(NASA-TM-74975) SATELLITE SITUATION REPORT, VOLUME 17, NUMBER 4 (NASA) 42 p HC A03/MF A01 CSCL 22A

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Satellite Situation Report

VOLUME 17 NUMBER 4 AUGUST 31, 1977

Goddard Space Flight Center
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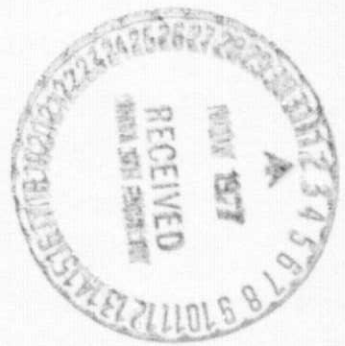

OFFICE OF PUBLIC AFFAIRS
GODDARD SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

VOLUME 17 NO. 4 AUGUST 31, 1977

SATELLITE SITUATION REPORT

THIS REPORT IS PUBLISHED AND DISTRIBUTED BY THE OFFICE OF PUBLIC AFFAIRS, GSFC.

THE REPORT IS COMPILED BY THE GSFC OPERATIONS CENTER BRANCH AS OF 2400Z ON AUGUST 31, 1977.

THE REPORT CONSISTS OF DATA COMPUTED BY THE GODDARD SPACE FLIGHT CENTER, NORAD, AND THE SMITHSONIAN ASTROPHYSICAL OBSERVATORY.

TRANSMITTING FREQUENCIES ARE SHOWN ONLY FOR SATELLITES BEING MONITORED BY THE NASA SPACEFLIGHT TRACKING AND DATA NETWORK.

SPACE OBJECTS BOX SCORE

	OBJECTS IN ORBIT	DECAYED OBJECTS
AUSTRALIA	1	1
CANADA	8	0
ESA	2	0
ESRO	1	9
FRANCE	54	26
FRANCE/FRG	2	0
FRG	9	3
INDIA	1	0
INDONESIA	2	0
INTERNATIONAL TELECOM-MUNICATIONS SATELLITE ORGANIZATION (ITSO)	22	0
ITALY	1	4
JAPAN	25	0
NATO	4	0
NETHERLANDS	0	4
PRC	6	14
SPAIN	1	0
UK	11	4
US	2898	1499
USSR	1413	4309
TOTAL	4462	5873

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1958 LAUNCHES										
BETA 1		16	US	17 MAR	138.2	34.2	4303	651		
BETA 2	VANGUARD 1	5	US	17 MAR	133.8	34.2	3921	651		
BETA 3		1576	US	17 MAR	131.3	34.2	3723	637		
1959 LAUNCHES										
ALPHA 1	VANGUARD 2	11	US	17 FEB	124.8	32.8	3232	557		
ALPHA 2		12	US	17 FEB	129.0	32.9	3607	554		
ALPHA 3		5807	US	17 FEB	127.0	32.8	3407	574		
BETA 1	VANGUARD 3	20	US	18 SEP	129.0	33.3	3644	511		
IOTA 1	EXPLORER 7	22	US	13 OCT	100.6	50.3	1032	548		
IOTA 2		23	US	13 OCT	99.7	50.3	955	540		
MU 1	LUNIK 1	112	USSR	2 JAN	HELIOCENTRIC ORBIT					
NU 1	PIONEER 4	113	US	3 MAR	HELIOCENTRIC ORBIT					
1960 LAUNCHES										
ALPHA 1	PIONEER 5	27	US	11 MAR	HELIOCENTRIC ORBIT					
BETA 1		28	US	1 APR	98.6	48.3	713	671		
BETA 2	TIROS 1	29	US	1 APR	99.0	48.3	736	687		
BETA 3		101	US	1 APR	97.1	48.5	651	587		
BETA 4		115	US	1 APR	99.6	48.1	792	689		
GAMMA 4		99	US	13 APR	94.3	51.3	547	422		
ETA 1	TRANSIT 2A	45	US	22 JUN	101.4	66.6	1040	616		
ETA 2	GREB	46	US	22 JUN	101.3	66.6	1028	614		
ETA 3		47	US	22 JUN	101.1	66.6	1017	614		
ETA 4		840	US	22 JUN	101.0	66.6	1003	610		
ETA 5		841	US	22 JUN	100.9	66.6	999	609		
IOTA 2		50	US	12 AUG	118.0	47.2	1583	1501		
IOTA 3		51	US	12 AUG	118.2	47.2	1685	1517		
IOTA 4		52	US	12 AUG	CURRENT ELEMENTS NOT MAINTAINED					
IOTA 5		53	US	12 AUG	118.4	47.2	1588	1531		
NU 1	COURIER 1B	58	US	4 OCT	107.0	28.3	1211	962		
NU 2		59	US	4 OCT	106.5	28.2	1207	921		
XI 1	EXPLORER 8	60	US	3 NOV	110.6	49.9	2041	414		
XI 2		62	US	3 NOV	106.8	49.9	1748	409		
PI 1	TIROS 2	63	US	23 NOV	97.9	48.5	710	609		
PI 2		64	US	23 NOV	97.0	48.5	658	578		
PI 3		74	US	23 NOV	97.5	48.5	682	597		
PI 4		75	US	23 NOV	97.7	48.5	696	601		
PI 5		5922	US	23 NOV	105.3	47.0	1038	977		
1961 LAUNCHES										
GAMMA 1	VENUS PROBE	80	USSR	12 FEB	HELIOCENTRIC ORBIT					
DELTA 2		82	US	16 FEB	118.3	38.8	2579	635		
DELTA 3		85	US	16 FEB	116.8	38.8	2442	629		
DELTA 5		3738	US	16 FEB	116.4	38.8	2425	617		
DELTA 6		3927	US	16 FEB	116.5	38.8	2415	629		
DELTA 7		4026	US	16 FEB	115.7	38.8	2398	589		
NU 1	EXPLORER 11	107	US	27 APR	107.1	28.7	1702	483		
NU 2		3739	US	27 APR	104.7	28.8	1486	475		
OMICRON 1	TRANSIT 4A	116	US	29 JUN	103.7	66.8	993	881		
OMICRON 2	INJUN-SP-3	117	US	29 JUN	103.7	66.8	995	881		
OMICRON 3 - 256			US	29 JUN	SEE NOTE 1*					1*
RHO 1	TIROS 3	162	US	12 JUL	100.3	47.9	809	736		
RHO 2		165	US	12 JUL	100.0	47.9	791	726		
RHO 3		166	US	12 JUL	98.3	47.9	759	598		
RHO 4		167	US	12 JUL	101.8	47.8	926	769		
SIGMA 1	MIDAS 3	163	US	12 JUL	161.4	91.1	3543	3347		
SIGMA 3		198	US	12 JUL	161.1	91.1	3535	3327		
SIGMA 4		196	US	12 JUL	161.8	91.1	3581	3341		
A DELTA 1	MIDAS 4	192	US	21 OCT	165.9	95.8	3758	3494		
A DELTA 3		194	US	21 OCT	165.5	95.8	3779	3441		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1961 LAUNCHES (CONT'D)										
A DELTA 4		195	US	21 OCT	166.3	95.8	3944	3441		
A DELTA 5		2009	US	21 OCT	165.7	95.8	3734	3499		
A DELTA 6		2371	US	21 OCT	165.5	95.8	4354	2866		
A ETA 1	TRANSIT 4B	202	US	15 NOV	105.7	32.4	1104	951		
A ETA 2	TRAAC	205	US	15 NOV	105.7	32.4	1092	966		
A ETA 3		204	US	15 NOV	105.6	32.4	1095	947		
1962 LAUNCHES										
ALPHA 1	RANGER 3	221	US	26 JAN	HELIOCENTRIC ORBIT					
ALPHA 2		222	US	26 JAN	HELIOCENTRIC ORBIT					
BETA 1	TIROS 4	226	US	8 FEB	100.2	48.3	836	705		
BETA 2		227	US	8 FEB	101.2	48.1	932	697		
BETA 3		228	US	8 FEB	99.2	48.4	748	693		
BETA 4		229	US	8 FEB	99.9	48.3	814	594		
ZETA 1	OSO 1	255	US	7 MAR	95.0	32.8	535	507		
KAPPA 1		271	US	9 APR	152.9	86.6	3409	2787		
KAPPA 3		273	US	9 APR	152.6	86.6	3397	2777		
KAPPA 4		274	US	9 APR	153.3	86.6	3432	2792		
MU 2		282	US	23 APR	HELIOCENTRIC ORBIT					
A ALPHA 1	TIROS 5	309	US	19 JUN	100.2	58.0	950	592		
A ALPHA 2		311	US	19 JUN	99.6	58.0	894	585		
A ALPHA 3		312	US	19 JUN	101.4	58.2	1054	596		
A ALPHA 4		313	US	19 JUN	98.4	57.9	804	569		
A EPSILON 1	TELSTAR 1	340	US	10 JUL	157.7	44.8	5636	950		
A EPSILON 2		341	US	10 JUL	157.6	44.7	5623	949		
A OMICRON 1		369	US	23 AUG	99.3	98.3	340	613		
A OMICRON 2		370	US	23 AUG	96.5	98.5	640	549		
A OMICRON 3		378	US	23 AUG	100.1	98.4	923	612		
A OMICRON 4		388	US	23 AUG	99.0	98.5	821	607		
A RHO 1	MARINER 2	374	US	27 AUG	HELIOCENTRIC ORBIT					
A RHO 2		375	US	27 AUG	HELIOCENTRIC ORBIT					
A PSI 1	TIROS 6	397	US	18 SEP	98.5	58.3	703	675		
A PSI 2		398	US	18 SEP	97.9	58.2	668	648		
A PSI 3		399	US	18 SEP	99.0	58.4	753	677		
A PSI 4		400	US	18 SEP	97.4	58.1	651	618		
B ALPHA 1	ALOUETTE 1	424	CANADA	29 SEP	105.4	80.4	1033	996		
B ALPHA 2		426	US	29 SEP	105.3	80.4	1027	999		
B ALPHA 3		510	US	29 SEP	105.3	80.5	1023	997		
B ALPHA 4		511	US	29 SEP	105.4	80.4	1041	991		
B GAMMA 1	EXPLORER 14	432	US	2 OCT	CURRENT ELEMENTS NOT MAINTAINED					
B GAMMA 2		NNA	US	2 OCT	CURRENT ELEMENTS NOT MAINTAINED					
B ETA 1	RANGER 5	439	US	18 OCT	HELIOCENTRIC ORBIT					
B ETA 2		440	US	18 OCT	HELIOCENTRIC ORBIT					
B LAMBDA 1	EXPLORER 15	445	US	27 OCT	CURRENT ELEMENTS NOT MAINTAINED					
B LAMBDA 2		NNA	US	27 OCT	CURRENT ELEMENTS NOT MAINTAINED					
B MU 1	ANNA 1B	446	US	31 OCT	107.8	50.1	1191	1076		
B MU 2		447	US	31 OCT	107.6	50.1	1166	1065		
B NU 3		450	USSR	1 NOV	HELIOCENTRIC ORBIT					
B UPSILON 1	RELAY 1	503	US	13 DEC	185.0	47.4	7434	1322		
B UPSILON 2		515	US	13 DEC	184.8	47.5	7418	1322		
B CHI 1	EXPLORER 16	506	US	16 DEC	104.3	52.0	1174	748		
B PSI 1	TRANSIT 5A	509	US	19 DEC	98.3	90.6	698	666		
B PSI 3		519	US	19 DEC	98.4	90.6	702	669		
B PSI 4		523	US	19 DEC	98.7	90.4	751	648		
1963 LAUNCHES										
1963 004A	SYNCOM 1	553	US	14 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1963 004B		532	US	14 FEB	312.3	32.5	17506	233		
1963 005A		534	US	19 FEB	96.6	100.4	716	486		
1963 005B		533	US	19 FEB	95.4	100.4	625	460		
1963 005D		536	US	19 FEB	93.8	100.4	502	423		
1963 008B		566	USSR	2 APR	BARYCENTRIC ORBIT					

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1963 LAUNCHES (CONT'D)										
1963 013A	TELSTAR 2	573	US	7 MAY	225.2	42.7	10805	966		
1963 013B		575	US	7 MAY	225.0	42.7	10790	962		
1963 014A		574	US	9 MAY	166.4	87.3	3675	3615		
1963 014B		579	US	9 MAY	166.2	87.4	4083	3193		
1963 014C		608	US	9 MAY	166.4	87.3	3727	3562		
1963 014D - 014DE			US	9 MAY	SEE NOTE 2*					2*
1963 022A		594	US	16 JUN	99.1	89.9	734	703		
1963 022B		603	US	16 JUN	99.2	89.9	741	709		
1963 022C		610	US	16 JUN	100.5	90.1	855	721		
1963 024A	TIROS 7	604	US	19 JUN	97.0	58.2	625	608		
1963 024B		605	US	19 JUN	94.6	58.1	512	487		
1963 024C		606	US	19 JUN	97.2	58.3	645	606		
1963 024D		607	US	19 JUN	95.3	58.0	548	518		
1963 025B		614	US	27 JUN	127.0	82.1	3655	337		
1963 026A	RESEARCH SATELLITE FOR GEOPHYSICS	612	US	28 JUN	99.4	49.7	1063	405		
1963 030A		622	US	18 JUL	167.8	88.4	3723	3681		
1963 030B		635	US	18 JUL	167.8	88.4	3723	3681		
1963 030C		630	US	18 JUL	167.4	88.3	3792	3582		
1963 030E		631	US	18 JUL	168.2	88.4	3773	3665		
1963 030F		3121	US	18 JUL	166.6	87.3	3720	3587		
1963 030G		3132	US	18 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1963 031A	SYNCOM 2	634	US	26 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1963 031B		625	US	26 JUL	171.2	32.6	7387	284		
1963 038A		669	US	28 SEP	107.0	89.8	1113	1071		
1963 038B		670	US	28 SEP	107.3	89.8	1133	1074		
1963 038C	SN 39	671	US	28 SEP	107.2	89.8	1131	1073		
1963 038D		672	US	28 SEP	107.0	89.8	1116	1066		
1963 038E		745	US	28 SEP	106.9	89.8	1106	1066		
1963 038F		2097	US	28 SEP	107.0	89.8	1122	1061		
1963 038G		3166	US	28 SEP	107.3	89.8	1133	1073		
1963 038H		7259	US	28 SEP	106.7	89.8	1106	1049		
1963 039A		674	US	17 OCT	CURRENT ELEMENTS NOT MAINTAINED					
1963 039B		675	US	17 OCT	CURRENT ELEMENTS NOT MAINTAINED					
1963 039C		692	US	17 OCT	CURRENT ELEMENTS NOT MAINTAINED					
1963 043A	POLYOT 1	663	USSR	1 NOV	98.5	58.8	1053	330		
1963 047A	CENTAUR 2	694	US	27 NOV	106.9	30.3	1697	472		
1963 047B - 047P			US	27 NOV	SEE NOTE 3*					3*
1963 049A		703	US	5 DEC	106.7	89.8	1089	1068		
1963 049B		704	US	5 DEC	107.0	89.8	1121	1065		
1963 049C		705	US	5 DEC	107.0	89.8	1118	1065		
1963 049D		706	US	5 DEC	106.9	89.8	1108	1062		
1963 049E		715	US	5 DEC	106.7	89.8	1102	1054		
1963 049F		753	US	5 DEC	106.9	89.8	1114	1063		
1963 049G		2432	US	5 DEC	107.0	89.8	1119	1065		
1963 049H		2620	US	5 DEC	106.6	89.8	1084	1064		
1963 049J		2930	US	5 DEC	103.7	89.8	1024	846		
1963 049K		4506	US	5 DEC	103.3	89.7	1060	775		
1963 049L		6182	US	5 DEC	103.4	89.7	1069	775		
1963 049M		6283	US	5 DEC	103.4	89.7	1068	779		
1963 053A	EXPLORER 19	714	US	19 DEC	110.6	78.9	1633	883		
1963 053B		721	US	19 DEC	115.6	78.6	2370	603		
1963 053C		722	US	19 DEC	114.6	78.7	2163	715		
1963 053D		723	US	19 DEC	114.4	78.7	2146	715		
1963 053E		724	US	19 DEC	114.4	78.7	2177	687		
1963 053G		726	US	19 DEC	113.8	78.6	2141	665		
1963 053H		732	US	19 DEC	114.3	78.7	2166	692		
1963 053J		3750	US	19 DEC	114.1	78.6	2158	677		
1963 054A	TIROS 8	716	US	21 DEC	99.2	58.4	740	701		
1963 054B		717	US	21 DEC	98.7	58.4	713	685		
1963 054C		720	US	21 DEC	100.8	58.4	908	693		
1963 054D		736	US	21 DEC	96.6	58.5	546	554		

