NASA/GSFC Greenbelt, Maryland
2. Vector Magnetometer: To measure the Earth's magnetic field with an accuracy of 6 nT R.M.S. and a resolution of 1 nT for each vector	Three fluxgate sensing elements aligned along orthogonal axes.	Dr. R. A. Langel NASA/GSFC Greenbelt, Maryland

Figure 2. Sample of Satellite or Space Probe Launching Report

COSPAR DESIGNATION	SPACECRAFT NAME	COUNTRY	LAUNCH DATE	EPOCH DATE	ORBIT TYPE	APOAPSIS	PERIAPSIS	INCLINATION	PERIOD
1979-001A	COSMOS 1070	U.S.S.R.	01/11/79	01/12/79	GEOCENTRIC	316.	214.	62.8	89.5
1979-002A	COSMOS 1071	U.S.S.R.	01/13/79	01/14/79	GEOCENTRIC	360.	190.	61.8	89.7
1979-003A	COSMOS 1072	U.S.S.R.	01/16/79	01/17/79	GEOCENTRIC	1030.	983.	83.	105.
1979-004A	MOLNIYA 3 (79-004A)	U.S.S.R.	01/18/79	01/19/79	GEOCENTRIC	40806.	474.	62.8	736.
1979-005A	METEOR 1 (79-005A)	U.S.S.R.	01/25/79	01/26/79	GEOCENTRIC	656.	628.	98.	97.4
1979-006A	COSMOS 1073	U.S.S.R.	01/30/79	01/31/79	GEOCENTRIC	350.	187.	62.8	89.6
1979-007A	STP P78-2	UNITED STATES	01/30/79	02/01/79	GEOCENTRIC	43905.	184.	27.4	794.8
1979-008A	COSMOS 1074	U.S.S.R.	01/31/79	02/01/79	GEOCENTRIC	258.	203.	51.6	88.8
1979-009A	ECS	JAPAN	02/06/79	02/07/79	GEOCENTRIC	34411.	193.	24.1	604.
1979-010A	COSMOS 1075	U.S.S.R.	02/08/79	02/09/79	GEOCENTRIC	521.	475.	65.8	94.6
1979-011A	COSMOS 1076	U.S.S.R.	02/12/79	02/13/79	GEOCENTRIC	678.	647.	82.	97.
1979-012A	COSMOS 1077	U.S.S.R.	02/14/79	02/15/79	GEOCENTRIC	651.	629.	81.2	97.3
1979-013A	SAGE	UNITED STATES	02/18/79	02/19/79	GEOCENTRIC	660.2	547.5	54.9	96.8
1979-014A	HAKUCHO	JAPAN	02/21/79	02/22/79	GEOCENTRIC	577.	545.	29.9	96.
1979-015A	EKRAN 3	U.S.S.R.	02/21/79	02/22/79	GEOCENTRIC	35780.	35780.	0.35	1436.
1979-016A	COSMOS 1078	U.S.S.R.	02/22/79	02/23/79	GEOCENTRIC	306.	180.	72.9	89.
1979-017A	STP P78-1	UNITED STATES	02/24/79	02/24/79	GEOCENTRIC	600.	560.	97.9	96.3
1979-018A	SOYUZ 32	U.S.S.R.	02/25/79	02/26/79	GEOCENTRIC	283.	244.	51.6	89.6
1979-019A	COSMOS 1079	U.S.S.R.	02/27/79	02/28/79	GEOCENTRIC	359.	179.	67.1	89.6
1979-020A	INTERCOSMOS 19	U.S.S.R.	02/27/79	02/28/79	GEOCENTRIC	966.	502.	74.	99.8
1979-021A	METEOR 2 (79-021A)	U.S.S.R.	03/01/79	03/02/79	GEOCENTRIC	908.	857.	81.2	102.3