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1964 LAUNCHES										
1964 001A		727	US	11 JAN	103.4	69.9	932	910		
1964 001B	GRAVITY GRADIENT 1	728	US	11 JAN	103.3	69.9	931	908		
1964 001C	EGRS 1	729	US	11 JAN	103.4	69.8	932	909		
1964 001D	SOLAR RAD.	730	US	11 JAN	103.4	69.9	932	909		
1964 001E		731	US	11 JAN	103.4	69.9	931	909		
1964 002A		733	US	19 JAN	101.1	99.0	844	787		
1964 002B		734	US	19 JAN	101.1	99.0	828	804		
1964 002C		735	US	19 JAN	101.2	99.0	831	806		
1964 003A	RELAY 2	737	US	21 JAN	194.7	46.3	7472	2026		
1964 003B		738	US	21 JAN	194.7	46.3	7481	2022		
1964 004B		741	US	25 JAN	108.8	81.4	1307	1045		
1964 004C		742	US	25 JAN	108.7	81.4	1305	1039		
1964 004D		743	US	25 JAN	108.7	81.5	1306	1037		
1964 005A	ELEKTRON 1	746	USSR	30 JAN	167.4	60.8	6971	400		
1964 006B	ELEKTRON 2	748	USSR	30 JAN	1356.3	64.9	66018	2403		
1964 006C		750	USSR	30 JAN	160.2	60.8	6381	411		
1964 006D		751	USSR	30 JAN	1384.0	64.0	67406	2117		
1964 016D	ZOND 1	785	USSR	2 APR	HELIOCENTRIC ORBIT					
1964 026A		801	US	4 JUN	102.8	90.5	943	850		
1964 026B		805	US	4 JUN	103.4	90.1	962	886		
1964 026C		806	US	4 JUN	101.8	90.8	922	770		
1964 026D		809	US	4 JUN	102.9	90.5	947	854		
1964 026E		2986	US	4 JUN	102.9	90.5	946	853		
1964 031A		812	US	18 JUN	101.5	99.7	835	827		
1964 031B		813	US	18 JUN	101.5	99.7	836	829		
1964 031C		815	US	18 JUN	101.4	99.7	838	820		
1964 038A	ELEKTRON 3	829	USSR	10 JUL	166.1	60.8	6867	398		
1964 038B	ELEKTRON 4	830	USSR	10 JUL	1313.4	69.5	63473	3226		
1964 038C		831	USSR	10 JUL	159.6	60.8	6339	402		
1964 038D		832	USSR	10 JUL	1319.0	69.4	63879	3045		
1964 040A		836	US	17 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1964 040B		837	US	17 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1964 040C		838	US	17 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1964 041B		843	US	28 JUL	BARYCENTRIC ORBIT					
1964 045B		851	US	14 AUG	100.5	95.4	1326	249		
1964 047A	SYNCOM 3	858	US	19 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1964 047B		862	US	19 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1964 049D	COSMOS 41	869	USSR	22 AUG	714.7	71.4	37583	2521		
1964 049E		898	USSR	22 AUG	719.0	71.3	37909	2506		
1964 051A	EXPLORER 20	870	US	25 AUG	103.8	79.8	1017	867		
1964 051B		871	US	25 AUG	103.7	79.9	1007	863		
1964 053A	COSMOS 44	876	USSR	28 AUG	99.3	65.0	848	607		
1964 053B		877	USSR	28 AUG	99.4	65.0	787	681		
1964 054A	OGO 1	879	US	5 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1964 063A		893	US	6 OCT	106.2	89.7	1078	1034		
1964 063B		897	US	6 OCT	106.5	89.7	1082	1054		
1964 063C		900	US	6 OCT	106.3	89.7	1072	1042		
1964 063D		901	US	6 OCT	106.5	89.7	1082	1055		
1964 063E		902	US	6 OCT	106.5	89.7	1083	1055		
1964 063F		903	US	6 OCT	106.3	89.8	1071	1045		
1964 064A	EXPLORER 22	899	US	10 OCT	104.6	79.6	1075	885		
1964 064B		907	US	10 OCT	104.6	79.6	1075	886		
1964 064C		976	US	10 OCT	103.8	79.3	1050	832		
1964 064D		977	US	10 OCT	105.3	80.0	1117	906		
1964 073A	MARINER 3	923	US	5 NOV	HELIOCENTRIC ORBIT					
1964 074A	EXPLORER 23	924	US	6 NOV	97.6	51.9	840	448		
1964 076B	EXPLORER 25	932	US	21 NOV	115.8	81.3	2463	529		
1964 076C		933	US	21 NOV	115.7	81.3	2446	531		
1964 076D		934	US	21 NOV	111.9	81.3	2032	523		
1964 076E		935	US	21 NOV	111.2	81.3	2042	527		
1964 076G		937	US	21 NOV	109.3	81.3	1895	500		
1964 076J		941	US	21 NOV	112.0	81.3	2120	521		
1964 076K		950	US	21 NOV	112.0	81.3	2091	551		
1964 076N		940	US	21 NOV	108.7	81.3	1825	516		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1964 LAUNCHES (CONT'D)										
1964 077A	MARINER 4	938	US	28 NOV	HELIOCENTRIC ORBIT					
1964 077B		942	US	28 NOV	HELIOCENTRIC ORBIT					
1964 078C	ZOND 2	945	USSR	30 NOV	HELIOCENTRIC ORBIT					
1964 083A		953	US	13 DEC	106.1	89.7	1072	1022		
1964 083B		956	US	13 DEC	106.1	89.7	1080	1019		
1964 083C		959	US	13 DEC	106.2	89.7	1084	1021		
1964 083D		965	US	13 DEC	106.2	89.7	1086	1025		
1964 083E		966	US	13 DEC	106.2	89.7	1083	1021		
1964 083F		967	US	13 DEC	106.1	89.7	1091	1019		
1964 083G		1099	US	13 DEC	106.2	89.7	1084	1021		
1964 083H		1528	US	13 DEC	103.9	89.8	996	891		
1964 083J		1608	US	13 DEC	106.0	89.7	1074	1015		
1964 083K		2798	US	13 DEC	101.3	89.7	865	785		
1964 083L		5444	US	13 DEC	101.3	89.7	865	785		
1964 083M		5540	US	13 DEC	101.5	89.7	859	809		
1964 086A	EXPLORER 26	963	US	21 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1964 086C		5992	US	21 DEC	129.9	18.0	4057	179		
1965 LAUNCHES										
1965 003A		973	US	19 JAN	94.6	98.6	588	414		
1965 004A	TIROS 9	978	US	22 JAN	119.1	96.4	2579	705		
1965 004B		979	US	22 JAN	119.1	96.4	2585	704		
1965 004C		1312	US	22 JAN	117.9	96.3	2504	674		
1965 004D		1313	US	22 JAN	120.3	96.4	2657	735		
1965 007A	OSO 2	987	US	3 FEB	95.9	32.8	592	528		
1965 007B		988	US	3 FEB	89.9	32.8	270	266		
1965 008A		1001	US	11 FEB	145.3	32.1	2794	2761		
1965 008B		1000	US	11 FEB	145.6	32.1	2797	2780		
1965 008C		1002	US	11 FEB	145.7	32.1	2806	2778		
1965 009A	PEGASUS 1	1085	US	16 FEB	93.4	31.7	477	408		
1965 009B		1088	US	16 FEB	96.2	31.7	668	482		
1965 010B		1087	US	17 FEB	BARYCENTRIC ORBIT					
1965 014A	COSMOS 58	1097	USSR	26 FEB	96.3	65.0	623	547		
1965 014B		1098	USSR	26 FEB	96.1	65.0	650	500		
1965 016A	GREB	1271	US	9 MAR	103.4	70.0	936	907		
1965 016B	GRAVITY GRADIENT 2	1244	US	9 MAR	103.4	70.0	937	907		
1965 016C	GRAVITY GRADIENT 3	1292	US	9 MAR	103.3	70.0	934	905		
1965 016D	SOLAR PAD.	1291	US	9 MAR	103.4	70.0	937	908		
1965 016E	EGRS 3	1208	US	9 MAR	103.4	70.0	936	908		
1965 016F	OSCAR 3	1293	US	9 MAR	103.3	70.0	931	903		
1965 016G	SURCAL	1310	US	9 MAR	101.8	70.0	862	834		
1965 016H	DODECAHEDRON	1272	US	9 MAR	103.4	70.0	938	907		
1965 016J		1245	US	9 MAR	103.4	70.0	935	905		
1965 020D - 020FE			USSR	15 MAR	SEE NOTE 4*					4*
1965 021A		1273	US	18 MAR	96.8	99.0	704	512		
1965 021C		1289	US	18 MAR	95.2	99.0	588	477		
1965 021F		1463	US	18 MAR	95.6	99.0	626	479		
1965 023B		1298	US	21 MAR	HELIOCENTRIC ORBIT					
1965 027A		1314	US	3 APR	111.5	90.2	1320	1273		
1965 027B	EGRS 4	1315	US	3 APR	111.4	90.2	1317	1271		
1965 027C		1316	US	3 APR	111.1	90.2	1313	1250		
1965 027D		1389	US	3 APR	111.2	90.2	1303	1263		
1965 027E		1399	US	3 APR	101.0	90.4	868	748		
1965 028A	EARLY BIRD	1317	ITSO	6 APR	1436.6	10.4	35817	35776		
1965 028B		1318	US	6 APR	CURRENT ELEMENTS NOT MAINTAINED					
1965 030A	MOLNIYA 1	1324	USSR	23 APR	720.2	64.6	39618	859		
1965 030D		1967	USSR	23 APR	702.5	64.7	38896	704		
1965 032A	EXPLORER 27	1328	US	29 APR	107.7	41.1	1319	927	136.740	5*
1965 032B		1359	US	29 APR	107.7	41.1	1318	928		
1965 032C		1995	US	29 APR	106.3	41.1	1370	740		
1965 032D		2011	US	29 APR	108.8	41.1	1273	1072		
1965 034A		1359	US	6 MAY	157.0	32.1	3740	2782		
1965 034B		1360	US	6 MAY	309.8	32.1	14815	2759		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ (MHZ)	NOTES
1965 LAUNCHES (CONT'D)										
1965 034C		1361	US	6 MAY	145.5	32.1	2799	2775		
1965 034D		2529	US	6 MAY	309.8	32.1	14817	2762		
1965 038A		1377	US	20 MAY	99.5	98.0	929	548		
1965 038B		1378	US	20 MAY	99.3	98.0	913	546		
1965 038C		1379	US	20 MAY	98.8	98.2	866	544		
1965 038E		1461	US	20 MAY	99.8	98.2	965	544		
1965 038F		1462	US	20 MAY	96.9	98.5	708	517		
1965 038G		1475	US	20 MAY	99.1	98.0	894	541		
1965 039A	PEGASUS 2	1381	US	25 MAY	95.1	31.7	586	463		
1965 039B		1385	US	25 MAY	96.4	31.7	682	494		
1965 044A	LUNIK 5	1393	USSR	8 JUN	HELIOCENTRIC ORBIT					
1965 048A		1420	US	24 JUN	106.8	89.8	1139	1025		
1965 048B		1428	US	24 JUN	106.5	89.8	1114	1023		
1965 048C		1425	US	24 JUN	106.8	89.8	1139	1026		
1965 048D		1435	US	24 JUN	106.6	89.8	1130	1017		
1965 048E		2701	US	24 JUN	106.4	89.8	1108	1019		
1965 048F		3592	US	24 JUN	106.4	89.8	1110	1020		
1965 051A	TIROS 10	1430	US	2 JUL	100.5	98.1	834	740		
1965 051B		1433	US	2 JUL	100.5	98.2	830	738		
1965 051C		1440	US	2 JUL	98.8	98.5	804	602		
1965 051D		1529	US	2 JUL	101.9	98.6	882	819		
1965 053B	COSMOS 72	1442	USSR	16 JUL	94.0	56.0	488	457		
1965 053D	COSMOS 74	1444	USSR	16 JUL	94.5	56.0	525	470		
1965 053E	COSMOS 75	1445	USSR	16 JUL	94.6	56.0	526	474		
1965 053F		1448	USSR	16 JUL	95.6	56.0	585	515		
1965 056A	ZOND 3	1454	USSR	18 JUL	HELIOCENTRIC ORBIT					
1965 058A		1458	US	20 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1965 058B		1459	US	20 JUL	CUPRENT ELEMENTS NOT MAINTAINED					
1965 058C		1460	US	20 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1965 063A	EGRS 5	1506	US	10 AUG	122.2	69.2	2427	1133		
1965 063B		1502	US	10 AUG	122.2	69.2	2426	1135		
1965 064A	CENTAUR 6	1503	US	11 AUG	BARYCENTRIC ORBIT					
1965 065A		1504	US	13 AUG	108.0	90.0	1186	1084		
1965 065B		1508	US	13 AUG	107.8	89.9	1158	1097		
1965 065C		1510	US	13 AUG	107.5	90.0	1162	1062		
1965 065D		1511	US	13 AUG	108.0	90.0	1189	1088		
1965 065E		1512	US	13 AUG	108.0	90.0	1191	1088		
1965 065F		1514	US	13 AUG	108.0	90.0	1191	1087		
1965 065G		1515	US	13 AUG	107.8	90.0	1179	1077		
1965 065H		1520	US	13 AUG	108.0	90.0	1190	1086		
1965 065J		1521	US	13 AUG	108.0	90.0	1190	1088		
1965 065K		1522	US	13 AUG	108.0	90.0	1190	1086		
1965 065L		1523	US	13 AUG	108.1	90.0	1192	1088		
1965 065M		2335	US	13 AUG	106.1	89.9	1121	973		
1965 065N		3809	US	13 AUG	106.0	89.9	1087	1001		
1965 065P		3810	US	13 AUG	105.2	89.9	1052	964		
1965 065Q		5265	US	13 AUG	107.8	89.9	1160	1098		
1965 065R		5363	US	13 AUG	105.3	89.9	1058	966		
1965 065S		6290	US	13 AUG	106.0	89.9	1084	1009		
1965 070A	COSMOS 80	1570	USSR	3 SEP	114.9	56.0	1542	1365		
1965 070B	COSMOS 81	1571	USSR	3 SEP	115.3	56.0	1547	1393		
1965 070C	COSMOS 82	1572	USSR	3 SEP	115.6	56.0	1555	1416		
1965 070D	COSMOS 83	1573	USSR	3 SEP	116.0	56.0	1565	1441		
1965 070E	COSMOS 84	1574	USSR	3 SEP	116.4	56.0	1574	1466		
1965 070F		1575	USSR	3 SEP	114.5	56.1	1514	1358		
1965 070G		3045	USSR	3 SEP	116.0	55.4	1740	1263		
1965 072A		1580	US	10 SEP	101.7	98.8	1041	648		
1965 072D		1583	US	10 SEP	101.6	98.6	1028	646		
1965 072F		1931	US	10 SEP	103.0	98.7	1156	647		
1965 072F		1932	US	10 SEP	100.3	98.3	910	641		
1965 073A	COSMOS 86	1584	USSR	18 SEP	115.0	56.0	1629	1286		
1965 073B	COSMOS 87	1585	USSR	18 SEP	115.4	56.0	1640	1311		
1965 073C	COSMOS 88	1586	USSR	18 SEP	115.8	56.0	1654	1332		
1965 073D	COSMOS 89	1587	USSR	18 SEP	116.2	56.0	1668	1355		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1965 LAUNCHES (CONT'D)										
1965 073E	COSMOS 90	1588	USSR	18 SEP	116.6	56.0	1680	1380		
1965 073F		1589	USSR	18 SEP	116.8	56.0	1690	1383		
1965 073G		1590	USSR	18 SEP	116.3	56.0	1652	1380		
1965 073H		1591	USSR	18 SEP	116.5	56.0	1677	1375		
1965 073J		1617	USSR	18 SEP	117.3	56.1	1750	1372		
1965 073K		1618	USSR	18 SEP	117.5	56.1	1754	1390		
1965 073L		2647	USSR	18 SEP	116.0	56.0	1656	1353		
1965 078A		1613	US	5 OCT	123.5	144.2	3269	410		
1965 078B		1616	US	5 OCT	123.2	144.2	3239	412		
1965 081A	OGO 2	1620	US	14 OCT	100.4	87.3	1161	400		
1965 081B		1625	US	14 OCT	101.4	87.3	1245	410		
1965 082B - 082UJ			US	15 OCT	SEE NOTE 6*					6*
1965 089A	EXPLORER 29	1726	US	6 NOV	120.3	59.3	2277	1112		
1965 089B		1729	US	6 NOV	120.2	59.3	2275	1113		
1965 089C		2700	US	6 NOV	119.1	59.5	2220	1068		
1965 089D		2888	US	6 NOV	121.3	59.1	2327	1153		
1965 091A	VENERA 2	1730	USSR	12 NOV	HELIOCENTRIC ORBIT					
1965 092D		1736	USSR	16 NOV	HELIOCENTRIC ORBIT					
1965 093A	EXPLORER 30	1738	US	19 NOV	100.6	59.7	901	678		
1965 093B		1739	US	19 NOV	100.5	59.7	874	699		
1965 093C		2013	US	19 NOV	99.9	59.6	832	681		
1965 093D		2088	US	19 NOV	101.1	59.7	905	722		
1965 096A	A-1	1778	FRANCE	26 NOV	108.4	34.2	1776	526		
1965 096B		1805	FRANCE	26 NOV	108.1	34.2	1754	525		
1965 096D		1996	FRANCE	26 NOV	107.2	34.2	1667	523		
1965 098A	ALOUETTE 2	1804	CANADA	29 NOV	120.7	79.8	2921	507		
1965 098B	EXPLORER 31	1806	US	29 NOV	121.1	79.8	2957	506		
1965 098C		1807	US	29 NOV	120.8	79.8	2930	507		
1965 098D		1808	US	29 NOV	118.3	79.8	2707	508		
1965 098E		1944	US	29 NOV	118.1	79.8	2692	509		
1965 098F		1948	US	29 NOV	119.6	79.8	2820	512		
1965 098G		1951	US	29 NOV	119.5	79.7	2813	509		
1965 098H		2092	US	29 NOV	120.7	79.8	2923	509		
1965 098J		2153	US	29 NOV	120.5	79.7	2912	505		
1965 101A	FR-1	1814	FRANCE	5 DEC	99.7	75.8	753	739		
1965 101B		1915	US	6 DEC	99.7	75.8	757	742		
1965 101C		1934	FRANCE	6 DEC	98.9	76.4	734	686		
1965 101D		1935	FRANCE	6 DEC	98.2	75.2	707	644		
1965 105A	PIONEER 6	1841	US	16 DEC	HELIOCENTRIC ORBIT					
1965 106A	COSMOS 100	1843	USSR	17 DEC	97.3	65.0	725	542		
1965 106B		1844	USSR	17 DEC	97.2	64.9	641	613		
1965 108B	LES 4	1970	US	21 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1965 108C	OSCAR 3	1902	US	21 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1965 109A		1864	US	22 DEC	104.9	89.0	1082	904		
1965 109B		1865	US	22 DEC	104.9	89.0	1093	905		
1965 109C		2086	US	22 DEC	103.7	89.1	949	883		
1965 109D		2226	US	22 DEC	107.1	89.0	1290	900		
1965 109F		2353	US	22 DEC	105.3	89.3	1134	889		
1965 112A	COSMOS 103	1868	USSR	28 DEC	96.4	56.0	605	573		
1965 112B		1869	USSR	28 DEC	96.3	56.0	605	558		
1965 112D		1937	USSR	28 DEC	96.5	55.9	625	566		
1966 LAUNCHES										
1966 000A		2428	UNKN	UNKN	91.2	35.0	496	168		7*
1966 000B		2429	UNKN	UNKN	CURRENT ELEMENTS NOT MAINTAINED					7*
1966 000C		2430	UNKN	UNKN	CURRENT ELEMENTS NOT MAINTAINED					7*
1966 005A		1952	US	28 JAN	105.8	89.5	1209	860		
1966 005B		1953	US	28 JAN	105.9	89.8	1211	859		
1966 005C		2140	US	28 JAN	107.7	89.9	1381	862		
1966 005D		2141	US	28 JAN	104.2	89.8	1074	843		
1966 005E		2889	US	28 JAN	109.5	89.5	1340	1077		
1966 005F		2989	US	28 JAN	104.2	89.7	1062	862		
1966 005G		4587	US	28 JAN	105.8	89.8	1041	1026		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1966 LAUNCHES (CONT'D)										
1966 006D		2001	USSR	31 JAN	BARYCENTRIC ORBIT					
1966 008A	ESSA I	1982	US	3 FEB	100.1	97.8	857	700		
1966 008B		1983	US	3 FEB	100.3	97.8	856	696		
1966 008C		2085	US	3 FEB	98.9	97.7	737	678		
1966 008D		2118	US	3 FEB	101.1	97.9	941	689		
1966 008E		2154	US	3 FEB	100.0	97.7	820	708		
1966 013A	D-1A	2016	FRANCE	17 FEB	117.9	34.1	2672	501		
1966 013B		2017	FRANCE	17 FEB	117.7	34.0	2657	502		
1966 013F		2023	FRANCE	17 FEB	114.0	34.0	2341	476		
1966 013G		2161	FRANCE	17 FEB	117.1	34.1	2588	511		
1966 013J		3970	FRANCE	17 FEB	113.8	34.0	2310	489		
1966 013K		5420	FRANCE	17 FEB	113.6	34.0	2297	490		
1966 013L		5959	FRANCE	17 FEB	113.5	34.0	2282	488		
1966 016A	ESSA 2	2091	US	28 FEB	113.4	101.2	1416	1357		
1966 016B		2096	US	28 FEB	113.4	101.1	1417	1357		
1966 016C		2223	US	28 FEB	111.9	100.8	1387	1242		
1966 016D		2224	US	28 FEB	115.0	100.9	1566	1352		
1966 016E		6214	US	28 FEB	114.4	101.4	1522	1340		
1966 024A		2119	US	26 MAR	105.2	89.8	1118	893		
1966 024B		2120	US	26 MAR	105.2	89.8	1121	894		
1966 024C		2386	US	26 MAR	105.0	89.9	1105	893		
1966 024D		3590	US	26 MAR	98.6	89.7	720	666		
1966 025A	OV1-4	2121	US	30 MAR	104.0	144.4	1011	885		
1966 025B	OV1-5	2122	US	30 MAR	105.6	144.6	1057	985		
1966 025C		2123	US	30 MAR	105.6	144.5	1056	985		
1966 025D		2124	US	30 MAR	104.0	144.5	1011	885		
1966 025F		3611	US	30 MAR	105.0	144.5	1054	926		
1966 025G		5361	US	30 MAR	105.1	144.6	1040	958		
1966 025H		5599	US	30 MAR	105.0	144.5	1074	919		
1966 026A		2125	US	31 MAR	100.3	98.3	925	625		
1966 026B		2129	US	31 MAR	100.1	98.2	909	620		
1966 026D		2177	US	31 MAR	101.9	98.9	1083	635		
1966 026E		2178	US	31 MAR	97.8	98.5	716	602		
1966 026F		2179	US	31 MAR	99.7	98.1	875	618		
1966 027A	LUNA 10	2126	USSR	31 MAR	SELENOCENTRIC ORBIT					
1966 027D		2130	USSR	31 MAR	HELIOCENTRIC ORBIT					
1966 027E		2131	USSR	31 MAR	BARYCENTRIC ORBIT					
1966 027F		2132	USSR	31 MAR	BARYCENTRIC ORBIT					
1966 031A	OAO 1	2142	US	8 APR	100.8	35.0	801	789		
1966 031B		2144	US	8 APR	100.7	35.0	799	781		
1966 031C		2145	US	8 APR	99.7	35.0	749	739		
1966 034A	OV3-1	2150	US	22 APR	147.4	82.4	5390	347		
1966 034B		2167	US	22 APR	141.9	82.4	4928	349		
1966 034D		2209	US	22 APR	134.7	82.3	4333	326		
1966 034E		9998	US	22 APR	145.0	82.4	5182	353		
1966 038A	COSMOS 114	2168	USSR	11 MAY	96.5	65.0	607	579		
1966 038B		2169	USSR	11 MAY	96.4	64.9	633	544		
1966 040A	NIMBUS 2	2173	US	15 MAY	108.0	100.5	1182	1096		
1966 040B		2174	US	15 MAY	107.8	100.4	1174	1083		
1966 041A		2176	US	19 MAY	103.2	89.7	978	852		
1966 041B		2180	US	19 MAY	103.3	89.7	983	853		
1966 041C		2225	US	19 MAY	100.9	89.7	843	767		
1966 041D		2644	US	19 MAY	105.4	89.7	1190	847		
1966 041E		3591	US	19 MAY	103.3	89.7	979	853		
1966 041F		4555	US	19 MAY	103.2	89.7	975	847		
1966 044A	EXPLORER 32	2183	US	25 MAY	107.3	64.5	1949	261		
1966 045B		2187	US	20 MAY	BARYCENTRIC ORBIT					
1966 049A	OGO 3	2195	US	7 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1966 052A		2201	US	10 JUN	143.0	40.8	4723	643		
1966 052B		2206	US	10 JUN	143.0	40.8	4714	643		
1966 052C		2498	US	10 JUN	140.5	40.6	4568	582		
1966 052D		2516	US	10 JUN	145.1	40.9	4835	703		
1966 053A		2207	US	16 JUN	1333.9	4.2	33877	33645		
1966 053B		2215	US	16 JUN	1334.6	4.1	33867	33683		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1966 LAUNCHES (CONT'D)										
1966 053C		2216	US	16 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1966 053D		2217	US	16 JUN	1336.4	4.0	33923	33702		
1966 053E		2218	US	16 JUN	1338.5	4.2	34014	33694		
1966 053F		2219	US	16 JUN	1340.8	4.2	34120	33681		
1966 053G		2220	US	16 JUN	1343.9	4.2	34192	33734		
1966 053H		2221	US	16 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1966 053J		2222	US	16 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1966 056A	PAGEOS 1	2253	US	24 JUN	180.0	84.8	5825	2543		
1966 056B - 056CF			US	24 JUN	SEE NOTE 8*					8*
1966 057A	COSMOS 122	2254	USSR	25 JUN	96.5	64.9	602	581		
1966 057B		2257	USSR	25 JUN	96.2	64.9	644	516		
1966 058A	EXPLORER 33	2258	US	1 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1966 058C		2260	US	1 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1966 063A	OV1-8	2324	US	14 JUL	96.5	144.1	611	574		
1966 063B		2327	US	14 JUL	104.9	144.2	1005	978		
1966 063C		2328	US	14 JUL	105.2	144.2	1012	995		
1966 063D		2329	US	14 JUL	105.2	144.2	1007	998		
1966 063E		2337	US	14 JUL	105.2	144.2	1009	1001		
1966 070A	OV3-3	2389	US	4 AUG	132.4	81.4	4104	359		
1966 070B		2404	US	4 AUG	127.2	81.4	3645	357		
1966 070D		2800	US	4 AUG	135.8	81.4	4330	422		
1966 073B		2395	US	10 AUG	BARYCENTRIC ORBIT					
1966 075A	PIONEER 7	2398	US	17 AUG	HELIOCENTRIC ORBIT					
1966 075C		2402	US	17 AUG	HELIOCENTRIC ORBIT					
1966 076A		2401	US	18 AUG	106.7	88.8	1103	1048		
1966 076B		2413	US	18 AUG	106.7	88.8	1103	1050		
1966 076C		2580	US	18 AUG	105.2	89.1	1085	930		
1966 076D		2702	US	18 AUG	108.3	88.5	1216	1082		
1966 076E		7558	US	18 AUG	106.2	88.8	1085	1025		
1966 076F		8000	US	18 AUG	106.3	88.8	1088	1028		
1966 076G		9401	US	18 AUG	106.5	88.8	1104	1035		
1966 077A		2403	US	19 AUG	167.4	89.8	3708	3665		
1966 077B	EGRS 7	2411	US	19 AUG	167.5	89.8	3703	3674		
1966 077C	ERS 15	2412	US	19 AUG	167.6	89.8	3703	3683		
1966 078A	LUNA 11	2406	USSR	24 AUG	SELENOCENTRIC ORBIT					
1966 082A		2418	US	16 SEP	100.7	98.5	895	691		
1966 082B		2422	US	16 SEP	100.7	98.6	895	692		
1966 084B		2426	US	20 SEP	BARYCENTRIC ORBIT					
1966 087A	ESSA 3	2435	US	2 OCT	114.5	101.0	1488	1387		
1966 087B		2436	US	2 OCT	114.5	101.0	1489	1385		
1966 087C		2518	US	2 OCT	115.9	100.8	1561	1435		
1966 087D		2775	US	2 OCT	113.2	101.6	1475	1282		
1966 087E		6213	US	2 OCT	114.2	101.5	1468	1377		
1966 087F		8791	US	2 OCT	114.6	101.4	1550	1329		
1966 089A		2481	US	5 OCT	167.5	90.3	3700	3683		
1966 089B	EGRS 8	2520	US	5 OCT	167.6	90.3	3696	3691		
1966 094A	LUNA 12	2508	USSR	22 OCT	SELENOCENTRIC ORBIT					
1966 095B		2513	US	25 OCT	BARYCENTRIC ORBIT					
1966 096A	INTELSAT 2 F-1	2514	ITSO	26 OCT	CURRENT ELEMENTS NOT MAINTAINED					
1966 110A	ATS I	2608	US	7 DEC	1436.1	8.4	35791	35782	136.470,137.350	5*
1966 111A	OV1-9	2610	US	11 DEC	141.5	99.1	4775	476		
1966 111B	OV1-10	2611	US	11 DEC	98.5	93.3	747	629		
1966 111C		2621	US	11 DEC	98.6	93.3	756	635		
1966 111D		2622	US	11 DEC	141.5	99.1	4762	477		
1967 LAUNCHES										
1967 001A	INTELSAT 2 F-2	2639	ITSO	11 JAN	1437.3	6.6	35862	35757		
1967 001B - 001X			US	11 JAN	SEE NOTE 9*					9*
1967 003A		2645	US	18 JAN	1329.5	3.8	33923	33523		
1967 003B		2649	US	18 JAN	1329.9	3.6	33831	33532		
1967 003C		2650	US	18 JAN	1330.6	3.6	33898	33494		
1967 003D		2651	US	18 JAN	1332.1	3.6	33875	33576		
1967 003E		2652	US	18 JAN	1334.1	3.7	33972	33559		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1967 LAUNCHES (CONT'D)										
1967 003F		2653	US	18 JAN	1336.5	8.1	34031	33595		
1967 003G		2654	US	18 JAN	1339.5	3.8	34112	33636		
1967 003H		2655	US	18 JAN	1343.0	3.8	34237	33651		
1967 003J		2660	US	18 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1967 006A	FSSA 4	2657	US	25 JAN	113.4	101.9	1442	1327		
1967 006B		2661	US	26 JAN	113.6	101.9	1444	1343		
1967 006C		2706	US	26 JAN	114.2	102.0	1451	1395		
1967 006D		2707	US	26 JAN	112.6	101.8	1464	1233		
1967 006E		5971	US	26 JAN	113.1	101.9	1459	1284		
1967 010A		2669	US	8 FEB	101.4	99.1	866	788		
1967 010B		2741	US	8 FEB	101.4	99.0	871	784		
1967 011A	DIADEME 1	2674	FRANCE	8 FEB	103.7	39.9	1305	562		
1967 011B		2671	FRANCE	8 FEB	103.9	39.9	1322	563		
1967 011G		2688	FRANCE	8 FEB	100.9	40.0	1066	538		
1967 011H		2689	FRANCE	8 FEB	103.5	39.9	1317	536		
1967 011L		2692	FRANCE	8 FEB	101.8	39.9	1142	549		
1967 011M		2900	FRANCE	8 FEB	101.0	39.9	1077	537		
1967 011N		2990	FRANCE	8 FEB	100.7	39.9	1051	537		
1967 011P		3742	FRANCE	8 FEB	101.2	39.9	1089	540		
1967 011Q		4009	FRANCE	8 FEB	108.4	39.4	1741	565		
1967 014A	DIADEME 2	2680	FRANCE	15 FEB	109.8	39.4	1851	587		
1967 014B		2682	FRANCE	15 FEB	110.0	39.4	1867	588		
1967 014C		2684	FRANCE	15 FEB	109.4	39.9	1819	582		
1967 014E		2683	FRANCE	15 FEB	108.1	39.4	1713	564		
1967 014F		2685	FRANCE	15 FEB	109.1	38.9	1797	575		
1967 014G		3589	FRANCE	15 FEB	115.2	38.8	2333	594		
1967 014H		3935	FRANCE	15 FEB	108.3	39.4	1737	564		
1967 018A	COSMOS 144	2695	USSR	28 FEB	96.1	81.1	598	553		
1967 018B		2696	USSR	28 FEB	96.3	81.2	663	506		
1967 020A	OSO 3	2703	US	8 MAR	98.8	32.8	520	499		
1967 026A	INTELSAT 2 F-3	2717	ITSO	23 MAR	1434.9	7.3	35843	35683		
1967 027A	COSMOS 151	2720	USSR	24 MAR	96.7	56.0	622	580		
1967 027B		2721	USSR	24 MAR	96.6	56.0	616	575		
1967 034A		2754	US	14 APR	106.4	90.2	1077	1050		
1967 034B		2755	US	14 APR	106.5	90.2	1080	1052		
1967 034C		2777	US	14 APR	104.9	90.3	1070	835		
1967 034D		2778	US	14 APR	108.6	90.1	1263	1069		
1967 034E		4843	US	14 APR	104.6	90.2	983	971		
1967 034F		6718	US	14 APR	104.5	90.2	999	964		
1967 034G		7670	US	14 APR	106.0	90.2	1063	1023		
1967 035B		2764	US	17 APR	BARYCENTRIC ORBIT					
1967 036A	FSSA 5	2757	US	20 APR	113.5	101.8	1424	1356		
1967 036B		2758	US	20 APR	113.5	101.9	1422	1359		
1967 036C		2976	US	20 APR	112.3	102.1	1413	1261		
1967 036D		2977	US	20 APR	114.6	101.8	1485	1393		
1967 039A	COSMOS 156	2762	USSR	27 APR	96.4	81.1	512	564		
1967 039B		2763	USSR	27 APR	96.7	81.1	676	528		
1967 040A		2765	US	28 APR	6689.6	37.3	119465	102991		
1967 040B		2766	US	28 APR	6708.7	37.1	123849	99054		
1967 040C	ERS 18	2767	US	28 APR	CURRENT ELEMENTS NOT MAINTAINED					
1967 040D	ERS 20	2768	US	28 APR	CURRENT ELEMENTS NOT MAINTAINED					
1967 040E	ERS 27	2769	US	28 APR	CURRENT ELEMENTS NOT MAINTAINED					
1967 040F		2770	US	28 APR	CURRENT ELEMENTS NOT MAINTAINED					
1967 043B		2780	US	9 MAY	97.8	84.9	770	545		
1967 045A	COSMOS 158	2801	USSR	15 MAY	100.4	74.0	822	736		
1967 045B		2802	USSR	15 MAY	100.5	74.0	844	728		
1967 045C		2823	USSR	15 MAY	100.2	74.0	816	724		
1967 045D		3737	USSR	15 MAY	100.1	74.0	819	715		
1967 046A	COSMOS 159	2805	USSR	17 MAY	1173.3	52.1	60627	316		
1967 046F		2924	USSR	17 MAY	1170.9	52.0	60615	229		
1967 048A		2807	US	18 MAY	106.9	89.6	1100	1072		
1967 048B		2811	US	18 MAY	106.9	89.6	1098	1073		
1967 053A		2826	US	31 MAY	103.2	69.9	920	901		
1967 053B		2825	US	31 MAY	103.3	69.9	925	912		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1967 LAUNCHES (CONT'D)										
1967 053C	GRAVITY GRADIENT 4	2828	US	31 MAY	103.3	69.9	926	911		
1967 053D	GRAVITY GRADIENT 5	2834	US	31 MAY	103.3	69.9	926	912		
1967 053E		2847	US	31 MAY	103.3	69.9	923	910		
1967 053F		2872	US	31 MAY	103.3	69.9	924	911		
1967 053G		2873	US	31 MAY	103.3	69.9	926	911		
1967 053H		2874	US	31 MAY	103.3	69.9	926	912		
1967 053J		2909	US	31 MAY	103.0	69.9	909	900		
1967 060A	MARINER 5	2845	US	14 JUN	HELIOCENTRIC ORBIT					
1967 060B		2846	US	14 JUN	HELIOCENTRIC ORBIT					
1967 065A	EGRS 9	2861	US	29 JUN	172.1	89.7	3943	3802		
1967 065B	AURORA 1	2876	US	29 JUN	172.1	89.7	3939	3807		
1967 065C		2877	US	29 JUN	172.1	89.7	3922	3823		
1967 066A	TITAN 3 C-14	2862	US	1 JUL	1309.7	3.9	33567	32983		
1967 066B		2863	US	1 JUL	1310.3	3.7	33588	32986		
1967 066C		2864	US	1 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1967 066D		2865	US	1 JUL	1313.6	4.3	33558	33148		
1967 066F		2866	US	1 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1967 066F	DODGE	2867	US	1 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1967 066G		2868	US	1 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1967 066H		2883	US	14 JUL	BARYCENTRIC ORBIT					
1967 070A	EXPLORER 35	2884	US	19 JUL	SELENOCENTRIC ORBIT					
1967 072D	OV1-12	2901	US	27 JUL	94.3	101.6	495	484		
1967 075B		2908	US	1 AUG	BARYCENTRIC ORBIT					
1967 080A		2920	US	23 AUG	102.1	98.6	889	831		
1967 080B		2940	US	23 AUG	102.1	98.6	888	831		
1967 084B		2938	US	8 SEP	BARYCENTRIC ORBIT					
1967 092A		2965	US	25 SEP	106.7	89.2	1111	1041		
1967 092B		2967	US	25 SEP	106.7	89.2	1110	1042		
1967 092C		2994	US	25 SEP	104.3	89.4	1043	888		
1967 092D		3122	US	25 SEP	109.1	89.0	1337	1039		
1967 094A	INTELSAT 2 F-4	2969	ITSO	28 SEP	1437.6	7.4	35825	35804		
1967 094C		2971	US	28 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1967 095A		2980	US	11 OCT	99.9	99.2	852	665		
1967 096B		2985	US	11 OCT	99.9	99.1	849	665		
1967 100A	OSO 4	3000	US	18 OCT	95.0	32.9	530	504		
1967 100B		3004	US	18 OCT	94.4	32.9	502	481		
1967 102A	COSMOS 184	3010	USSR	24 OCT	96.5	81.1	610	583		
1967 102B		3011	USSR	24 OCT	96.8	81.1	682	534		
1967 104B		3019	USSR	27 OCT	98.2	64.0	867	479		
1967 108A	COSMOS 189	3021	USSR	30 OCT	92.5	73.9	409	396		
1967 108B		3023	USSR	30 OCT	94.4	73.9	507	476		
1967 111A	ATS 3	3029	US	5 NOV	1436.2	6.8	35965	35709	136.470,137.350	S*
1967 112B		3034	US	7 NOV	BARYCENTRIC ORBIT					
1967 114A	ESSA 6	3035	US	10 NOV	114.8	102.2	1487	1410		
1967 114B		3036	US	10 NOV	114.8	102.2	1487	1412		
1967 114C		3051	US	10 NOV	114.1	101.3	1487	1348		
1967 114D		3123	US	10 NOV	115.4	102.4	6698	1453		
1967 114E		5443	US	10 NOV	114.6	101.4	1488	1391		
1967 116A	COSMOS 192	3047	USSR	23 NOV	99.7	74.0	750	742		
1967 116B		3048	USSR	23 NOV	99.7	74.0	753	742		
1967 123A	PIONEER 8	3066	US	13 DEC	HELIOCENTRIC ORBIT					
1967 127A	COSMOS 198	3081	USSR	27 DEC	103.4	65.1	936	908		
1968 LAUNCHES										
1968 001B		3092	US	7 JAN	BARYCENTRIC ORBIT					
1968 002A	EXPLORER 36	3093	US	11 JAN	112.2	105.8	1576	1083	136.320	S*
1968 002B		3094	US	11 JAN	112.1	105.8	1570	1080		
1968 002C		3126	US	11 JAN	112.3	106.0	1586	1087		
1968 002D		3127	US	11 JAN	112.1	105.3	1576	1078		
1968 006C		3103	USSR	19 JAN	94.2	73.9	506	460		
1968 011A	COSMOS 203	3129	USSR	20 FEB	109.2	74.0	1203	1185		
1968 011B		3131	USSR	20 FEB	109.3	74.0	1206	1185		
1968 011C		3147	USSR	20 FEB	103.2	74.0	1104	720		