1979-022A	PROGRESS 5	U.S.S.R.	03/12/79	03/13/79	GEOCENTRIC	269.	191.	51.6	88.8
1979-023A	COSMOS 1080	U.S.S.R.	03/14/79	03/15/79	GEOCENTRIC	320.	180.	79.2	89.2
1979-024A	COSMOS 1081	U.S.S.R.	03/15/79	03/16/79	GEOCENTRIC	1526.	1455.	74.	115.4
1979-024B	COSMOS 1082	U.S.S.R.	03/15/79	03/16/79	GEOCENTRIC	1526.	1455.	74.	115.4
1979-024C	COSMOS 1083	U.S.S.R.	03/15/79	03/16/79	GEOCENTRIC	1526.	1455.	74.	115.4
1979-024D	COSMOS 1084	U.S.S.R.	03/15/79	03/16/79	GEOCENTRIC	1526.	1455.	74.	115.4
1979-024E	COSMOS 1085	U.S.S.R.	03/15/79	03/16/79	GEOCENTRIC	1526.	1455.	74.	115.4
1979-024F	COSMOS 1086	U.S.S.R.	03/15/79	03/16/79	GEOCENTRIC	1526.	1455.	74.	115.4
1979-024G	COSMOS 1087	U.S.S.R.	03/15/79	03/16/79	GEOCENTRIC	1526.	1455.	74.	115.4
1979-024H	COSMOS 1088	U.S.S.R.	03/15/79	03/16/79	GEOCENTRIC	1526.	1455.	74.	115.4
1979-025A	1979-025A	UNITED STATES	03/16/79	03/17/79	GEOCENTRIC	256.	177.	96.3	88.7
1979-025B	1979-025B	UNITED STATES	03/16/79	03/17/79	GEOCENTRIC	625.	620.	95.7	97.1
1979-026A	COSMOS 1089	U.S.S.R.	03/21/79	03/22/79	GEOCENTRIC	1016.	986.	83.	104.9
1979-027A	COSMOS 1090	U.S.S.R.	03/31/79	04/01/79	GEOCENTRIC	354.	212.	72.9	89.8
1979-028A	COSMOS 1091	U.S.S.R.	04/07/79	04/08/79	GEOCENTRIC	1024.	985.	83.	105.
1979-029A	SOYUZ 33	U.S.S.R.	04/10/79	04/11/79	GEOCENTRIC	330.	273.	51.6	90.1
1979-030A	COSMOS 1092	U.S.S.R.	04/12/79	04/13/79	GEOCENTRIC	1021.	983.	83.	105.
1979-031A	MOLNIYA 1 (79-031A)	U.S.S.R.	04/12/79	04/13/79	GEOCENTRIC	40590.	656.	62.9	735.
1979-032A	COSMOS 1093	U.S.S.R.	04/14/79	04/15/79	GEOCENTRIC	650.	625.	81.3	97.3
1979-033A	COSMOS 1094	U.S.S.R.	04/18/79	04/19/79	GEOCENTRIC	457.	437.	65.	93.3
1979-034A	COSMOS 1095	U.S.S.R.	04/20/79	04/21/79	GEOCENTRIC	404.	209.	72.9	90.3
1979-035A	RADUGA 5	U.S.S.R.	04/25/79	04/26/79	GEOCENTRIC	36000.	36000.	0.4	1442.
1979-036A	COSMOS 1096	U.S.S.R.	04/25/79	04/26/79	GEOCENTRIC	457.	439.	65.	93.3
1979-037A	COSMOS 1097	U.S.S.R.	04/27/79	04/28/79	GEOCENTRIC	357.	180.	62.8	89.6
1979-038A	FLEETSATCOM 2	UNITED STATES	05/04/79	05/05/79	GEOCENTRIC	35985.	116.	26.4	634.3