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1968 LAUNCHES (CONT'D)										
1968 012A		3133	US	2 MAR	106.9	89.9	1144	1025		
1968 012B		3137	US	2 MAR	106.9	89.9	1144	1026		
1968 012C		3213	US	2 MAR	105.1	89.8	1110	891		
1968 012D		3214	US	2 MAR	108.8	90.1	1323	1027		
1968 013A	ZOND 4	3134	USSR	2 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1968 014A	OGO 5	3138	US	4 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1968 014B		3145	US	4 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1968 017A	EXPLORER 37	3141	US	5 MAR	97.8	59.3	820	492		
1968 017B		3146	US	5 MAR	97.1	59.3	753	490		
1968 017D		3328	US	5 MAR	99.8	59.6	865	640		
1968 017E		5743	US	5 MAR	91.7	59.3	418	306		
1968 019A	COSMOS 206	3150	USSR	14 MAR	96.5	81.2	612	578		
1968 019B		3151	USSR	14 MAR	96.5	81.2	688	533		
1968 023A	COSMOS 209	3158	USSR	22 MAR	103.1	65.3	942	872		
1968 026A	OV1-13	3173	US	6 APR	199.4	99.9	9285	580		
1968 026B	OV1-14	3174	US	6 APR	207.7	99.9	9940	545		
1968 026C		3177	US	6 APR	207.9	99.9	9965	537		
1968 026D		3212	US	6 APR	199.4	99.9	9278	580		
1968 027A	LUNA 14	3178	USSR	7 APR	SELENOCENTRIC ORBIT					
1968 040A	COSMOS 220	3229	USSR	7 MAY	98.9	74.0	749	672		
1968 040B		3230	USSR	7 MAY	98.9	74.0	751	672		
1968 040C		3231	USSR	7 MAY	98.6	74.0	733	653		
1968 042A		3266	US	23 MAY	102.0	98.6	899	819		
1968 042B		3271	US	23 MAY	102.1	98.6	899	819		
1968 049A	COSMOS 226	3282	USSR	12 JUN	96.3	81.1	606	559		
1968 049B		3283	USSR	12 JUN	96.6	81.2	680	519		
1968 050A		3284	US	13 JUN	1335.2	2.4	33847	33728		
1968 050B		3285	US	13 JUN	1335.5	2.4	33855	33735		
1968 050C		3286	US	13 JUN	1336.3	2.3	33902	33719		
1968 050D		3287	US	13 JUN	1337.8	2.4	33962	33717		
1968 050E		3288	US	13 JUN	1339.8	2.4	34044	33716		
1968 050F		3289	US	13 JUN	1342.2	2.4	34112	33742		
1968 050G		3290	US	13 JUN	1345.3	2.4	34260	33721		
1968 050H		3291	US	13 JUN	1348.7	2.3	34345	33772		
1968 050J		3292	US	13 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1968 055A	EXPLORER 38	3307	US	4 JUL	224.2	120.8	5864	5834		
1968 055B		3315	US	4 JUL	156.6	120.5	5937	560		
1968 055C		3848	US	4 JUL	224.1	120.8	5861	5826		
1968 055D		4841	US	4 JUL	156.3	120.7	5933	541		
1968 063A		3334	US	6 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1968 066A	EXPLORER 39	3337	US	8 AUG	114.3	80.7	2149	702		
1968 066B	EXPLORER 40	3338	US	8 AUG	118.2	80.6	2526	682		
1968 066C		3341	US	8 AUG	118.2	80.6	2523	684		
1968 066D		3342	US	8 AUG	117.3	80.6	2440	681		
1968 066E		3343	US	8 AUG	117.6	80.6	2478	671		
1968 066F		3390	US	8 AUG	117.4	80.6	2437	700		
1968 066G		3391	US	8 AUG	117.5	80.6	2467	672		
1968 066H		3392	US	8 AUG	117.5	80.7	2440	701		
1968 066J		3393	US	8 AUG	117.2	80.5	2444	676		
1968 069A	FSSA 7	3345	US	16 AUG	114.9	102.0	1475	1432		
1968 069B		3346	US	16 AUG	114.8	101.9	1468	1429		
1968 069C		3416	US	16 AUG	113.7	101.6	1489	1305		
1968 069D		3417	US	16 AUG	116.1	102.0	1563	1458		
1968 069E		3974	US	16 AUG	114.9	102.0	1482	1426		
1968 069F		3975	US	16 AUG	114.9	102.0	1486	1419		
1968 069G		4499	US	16 AUG	115.1	102.0	1486	1439		
1968 070A	COSMOS 236	3347	USSR	27 AUG	96.4	56.0	602	579		
1968 070B		3349	USSR	27 AUG	96.2	56.0	596	557		
1968 081A	OV2-5	3428	US	26 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1968 081B	ERS 28	3429	US	26 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1968 081C	ERS 21	3430	US	26 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1968 081D	LES 6	3431	US	26 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1968 081E		3432	US	26 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1968 090A	COSMOS 248	3503	USSR	19 OCT	93.5	62.2	461	437		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1968 LAUNCHES (CONT'D)										
1968 091A	COSMOS 249	3504	USSR	20 OCT	112.0	62.3	2131	508		
1968 091B - 091CK			USSR	20 OCT	SEE NOTE	10*				10*
1968 092A		3510	US	23 OCT	101.3	98.6	848	799		
1968 092B		3522	US	23 OCT	101.3	398.5	848	798		
1968 095A	COSMOS 250	3526	USSR	30 OCT	91.7	73.9	361	360		
1968 095B		3527	USSR	30 OCT	92.9	74.0	422	416		
1968 097A	COSMOS 252	3530	USSR	1 NOV	112.3	62.3	2127	546		
1968 097B - 097DW			USSR	1 NOV	SEE NOTE	11*				11*
1968 100A	PIONEER 9	3533	US	8 NOV	HELIOCENTRIC ORBIT					
1968 100B	TETR 2	3534	US	8 NOV	94.7	32.8	659	350		
1968 100D		3547	US	8 NOV	92.4	32.8	468	321		
1968 106A	COSMOS 256	3576	USSR	30 NOV	109.3	74.0	1225	1174		
1968 106B		3577	USSR	30 NOV	109.2	74.0	1220	1168		
1968 110A	OAO-A2	3597	US	7 DEC	100.2	34.9	773	764		
1968 110B		3598	US	7 DEC	100.1	34.9	809	716		
1968 112B		3605	US	12 DEC	114.4	80.3	1474	1385		
1968 112C		3617	US	12 DEC	114.0	80.1	1452	1377		
1968 112D		3618	US	12 DEC	114.7	80.5	1513	1378		
1968 112E		3840	US	12 DEC	114.5	80.6	1459	1408		
1968 114A	ESSA 8	3615	US	15 DEC	114.6	101.4	1455	1416		
1968 114B		3616	US	15 DEC	115.1	101.5	1472	1450		
1968 114C		3811	US	15 DEC	112.8	101.9	1468	1252		
1968 114D		3812	US	15 DEC	116.3	101.8	1575	1463		
1968 116A	INTELSAT 3 F-2	3623	ITSO	19 DEC	1632.5	6.5	39728	39368		
1968 118B		3627	US	21 DEC	HELIOCENTRIC ORBIT					
1969 LAUNCHES										
1969 006A	OSO 5	3663	US	22 JAN	95.2	32.9	538	518		
1969 006B		3664	US	22 JAN	94.4	32.9	497	482		
1969 009A	ISIS 1	3669	CANADA	30 JAN	128.2	88.4	3518	577	136.080,136.410, 136.590,137.950, 401.750	5* 5* 5*
1969 009B		3670	US	30 JAN	128.0	88.4	3495	577		
1969 010B		3673	US	5 FEB	114.1	80.3	1435	1398		
1969 010C		3841	US	5 FEB	113.7	80.1	1425	1375		
1969 011A	INTELSAT 3 F-3	3674	ITSO	6 FEB	1435.8	4.9	35784	35779		
1969 011B		5977	US	6 FEB	518.0	26.6	29611	363		
1969 013A		3691	US	9 FEB	1435.9	1.0	35803	35765		
1969 013B		3692	US	9 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1969 014A	MARINER 6	3759	US	25 FEB	HELIOCENTRIC ORBIT					
1969 014B		3760	US	25 FEB	HELIOCENTRIC ORBIT					
1969 016A	ESSA 9	3764	US	26 FEB	115.2	102.1	1507	1427		
1969 016B		3767	US	26 FEB	115.1	102.1	1503	1422		
1969 018B		3770	US	3 MAR	HELIOCENTRIC ORBIT					
1969 018C	LM/ASCENT	3771	US	3 MAR	131.5	28.9	4155	222		
1969 021A	COSMOS 269	3775	USSR	5 MAR	93.0	74.0	426	422		
1969 021B		3776	USSR	5 MAR	92.9	74.1	421	418		
1969 021T		3844	USSR	5 MAR	95.2	74.1	543	517		
1969 024A	COSMOS 272	3818	USSR	17 MAR	109.3	73.9	1210	1181		
1969 024B		3819	USSR	17 MAR	109.2	73.9	1198	1182		
1969 024C		6289	USSR	17 MAR	109.1	73.9	1198	1180		
1969 025C	OVI-19	3825	US	18 MAR	153.2	104.7	5747	467		
1969 025E		3827	US	18 MAR	152.8	104.7	5712	473		
1969 025F		3828	US	18 MAR	93.2	98.8	462	404		
1969 029A	METEOR	3835	USSR	26 MAR	97.7	81.1	672	627		
1969 029B - 029AP			USSR	26 MAR	SEE NOTE	12*				12*
1969 030A	MARINER 7	3837	US	27 MAR	HELIOCENTRIC ORBIT					
1969 030B		3845	US	27 MAR	HELIOCENTRIC ORBIT					
1969 036A		3889	US	13 APR	CURRENT ELEMENTS NOT MAINTAINED					
1969 037A	NIMBUS 3	3890	US	14 APR	107.3	99.5	1134	1074		
1969 037B	EGRS 13	3891	US	14 APR	107.2	99.6	1131	1073		
1969 037C		3892	US	14 APR	107.4	99.5	1139	1079		
1969 043B		3943	US	18 MAY	HELIOCENTRIC ORBIT					