1979-039A	PROGRESS 6	U.S.S.R.	05/13/79	05/14/79	GEOCENTRIC	268.	193.	51.6	88.8
1979-040A	COSMOS 1098	U.S.S.R.	05/15/79	05/16/79	GEOCENTRIC	382.	180.	72.9	89.8
1979-041A	COSMOS 1099	U.S.S.R.	05/17/79	05/18/79	GEOCENTRIC	274.	224.	81.4	89.2
1979-042A	COSMOS 1100	U.S.S.R.	05/23/79	05/24/79	GEOCENTRIC	230.	199.	51.6	88.7
1979-042B	COSMOS 1101	U.S.S.R.	05/23/79	05/24/79	GEOCENTRIC	230.	199.	51.6	88.7
1979-043A	COSMOS 1102	U.S.S.R.	05/25/79	05/26/79	GEOCENTRIC	288.	222.	81.4	89.2
1979-044A	1979-044A	UNITED STATES	05/28/79	05/29/79	GEOCENTRIC	305.	124.	96.4	88.7
1979-045A	COSMOS 1103	U.S.S.R.	05/31/79	06/01/79	GEOCENTRIC	396.	264.	62.8	90.8
1979-046A	COSMOS 1104	U.S.S.R.	05/31/79	06/01/79	GEOCENTRIC	1022.	979.	83.	104.9
1979-047A	UK 6	UNITED KINGDOM	06/02/79	06/02/79	GEOCENTRIC	651.	605.	55.	97.3
		UNITED STATES-R							
1979-048A	MOLNIYA 3 (79-048A)	U.S.S.R.	06/06/79	06/07/79	GEOCENTRIC	40769.	473.	62.5	735.
1979-049A	SOYUZ 34	U.S.S.R.	06/06/79	06/07/79	GEOCENTRIC	270.	198.	51.6	88.9
1979-050A	DMSP 5D-1/F4	UNITED STATES	06/06/79	06/07/79	GEOCENTRIC	839.	817.	98.7	101.4
1979-051A	BHASKARA	INDIA	06/07/79	06/07/79	GEOCENTRIC	557.	512.	50.7	95.2
		U.S.S.R.-R							
1979-052A	COSMOS 1105	U.S.S.R.	06/08/79	06/09/79	GEOCENTRIC	281.	223.	81.4	89.2
1979-053A	1979-053A	UNITED STATES	06/10/79	06/11/79	GEOCENTRIC	35859.	35729.	1.9	1436.5
1979-054A	COSMOS 1106	U.S.S.R.	06/12/79	06/13/79	GEOCENTRIC	264.	222.	81.4	89.1
1979-055A	COSMOS 1107	U.S.S.R.	06/15/79	06/16/79	GEOCENTRIC	328.	209.	72.9	89.5
1979-056A	COSMOS 1108	U.S.S.R.	06/22/79	06/23/79	GEOCENTRIC	272.	224.	81.3	89.1
1979-057A	NOAA 6	UNITED STATES	06/27/79	06/28/79	GEOCENTRIC	833.	833.	98.7	101.5
1979-058A	COSMOS 1109	U.S.S.R.	06/27/79	06/28/79	GEOCENTRIC	40130.	626.	62.8	720.
1979-059A	PROGRESS 7	U.S.S.R.	06/28/79	06/29/79	GEOCENTRIC	270.	193.	51.6	88.8
1979-060A	COSMOS 1110	U.S.S.R.	06/28/79	06/29/79	GEOCENTRIC	833.	792.	74.	101.
1979-061A	COSMOS 1111	U.S.S.R.	06/29/79	06/30/79	GEOCENTRIC	353.	264.	63.	90.4
1979-062A	HORIZONT (79-062A)	U.S.S.R.	07/05/79	07/06/79	GEOCENTRIC	36550.	36550.	0.8	1477.
1979-063A	COSMOS 1112	U.S.S.R.	07/06/79	07/07/79	GEOCENTRIC	552.	345.	50.7	93.4