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1969 LAUNCHES (CONT'D)										
1969 043C	LM/DESCENT	3948	US	18 MAY	SELENOCENTRIC ORBIT					
1969 043D	LM/ASCENT	3949	US	18 MAY	HELIOCENTRIC ORBIT					
1969 045A	INTELSAT 3 F-4	3947	ITSO	22 MAY	1636.3	6.1	39752	39486		
1969 046A	OVS-5/ERS-29	3950	US	23 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1969 046B	OVS-6	3951	US	23 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1969 046C	OVS-9	3952	US	23 MAY	3114.9	32.9	113065	15483		
1969 046D		3954	US	23 MAY	6686.5	46.4	115988	106394		
1969 046E		3955	US	23 MAY	6704.3	46.4	116892	105908		
1969 046F		3956	US	23 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1969 051A	OGO 6	3986	US	5 JUN	96.6	81.9	811	383		
1969 051B		3987	US	5 JUN	97.1	81.9	846	399		
1969 053B		3993	US	21 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1969 059B		4040	US	16 JUL	HELIOCENTRIC ORBIT					
1969 059C	LUNAR MODULE	4041	US	16 JUL	SELENOCENTRIC ORBIT					13*
1969 062A		4047	US	23 JUL	101.2	98.4	856	783		
1969 062B		4048	US	23 JUL	101.2	98.4	855	784		
1969 064A	INTELSAT 3 F-5	4051	ITSO	26 JUL	132.1	30.3	4160	264		
1969 064C		4053	US	26 JUL	141.1	30.3	4935	266		
1969 068A	OSU 6	4065	US	9 AUG	94.3	32.9	506	464		
1969 069A	ATS 5	4068	US	12 AUG	1436.0	4.2	35789	35779	136.470,137.350	5*
1969 069B		4069	US	12 AUG	703.3	17.7	37314	2325		
1969 069C		5991	US	12 AUG	680.0	17.3	36995	1490		
1969 070A	COSMOS 292	4070	USSR	13 AUG	99.8	74.0	761	744		
1969 070B		4071	USSR	13 AUG	99.7	74.0	760	732		
1969 070C		4084	USSR	13 AUG	100.0	74.0	777	743		
1969 082B		4256	US	30 SEP	103.4	70.0	937	904		
1969 082C		4257	US	30 SEP	103.4	70.0	939	905		
1969 082D		4259	US	30 SEP	103.4	70.0	939	905		
1969 082F		4237	US	30 SEP	103.4	70.0	939	905		
1969 082F		4247	US	30 SEP	103.4	70.0	939	905		
1969 082G		4295	US	30 SEP	103.4	70.0	939	904		
1969 082H		4168	US	30 SEP	103.4	70.0	938	905		
1969 082J		4166	US	30 SEP	103.2	70.0	926	896		
1969 082K		4132	US	30 SEP	103.3	70.0	934	899		
1969 082L - 082KL			US	30 SEP	SEE NOTE 14*					14*
1969 084A	METEOR	4119	USSR	6 OCT	97.4	81.2	664	612		
1969 084B		4120	USSR	6 OCT	97.5	81.2	745	643		
1969 091A	COSMOS 304	4138	USSR	21 OCT	99.8	74.0	760	741		
1969 091B		4139	USSR	21 OCT	99.6	74.0	746	738		
1969 097A	GRS-A/AZUR	4221	FRG	8 NOV	120.2	102.6	2998	387		
1969 097B		4222	US	8 NOV	118.9	102.8	2882	385		
1969 097C		4242	FRG	8 NOV	114.5	102.7	2492	380		
1969 097D		4243	FRG	8 NOV	114.2	103.0	2460	379		
1969 097E		4261	FRG	8 NOV	112.3	103.6	2282	385		
1969 097F		4265	FRG	8 NOV	108.0	102.2	1908	366		
1969 099B		4226	US	14 NOV	CURRENT ELEMENTS NOT MAINTAINED					
1969 101A	SKYNET A	4250	UK	22 NOV	1436.0	3.8	35820	35749		
1969 101B		4251	US	22 NOV	CURRENT ELEMENTS NOT MAINTAINED					
1969 103A	COSMOS 312	4254	USSR	24 NOV	108.5	74.0	1178	1143		
1969 103B		4255	USSR	24 NOV	108.3	74.0	1151	1144		
1969 107A	COSMOS 315	4273	USSR	20 DEC	93.6	74.0	462	450		
1969 107B		4274	USSR	20 DEC	93.5	74.0	459	443		
1970 LAUNCHES										
1970 003A	INTELSAT 3 F-6	4297	ITSO	15 JAN	1465.7	5.2	36542	36184		
1970 003B		4298	US	15 JAN	607.5	28.1	34438	330		
1970 008A	ITOS 1	4320	US	23 JAN	115.0	102.0	1482	1435		
1970 008B	OSCAR 5	4321	AUSTRL	23 JAN	115.0	102.0	1480	1435		
1970 008C		4322	US	23 JAN	115.0	102.0	1482	1435		
1970 009A	SERT 2	4327	US	4 FEB	106.1	99.2	1052	1044		
1970 011A	OHSUMI	4330	JAPAN	11 FEB	139.2	31.0	4698	336		
1970 012A		4331	US	11 FEB	101.2	98.7	869	771		
1970 012B		4332	US	11 FEB	101.2	98.9	871	771		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1970 LAUNCHES (CONT'D)										
1970 017A	DIAL-WIKA	4344	FRG	10 MAR	95.8	5.4	826	289		
1970 019A	METEOR	4349	USSR	17 MAR	95.8	81.1	603	519		
1970 019B		4350	USSR	17 MAR	95.9	81.1	674	458		
1970 021A	NATO 1	4353	NATO	20 MAR	1436.1	3.0	35822	35750		
1970 021B		4354	US	20 MAR	629.4	25.3	35390	302		
1970 021C		5975	US	20 MAR	636.7	25.3	36009	270		
1970 024A	COSMOS 330	4360	USSR	7 APR	93.9	74.0	475	464		
1970 024B		4361	USSR	7 APR	94.1	74.0	490	462		
1970 025A	NIMBUS 4	4362	US	8 APR	107.1	99.7	1122	1091	136.500,136.950, 401.500,1702.500	5* 5*
1970 025B	TOPO 1	4363	US	8 APR	106.9	99.8	1090	1086		
1970 025C - 025NQ			US	8 APR	SEE NOTE 15*					15*
1970 027A		4366	US	8 APR	6692.1	44.3	112199	110313		
1970 027B		4368	US	8 APR	6711.5	44.2	112852	110116		
1970 028A	COSMOS 332	4369	USSR	11 APR	99.9	74.0	761	751		
1970 028B		4370	USSR	11 APR	99.8	74.0	764	736		
1970 032A	INTELSAT 3 F-7	4376	ITSO	23 APR	CURRENT ELEMENTS NOT MAINTAINED					
1970 032B		4377	US	23 APR	CURRENT ELEMENTS NOT MAINTAINED					
1970 034A		4382	PRC	24 APR	113.7	68.4	2357	440		
1970 034B		4392	PRC	24 APR	112.4	68.4	2242	438		
1970 034C		4400	PRC	24 APR	110.3	68.5	2063	420		
1970 036A	COSMOS 336	4383	USSR	25 APR	115.4	74.0	1488	1465		
1970 036B	COSMOS 337	4384	USSR	25 APR	116.2	74.0	1554	1469		
1970 036C	COSMOS 338	4385	USSR	25 APR	115.8	74.0	1520	1469		
1970 036D	COSMOS 339	4386	USSR	25 APR	115.0	74.0	1471	1447		
1970 036E	COSMOS 340	4387	USSR	25 APR	114.6	74.0	1471	1409		
1970 036F	COSMOS 341	4388	USSR	25 APR	113.9	74.0	1470	1344		
1970 036G	COSMOS 342	4389	USSR	25 APR	113.5	74.0	1470	1312		
1970 036H	COSMOS 343	4390	USSR	25 APR	114.2	74.0	1470	1377		
1970 036J		4391	USSR	25 APR	116.6	74.0	1591	1469		
1970 037A	METEOR	4393	USSR	28 APR	97.9	81.2	701	621		
1970 037B		4394	USSR	28 APR	98.1	81.2	775	567		
1970 037C		5955	USSR	28 APR	96.6	81.2	624	574		
1970 046A		4418	US	19 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1970 046B		4511	US	19 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1970 047A	METEOR	4419	USSR	23 JUN	102.0	81.2	890	826		
1970 047B		4420	USSR	23 JUN	102.2	81.2	921	812		
1970 055A	INTELSAT 3 F-8	4478	ITSO	23 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1970 055B		4486	US	23 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1970 062A	SKYNET B	4493	UK	19 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1970 064A	COSMOS 358	4497	USSR	20 AUG	94.9	74.0	523	509		
1970 064B		4498	USSR	20 AUG	93.9	74.0	482	453		
1970 067A	NNSS O-19	4507	US	27 AUG	106.9	90.1	1221	952		
1970 067B		4515	US	27 AUG	106.9	90.1	1221	954		
1970 067C		5036	US	27 AUG	104.4	90.0	994	942		
1970 067D		5447	US	27 AUG	109.6	90.1	1456	954		
1970 067F		6372	US	27 AUG	106.0	90.0	1132	958		
1970 069A		4510	US	1 SEP	CUPRENT ELEMENTS NOT MAINTAINED					
1970 070A		4512	US	3 SEP	101.1	98.8	870	762		
1970 070B		4513	US	3 SEP	101.1	98.9	871	761		
1970 079A	COSMOS 367	4564	USSR	3 OCT	104.5	55.2	1009	935		
1970 083A	COSMOS 371	4578	USSR	12 OCT	99.8	73.9	754	749		
1970 083B		4579	USSR	12 OCT	99.7	74.0	756	738		
1970 085A	METEOR	4583	USSR	15 OCT	97.2	81.2	640	621		
1970 085B		4584	USSR	15 OCT	97.4	81.2	724	548		
1970 085C		5330	USSR	15 OCT	97.3	81.2	721	547		
1970 086A	COSMOS 372	4588	USSR	16 OCT	100.7	74.0	805	783		
1970 086B		4589	USSR	16 OCT	100.6	74.0	807	771		
1970 086C		5357	USSR	16 OCT	100.6	74.0	799	782		
1970 086D		5358	USSR	16 OCT	100.9	74.0	811	800		
1970 087A	COSMOS 373	4590	USSR	20 OCT	93.8	62.9	478	444		
1970 089A	COSMOS 374	4594	USSR	23 OCT	111.6	62.9	2008	597		
1970 089B - 089CU			USSR	23 OCT	SEE NOTE 16*					16*
1970 091A	COSMOS 375	4598	USSR	30 OCT	111.7	62.8	2052	565		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1970 LAUNCHES (CONT'D)										
1970 091B - 091AQ			USSR	30 OCT	SEE NOTE	17*				17*
1970 093A		4630	US	6 NOV	CURRENT ELEMENTS NOT MAINTAINED					
1970 093B		4632	US	6 NOV	CURRENT ELEMENTS NOT MAINTAINED					
1970 098B		4722	US	18 NOV	89.6	83.1	258	258		
1970 099A	COSMOS 379	4760	USSR	24 NOV	104.8	51.7	8557	184		
1970 102A	COSMOS 381	4783	USSR	2 DEC	104.8	74.0	1013	966		
1970 102B		4784	USSR	2 DEC	104.7	74.0	1006	963		
1970 102C		4840	USSR	2 DEC	104.4	74.0	994	947		
1970 102D		5225	USSR	2 DEC	104.6	74.0	992	962		
1970 102E		8764	USSR	2 DEC	104.5	74.0	994	958		
1970 102F		9794	USSR	2 DEC	104.7	74.0	1005	960		
1970 103A	COSMOS 382	4786	USSR	2 DEC	171.0	55.8	5185	2469		
1970 103B		4789	USSR	2 DEC	158.8	51.5	5082	1589		
1970 103C		4790	USSR	2 DEC	159.1	51.5	5083	1614		
1970 103D		5316	USSR	2 DEC	162.9	56.3	4760	2244		
1970 106A	NOAA 1	4793	US	11 DEC	114.8	102.0	1475	1426		
1970 106B		4794	US	11 DEC	114.8	102.0	1476	1424		
1970 106C		8828	US	11 DEC	116.5	101.7	1550	1506		
1970 107A	EXPLORER 42	4797	US	12 DEC	94.4	3.0	500	475		
1970 107B		4798	US	12 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1970 108A	COSMOS 385	4799	USSR	12 DEC	104.7	74.0	984	979		
1970 108B		4800	USSR	12 DEC	104.6	74.0	984	969		
1970 109A	PEOLE	4801	FRANCE	12 DEC	96.5	15.0	698	494		
1970 109B		4802	FRANCE	12 DEC	98.5	15.0	743	631		
1970 109C		4803	FRANCE	12 DEC	96.5	14.9	689	494		
1970 109D		4839	FRANCE	12 DEC	95.7	14.9	630	473		
1970 109E		5264	FRANCE	12 DEC	95.8	15.0	636	475		
1970 111A	COSMOS 387	4806	USSR	16 DEC	94.5	73.9	502	496		
1970 111B		4807	USSR	16 DEC	94.4	74.0	503	484		
1970 113A	COSMOS 389	4813	USSR	18 DEC	97.9	81.1	682	638		
1970 113B		4814	USSR	18 DEC	97.9	81.1	724	599		
1971 LAUNCHES										
1971 000A		4924	US	UNKN	275.1	18.0	14920	345		18*
1971 000B		4925	US	UNKN	275.1	19.8	15005	262		18*
1971 000C		4926	US	UNKN	307.1	19.8	17124	276		18*
1971 000E		5310	US	UNKN	1435.7	4.8	35795	35763		18*
1971 003A	METEOR	4849	USSR	20 JAN	97.4	81.2	650	625		
1971 003B		4850	USSR	20 JAN	97.5	81.2	728	562		
1971 006A	INTELSAT 4 F-2	4881	ITSO	26 JAN	1436.3	0.4	35903	35778		
1971 006B		4882	US	26 JAN	654.4	27.8	36526	654		
1971 009A	NATO 2	4902	NATO	3 FEB	1436.1	2.3	35803	35768		
1971 009B		4903	US	3 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1971 009D		5986	US	3 FEB	576.0	26.1	31891	1217		
1971 010A	COSMOS 394	4922	USSR	9 FEB	96.4	65.8	607	572		
1971 010B		4923	USSR	9 FEB	96.2	65.8	602	553		
1971 010C		4927	USSR	9 FEB	96.1	65.8	590	558		
1971 011A	TANSEI	4952	JAPAN	16 FEB	106.0	29.6	1103	983		
1971 011B		5126	JAPAN	16 FEB	104.7	29.6	992	973		
1971 011C		5419	JAPAN	16 FEB	100.2	30.4	1011	525		
1971 012A		4953	US	17 FEB	100.8	98.5	830	767		
1971 012B		4954	US	17 FEB	100.8	98.4	831	771		
1971 012C		4957	US	17 FEB	100.5	98.5	819	756		
1971 012D		4958	US	17 FEB	100.5	98.5	819	753		
1971 012E		4963	US	17 FEB	100.6	98.5	819	763		
1971 013A	COSMOS 395	4955	USSR	17 FEB	94.7	74.0	520	498		
1971 013B		4956	USSR	17 FEB	94.7	74.0	522	494		
1971 015A	COSMOS 397	4964	USSR	25 FEB	113.4	65.7	2204	569		
1971 015B - 015CL			USSR	25 FEB	SEE NOTE	19*				19*
1971 016A	COSMOS 398	4966	USSR	26 FEB	194.0	51.6	9244	204		
1971 018A		5007	PRC	3 MAR	98.5	69.8	1131	251		
1971 019C		5045	US	13 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1971 020A	COSMOS 400	5050	USSR	18 MAR	104.9	65.8	1004	984		

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1971 LAUNCHES (CONT'D)										
1971 020B		5051	USSR	18 MAR	104.8	65.8	995	983		
1971 020C		5052	USSR	18 MAR	104.9	65.8	1005	985		
1971 021A		5053	US	21 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1971 021B		5054	US	21 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1971 024A	ISIS 2	5104	CANADA	1 APR	113.6	88.1	1428	1358	136.080,136.410, 136.590,137.950, 401.750	5* 5* 5*
1971 024B		5106	US	1 APR	113.5	88.1	1426	1355		
1971 024C		5360	US	1 APR	113.6	88.2	1428	1359		
1971 025A	COSMOS 402	5105	USSR	1 APR	104.9	64.9	1034	949		
1971 028A	COSMOS 405	5117	USSR	7 APR	98.2	81.2	678	671		
1971 028B		5118	USSR	7 APR	98.3	81.2	745	613		
1971 028D		5724	USSR	7 APR	98.1	81.2	676	671		
1971 030A	TOURNESOL	5128	FRANCE	15 APR	95.4	46.3	629	445		
1971 030B		5135	FRANCE	15 APR	94.9	46.3	605	430		
1971 031A	METEOR	5142	USSR	17 APR	96.9	81.2	628	601		
1971 031B		5143	USSR	17 APR	97.1	81.2	702	548		
1971 035A	COSMOS 407	5174	USSR	23 APR	100.9	74.0	818	789		
1971 035B		5175	USSR	23 APR	100.8	74.0	822	774		
1971 035C		5300	USSR	23 APR	101.2	74.0	833	806		
1971 035D		5301	USSR	23 APR	101.3	74.0	840	806		
1971 035E		5778	USSR	23 APR	101.2	74.0	832	805		
1971 035F		5858	USSR	23 APR	101.1	74.0	827	805		
1971 035G		9569	USSR	23 APR	101.1	74.0	831	795		
1971 038A	COSMOS 409	5180	USSR	28 APR	109.3	74.0	1213	1178		
1971 038B		5181	USSR	28 APR	109.0	73.9	1228	1143		
1971 039A		5204	US	5 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1971 039B		5205	US	5 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1971 041A	COSMOS 411	5210	USSR	7 MAY	113.8	74.0	1492	1317		
1971 041B	COSMOS 412	5211	USSR	7 MAY	116.1	74.0	1537	1481		
1971 041C	COSMOS 413	5212	USSR	7 MAY	115.7	74.0	1509	1475		
1971 041D	COSMOS 414	5213	USSR	7 MAY	115.1	74.0	1495	1428		
1971 041E	COSMOS 415	5214	USSR	7 MAY	150.4	74.0	1502	1452		
1971 041F	COSMOS 416	5215	USSR	7 MAY	114.4	74.0	1493	1373		
1971 041G	COSMOS 417	5216	USSR	7 MAY	114.1	74.0	1494	1345		
1971 041H	COSMOS 418	5217	USSR	7 MAY	114.8	74.0	1494	1400		
1971 041J		5218	USSR	7 MAY	116.8	74.0	1593	1490		
1971 045A	MARS 2	5234	USSR	19 MAY	APEOCENTRIC ORBIT					
1971 046A	COSMOS 422	5238	USSR	22 MAY	105.0	74.0	1009	987		
1971 046B		5239	USSR	22 MAY	104.9	74.0	1001	985		
1971 049A	MARS 3	5252	USSR	28 MAY	APEOCENTRIC ORBIT					
1971 050A	COSMOS 425	5253	USSR	29 MAY	94.5	74.0	512	485		
1971 050B		5254	USSR	29 MAY	94.4	74.0	519	469		
1971 051A	MARINER 9	5261	US	30 MAY	APEOCENTRIC ORBIT					
1971 051B		5267	US	30 MAY	HELIOCENTRIC ORBIT					
1971 052A	COSMOS 426	5281	USSR	4 JUN	108.4	74.0	1926	385		
1971 052B		5282	USSR	4 JUN	108.3	74.0	1921	386		
1971 052F		5956	USSR	4 JUN	96.2	73.9	810	351		
1971 054A		5285	US	8 JUN	95.6	90.1	566	533		
1971 058A	EXPLORER 44	5317	US	8 JUL	94.5	51.0	568	421		
1971 059A	METEOR	5327	USSR	16 JUL	97.1	81.1	637	608		
1971 059B		5328	USSR	16 JUL	97.3	81.2	713	554		
1971 060A		5329	US	16 JUL	93.0	74.9	427	423		
1971 063D	APOLLO 15 SUBSATELLITE	5377	US	26 JUL	SELENOCENTRIC ORBIT					
1971 067B	OVI-21	5397	US	7 AUG	101.9	87.6	917	787		
1971 067E		5398	US	7 AUG	101.9	87.6	914	787		
1971 067G		5401	US	7 AUG	100.3	87.6	828	726		
1971 067H		5406	US	7 AUG	100.8	87.6	857	744		
1971 067J		5405	US	7 AUG	101.6	87.6	907	768		
1971 067K		5395	US	7 AUG	101.9	87.6	915	788		
1971 067L		5399	US	7 AUG	101.7	87.6	909	779		
1971 067M		5400	US	7 AUG	101.7	87.6	907	777		
1971 067N		5384	US	7 AUG	101.8	87.6	915	779		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1971 LAUNCHES (CONT'D)										
1971 067P		5410	US	7 AUG	101.4	87.6	992	768		
1971 069A	COSMOS 434	5407	USSR	12 AUG	167.3	51.5	7183	178		
1971 071A	EOLE 1	5435	FRANCE	16 AUG	100.6	50.1	901	675		
1971 071B		5438	US	16 AUG	100.6	50.1	901	673		
1971 071C		5440	US	16 AUG	100.1	50.7	885	643		
1971 071D		5426	US	16 AUG	101.0	49.5	919	697		
1971 073B		5449	USSR	2 SEP	SELENOCENTRIC ORBIT					
1971 074A	COSMOS 436	5461	USSR	7 SEP	94.5	74.0	507	487		
1971 074B		5462	USSR	7 SEP	94.4	74.0	505	476		
1971 075A	COSMOS 437	5466	USSR	10 SEP	94.7	74.0	520	494		
1971 075B		5467	USSR	10 SEP	94.6	74.0	541	467		
1971 080A	SHINSEI	5485	JAPAN	28 SEP	113.0	32.0	1865	868		
1971 080B		5498	JAPAN	28 SEP	111.8	32.0	1755	866		
1971 082A	LUNA 19	5488	USSR	28 SEP	SELENOCENTRIC ORBIT					
1971 082C		5490	USSR	28 SEP	SELENOCENTRIC ORBIT					
1971 083B	TETR 4	5492	US	29 SEP	92.5	33.0	440	357		
1971 086A	COSMOS 444	5547	USSR	13 OCT	114.1	74.0	1510	1323		
1971 086B	COSMOS 445	5548	USSR	13 OCT	114.4	74.0	1513	1352		
1971 086C	COSMOS 446	5549	USSR	13 OCT	114.8	74.0	1513	1382		
1971 086D	COSMOS 447	5550	USSR	13 OCT	115.1	74.0	1516	1412		
1971 086E	COSMOS 448	5551	USSR	13 OCT	115.5	74.0	1518	1442		
1971 086F	COSMOS 449	5552	USSR	13 OCT	116.2	74.0	1543	1484		
1971 086G	COSMOS 450	5553	USSR	13 OCT	115.9	74.0	1531	1463		
1971 086H	COSMOS 451	5554	USSR	13 OCT	116.6	74.0	1575	1490		
1971 086J		5555	USSR	13 OCT	117.4	74.0	1625	1504		
1971 087A		5557	US	14 OCT	101.5	99.0	877	793		
1971 087B		5556	US	14 OCT	101.6	99.0	887	793		
1971 089A		5560	US	17 OCT	100.5	92.7	799	772		
1971 091D		5576	US	21 OCT	105.3	103.4	1392	628		
1971 093A	PROSPERO	5580	UK	28 OCT	106.3	82.0	1573	544		
1971 093B		5581	UK	28 OCT	106.4	82.0	1593	544		
1971 093C		5582	UK	28 OCT	104.2	82.1	1381	538		
1971 095A		5587	US	3 NOV	1436.3	2.2	35808	35774		
1971 095B		5588	US	3 NOV	1441.8	2.3	35913	35886		
1971 095C		5589	US	3 NOV	CURRENT ELEMENTS NOT MAINTAINED					
1971 096A	EXPLORER 45	5598	US	15 NOV	393.2	3.6	22552	246		
1971 096B		5973	US	15 NOV	347.0	3.5	19737	226		
1971 099A	COSMOS 457	5614	USSR	20 NOV	109.4	74.0	1220	1185		
1971 099B		5615	USSR	20 NOV	109.3	74.0	1214	1179		
1971 103A	COSMOS 460	5628	USSR	30 NOV	94.6	74.0	509	499		
1971 103B		5629	USSR	30 NOV	94.6	74.0	520	487		
1971 105A	COSMOS 461	5643	USSR	2 DEC	93.5	69.2	455	440		
1971 105B		5644	USSR	2 DEC	93.5	69.2	464	435		
1971 109A	ARIEL 4	5675	UK	11 DEC	93.9	82.9	504	433		
1971 109B		5676	US	11 DEC	93.5	82.9	478	420		
1971 110A		5678	US	14 DEC	104.9	69.9	996	984		
1971 110B		5679	US	14 DEC	104.1	69.9	964	945		
1971 110C		5680	US	14 DEC	104.9	69.9	996	985		
1971 110D		5681	US	14 DEC	104.9	69.9	996	985		
1971 110E		5682	US	14 DEC	104.9	69.9	996	985		
1971 111A	COSMOS 465	5683	USSR	15 DEC	104.8	74.0	1011	970		
1971 111B		5685	USSR	15 DEC	104.7	74.0	1003	965		
1971 114A	COSMOS 468	5705	USSR	17 DEC	100.7	74.0	808	784		
1971 114B		5707	USSR	17 DEC	100.7	74.0	813	774		
1971 114C		8756	USSR	17 DEC	101.1	74.0	821	810		
1971 114D		8757	USSR	17 DEC	101.0	74.0	816	805		
1971 114E		9704	USSR	17 DEC	101.1	74.0	817	806		
1971 115B		5713	USSR	19 DEC	153.9	64.7	6160	116		
1971 116A	INTELSAT 4 F-3	5709	ITSO	20 DEC	1430.4	0.1	35783	35566		
1971 117A	COSMOS 469	5721	USSR	25 DEC	104.7	64.4	1030	932		
1971 119A	OREOL 1	5729	USSR	27 DEC	114.1	73.9	2433	399		
1971 119B		5730	USSR	27 DEC	113.9	73.9	2414	400		
1971 119C		5962	USSR	27 DEC	94.0	73.9	489	453		
1971 119E		6190	USSR	27 DEC	92.0	74.0	382	374		

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1971 LAUNCHES (CONT'D)										
1971 120A	METEOR	5731	USSR	29 DEC	102.6	81.2	927	843		
1971 120B		5732	USSR	29 DEC	102.2	81.2	873	857		
1971 120C		8826	USSR	29 DEC	102.5	81.2	900	861		
1971 120D		8827	USSR	29 DEC	102.3	81.2	874	866		
1971 120E		9300	USSR	29 DEC	102.6	81.2	900	872		
1972 LAUNCHES										
1972 002D		5772	US	20 JAN	93.8	96.5	492	440		
1972 003A	INTELSAT 4 F-4	5775	ITSO	23 JAN	1436.1	0.1	35799	35774		
1972 003B		5816	US	23 JAN	654.4	28.4	36570	612		
1972 005B		5815	US	31 JAN	94.5	89.7	703	295		
1972 005C		5817	US	31 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1972 007B		5836	USSR	14 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1972 009A	COSMOS 475	5846	USSR	25 FEB	104.7	74.0	1001	967		
1972 009B		5847	USSR	25 FEB	104.5	74.0	998	952		
1972 010A		5851	US	1 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1972 010B		5854	US	1 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1972 011A	COSMOS 476	5852	USSR	1 MAR	97.0	81.2	629	612		
1972 011B		5853	USSR	1 MAR	97.2	81.2	686	565		
1972 012A	PIONEER 10	5860	US	3 MAR	SOLAR SYSTEM ESCAPE TRAJECTORY					
1972 012B		5861	US	3 MAR	HELIOCENTRIC ORBIT					
1972 014A	TD-1A	5879	ESRO	12 MAR	94.9	97.5	524	509		
1972 014B		5880	US	12 MAR	94.8	97.5	519	508		
1972 017A	COSMOS 479	5894	USSR	22 MAR	94.7	74.0	515	497		
1972 017B		5895	USSR	22 MAR	94.6	74.0	523	482		
1972 018A		5903	US	24 MAR	101.7	98.8	884	800		
1972 018B		5904	US	24 MAR	101.6	98.8	874	800		
1972 019A	COSMOS 480	5905	USSR	25 MAR	109.1	82.9	1201	1175		
1972 019B		5907	USSR	25 MAR	109.0	82.9	1196	1167		
1972 022A	METEOR	5917	USSR	30 MAR	102.5	81.2	892	865		
1972 022B		5918	USSR	30 MAR	102.6	81.2	931	840		
1972 023A	COSMOS 482	5919	USSR	31 MAR	158.6	52.1	6449	213		
1972 023D		5923	USSR	31 MAR	167.6	52.1	7170	217		
1972 023E		6073	USSR	31 MAR	192.6	52.1	9132	209		
1972 025B	SPOT 1	5928	FRANCE	4 APR	CURRENT ELEMENTS NOT MAINTAINED					
1972 029A	PROGNOZ	5941	USSR	14 APR	CURRENT ELEMENTS NOT MAINTAINED					
1972 031C	LUNAR MODULE	6005	US	16 APR	SELENOCENTRIC ORBIT					13*
1972 035A	COSMOS 489	6019	USSR	6 MAY	104.7	74.0	1003	967		
1972 035B		6020	USSR	6 MAY	104.6	74.0	990	965		
1972 041A	INTELSAT 4 F-5	6052	ITSO	13 JUN	1436.0	0.1	35793	35778		
1972 041B		6058	US	13 JUN	653.6	26.4	36601	539		
1972 043A	COSMOS 494	6059	USSR	23 JUN	100.7	74.0	903	789		
1972 043B		6061	USSR	23 JUN	100.6	74.0	801	778		
1972 043C		6063	USSR	23 JUN	101.1	74.0	823	800		
1972 043D		6065	USSR	23 JUN	101.2	74.0	838	800		
1972 043E		6162	USSR	23 JUN	100.6	74.0	810	767		
1972 046A	PROGNOZ 2	6068	USSR	29 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1972 049A	METEOR	6079	USSR	30 JUN	102.8	81.2	903	888		
1972 049B		6080	USSR	30 JUN	102.9	81.2	938	864		
1972 052C		6096	US	7 JUL	92.9	96.1	421	419		
1972 053A	COSMOS 500	6097	USSR	10 JUL	94.7	74.0	522	491		
1972 053B		6098	USSR	10 JUL	94.6	74.0	525	482		
1972 057A	COSMOS 504	6117	USSR	20 JUL	113.9	74.0	1497	1323		
1972 057B	COSMOS 505	6118	USSR	20 JUL	114.3	74.0	1498	1354		
1972 057C	COSMOS 506	6119	USSR	20 JUL	114.6	74.0	1497	1384		
1972 057D	COSMOS 507	6120	USSR	20 JUL	114.9	74.0	1498	1413		
1972 057E	COSMOS 508	6121	USSR	20 JUL	115.3	74.0	1497	1445		
1972 057F	COSMOS 509	6122	USSR	20 JUL	115.6	74.0	1500	1475		
1972 057G	COSMOS 510	6123	USSR	20 JUL	116.0	74.0	1511	1497		
1972 057H	COSMOS 511	6124	USSR	20 JUL	116.4	74.0	1547	1497		
1972 057J		6125	USSR	20 JUL	117.0	74.0	1603	1494		
1972 058A	LANDSAT 1	6126	US	23 JUL	103.2	98.8	916	906	137.860,2229.500, 2265.500, 2287.500	5* 5* 5*

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1972 LAUNCHES (CONT'D)										
1972 058D - 058H7			US	23 JUL	SEE NOTE	20*				20*
1972 061A	EXPLORER 46	6142	US	13 AUG	97.0	37.6	746	482		
1972 061B		6145	US	13 AUG	96.6	37.6	725	472		
1972 061C		6146	US	13 AUG	94.8	37.6	597	422		
1972 062A	COSMOS 514	6148	USSR	16 AUG	104.3	82.9	974	957		
1972 062B		6149	USSR	16 AUG	104.3	82.9	970	955		
1972 062C		6277	USSR	16 AUG	104.1	82.8	963	951		
1972 062D		7560	USSR	16 AUG	103.2	82.9	969	858		
1972 064A	DFNPA	6152	JAPAN	19 AUG	131.5	30.9	4145	230		
1972 064B		6332	JAPAN	18 AUG	130.9	30.9	4778	230		
1972 065A	COPERNICUS	6153	US	21 AUG	99.6	35.0	744	734	136.260,136.440, 400.550	5* 5*
1972 065B		6155	US	21 AUG	99.5	35.0	778	694		
1972 065C		6156	US	21 AUG	99.4	35.0	738	724		
1972 066A	COSMOS 516	6154	USSR	21 AUG	104.5	64.8	1034	915		
1972 069A	TRIAD 01-1X	6173	US	2 SEP	100.6	90.0	840	738		
1972 069B		6180	US	2 SEP	100.6	90.0	837	740		
1972 069C		6250	US	2 SEP	100.1	89.7	832	705		
1972 072A	COSMOS 520	6192	USSR	19 SEP	715.2	65.6	37074	3155		
1972 072E		6302	USSR	19 SEP	706.7	65.6	36677	3129		
1972 073A	EXPLORER 47	6197	US	23 SEP	17597.7	38.3	232145	203322	136.890,137.920	5*
1972 074A	COSMOS 521	6206	USSR	29 SEP	104.9	65.8	999	986		
1972 074B		6207	USSR	29 SEP	104.8	65.8	992	982		
1972 074C		6210	USSR	29 SEP	104.9	65.8	1004	985		
1972 075A	MOLNIYA 2	6208	USSR	30 SEP	717.4	65.0	40092	244		
1972 075D		6303	USSR	30 SEP	700.1	65.0	39252	227		
1972 076A		6212	US	2 OCT	99.5	98.4	745	728		
1972 076B		6217	US	2 OCT	99.5	98.5	747	730		
1972 076C		6219	US	2 OCT	99.5	98.4	749	731		
1972 076D		6221	US	2 OCT	99.5	98.4	748	730		
1972 076E		6224	US	2 OCT	99.3	98.4	738	716		
1972 079C		6822	US	10 OCT	114.7	95.6	1469	1421		
1972 079D		6823	US	10 OCT	114.8	95.7	1490	1408		
1972 079F		6824	US	10 OCT	114.6	95.5	1449	1436		
1972 081A	MOLNIYA 1	6231	USSR	14 OCT	716.2	64.2	40130	149		
1972 082A	NOAA 2	6235	US	15 OCT	114.9	101.4	1457	1451		
1972 082B	AMSAT-OSCAR 6	6236	US	15 OCT	114.9	101.4	1457	1450		
1972 082C		6237	US	15 OCT	109.3	102.7	1472	919		
1972 085A	METEOR	6256	USSR	26 OCT	102.5	81.2	892	864		
1972 085B		6257	USSR	26 OCT	102.6	81.2	925	841		
1972 087A	COSMOS 528	6262	USSR	1 NOV	114.1	74.0	1470	1367		
1972 087B	COSMOS 529	626A	USSR	1 NOV	114.5	74.0	1470	1403		
1972 087C	COSMOS 530	6265	USSR	1 NOV	113.8	74.0	1470	1334		
1972 087D	COSMOS 531	6266	USSR	1 NOV	114.7	74.0	1472	1421		
1972 087E	COSMOS 532	6267	USSR	1 NOV	113.4	74.0	1469	1301		
1972 087F	COSMOS 533	6268	USSR	1 NOV	113.6	74.0	1470	1318		
1972 087G	COSMOS 534	6269	USSR	1 NOV	113.9	74.0	1470	1350		
1972 087H	COSMOS 535	6270	USSR	1 NOV	114.3	74.0	1471	1385		
1972 087J		6271	USSR	1 NOV	116.6	74.0	1594	1469		
1972 088A	COSMOS 536	6272	USSR	3 NOV	94.9	74.0	536	495		
1972 088B		6273	USSR	3 NOV	94.8	74.0	536	484		
1972 088D		6700	USSR	3 NOV	95.2	74.0	546	515		
1972 089A		6275	US	9 NOV	101.7	98.6	870	811		
1972 089B		6276	US	9 NOV	101.7	98.6	870	815		
1972 090A	ANIK 1	6278	CANADA	10 NOV	1436.1	0.0	35797	35777		
1972 091A	EXPLORER 48	6282	US	15 NOV	94.6	1.9	574	422		
1972 091B		6800	US	15 NOV	94.4	1.9	560	419		
1972 097A	NIMBUS 5	6305	US	11 DEC	107.2	99.8	1105	1092	136.500,1702.500, 2208.500	5* 5*
1972 097B		6306	US	11 DEC	111.8	99.8	1519	1103		
1972 101A		6317	US	20 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1972 101B		6318	US	20 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1972 102A	COSMOS 539	6319	USSR	21 DEC	112.9	74.0	1381	1343		
1972 102B		6320	USSR	21 DEC	112.8	74.0	1375	1338		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1972 LAUNCHES (CONT'D)										
1972 104A	COSMOS 540	6323	USSR	25 DEC	100.7	74.0	808	780		
1972 104B		6324	USSR	25 DEC	100.5	74.0	793	774		
1972 104C		6391	USSR	25 DEC	100.8	74.1	809	787		
1972 104D		6396	USSR	25 DEC	100.8	74.0	813	784		
1972 104E		8829	USSR	25 DEC	101.5	74.0	852	813		
1972 106A	COSMOS 542	6328	USSR	28 DEC	96.1	81.2	634	521		
1972 106B		6329	USSR	28 DEC	96.2	81.2	652	506		
1973 LAUNCHES										
1973 003A	COSMOS 544	6343	USSR	20 JAN	94.9	74.0	527	504		
1973 003B		6344	USSR	20 JAN	94.7	74.0	524	491		
1973 005A	COSMOS 546	6350	USSR	26 JAN	96.5	50.6	612	574		
1973 005B		6351	USSR	26 JAN	96.3	50.6	613	558		
1973 007A	MOLNIYA 1	6356	USSR	3 FEB	643.4	64.5	36510	110		
1973 007E		6366	USSR	3 FEB	698.2	64.7	39235	153		
1973 009A	PROGNOZ 3	6364	USSR	15 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1973 010A	COSMOS 549	6373	USSR	28 FEB	94.9	74.0	523	509		
1973 010B		6374	USSR	28 FEB	94.8	74.0	538	486		
1973 013A		6380	US	6 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1973 015A	METEOR	6392	USSR	20 MAR	102.5	81.2	892	871		
1973 015B		6393	USSR	20 MAR	102.7	81.2	932	843		
1973 018A	MOLNIYA 2	6418	USSR	5 APR	717.8	65.3	39514	842		
1973 018D		6439	USSR	5 APR	699.0	65.3	38602	822		
1973 019A	PIONEER 11	6421	US	6 APR	SOLAR SYSTEM ESCAPE TRAJECTORY					
1973 019B		6425	US	6 APR	HELIOCENTRIC ORBIT					
1973 023A	ANIK 2	6437	CANADA	20 APR	1436.1	0.1	35799	35776		
1973 027A	SKYLAB 1	6633	US	14 MAY	92.8	50.0	420	402		
1973 034A	METEOR	6659	USSR	29 MAY	102.4	81.2	896	851		
1973 034B		6660	USSR	29 MAY	102.6	81.2	920	850		
1973 037A	COSMOS 564	6675	USSR	8 JUN	114.6	74.0	1482	1396		
1973 037B	COSMOS 565	6676	USSR	8 JUN	115.3	74.0	1491	1450		
1973 037C	COSMOS 566	6677	USSR	8 JUN	115.0	74.0	1484	1434		
1973 037D	COSMOS 567	6678	USSR	8 JUN	114.8	74.0	1485	1413		
1973 037E	COSMOS 568	6679	USSR	8 JUN	114.4	74.0	1483	1376		
1973 037F	COSMOS 569	6680	USSR	8 JUN	114.2	74.0	1482	1358		
1973 037G	COSMOS 570	6681	USSR	8 JUN	114.0	74.0	1483	1339		
1973 037H	COSMOS 571	6682	USSR	8 JUN	113.7	74.0	1481	1321		
1973 037J		6683	USSR	8 JUN	116.9	74.0	1603	1481		
1973 039A	EXPLORER 49	6686	US	10 JUN	SELENOCENTRIC ORBIT					
1973 039B		6687	US	10 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1973 039D		6689	US	10 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1973 039F		6725	US	10 JUN	SELENOCENTRIC ORBIT					
1973 039G		6726	US	10 JUN	SELENOCENTRIC ORBIT					
1973 040A		6691	US	12 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1973 042A	COSMOS 574	6707	USSR	20 JUN	105.0	82.9	1016	982		
1973 042B		6708	USSR	20 JUN	104.9	82.9	1005	983		
1973 045A	MOLNIYA 2	6722	USSR	11 JUL	717.7	65.0	39827	523		
1973 045D		6741	USSR	11 JUL	702.1	65.1	39044	535		
1973 047A	MARS 4	6742	USSR	21 JUL	HELIOCENTRIC ORBIT					
1973 049A	MARS 5	6754	USSR	25 JUL	AREOCENTRIC ORBIT					
1973 052A	MARS 6	6768	USSR	5 AUG	HELIOCENTRIC ORBIT					
1973 053A	MARS 7	6776	USSR	9 AUG	HELIOCENTRIC ORBIT					
1973 053D	CAPSULE	7224	USSR	9 AUG	HELIOCENTRIC ORBIT					
1973 054A		6787	US	17 AUG	101.4	98.6	852	807		
1973 054B		6788	US	17 AUG	101.4	98.6	851	805		
1973 056A		6791	US	21 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1973 056B		6792	US	21 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1973 058A	INTELSAT 4 F-7	6796	ITSO	23 AUG	1436.3	0.2	35799	35783		
1973 058B		6797	US	23 AUG	655.0	27.9	36661	553		
1973 060A	COSMOS 582	6802	USSR	28 AUG	95.0	74.0	527	513		
1973 060B		6803	USSR	28 AUG	94.9	74.0	529	508		
1973 060C		6804	USSR	28 AUG	94.9	74.0	537	500		
1973 061A	MOLNIYA 1	6805	USSR	30 AUG	717.7	65.4	39405	946		