1979-064A	COSMOS 1113	U.S.S.R.	07/10/79	07/11/79	GEOCENTRIC	350.	180.	65.	89.5
1979-065A	COSMOS 1114	U.S.S.R.	07/11/79	07/12/79	GEOCENTRIC	558.	507.	74.	95.2
1979-066A	COSMOS 1115	U.S.S.R.	07/13/79	07/14/79	GEOCENTRIC	262.	222.	81.4	89.1
1979-067A	COSMOS 1116	U.S.S.R.	07/20/79	07/21/79	GEOCENTRIC	649.	608.	81.2	97.1
1979-068A	COSMOS 1117	U.S.S.R.	07/25/79	07/26/79	GEOCENTRIC	349.	187.	62.8	89.6
1979-069A	COSMOS 1118	U.S.S.R.	07/27/79	07/28/79	GEOCENTRIC	273.	222.	81.4	89.1
1979-070A	MOLNIYA 1 (79-070A)	U.S.S.R.	07/31/79	08/01/79	GEOCENTRIC	39892.	457.	62.9	717.7
1979-071A	COSMOS 1119	U.S.S.R.	08/03/79	08/04/79	GEOCENTRIC	267.	222.	81.3	89.1
1979-072A	WESTAR 3	UNITED STATES	08/10/79	08/10/79	GEOCENTRIC	238.7	129.9	31.5	88.2
1979-073A	COSMOS 1120	U.S.S.R.	08/11/79	08/12/79	GEOCENTRIC	376.	181.	70.4	89.8
1979-074A	COSMOS 1121	U.S.S.R.	08/14/79	08/15/79	GEOCENTRIC	375.	180.	67.2	89.7
1979-075A	COSMOS 1122	U.S.S.R.	08/17/79	08/18/79	GEOCENTRIC	260.	218.	81.4	89.1
1979-076A	COSMOS 1123	U.S.S.R.	08/21/79	08/22/79	GEOCENTRIC	266.	221.	81.4	89.1
1979-077A	COSMOS 1124	U.S.S.R.	08/28/79	08/29/79	GEOCENTRIC	40070.	620.	62.8	724.
1979-078A	COSMOS 1125	U.S.S.R.	08/28/79	08/29/79	GEOCENTRIC	834.	795.	74.	100.9
1979-079A	COSMOS 1126	U.S.S.R.	08/31/79	09/01/79	GEOCENTRIC	421.	208.	72.9	90.5
1979-080A	COSMOS 1127	U.S.S.R.	09/05/79	09/06/79	GEOCENTRIC	300.	226.	81.4	89.4
1979-081A	COSMOS 1128	U.S.S.R.	09/14/79	09/15/79	GEOCENTRIC	352.	184.	62.8	89.6
1979-082A	HEAO 3	UNITED STATES	09/20/79	09/21/79	GEOCENTRIC	504.9	486.4	43.6	94.5
1979-083A	COSMOS 1129	U.S.S.R.	09/25/79	09/26/79	GEOCENTRIC	406.	226.	62.8	90.5
1979-084A	COSMOS 1130	U.S.S.R.	09/25/79	09/26/79	GEOCENTRIC	1515.	1446.	74.	115.
1979-084B	COSMOS 1131	U.S.S.R.	09/25/79	09/26/79	GEOCENTRIC	1515.	1446.	74.	115.
1979-084C	COSMOS 1132	U.S.S.R.	09/25/79	09/26/79	GEOCENTRIC	1515.	1446.	74.	115.
1979-084D	COSMOS 1133	U.S.S.R.	09/25/79	09/26/79	GEOCENTRIC	1515.	1446.	74.	115.
1979-084E	COSMOS 1134	U.S.S.R.	09/25/79	09/26/79	GEOCENTRIC	1515.	1446.	74.	115.
1979-084F	COSMOS 1135	U.S.S.R.	09/25/79	09/26/79	GEOCENTRIC	1515.	1446.	74.	115.