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1973 LAUNCHES (CONT'D)										
1973 061F		6915	USSR	30 AUG	678.1	65.2	37578	802		
1973 064A	COSMOS 585	6825	USSR	8 SEP	113.5	74.0	1405	1376		
1973 064B		6826	USSR	8 SEP	113.4	74.0	1407	1362		
1973 064C		6827	USSR	8 SEP	101.0	74.1	827	794		
1973 065A	COSMOS 586	6828	USSR	14 SEP	104.8	82.9	1006	969		
1973 065B		6829	USSR	14 SEP	104.7	82.9	998	967		
1973 069A	COSMOS 588	6845	USSR	OCT	115.3	73.9	1494	1450		
1973 069B	COSMOS 589	6846	USSR	2 OCT	114.9	73.9	1490	1416		
1973 069C	COSMOS 590	6847	USSR	2 OCT	115.1	73.9	1489	1435		
1973 069D	COSMOS 591	6848	USSR	2 OCT	114.1	73.9	1487	1348		
1973 069E	COSMOS 592	6849	USSR	2 OCT	113.9	73.9	1486	1332		
1973 069F	COSMOS 593	6850	USSR	2 OCT	114.3	73.9	1487	1365		
1973 069G	COSMOS 594	6851	USSR	2 OCT	114.5	73.9	1487	1382		
1973 069H	COSMOS 595	6852	USSR	2 OCT	114.7	73.9	1487	1400		
1973 069J		6853	USSR	2 OCT	117.1	74.0	1624	1486		
1973 076A	MOLNIYA 2	6877	USSR	19 OCT	732.5	64.9	40134	947		
1973 076D		6898	USSR	19 OCT	733.0	65.0	40172	933		
1973 078A	EXPLORER 50	6893	US	26 OCT	17285.0	31.3	258786	171356	136.800,137.980	5*
1973 078C		6895	US	26 OCT	111.8	28.8	2262	358		
1973 078D		6896	US	26 OCT	CURRENT ELEMENTS NOT MAINTAINED					
1973 080A	COSMOS 604	6907	USSR	29 OCT	97.1	81.2	634	612		
1973 080B		6908	USSR	29 OCT	97.1	81.2	675	571		
1973 081A	NNSS 0-20	6909	US	30 OCT	105.5	90.1	1145	897		
1973 081B		6910	US	30 OCT	105.5	90.1	1144	896		
1973 082B		6912	USSR	30 OCT	91.0	73.9	443	215		
1973 084A	COSMOS 606	6916	USSR	2 NOV	717.8	55.8	37836	2523		
1973 084D		6939	USSR	2 NOV	706.5	55.7	37358	2441		
1973 085A	MARINER 10	6919	US	3 NOV	HELIOCENTRIC ORBIT					
1973 086A	NOAA 3	6920	US	6 NOV	116.1	101.8	1512	1504		
1973 086B - 086GJ			US	6 NOV	SEE NOTE 21*					21*
1973 088B		6931	US	10 NOV	93.8	96.3	471	454		
1973 088D		6938	US	10 NOV	114.5	96.9	1459	1417		
1973 088E		7559	US	10 NOV	114.7	96.7	1481	1407		
1973 089A	MOLNIYA 1	6932	USSR	14 NOV	717.7	55.0	39322	1032		
1973 089E		6940	USSR	14 NOV	698.5	65.1	38379	1020		
1973 093A	COSMOS 610	6950	USSR	27 NOV	95.0	74.0	534	508		
1973 093B		6951	USSR	27 NOV	94.8	74.0	534	491		
1973 097A	MOLNIYA 1	6958	USSR	30 NOV	717.7	63.8	39884	469		
1973 097D		7178	USSR	30 NOV	734.7	63.8	40574	515		
1973 098A	COSMOS 614	6965	USSR	4 DEC	100.6	74.0	806	769		
1973 098B		6966	USSR	4 DEC	100.5	74.0	805	767		
1973 098C		6967	USSR	4 DEC	100.6	74.0	811	773		
1973 100A		6973	US	13 DEC	1438.3	0.5	35850	35810		
1973 100B		6974	US	13 DEC	1436.2	0.6	35794	35782		
1973 100D		6976	US	13 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1973 101A	EXPLORER 51	6977	US	16 DEC	92.2	67.9	385	383	137.230.2289.500	5*
1973 104A	COSMOS 617	6985	USSR	19 DEC	114.0	74.0	1485	1336		
1973 104B	COSMOS 618	6986	USSR	19 DEC	115.2	74.0	1488	1445		
1973 104C	COSMOS 619	6987	USSR	19 DEC	115.0	74.0	1489	1425		
1973 104D	COSMOS 620	6988	USSR	19 DEC	115.4	74.0	1495	1460		
1973 104E	COSMOS 621	6989	USSR	19 DEC	114.8	74.0	1486	1408		
1973 104F	COSMOS 622	6990	USSR	19 DEC	114.3	74.0	1486	1371		
1973 104G	COSMOS 623	6991	USSR	19 DEC	114.6	74.0	1487	1388		
1973 104H	COSMOS 624	6992	USSR	19 DEC	114.2	74.0	1497	1352		
1973 104J		6993	USSR	19 DEC	117.0	74.0	1624	1476		
1973 106A	MOLNIYA 2	7000	USSR	25 DEC	717.7	63.8	39916	435		
1973 106D		7372	USSR	25 DEC	733.6	63.8	40651	471		
1973 107A	ORFOL 2	7003	USSR	26 DEC	108.8	73.9	1951	401		
1973 107B		7004	USSR	26 DEC	108.7	74.0	1944	394		
1973 108A	COSMOS 626	7005	USSR	27 DEC	104.0	65.4	989	909		
1973 109A	COSMOS 627	7008	USSR	29 DEC	105.0	82.9	1019	973		
1973 109B		7009	USSR	29 DEC	104.7	82.9	997	970		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1974 LAUNCHES										
1974 001A	COSMOS 628	7094	USSR	17 JAN	104.8	82.9	1013	959		
1974 001B		7095	USSR	17 JAN	104.6	82.9	1005	952		
1974 005A	COSMOS 631	7109	USSR	6 FEB	95.0	74.0	548	499		
1974 005B		7110	USSR	6 FEB	94.9	74.0	526	510		
1974 005C		7111	USSR	6 FEB	93.2	74.1	474	397		
1974 005E		7257	USSR	6 FEB	93.7	74.0	478	438		
1974 008A	TANSEI 2	7122	JAPAN	16 FEB	118.0	31.2	2899	280		
1974 008B		7123	JAPAN	16 FEB	118.4	31.2	2944	277		
1974 011A	METEOR	7209	USSR	5 MAR	102.1	81.2	893	832		
1974 011B		7210	USSR	5 MAR	102.1	81.2	920	807		
1974 013A	UK-X4	7213	UK	9 MAR	101.1	97.8	924	701		
1974 013B		7228	US	9 MAR	101.1	97.8	916	712		
1974 013C		7215	UK	9 MAR	100.9	97.2	900	711		
1974 013D		7214	UK	9 MAR	101.2	98.4	933	701		
1974 015A		7218	US	16 MAR	101.4	98.9	878	780		
1974 015B		7219	US	16 MAR	101.5	98.9	885	783		
1974 017A	COSMOS 637	7229	USSR	26 MAR	1428.9	2.5	35770	35521		
1974 020B		7244	US	10 APR	101.0	94.6	827	787		
1974 020C		7247	US	10 APR	94.7	93.9	517	496		
1974 022A	WESTAR 1	7250	US	13 APR	1435.7	0.0	35794	35784		
1974 023A	MOLNIYA 1	7260	USSR	20 APR	717.6	64.8	39400	947		
1974 023E		7264	USSR	20 APR	734.4	64.9	40241	931		
1974 024A	COSMOS 641	7265	USSR	23 APR	114.5	74.0	1493	1389		
1974 024B	COSMOS 642	7266	USSR	23 APR	113.7	74.0	1482	1320		
1974 024C	COSMOS 643	7267	USSR	23 APR	114.1	74.0	1483	1354		
1974 024D	COSMOS 644	7268	USSR	23 APR	113.9	74.0	1483	1336		
1974 024E	COSMOS 645	7269	USSR	23 APR	114.3	74.0	1483	1370		
1974 024F	COSMOS 646	7270	USSR	23 APR	114.7	74.0	1486	1405		
1974 024G	COSMOS 647	7271	USSR	23 APR	114.9	74.0	1485	1424		
1974 024H	COSMOS 648	7272	USSR	23 APR	115.1	74.0	1491	1439		
1974 024J		7273	USSR	23 APR	116.9	74.0	1611	1477		
1974 025A	METEOR	7274	USSR	24 APR	102.5	81.2	896	862		
1974 025B		7275	USSR	24 APR	102.6	81.2	927	840		
1974 026A	MOLNIYA 2	7276	USSR	26 APR	717.6	63.7	38696	1649		
1974 026E		7373	USSR	26 APR	732.6	63.8	39394	1688		
1974 028A	COSMOS 650	7281	USSR	29 APR	113.4	74.0	1402	1369		
1974 028B		7284	USSR	29 APR	113.2	74.0	1394	1363		
1974 029A	COSMOS 651	7291	USSR	15 MAY	103.4	64.9	954	892		
1974 032A	COSMOS 654	7297	USSR	17 MAY	104.4	64.9	1025	912		
1974 033A	SMS 1	7298	US	17 MAY	1436.3	2.7	35808	35769	136.380.468.825, 1682.500	5* 5*
1974 034A	INTERCOSMOS 11	7299	USSR	17 MAY	94.4	50.6	500	481		
1974 034B		7302	USSR	17 MAY	94.2	50.6	500	460		
1974 035A	COSMOS 655	7306	USSR	21 MAY	95.1	73.9	540	512		
1974 035B		7307	USSR	21 MAY	95.0	74.0	528	514		
1974 035C		7515	USSR	21 MAY	95.1	73.9	541	514		
1974 035D		7516	USSR	21 MAY	95.5	73.9	563	531		
1974 035E		7517	USSR	21 MAY	95.6	74.0	598	510		
1974 035F		7518	USSR	21 MAY	94.5	74.0	512	484		
1974 035G		7519	USSR	21 MAY	94.4	74.0	510	478		
1974 035H		8778	USSR	21 MAY	93.7	74.0	472	443		
1974 037A	LUNA 22	7315	USSR	29 MAY	SELENOCENTRIC ORBIT					
1974 039A	ATS 6	7318	US	30 MAY	1436.3	0.9	35808	35773	136.230.137.110	5*
1974 039C		7324	US	30 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1974 040A	EXPLORER 52	7325	US	3 JUN	3076.9	85.0	125060	2340	136.290.400.650	5*
1974 040B		7326	US	3 JUN	90.	89.6	368	280		
1974 044A	COSMOS 660	7337	USSR	18 JUN	108.8	82.9	1955	397		
1974 044B		7338	USSR	18 JUN	108.6	82.9	1926	405		
1974 045A	COSMOS 661	7339	USSR	21 JUN	95.9	74.0	541	500		
1974 045B		7340	USSR	21 JUN	94.8	74.0	532	492		
1974 045C		7341	USSR	21 JUN	93.8	73.9	480	449		
1974 048A	COSMOS 663	7349	USSR	27 JUN	104.8	82.9	1005	969		
1974 048B		7350	USSR	27 JUN	104.6	82.9	994	966		
1974 050A	COSMOS 665	7352	USSR	29 JUN	718.3	66.1	38586	1796		

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1974 LAUNCHES (CONT'D)										
1974 050C		7354	USSR	29 JUN	707.3	66.4	38089	1750		
1974 052A	METEOR	7363	USSR	9 JUL	103.0	81.2	918	892		
1974 052B		7364	USSR	9 JUL	102.6	81.2	917	854		
1974 054A		7369	US	14 JUL	458.7	124.7	13752	13467		
1974 054B		7370	US	14 JUL	225.9	125.3	11587	236		
1974 054C		8599	US	14 JUL	468.6	124.7	14009	13208		
1974 056A	MOLNIYA 2	7376	USSR	23 JUL	717.7	63.3	38992	1358		
1974 056D		7382	USSR	23 JUL	733.9	63.2	39672	1476		
1974 060A	MOLNIYA 1-5	7392	USSR	29 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1974 060D		7399	USSR	29 JUL	240.0	46.8	12689	141		
1974 060E		7400	USSR	29 JUL	133.4	46.8	4168	376		
1974 063A		7411	US	9 AUG	101.6	98.7	875	804		
1974 063B		7412	US	9 AUG	101.6	98.7	873	802		
1974 066A	COSMOS 673	7417	USSR	16 AUG	97.0	81.2	636	602		
1974 066B		7418	USSR	16 AUG	97.2	81.2	674	578		
1974 066C		8424	USSR	16 AUG	97.0	81.2	635	605		
1974 069A	COSMOS 675	7424	USSR	29 AUG	113.6	74.0	1425	1365		
1974 069B		7426	USSR	29 AUG	113.5	74.0	1424	1355		
1974 071A	COSMOS 676	7433	USSR	11 SEP	100.9	74.0	816	795		
1974 071B		7434	USSR	11 SEP	100.8	74.0	815	786		
1974 072A	COSMOS 677	7435	USSR	19 SEP	114.4	74.0	1467	1399		
1974 072B	COSMOS 678	7436	USSR	19 SEP	115.9	74.0	1534	1468		
1974 072C	COSMOS 679	7437	USSR	19 SEP	115.7	74.0	1511	1468		
1974 072D	COSMOS 680	7438	USSR	19 SEP	115.5	74.0	1493	1468		
1974 072E	COSMOS 681	7439	USSR	19 SEP	115.3	74.0	1473	1468		
1974 072F	COSMOS 682	7440	USSR	19 SEP	115.1	74.0	1468	1454		
1974 072G	COSMOS 683	7441	USSR	19 SEP	114.9	74.0	1458	1435		
1974 072H	COSMOS 684	7442	USSR	19 SEP	114.7	74.0	1468	1417		
1974 072J		7443	USSR	19 SEP	117.7	74.0	1689	1474		
1974 075A	WESTAR 2	7466	US	10 OCT	1436.7	0.0	35790	35783		
1974 075B		7467	US	10 OCT	110.0	27.2	2231	222		
1974 075C		7468	US	10 OCT	602.7	24.4	34264	250		
1974 076A	COSMOS 687	7469	USSR	11 OCT	91.5	73.9	441	264		
1974 077A	ARIEL 5	7471	UK	15 OCT	95.1	2.9	540	497	137.680	5*
1974 077B		7472	US	15 OCT	94.9	2.8	531	491		
1974 079A	COSMOS 689	7476	USSR	18 OCT	105.0	82.9	1019	977		
1974 079B		7477	USSR	18 OCT	104.9	82.9	1015	971		
1974 081A	MOLNIYA 1	7480	USSR	24 OCT	717.7	64.2	39613	742		
1974 081D		7485	USSR	24 OCT	731.9	64.1	40301	752		
1974 083A	METEOR	7490	USSR	28 OCT	102.4	81.1	905	843		
1974 083B		7493	USSR	28 OCT	102.5	81.1	913	845		
1974 085B		7498	US	29 OCT	94.9	96.0	525	512		
1974 089A	NOAA 4	7529	US	15 NOV	114.9	101.5	1461	1447	136.770,137.140,	5*
									137.500,137.620,	5*
									1697.500	5*
1974 089B	AMSAT-OSCAR 7	7530	US	15 NOV	114.8	101.5	1462	1441		
1974 089C	INTASAT	7531	SPAIN	15 NOV	114.9	101.5	1461	1443		
1974 089D - 089EG			US	15 NOV	SEE NOTE 22*					22*
1974 092A	MOLNIYA 3	7540	USSR	21 NOV	717.7	64.2	39638	712		
1974 092E		7546	USSR	21 NOV	733.8	64.2	40433	709		
1974 093A	INTELSAT A F-8	7544	ITSO	21 NOV	1436.2	0.5	35798	35779		
1974 093B		7545	US	21 NOV	654.4	25.9	36619	561		
1974 094A	SKYNET 2B	7547	UK	23 NOV	1435.3	0.8	35781	35762		
1974 094D		7550	US	23 NOV	121.9	28.2	3219	310		
1974 097A	HELIOS 1	7567	FRG	10 DEC	HELIOCENTRIC ORBIT					
1974 097B		7568	US	10 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1974 097C		7569	US	10 DEC	HELIOCENTRIC ORBIT					
1974 097D		7570	FRG	10 DEC	HELIOCENTRIC ORBIT					
1974 099A	METEOR	7574	USSR	17 DEC	102.3	81.2	899	840		
1974 099B		7575	USSR	17 DEC	102.3	81.2	921	818		
1974 100A	COSMOS 698	7576	USSR	18 DEC	95.1	74.0	539	516		
1974 100B		7577	USSR	18 DEC	95.0	74.0	542	505		
1974 100D		7636	USSR	18 DEC	94.7	74.0	555	459		
1974 100E		7695	USSR	18 DEC	91.9	74.0	374	372		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1974 LAUNCHES (CONT'D)										
1974 100F		7722	USSR	18 DEC	94.6	73.9	544	462		
1974 100G		7723	USSR	18 DEC	95.2	73.9	551	510		
1974 100H		7724	USSR	18 DEC	94.6	73.9	517	490		
1974 101A	SYMPHONIE-A	7578	FR/FRG	19 DEC	1435.9	0.2	35797	35769		
1974 101B		7579	US	19 DEC	94.5	26.9	715	269		
1974 101F		8739	US	19 DEC	90.1	26.9	326	234		
1974 101F		8740	US	19 DEC	93.3	27.0	606	265		
1974 101G		9330	US	19 DEC	682.5	13.2	38204	395		
1974 102A	MOLNIYA 2	7583	USSR	21 DEC	717.8	64.5	39318	1041		
1974 102D		7586	USSR	21 DEC	734.0	64.7	40130	1021		
1974 103A	COSMOS 699	7587	USSR	24 DEC	91.0	64.9	336	316		
1974 103B - 103BC			USSR	24 DEC	SEE NOTE	23*				23*
1974 105A	COSMOS 700	7593	USSR	26 DEC	104.7	82.9	1002	964		
1974 105B		7594	USSR	26 DEC	104.6	82.9	991	964		
1975 LAUNCHES										
1975 004A	LANDSAT 2	7615	US	22 JAN	103.2	98.9	920	903	137.860,2229.500,	5*
									2265.500,	5*
									2287.500	5*
1975 004B - 004HF			US	22 JAN	SEE NOTE	24*				24*
1975 007A	COSMOS 706	7625	USSR	30 JAN	717.5	63.1	38726	1615		
1975 007D		7629	USSR	30 JAN	717.0	63.3	38700	1616		
1975 008A	COSMOS 707	7637	USSR	5 FEB	94.9	74.0	544	494		
1975 008H		7638	USSR	5 FEB	94.8	74.0	543	484		
1975 009A	MOLNIYA 2	7641	USSR	6 FEB	717.7	64.2	39713	641		
1975 009D		7653	USSR	6 FEB	733.3	64.2	40472	647		
1975 010A	STARLETTE	7646	FRANCE	6 FEB	104.1	49.8	1107	805		
1975 010B		7647	FRANCE	6 FEB	104.4	49.8	1137	803		
1975 010C		7654	FRANCE	6 FEB	104.0	49.8	1094	805		
1975 010D		7655	FRANCE	6 FEB	104.1	49.8	1101	804		
1975 010E		7659	FRANCE	6 FEB	104.3	49.8	1120	804		
1975 011A	SMS 2	7648	US	6 FEB	1436.2	0.0	35801	35777	136.380,459.825,	5*
									1682.500	5*
1975 011B		7650	US	6 FEB	119.0	27.6	2996	275		
1975 012A	COSMOS 708	7663	USSR	12 FEB	113.5	59.2	1410	1371		
1975 012B		7665	USSR	12 FEB	113.4	69.2	1397	1370		
1975 014A	SRATS (TAIYO)	7671	JAPAN	24 FEB	115.1	31.5	2675	246		
1975 014B		7674	JAPAN	24 FEB	114.8	31.5	2649	244		
1975 016A	COSMOS 711	7678	USSR	28 FEB	115.4	74.0	1494	1463		
1975 016B	COSMOS 712	7679	USSR	28 FEB	114.9	73.9	1491	1413		
1975 016C	COSMOS 713	7680	USSR	28 FEB	114.7	73.9	1488	1398		
1975 016D	COSMOS 714	7681	USSR	28 FEB	115.2	73.9	1492	1446		
1975 016E	COSMOS 715	7682	USSR	28 FEB	115.7	74.0	1506	1471		
1975 016F	COSMOS 716	7683	USSR	28 FEB	115.9	74.0	1516	1480		
1975 016G	COSMOS 717	7684	USSR	28 FEB	116.1	73.9	1537	1481		
1975 016H	COSMOS 718	7685	USSR	28 FEB	115.1	73.9	1491	1430		
1975 016J		7686	USSR	28 FEB	118.0	73.9	1707	1479		
1975 017A		7687	US	10 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1975 017B		7688	US	10 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1975 022A	INTERCOSMOS 13	7710	USSR	27 MAR	103.1	82.9	1539	283		
1975 022B		7713	USSR	27 MAR	102.7	82.9	1496	279		
1975 023A	METEOR	7714	USSR	1 APR	102.5	81.2	896	864		
1975 023B		7715	USSR	1 APR	102.5	81.2	920	844		
1975 024A	COSMOS 723	7718	USSR	2 APR	103.7	64.7	980	889		
1975 025A	COSMOS 724	7727	USSR	7 APR	103.0	65.5	938	868		
1975 027A	GEOS 3	7734	US	9 APR	101.7	114.9	852	834	136.320,2247.000	5*
1975 027B		7735	US	9 APR	101.7	114.9	852	830		
1975 028A	COSMOS 726	7736	USSR	11 APR	104.6	82.9	998	958		
1975 028B		7737	USSR	11 APR	104.5	82.9	988	957		
1975 029A	MOLNIYA 3	7738	USSR	14 APR	717.6	64.5	39318	1029		
1975 029D		7741	USSR	14 APR	733.0	64.4	40078	1029		
1975 033A	ARIABAT	7752	INDIA	19 APR	96.4	50.6	609	567		
1975 033B		7753	USSR	19 APR	96.2	50.6	621	540		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1975 LAUNCHES (CONT'D)										
1975 033C		8058	USSR	19 APR	95.1	50.6	543	506		
1975 034A	COSMOS 729	7768	USSR	22 APR	104.9	82.9	1013	976		
1975 034B		7769	USSR	22 APR	104.8	82.9	1006	974		
1975 036A	MOLNIYA 1	7780	USSR	29 APR	717.7	63.2	38800	1553		
1975 036D		7800	USSR	29 APR	732.9	63.2	39495	1602		
1975 037A	EXPLORER 53	7788	US	7 MAY	94.4	2.9	493	487	136.680	5*
1975 037B		7789	US	7 MAY	94.4	2.9	490	484		
1975 038A	ANIK 3	7790	CANADA	7 MAY	1436.1	0.0	35792	35783		
1975 038D		7794	US	7 MAY	627.3	24.1	35538	254		
1975 039B	CASTOR	7802	FRANCE	17 MAY	97.7	29.8	1027	267	136.250	5*
1975 039G		8035	FRANCE	17 MAY	94.3	29.9	712	253		
1975 042A	INTELSAT A F-1	7815	ITSO	22 MAY	1436.0	0.1	35793	35778		
1975 042B		7902	US	22 MAY	655.2	25.3	36665	559		
1975 043A		7816	US	24 MAY	101.9	98.8	896	806		
1975 043B		7817	US	24 MAY	101.8	98.8	891	806		
1975 045A	COSMOS 732	7820	USSR	28 MAY	114.6	74.0	1472	1405		
1975 045B	COSMOS 733	7822	USSR	28 MAY	116.2	74.0	1555	1471		
1975 045C	COSMOS 734	7823	USSR	28 MAY	115.9	74.0	1473	1444		
1975 045D	COSMOS 735	7824	USSR	28 MAY	115.2	74.0	1475	1463		
1975 045E	COSMOS 736	7825	USSR	28 MAY	115.5	74.0	1488	1471		
1975 045F	COSMOS 737	7826	USSR	28 MAY	115.9	74.0	1530	1472		
1975 045G	COSMOS 738	7827	USSR	28 MAY	115.7	74.0	1511	1470		
1975 045H	COSMOS 739	7828	USSR	28 MAY	114.8	74.0	1474	1424		
1975 045J		7831	USSR	28 MAY	118.0	73.9	1696	1488		
1975 049A	MOLNIYA 1	7903	USSR	5 JUN	717.7	63.1	39527	827		
1975 049B	SRET 2	7910	FRANCE	5 JUN	736.4	62.6	40319	949	137.530	
1975 049F		8548	USSR	5 JUN	730.5	63.1	40118	870		
1975 050A	VENERA 9	7915	USSR	8 JUN	CIRCUM-VENEREAN ORBIT					
1975 051C	SSU 1	7937	US	8 JUN	113.6	95.0	1397	1390		
1975 051D		7938	US	8 JUN	113.2	94.9	1407	1350		
1975 051E		7939	US	8 JUN	113.9	95.1	1431	1387		
1975 052A	NIMBUS 6	7924	US	12 JUN	107.4	99.9	1117	1104	136.500,401.200,	5*
									1702.500,	5*
									2253.000	5*
1975 052B		7946	US	12 JUN	107.2	99.9	1106	1096		
1975 054A	VENERA 10	7947	USSR	14 JUN	CIRCUM-VENEREAN ORBIT					
1975 055A		7963	US	18 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1975 055B		7964	US	18 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1975 056A	COSMOS 744	7958	USSR	20 JUN	97.0	81.2	636	600		
1975 056B		7969	USSR	20 JUN	97.2	81.2	667	586		
1975 057A	OSO 8	7970	US	21 JUN	95.5	32.9	552	537	136.920,2212.500	5*
1975 057B		7971	US	21 JUN	95.5	32.9	550	536		
1975 062A	COSMOS 749	8009	USSR	4 JUL	95.1	74.0	558	491		
1975 062B		8010	USSR	4 JUL	95.0	74.0	548	497		
1975 062C		8107	USSR	4 JUL	94.6	74.1	541	464		
1975 063A	MOLNIYA 2	8015	USSR	8 JUL	717.2	63.2	38849	1480		
1975 063D		8018	USSR	8 JUL	732.9	63.1	39584	1517		
1975 064A	METEOR 2	8026	USSR	11 JUL	102.4	81.2	890	658		
1975 064B		8027	USSR	11 JUL	102.5	81.3	921	839		
1975 064C		8039	USSR	11 JUL	102.4	81.2	890	857		
1975 064D		8110	USSR	11 JUL	102.2	81.3	901	835		
1975 067A	COSMOS 750	8036	USSR	17 JUL	90.3	70.9	353	232		
1975 069A	COSMOS 752	8043	USSR	24 JUL	94.4	65.8	519	468		
1975 069B		8044	USSR	24 JUL	94.2	65.8	516	453		
1975 072A	COS-B	8062	ESA	9 AUG	2203.2	95.3	91937	7482		
1975 072B		8063	US	9 AUG	138.9	89.2	4686	331		
1975 074A	COSMOS 755	8072	USSR	14 AUG	104.9	82.9	1014	971		
1975 074B		8073	USSR	14 AUG	104.8	82.9	1007	965		
1975 075A	VIKING ORBITER 1	8108	US	20 AUG	AREOCENTRIC ORBIT					
1975 075B		8111	US	20 AUG	HELIOCENTRIC ORBIT					
1975 076A	COSMOS 756	8127	USSR	22 AUG	97.2	81.2	634	618		
1975 076B		8128	USSR	22 AUG	97.3	81.2	680	586		
1975 077A	SYMPHONIE-B	8132	FR/FRG	27 AUG	1436.1	0.1	35794	35784		
1975 077B		8133	US	27 AUG	109.6	25.3	2007	407		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1975 LAUNCHES (CONT'D)										
1975 077C		8134	US	27 AUG	678.4	13.5	38001	392		
1975 079A	MOLNIYA 1	8187	USSR	2 SEP	717.6	64.2	39791	556		
1975 079E		8274	USSR	2 SEP	735.9	64.1	40596	652		
1975 081A	MOLNIYA 2	8195	USSR	9 SEP	717.7	63.1	38972	1383		
1975 081D		8418	USSR	9 SEP	733.7	63.1	39706	1435		
1975 082A	KIKU	8197	JAPAN	9 SEP	105.9	46.9	1102	975		
1975 082B		8352	JAPAN	9 SEP	105.9	46.9	1102	975		
1975 083A	VIKING ORBITER 2	8199	US	9 SEP	APEOCENTRIC ORBIT					
1975 083B		8272	US	9 SEP	HELIOCENTRIC ORBIT					
1975 086A	COSMOS 761	8285	USSR	17 SEP	114.6	74.0	1483	1401		
1975 086B	COSMOS 762	8286	USSR	17 SEP	115.1	74.0	1486	1440		
1975 086C	COSMOS 763	8287	USSR	17 SEP	115.8	74.0	1511	1475		
1975 086D	COSMOS 764	8288	USSR	17 SEP	116.0	74.0	1527	1480		
1975 086E	COSMOS 765	8289	USSR	17 SEP	116.3	74.0	1552	1479		
1975 086F	COSMOS 766	8290	USSR	17 SEP	114.9	74.0	1487	1418		
1975 086G	COSMOS 767	8291	USSR	17 SEP	115.3	74.0	1488	1457		
1975 086H	COSMOS 768	8292	USSR	17 SEP	115.5	74.0	1493	1472		
1975 086J		8295	USSR	17 SEP	117.8	74.0	1686	1482		
1975 087A	METEOR	8293	USSR	18 SEP	102.3	81.2	919	818		
1975 087B		8294	USSR	18 SEP	102.4	81.2	923	828		
1975 089A	COSMOS 770	8325	USSR	24 SEP	109.1	82.9	1210	1167		
1975 089B		8326	USSR	24 SEP	109.3	82.9	1200	1165		
1975 091A	INTELSAT 4A F-1	8330	ITSO	26 SEP	1436.2	0.0	35796	35781		
1975 091B		8331	US	26 SEP	656.7	22.0	36768	529		
1975 092A	D2-B	8332	FRANCE	27 SEP	96.7	37.1	706	499		
1975 092B		8333	FRANCE	27 SEP	96.8	37.1	714	499		
1975 092C		8336	FRANCE	27 SEP	96.2	37.1	660	490		
1975 092D		8337	FRANCE	27 SEP	96.4	37.0	669	507		
1975 092E		8340	FRANCE	27 SEP	96.1	37.1	658	487		
1975 092F		8341	FRANCE	27 SEP	96.6	37.1	697	500		
1975 092G		8342	FRANCE	27 SEP	96.5	37.1	691	492		
1975 094A	COSMOS 773	8343	USSR	30 SEP	100.8	74.0	807	790		
1975 094B		8344	USSR	30 SEP	100.7	74.0	812	776		
1975 094C		8346	USSR	30 SEP	100.6	74.0	806	774		
1975 097A	COSMOS 775	8357	USSR	8 OCT	1435.6	1.4	35816	35736		
1975 097D		8414	USSR	8 OCT	630.0	46.9	35518	413		
1975 097E		8415	USSR	8 OCT	632.4	46.9	35579	477		
1975 099A	TIP 2	8361	US	12 OCT	98.8	90.3	825	582		
1975 099B		8364	US	12 OCT	93.6	90.7	568	341		
1975 099C		8409	US	12 OCT	95.4	90.8	684	398		
1975 100A	GOES 1	8366	US	16 OCT	1436.5	0.5	35802	35784	136.380.468.825. 1682.500	5* 5*
1975 100C		8368	US	16 OCT	534.3	23.5	30625	242		
1975 102AB		8647	USSR	29 OCT	93.6	65.0	490	413		
1975 102AC		8648	USSR	29 OCT	93.1	64.9	451	405		
1975 102AL		8656	USSR	29 OCT	92.1	65.8	400	358		
1975 102BJ		8731	USSR	29 OCT	91.4	65.0	365	322		
1975 103A	COSMOS 778	8419	USSR	4 NOV	104.8	82.9	1005	975		
1975 103B		8421	USSR	4 NOV	104.7	82.9	997	972		
1975 105A	MOLNIYA 3	8425	USSR	14 NOV	717.7	63.0	38974	1380		
1975 105D		8462	USSR	14 NOV	733.8	63.0	39744	1400		
1975 107A	EXPLORER 55	8440	US	20 NOV	90.0	19.6	277	275	137.230.2289.500	5*
1975 109A	COSMOS 781	8444	USSR	21 NOV	95.1	74.0	542	507		
1975 109B		8445	USSR	21 NOV	95.0	74.0	552	488		
1975 109C		8447	USSR	21 NOV	93.6	73.9	458	443		
1975 109D		8448	USSR	21 NOV	92.7	74.0	419	398		
1975 109E		8449	USSR	21 NOV	92.1	73.9	387	377		
1975 109F		8776	USSR	21 NOV	92.9	74.0	425	416		
1975 109G		8777	USSR	21 NOV	93.3	74.0	454	428		
1975 109H		9693	USSR	21 NOV	91.0	73.9	331	319		
1975 109J		9994	USSR	21 NOV	93.8	74.0	479	449		
1975 109K		9995	USSR	21 NOV	96.6	74.0	843	355		
1975 112A	COSMOS 783	8458	USSR	28 NOV	100.9	74.0	815	794		
1975 112B		8459	USSR	28 NOV	100.9	74.0	812	785		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1975 LAUNCHES (CONT'D)										
1975 112C		9572	USSR	28 NOV	101.0	74.0	813	801		
1975 114A		8468	US	4 DEC	97.5	96.2	1061	223		
1975 115A	INTERCOSMOS 14	8471	USSR	11 DEC	104.8	73.9	1641	332		
1975 115B		8472	USSR	11 DEC	104.5	74.0	1627	324		
1975 115C		8474	USSR	11 DEC	105.4	73.0	1669	367		
1975 115D		8475	USSR	11 DEC	106.0	73.3	1634	455		
1975 115E		8765	USSR	11 DEC	105.4	72.3	1621	409		
1975 115F		8765	USSR	11 DEC	102.4	73.3	1338	409		
1975 116A	COSMOS 785	8473	USSR	12 DEC	104.2	65.0	1023	896		
1975 117A	RCA-SATCOM-I	8476	US	13 DEC	1436.1	0.0	35795	35779		
1975 117C		8479	US	13 DEC	570.7	27.1	32603	227		
1975 118A		8482	US	14 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1975 118C		8516	US	14 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1975 118D		8517	US	14 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1975 121A	MOLNIYA 2	8492	USSR	17 DEC	717.6	63.1	39759	590		
1975 121D		8529	USSR	17 DEC	732.3	63.1	40452	606		
1975 122A	PROGNOZ 4	8510	USSR	22 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1975 123A	RADUGA	8513	USSR	22 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1975 123D		8546	USSR	22 DEC	475.4	46.7	27304	295		
1975 123F		9547	USSR	22 DEC	567.4	46.7	32299	351		
1975 124A	METEOR	8519	USSR	25 DEC	102.3	81.2	903	840		
1975 124B		8520	USSR	25 DEC	102.4	81.2	912	838		
1975 125A	MOLNIYA 3	8521	USSR	27 DEC	717.7	63.1	39752	600		
1975 125F		8600	USSR	27 DEC	731.1	63.1	40405	607		
1976 LAUNCHES										
1976 001A	COSMOS 787	8530	USSR	6 JAN	95.2	74.0	544	515		
1976 001B		8531	USSR	6 JAN	95.1	74.0	546	504		
1976 001C		8549	USSR	6 JAN	93.4	74.0	461	424		
1976 001F		9731	USSR	6 JAN	93.7	73.9	473	443		
1976 001G		9791	USSR	6 JAN	93.3	74.0	456	422		
1976 001H		9792	USSR	6 JAN	93.5	74.0	464	430		
1976 003A	HELIOS 2	8582	FRG	15 JAN	HELIOCENTRIC ORBIT					
1976 003B		8583	US	15 JAN	HELIOCENTRIC ORBIT					
1976 003C		8584	US	15 JAN	HELIOCENTRIC ORBIT					
1976 004A	CTS	8585	CANADA	17 JAN	1436.2	0.5	35851	35728	2277.500	S*
1976 004D		8598	US	17 JAN	552.5	25.4	31710	138		
1976 005A	COSMOS 789	8591	USSR	20 JAN	104.9	82.9	1019	971		
1976 005B		8597	USSR	20 JAN	104.8	82.9	1012	968		
1976 006A	MOLNIYA 1	8601	USSR	22 JAN	717.6	63.3	39187	1163		
1976 006D		8701	USSR	22 JAN	695.4	63.2	38112	1133		
1976 007A	COSMOS 790	8604	USSR	22 JAN	95.1	74.0	553	501		
1976 007B		8605	USSR	22 JAN	94.9	74.0	536	499		
1976 008A	COSMOS 791	8607	USSR	28 JAN	114.7	74.0	1488	1403		
1976 008B	COSMOS 792	8608	USSR	28 JAN	115.1	74.0	1491	1438		
1976 008C	COSMOS 793	8609	USSR	28 JAN	114.9	74.0	1491	1420		
1976 008D	COSMOS 794	8610	USSR	28 JAN	115.3	74.0	1495	1453		
1976 008E	COSMOS 795	8611	USSR	28 JAN	115.6	74.0	1499	1469		
1976 008F	COSMOS 796	8612	USSR	28 JAN	115.8	74.0	1517	1473		
1976 008G	COSMOS 797	8613	USSR	28 JAN	116.0	74.0	1531	1480		
1976 008H	COSMOS 798	8614	USSR	28 JAN	116.3	74.0	1556	1480		
1976 008J		8615	USSR	28 JAN	117.9	74.0	1697	1485		
1976 010A	INTELSAT 4A F-2	8620	ITSO	29 JAN	1436.2	0.1	35794	35782		
1976 010B		8621	US	29 JAN	655.2	21.4	36616	607		
1976 011A	COSMOS 800	8645	USSR	3 FEB	105.0	82.9	1016	982		
1976 011B		8646	USSR	3 FEB	104.9	82.9	1007	979		
1976 012A	COSMOS 801	8658	USSR	5 FEB	92.2	70.9	519	252		
1976 014A	COSMOS 803	8688	USSR	12 FEB	96.3	65.8	614	556		
1976 014B		8689	USSR	12 FEB	96.2	65.8	613	547		
1976 014C		8690	USSR	12 FEB	96.3	65.8	612	554		
1976 017A	MARISAT 1	8697	US	19 FEB	1436.2	1.2	35814	35764		
1976 017C		8702	US	19 FEB	622.9	24.9	35299	269		
1976 019A	UME	8709	JAPAN	29 FEB	105.1	69.6	1013	993		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1976 LAUNCHES (CONT'D)										
1976 019B		8710	JAPAN	29 FEB	105.1	69.6	1015	993		
1976 021A	MOLNIYA 1	8741	USSR	11 MAR	717.6	63.6	39799	551		
1976 021D		9411	USSR	11 MAR	731.0	63.5	40473	533		
1976 022A	COSMOS 807	8744	USSR	12 MAR	108.9	82.9	1965	398		
1976 022B		8745	USSR	12 MAR	108.8	82.9	1955	392		
1976 023A	LES 8	8746	US	15 MAR	1436.3	25.2	35815	35767		
1976 023B	LES 9	8747	US	15 MAR	1435.8	25.3	35801	35761		
1976 023C	SOLRAD 11A	8748	US	15 MAR	7336.7	27.2	119523	117864		
1976 023D	SOLRAD 11B	8749	US	15 MAR	7336.9	27.2	119251	118142	136.530	5*
1976 023F		8751	US	15 MAR	1465.4	25.4	36936	35780		
1976 023G		8752	US	15 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1976 023H		8753	US	15 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1976 023J		8832	US	15 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1976 024A	COSMOS 808	8754	USSR	16 MAR	97.0	81.2	636	599		
1976 024B		8755	USSR	16 MAR	97.1	81.2	576	566		
1976 026A	MOLNIYA 1	8762	USSR	19 MAR	717.6	63.5	39958	391		
1976 026D		8792	USSR	19 MAR	696.0	63.4	39034	241		
1976 029A	RCA-SATCOM-II	8774	US	26 MAR	1436.0	0.0	35798	35775		
1976 029C		8793	US	26 MAR	601.5	26.3	34289	164		
1976 031A	COSMOS 812	8794	USSR	6 APR	95.1	74.0	543	506		
1976 031B		8795	USSR	6 APR	95.0	74.0	542	497		
1976 031C		9836	USSR	6 APR	93.0	74.0	439	408		
1976 031D		9990	USSR	6 APR	93.9	73.9	488	452		
1976 032A	METEOR	8799	USSR	7 APR	102.2	81.2	893	842		
1976 032B		8800	USSR	7 APR	102.3	81.2	916	827		
1976 035A	NATO III-A	8808	NATO	22 APR	1436.1	2.2	35791	35783		
1976 035C		8810	US	22 APR	585.5	26.4	33416	190		
1976 037A	COSMOS 816	8812	USSR	28 APR	94.4	65.8	594	482		
1976 037B - 037AA			USSR	28 APR	SEE NOTE 25*					25*
1976 038A		8818	US	30 APR	107.4	63.4	1139	1072		
1976 038B		8819	US	30 APR	107.3	63.4	1142	1069		
1976 038C	SSU-1	8835	US	30 APR	107.4	63.4	1147	1075		
1976 038D	SSU-2	8836	US	30 APR	107.4	63.4	1148	1075		
1976 038E		8839	US	30 APR	107.6	63.4	1158	1079		
1976 038F		8842	US	30 APR	107.3	63.4	1144	1068		
1976 038G		8843	US	30 APR	107.6	63.4	1157	1079		
1976 038H		8859	US	30 APR	107.1	63.4	1130	1057		
1976 038J	SSU-3	8884	US	30 APR	107.4	63.4	1149	1073		
1976 038K		9796	US	30 APR	107.1	63.4	1130	1057		
1976 038L		9996	US	30 APR	107.1	63.4	1128	1060		
1976 039A	LAGEOS	8820	US	4 MAY	225.4	109.8	5945	5838		
1976 039B		8821	US	4 MAY	152.2	109.6	5828	306		
1976 039C		8822	US	4 MAY	225.4	109.8	5946	5836		
1976 041A	MOLNIYA 3	8833	USSR	12 MAY	717.7	63.8	39762	589		
1976 041D		8844	USSR	12 MAY	733.5	63.8	40553	575		
1976 042A	COMSTAR 1	8838	US	13 MAY	1436.0	0.0	35793	35778		
1976 042B		8840	US	13 MAY	649.5	21.1	36301	629		
1976 043A	METEOR	8845	USSR	15 MAY	102.2	81.2	892	840		
1976 043B		8846	USSR	15 MAY	102.4	81.2	915	836		
1976 047A	P 76-5	8860	US	22 MAY	105.6	99.6	1060	994		
1976 047B		8861	US	22 MAY	105.6	99.6	1059	994		
1976 047C		8867	US	22 MAY	106.5	99.3	1128	1010		
1976 047D		8868	US	22 MAY	104.9	99.9	1034	952		
1976 049A	COSMOS 822	8865	USSR	28 MAY	93.3	74.0	609	273		
1976 049B		8866	USSR	28 MAY	92.0	74.0	491	260		
1976 050A		8871	US	2 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1976 050B		8872	US	2 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1976 051A	COSMOS 823	8873	USSR	2 JUN	104.9	82.9	1013	976		
1976 051B		8874	USSR	2 JUN	104.8	82.9	1004	975		
1976 053A	MARISAT 2	8892	US	10 JUN	1436.1	1.7	35804	35768		
1976 053F		8910	US	10 JUN	616.7	25.7	34987	252		
1976 054A	COSMOS 825	8889	USSR	15 JUN	114.7	73.9	1489	1396		
1976 054B	COSMOS 826	8890	USSR	15 JUN	116.2	74.0	1546	1483		
1976 054C	COSMOS 827	8891	USSR	15 JUN	114.9	73.9	1491	1414		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1976 LAUNCHES (CONT'D)										
1976 054D	COSMOS 828	8892	USSR	15 JUN	115.1	73.9	1492	1433		
1976 054E	COSMOS 829	8893	USSR	15 JUN	115.3	74.0	1492	1452		
1976 054F	COSMOS 830	8894	USSR	15 JUN	115.5	73.9	1495	31469		
1976 054G	COSMOS 831	8895	USSR	15 JUN	115.8	73.9	1509	1476		
1976 054H	COSMOS 832	8896	USSR	15 JUN	116.0	73.9	1521	1484		
1976 054J		8897	USSR	15 JUN	117.9	74.0	1691	1487		
1976 056A	INTERCOSMOS 15	8903	USSR	19 JUN	94.5	74.0	511	481		
1976 056B		8904	USSR	19 JUN	94.4	74.0	512	473		
1976 059A		8916	US	26 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1976 059C		8918	US	26 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1976 059D		8919	US	26 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1976 061A	COSMOS 836	8923	USSR	29 JUN	100.9	74.0	817	790		
1976 061B		8924	USSR	29 JUN	100.8	74.0	811	787		
1976 062A	COSMOS 837	8927	USSR	1 JUL	98.4	62.7	951	421		
1976 062E		8931	USSR	1 JUL	98.3	62.7	939	422		
1976 063B - 063AS			USSR	2JUL	SEE NOTE 26*					26*
1976 065B		9007	US	8 JUL	176.1	97.5	7829	234		
1976 065C		9008	US	8 JUL	97.2	96.3	632	626		
1976 066A	PALAPA 1	9009	INDNSA	8 JUL	1436.2	0.0	35793	35785		
1976 066C		9017	US	8 JUL	631.2	24.7	35715	278		
1976 067A	COSMOS 839	9011	USSR	8 JUL	116.8	65.8	2098	982		
1976 067B		9013	USSR	8 JUL	116.6	65.8	2093	969		
1976 067C		9016	USSR	8 JUL	116.8	65.8	2098	985		
1976 069A	COSMOS 841	9022	USSR	15 JUL	100.7	74.0	808	785		
1976 069B		9023	USSR	15 JUL	100.6	74.0	808	777		
1976 070A	COSMOS 842	9025	USSR	21 JUL	104.9	82.9	1010	971		
1976 070B		9044	USSR	21 JUL	104.7	82.9	999	971		
1976 073A	COMSTAR 2	9047	US	22 JUL	1436.1	0.1	35790	35783		
1976 073B		9329	US	22 JUL	648.3	21.8	36287	584		
1976 074A	MOLNIYA 1	9049	USSR	23 JUL	717.8	63.0	39592	764		
1976 074E		9269	USSR	23 JUL	698.4	63.0	38650	746		
1976 075A	COSMOS 845	9053	USSR	27 JUL	95.1	74.0	551	503		
1976 075B		9054	USSR	27 JUL	95.0	74.0	546	499		
1976 075C		9058	USSR	27 JUL	94.2	74.0	501	461		
1976 075D		9267	USSR	27 JUL	96.7	74.0	714	491		
1976 075E		9268	USSR	27 JUL	97.0	74.0	727	506		
1976 075F		9665	USSR	27 JUL	94.3	73.9	505	468		
1976 075G		9718	USSR	27 JUL	94.2	74.1	503	466		
1976 075H		9789	USSR	27 JUL	94.4	74.0	511	475		
1976 076A	INTERCOSMOS 16	9055	USSR	27 JUL	94.3	50.5	513	459		
1976 076B		9056	USSR	27 JUL	94.2	50.5	505	458		
1976 077A	NOAA 5	9057	US	29 JUL	116.2	102.0	1522	1507	136.770,137.140, 137.500,137.620, 1697.500	5* 5* 5*
1976 077B		9063	US	29 JUL	116.2	102.0	1521	1507		
1976 078A	COSMOS 846	9061	USSR	29 JUL	104.7	82.9	1014	954		
1976 078B		9062	USSR	29 JUL	104.6	82.9	1001	955		
1976 080A		9270	US	6 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1976 080B		9271	US	6 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1976 083A	COSMOS 849	9382	USSR	18 AUG	94.9	70.9	588	258		
1976 083B		9383	USSR	18 AUG	92.0	70.9	499	251		
1976 085A	COSMOS 851	9389	USSR	27 AUG	96.6	81.2	636	566		
1976 085B		9390	USSR	27 AUG	96.7	81.2	664	544		
1976 087A		9394	PRC	30 AUG	104.6	69.1	1758	195		
1976 087B		9395	PRC	30 AUG	99.7	69.1	1308	186		
1976 089A	TIP 3	9403	US	1 SEP	97.8	89.2	862	455		
1976 089B		9404	US	1 SEP	95.0	90.3	702	344		
1976 089C		9409	US	1 SEP	93.9	90.1	610	324		
1976 089D		9410	US	1 SEP	95.1	90.4	708	344		
1976 091A		9415	US	11 SEP	101.5	98.6	846	819		
1976 091B		9419	US	11 SEP	101.5	98.6	845	817		
1976 091C		9420	US	11 SEP	101.5	98.6	846	819		
1976 091D		9474	US	11 SEP	101.4	98.7	847	814		
1976 091E		9483	US	11 SEP	101.5	98.6	852	817		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1976 LAUNCHES (CONT'D)										
1976 091F		9484	US	11 SEP	101.6	98.5	954	817		
1976 091G		9518	US	11 SEP	101.5	98.6	846	817		
1976 092A	RADUGA	9416	USSR	11 SEP	1436.2	0.3	35809	35771		
1976 098A	COSMOS 858	9443	USSR	29 SEP	100.8	74.0	811	791		
1976 098B		9444	USSR	29 SEP	100.7	74.0	813	780		
1976 101A	MARISAT 3	9478	US	14 OCT	1436.1	2.0	35808	35763		
1976 101E		9542	US	14 OCT	617.7	26.6	35107	189		
1976 102A	METEOR	9481	USSR	15 OCT	102.4	81.2	893	855		
1976 102B		9482	USSR	15 OCT	102.5	81.2	925	834		
1976 103A	COSMOS 860	9486	USSR	17 OCT	104.3	64.6	1022	905		
1976 104A	COSMOS 861	9494	USSR	21 OCT	104.3	64.8	990	934		
1976 105A	COSMOS 862	9495	USSR	22 OCT	718.1	63.7	39398	975		
1976 105D		9506	USSR	22 OCT	711.8	63.6	39036	1023		
1976 105E		9888	USSR	22 OCT	721.0	63.3	39283	1229		
1976 105F		9889	USSR	22 OCT	718.3	63.6	39407	977		
1976 105G		9890	USSR	22 OCT	715.2	64.8	40310	220		
1976 105H		9891	USSR	22 OCT	718.4	63.7	39410	976		
1976 105J		9892	USSR	22 OCT	718.6	63.6	39431	967		
1976 105K		9893	USSR	22 OCT	716.4	63.5	39058	1229		
1976 105L		9894	USSR	22 OCT	715.2	63.1	39441	787		
1976 105M		9895	USSR	22 OCT	719.9	63.1	39672	791		
1976 105N		9896	USSR	22 OCT	724.5	64.2	39847	839		
1976 105P		9902	USSR	22 OCT	729.0	63.5	40254	654		
1976 107A	EKRAN	9503	USSR	26 OCT	1436.3	0.2	36067	35513		
1976 108A	COSMOS 864	9509	USSR	29 OCT	104.8	82.9	1010	965		
1976 108B		9510	USSR	29 OCT	104.7	82.9	999	965		
1976 111F		9582	USSR	23 NOV	91.2	62.8	362	314		
1976 112A	PROGNOZ 5	9557	USSR	25 NOV	5728.6	65.9	196488	2864		
1976 113A	COSMOS 869	9561	USSR	26 NOV	93.0	65.0	444	408		
1976 115A	COSMOS 870	9573	USSR	2 DEC	95.1	73.9	543	515		
1976 115B		9576	USSR	2 DEC	95.0	74.0	552	496		
1976 115C		9577	USSR	2 DEC	93.8	73.9	477	450		
1976 115D		9991	USSR	2 DEC	94.5	73.9	517	480		
1976 115E		9992	USSR	2 DEC	94.5	73.9	518	481		
1976 115F		9993	USSR	2 DEC	94.6	74.0	518	484		
1976 116A	MOLNIYA 2	9574	USSR	2 DEC	717.7	63.4	39734	619		
1976 116D		9579	USSR	2 DEC	731.9	63.5	40437	614		
1976 118A	COSMOS 871	9588	USSR	7 DEC	114.7	74.0	1466	1419		
1976 118B	COSMOS 872	9589	USSR	7 DEC	114.4	74.0	1465	1400		
1976 118C	COSMOS 873	9590	USSR	7 DEC	115.5	74.0	1498	1465		
1976 118D	COSMOS 874	9591	USSR	7 DEC	115.7	74.0	1518	1465		
1976 118E	COSMOS 875	9592	USSR	7 DEC	114.9	74.0	1465	1438		
1976 118F	COSMOS 876	9593	USSR	7 DEC	116.0	74.0	1540	1465		
1976 118G	COSMOS 877	9594	USSR	7 DEC	115.1	74.0	1466	1456		
1976 118H	COSMOS 878	9595	USSR	7 DEC	115.3	74.0	1477	1465		
1976 118J		9598	USSR	7 DEC	117.6	74.0	1590	1464		
1976 120A	COSMOS 880	9601	USSR	9 DEC	96.4	65.8	624	553		
1976 120B		9604	USSR	9 DEC	96.2	65.8	626	537		
1976 120C		9605	USSR	9 DEC	96.4	65.8	524	552		
1976 122A	COSMOS 883	9610	USSR	15 DEC	104.8	82.9	1012	960		
1976 122B		9613	USSR	15 DEC	104.6	82.9	1003	959		
1976 124A	COSMOS 885	9615	USSR	17 DEC	94.3	65.8	511	461		
1976 124B - 124T			USSR	17 DEC	SEE NOTE	27*				27*
1976 125A		9627	US	19 DEC	92.3	96.9	518	263		
1976 126A	COSMOS 886	9634	USSR	27 DEC	113.8	65.8	2307	498		
1976 126B - 126BH			USSR	27 DEC	SEE NOTE	28*				28*
1976 127A	MOLNIYA 3	9635	USSR	28 DEC	717.7	63.0	39689	663		
1976 127E		9647	USSR	28 DEC	732.3	63.0	40414	658		
1976 128A	COSMOS 887	9637	USSR	28 DEC	104.7	82.9	1019	951		
1976 128B		9638	USSR	28 DEC	104.6	82.9	1007	951		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1977 LAUNCHES										
1977 002A	METEOR 2	9661	USSR	6 JAN	102.9	81.2	906	889		
1977 002B		9662	USSR	6 JAN	102.9	81.2	939	863		
1977 002C		9663	USSR	6 JAN	102.8	81.2	901	887		
1977 002D		9664	USSR	6 JAN	102.8	81.2	902	889		
1977 004A	COSMOS 890	9737	USSR	20 JAN	105.1	82.9	1021	980		
1977 004B		9738	USSR	20 JAN	104.9	82.9	1008	981		
1977 005A	NATO III-B	9785	NATO	28 JAN	1436.2	2.6	35794	35784		
1977 005B		9786	US	28 JAN	104.2	28.0	1299	617		
1977 005C		9787	US	28 JAN	614.3	26.7	34950	167		
1977 005D		9809	US	28 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1977 005E		9810	US	28 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1977 005F		9811	US	28 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1977 006A	COSMOS 891	9801	USSR	2 FEB	94.4	65.8	521	453		
1977 006B		9802	USSR	2 FEB	94.3	65.8	522	453		
1977 007A		9803	US	6 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1977 007C		9855	US	6 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1977 007D		9856	US	5 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1977 010A	MOLNIYA 2	9829	USSR	11 FEB	717.5	62.9	33695	649		
1977 010E		9850	USSR	11 FEB	730.9	62.9	40353	650		
1977 011A	COSMOS 893	9833	USSR	15 FEB	105.0	73.9	1566	332		
1977 011B		9834	USSR	15 FEB	103.1	73.9	1496	323		
1977 012A	TANSEI 3	9841	JAPAN	19 FEB	134.1	65.7	3813	796		
1977 012B		9842	JAPAN	19 FEB	95.5	65.4	764	330		
1977 012C		9843	JAPAN	19 FEB	134.2	65.7	3816	795		
1977 012D		9844	JAPAN	19 FEB	95.4	64.9	743	334		
1977 012E		9981	JAPAN	19 FEB	133.9	65.2	3801	785		
1977 012F		9982	JAPAN	19 FEB	133.9	65.9	3804	780		
1977 012G		9983	JAPAN	19 FEB	134.4	65.5	3821	810		
1977 013A	COSMOS 894	9846	USSR	21 FEB	104.9	82.9	1016	969		
1977 013B		9848	USSR	21 FEB	104.8	82.9	1004	972		
1977 014A	KIKU 2	9852	JAPAN	23 FEB	1436.0	0.2	35791	35773		
1977 014B		9859	JAPAN	23 FEB	625.2	23.6	35434	253		
1977 015A	COSMOS 895	9853	USSR	26 FEB	97.1	81.1	635	610		
1977 015B		9854	USSR	26 FEB	97.1	81.2	689	562		
1977 018A	PALAPA 2	9862	INDNSA	10 MAR	1436.2	0.0	35800	35778		
1977 018B		9864	US	10 MAR	630.8	24.3	35780	194		
1977 018C		9866	US	10 MAR	109.8	28.6	2250	185		
1977 018D		9867	US	10 MAR	117.2	28.7	2923	166		
1977 018E		9868	US	10 MAR	116.3	28.6	2828	202		
1977 021A	MOLNIYA 1	9880	USSR	24 MAR	717.6	62.9	39740	609		
1977 021D		9927	USSR	24 MAR	732.8	62.9	40485	610		
1977 022A	COSMOS 899	9883	USSR	24 MAR	95.0	74.0	547	501		
1977 022B		9884	USSR	24 MAR	94.9	74.0	543	495		
1977 022C		9900	USSR	24 MAR	94.4	74.0	524	464		
1977 023A	COSMOS 900	9898	USSR	29 MAR	94.3	82.9	520	454		
1977 023B		9899	USSR	29 MAR	94.1	82.9	516	445		
1977 024A	METEOR	9903	USSR	5 APR	102.4	81.2	896	853		
1977 024B		9904	USSR	5 APR	102.5	81.2	923	840		
1977 024C		9907	USSR	5 APR	102.5	81.2	922	841		
1977 025A	COSMOS 901	9905	USSR	5 APR	94.8	70.9	764	262		
1977 025B		9906	USSR	5 APR	94.4	70.9	708	276		
1977 027A	COSMOS 903	9911	USSR	11 APR	717.8	62.8	39509	847		
1977 027D		9921	USSR	11 APR	724.0	62.9	39820	842		
1977 029A	ESA-GEOS	9931	ESA	20 APR	718.2	26.5	38330	2046	137.200.2299.500	5*
1977 029C		9933	US	20 APR	225.7	26.0	11552	250		
1977 031A	COSMOS 906	9938	USSR	27 APR	94.3	50.6	512	462		
1977 032A	MOLNIYA 3	9941	USSR	28 APR	717.6	62.9	39768	577		
1977 034A		10000	US	12 MAY	1436.1	2.2	35793	35781		
1977 034B		10001	US	12 MAY	1436.1	2.2	35795	35780		
1977 034C		10002	US	12 MAY	1506.9	2.1	38528	35794		
1977 036A	COSMOS 909	10010	USSR	19 MAY	117.0	65.8	2104	994		
1977 036B		10011	USSR	19 MAY	116.9	65.8	2095	991		
1977 036C		10013	USSR	19 MAY	117.0	65.8	2104	994		
1977 038A		10016	US	23 MAY	CURRENT ELEMENTS NOT MAINTAINED					