COSPAR DESIGNATION	SPACECRAFT NAME	COUNTRY	LAUNCH DATE	EPOCH DATE	ORBIT TYPE	APOAPSIS	PERIAPSIS	INCLINATION	PERIOD
1979-084G	COSMOS 1136	U.S.S.R.	09/25/79	09/26/79	GEOCENTRIC	1515.	1446.	74.	115.
1979-084H	COSMOS 1137	U.S.S.R.	09/25/79	09/26/79	GEOCENTRIC	1515.	1446.	74.	115.
1979-085A	COSMOS 1138	U.S.S.R.	09/28/79	09/29/79	GEOCENTRIC	398.	210.	72.9	90.2
1979-086A	1979-086A	UNITED STATES	10/01/79	10/02/79	GEOCENTRIC	36261.	35801.	1.9	1448.5
1979-087A	EKRAN	U.S.S.R.	10/03/79	10/04/79	GEOCENTRIC	35557.	35557.	0.45	1424.
1979-088A	COSMOS 1139	U.S.S.R.	10/05/79	10/06/79	GEOCENTRIC	357.	212.	72.9	89.9
1979-089A	COSMOS 1140	U.S.S.R.	10/11/79	11/12/79	GEOCENTRIC	818.	781.	74.	101.
1979-090A	COSMOS 1141	U.S.S.R.	11/16/79	10/17/79	GEOCENTRIC	1014.	976.	82.9	104.7
1979-091A	MOLNIYA 1 (79-091A)	U.S.S.R.	10/20/79	10/21/79	GEOCENTRIC	40640.	640.	62.8	736.
1979-092A	COSMOS 1142	U.S.S.R.	10/22/79	10/23/79	GEOCENTRIC	408.	208.	72.9	90.3
1979-093A	COSMOS 1143	U.S.S.R.	10/26/79	10/27/79	GEOCENTRIC	665.	625.	81.2	97.4
1979-094A	MAGSAT	UNITED STATES	10/30/79	10/31/79	GEOCENTRIC	578.4	351.9	96.8	93.9
1979-095A	METEOR 2 (79-095A)	U.S.S.R.	10/31/79	11/01/79	GEOCENTRIC	904.	877.	81.2	102.6
1979-096A	INTERCOSMOS 20	U.S.S.R.	11/01/79	11/02/79	GEOCENTRIC	523.	467.	74.	94.4
1979-097A	COSMOS 1144	U.S.S.R.	11/02/79	11/04/79	GEOCENTRIC	337.	158.	67.2	89.4
1979-098A	1979-098A	UNITED STATES	11/21/79	11/23/79	GEOCENTRIC	35789.	35594.	2.4	1413.1
1979-099A	COSMOS 1145	U.S.S.R.	11/27/79	11/28/79	GEOCENTRIC	652.	629.	81.2	97.3
1979-100A	COSMOS 1146	U.S.S.R.	12/05/79	12/06/79	GEOCENTRIC	497.	441.	65.9	93.9
1979-101A	RCA-SATCOM 3	UNITED STATES	12/07/79	12/08/79	GEOCENTRIC	36124.	166.3	23.8	637.
1979-102A	COSMOS 1147	U.S.S.R.	12/12/79	12/13/79	GEOCENTRIC	407.	207.	72.9	90.3
1979-103A	SOYUZ-T	U.S.S.R.	12/16/79	12/17/79	GEOCENTRIC	232.	201.	51.6	88.6
1979-104A	ARIANE LO-1	ESA	12/24/79	12/25/79	GEOCENTRIC	42381.	6579.	17.6	635.3
1979-105A	HORIZONT (79-105A)	U.S.S.R.	12/28/79	12/29/79	GEOCENTRIC	36300.	36300.	0.8	1463.
1979-106A	COSMOS 1148	U.S.S.R.	12/28/79	12/29/79	GEOCENTRIC	367.	180.	67.1	89.7

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 an International Geophysical Year program. This program was 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 Centres.

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. A fourth revision was published in June 1979.

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), 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; and (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; and (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; and (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 serve the scientific community more effectively. 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 (Snow and Ice):

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) 344-6695

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

1. Communications regarding data interchange matters in general and the 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.