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1977 LAUNCHES (CONT'D)										
1977 038B		10017	US	23 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1977 039A	COSMOS 911	10019	USSR	25 MAY	104.8	82.9	1007	967		
1977 039B		10020	USSR	25 MAY	104.6	82.9	998	962		
1977 041A	INTELSAT 4A F-4	10024	ITSO	26 MAY	1436.1	0.0	35790	35784		
1977 041B		10025	US	26 MAY	649.9	21.9	36351	600		
1977 042A	COSMOS 913	10028	USSR	30 MAY	94.4	74.0	518	472		
1977 042B		10029	USSR	30 MAY	94.3	74.0	511	463		
1977 042C		10237	USSR	30 MAY	94.3	74.0	511	467		
1977 042D		10238	USSR	30 MAY	94.5	74.0	518	474		
1977 044A		10033	US	5 JUN	101.5	99.1	868	801		
1977 044B		10034	US	5 JUN	101.5	99.1	866	802		
1977 044C		10037	US	5 JUN	101.5	99.1	867	801		
1977 044D		10085	US	5 JUN	101.5	99.1	867	801		
1977 047A	COSMOS 917	10059	USSR	16 JUN	717.9	62.8	39695	668		
1977 047D		10089	USSR	16 JUN	722.3	62.9	39915	665		
1977 048A	GOES 2	10061	US	16 JUN	1436.2	0.7	35790	35787	136.380.468.925,	5*
									1682.500	5*
1977 048B		10062	US	16 JUN	109.0	28.4	1785	571		
1977 048F		NNA	US	16 JUN	655.9	23.8	37073	185		
1977 049A	SIGNE 3	10064	FRANCE	17 JUN	94.3	50.6	517	458	136.050.136.630	
1977 049B		10069	USSR	17 JUN	94.2	50.6	516	450		
1977 051A	COSMOS 919	10070	USSR	18 JUN	95.2	71.0	793	264		
1977 051B		10071	USSR	18 JUN	94.9	71.0	767	264		
1977 053A		10091	US	23 JUN	717.9	63.3	20181	20181		
1977 054A	MOLNIYA 1	10092	USSR	24 JUN	717.7	63.1	39896	457		
1977 054D		10155	USSR	24 JUN	695.4	62.9	38792	454		
1977 055A	COSMOS 921	10095	USSR	24 JUN	97.9	75.8	698	621		
1977 055B		10096	USSR	24 JUN	97.8	75.8	699	617		
1977 056A		10111	US	27 JUN	88.4	96.9	241	158		
1977 057A	METEOR	10113	USSR	29 JUN	97.4	97.8	669	602		
1977 057B		10114	USSR	29 JUN	97.5	97.8	557	626		
1977 057C		10116	USSR	29 JUN	97.5	97.9	652	631		
1977 059A	COSMOS 923	10120	USSR	1 JUL	101.0	74.0	818	796		
1977 059B		10121	USSR	1 JUL	100.8	74.0	818	785		
1977 060A	COSMOS 924	10129	USSR	4 JUL	95.2	74.0	550	512		
1977 060B		10130	USSR	4 JUL	95.1	74.0	549	500		
1977 060C		10131	USSR	4 JUL	94.8	74.0	545	483		
1977 060D		10132	USSR	4 JUL	93.9	73.9	501	435		
1977 061A	COSMOS 925	10134	USSR	7 JUL	97.0	81.2	635	607		
1977 061B		10135	USSR	7 JUL	97.2	81.2	675	579		
1977 062A	COSMOS 926	10137	USSR	8 JUL	105.0	82.9	1023	974		
1977 062B		10138	USSR	8 JUL	104.9	82.9	1012	974		
1977 064A	COSMOS 928	10141	USSR	13 JUL	104.7	82.9	1010	956		
1977 064B		10142	USSR	13 JUL	104.6	82.9	1003	953		
1977 065A	HIMAWARI	10143	JAPAN	14 JUL	1436.2	1.1	35804	35771	136.890	5*
1977 065B - 065DL			US	14 JUL	SEE NOTE 29*					29*
1977 066A	COSMOS 929	10146	USSR	17 JUL	90.9	51.5	325	312		
1977 067A	COSMOS 930	10149	USSR	19 JUL	94.5	74.0	515	480		
1977 068A	COSMOS 931	10150	USSR	20 JUL	717.7	62.7	39717	637		
1977 068B		10151	USSR	20 JUL	90.9	62.7	443	204		
1977 068D		10167	USSR	20 JUL	720.9	62.8	39875	636		
1977 070A	COSMOS 933	10157	USSR	22 JUL	92.4	65.8	408	379		
1977 070B		10158	USSR	22 JUL	92.3	65.8	408	369		
1977 071A	RADUGA	10159	USSR	23 JUL	1436.2	0.3	35820	35757		
1977 071D		10276	USSR	23 JUL	647.1	47.0	36473	338		
1977 071E		10277	USSR	23 JUL	645.9	47.0	36473	273		
1977 074C		10274	USSR	3 AUG	89.3	62.7	282	202		
1977 074D		10275	USSR	3 AUG	90.2	62.7	360	214		
1977 075A	HEAO 1	10217	US	12 AUG	93.5	22.8	455	433	2247.0,2253.0	5*
1977 075B		10218	US	12 AUG	91.5	22.8	373	326		
1977 076A	VOYAGER 2	10271	US	20 AUG	SOLAR SYSTEM ESCAPE TRAJECTORY					
1977 076B		10272	US	20 AUG	HELIOCENTRIC ORBIT					
1977 076C		10273	US	20 AUG	HELIOCENTRIC ORBIT					
1977 077A	COSMOS 937	10278	USSR	24 AUG	93.3	65.0	447	425		

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1977 LAUNCHES (CONT'D)										
1977 077C		10280	USSR	24 AUG	92.8	64.9	578	249		
1977 078A	COSMOS 938	10281	USSR	24 AUG	89.1	62.8	314	155		
1977 078C		10284	USSR	24 AUG	89.3	62.7	304	182		
1977 078D		10285	USSR	24 AUG	90.0	62.8	377	178		
1977 079A	COSMOS 939	10282	USSR	24 AUG	114.8	74.0	1463	1434		
1977 079B	COSMOS 940	10286	USSR	24 AUG	114.4	74.0	1463	1396		
1977 079C	COSMOS 941	10287	USSR	24 AUG	114.6	74.0	1463	1415		
1977 079D	COSMOS 942	10288	USSR	24 AUG	115.9	74.0	1534	1467		
1977 079E	COSMOS 943	10289	USSR	24 AUG	115.0	74.0	1463	1452		
1977 079F	COSMOS 944	10290	USSR	24 AUG	115.2	74.0	1472	1463		
1977 079G	COSMOS 945	10291	USSR	24 AUG	115.4	74.0	1492	1463		
1977 079H	COSMOS 946	10292	USSR	24 AUG	115.6	74.0	1512	1463		
1977 079J		10293	USSR	24 AUG	117.5	74.0	1683	1461		
1977 080A	SIRIO	10294	ITALY	25 AUG	1409.7	0.2	36327	34210	136.140,136.620	5*
1977 080B		10295	US	25 AUG	115.6	27.1	2093	868		
1977 080C		10296	US	25 AUG	659.9	23.0	37215	246		
1977 080D		10297	US	25 AUG	98.8	28.0	1188	211		
1977 080E		10298	US	25 AUG	98.9	28.0	1206	207		
1977 081A	COSMOS 947	10299	USSR	27 AUG	89.7	72.8	320	202		
1977 081B		10300	USSR	27 AUG	89.4	72.8	297	200		
1977 081C		10301	USSR	27 AUG	89.6	72.8	314	200		
1977 082A	MOLNIYA 1	10315	USSR	30 AUG	735.6	62.8	40786	444		
1977 082B		10316	USSR	30 AUG	90.9	62.9	433	208		
1977 082C		10317	USSR	30 AUG	91.1	62.8	464	197		
1977 082D		10318	USSR	30 AUG	91.3	62.8	453	214		

INITIAL ELEMENTS OF OBJECTS WHICH WERE LAUNCHED/CATALOGED AND DECAYED WITHIN THE REPORTING PERIOD

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	NOTES
1976 063AP		10123	USSR	2 JUL	93.1	65.1	450	403	
1976 063AQ		10124	USSR	2 JUL	92.7	65.0	417	395	
1976 063AR		10125	USSR	2 JUL	94.0	64.9	545	399	
1977 052C		10127	USSR	22 JUN	89.1	65.0	290	168	
1977 052D		10128	USSR	22 JUN	88.8	64.9	267	165	
1977 052E		10133	USSR	22 JUN	88.9	65.0	278	160	
1977 058C		10118	USSR	30 JUN	89.6	63.0	301	206	
1977 058D		10119	USSR	30 JUN	89.2	62.7	275	211	
1977 063A	COSMOS 927	10139	USSR	12 JUL	89.9	72.8	375	167	
1977 063B		10140	USSR	12 JUL	89.8	72.9	368	164	
1977 063C		10162	USSR	12 JUL	88.8	72.9	314	115	
1977 063D		10163	USSR	12 JUL	88.1	72.8	218	138	
1977 066B		10147	USSR	17 JUL	89.3	51.6	263	213	
1977 066C		10148	USSR	17 JUL	89.5	51.6	284	215	
1977 068C		10152	USSR	20 JUL	92.4	62.9	601	180	
1977 069A	COSMOS 932	10153	USSR	20 JUL	89.4	65.0	321	172	
1977 069B		10154	USSR	20 JUL	89.3	65.0	310	172	
1977 069C		10170	USSR	20 JUL	89.0	65.0	302	144	
1977 069D		10171	USSR	20 JUL	88.6	65.1	260	150	
1977 071B		10160	USSR	23 JUL	88.3	51.5	198	179	
1977 071C		10161	USSR	23 JUL	88.4	51.5	195	191	
1977 072A	COSMOS 934	10164	USSR	27 JUL	89.4	62.8	256	230	
1977 072B		10165	USSR	27 JUL	89.3	62.8	254	223	
1977 072C		10166	USSR	27 JUL	89.5	62.8	255	244	
1977 072D		10174	USSR	27 JUL	89.5	62.8	329	168	
1977 072E		10175	USSR	27 JUL	88.9	62.8	280	156	
1977 072F		10195	USSR	27 JUL	89.3	62.8	313	165	
1977 073A	COSMOS 935	10168	USSR	29 JUL	89.0	81.3	237	215	
1977 073B		10169	USSR	29 JUL	88.9	81.3	233	212	
1977 074A	COSMOS 936	10172	USSR	3 AUG	90.7	62.8	397	217	
1977 074B		10173	USSR	3 AUG	90.5	62.8	386	216	
1977 077B		10279	USSR	24 AUG	89.3	65.0	377	100	
1977 078B		10283	USSR	24 AUG	89.6	62.8	328	179	

OBJECTS DECAYED WITHIN THE REPORTING PERIOD

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1962 B PSI 5		7258	US	19 DEC	19 JUL 77	
1965 108G		4476	US	21 DEC	1 AUG 77	
1968 091BS		3934	USSR	20 OCT	24 AUG 77	
1970 089BD		5202	USSR	23 OCT	23 AUG 77	
1971 015AV		5201	USSR	25 FEB	9 AUG 77	
1971 030D		5140	FRANCE	15 APR	15 JUL 77	
1971 064A	MOLNIYA 1	5367	USSR	28 JUL	19 JUL 77	
1971 064D		5368	USSR	28 JUL	14 AUG 77	
1973 082A	INTERCOSMOS 10	6911	USSR	30 OCT	1 JUL 77	
1974 089DP		8787	US	15 NOV	24 AUG 77	
1974 100J		9793	USSR	18 DEC	1 AUG 77	
1975 004CN		9004	US	22 JAN	3 JUL 77	
1975 004EM		9310	US	22 JAN	7 JUL 77	
1975 102M		8631	USSR	29 OCT	21 AUG 77	
1975 102N		8632	USSR	29 OCT	20 JUL 77	
1976 001F		9790	USSR	6 JAN	5 AUG 77	
1976 001J		9837	USSR	6 JAN	27 AUG 77	
1976 001K		9838	USSR	6 JAN	30 JUL 77	
1976 037C		8885	USSR	28 APR	12 JUL 77	
1976 037D		8886	USSR	28 APR	26 JUL 77	
1976 037G		9428	USSR	28 APR	9 AUG 77	
1976 037H		9429	USSR	28 APR	10 AUG 77	
1976 037J		9430	USSR	28 APR	29 AUG 77	
1976 037K		9431	USSR	28 APR	24 AUG 77	
1976 037M		9438	USSR	28 APR	19 AUG 77	
1976 037V		9507	USSR	28 APR	1 AUG 77	
1976 053B		8883	US	10 JUN	25 AUG 77	
1976 057A	SALYUT 5	8911	USSR	22 JUN	8 AUG 77	
1976 063A	COSMOS 838	8932	USSR	2 JUL	23 AUG 77	
1976 063D		10048	USSR	2 JUL	14 AUG 77	
1976 063F		10050	USSR	2 JUL	23 JUL 77	
1976 063X		10083	USSR	2 JUL	27 JUL 77	
1976 063Z		10098	USSR	2 JUL	23 JUL 77	
1976 063AG		10105	USSR	2 JUL	17 AUG 77	
1976 063AK		10108	USSR	2 JUL	27 AUG 77	
1976 063AP		10123	USSR	2 JUL	18 AUG 77	
1976 063AQ		10124	USSR	2 JUL	17 AUG 77	
1976 063AR		10125	USSR	2 JUL	28 JUL 77	
1976 092D		9440	USSR	11 SEP	19 JUL 77	
1976 111J		9585	USSR	23 NOV	7 JUL 77	
1977 043E		10046	USSR	31 MAY	2 JUL 77	
1977 046B		10041	USSR	10 JUN	1 JUL 77	
1977 046G		10090	USSR	10 JUN	1 JUL 77	
1977 047B		10060	USSR	16 JUN	17 AUG 77	
1977 047C		10066	USSR	16 JUN	14 JUL 77	
1977 048C		10063	US	16 JUN	12 JUL 77	
1977 048E		10075	US	16 JUN	11 JUL 77	
1977 051C		10072	USSR	18 JUN	15 JUL 77	
1977 052A	COSMOS 920	10086	USSR	22 JUN	5 JUL 77	
1977 052C		10127	USSR	22 JUN	10 JUL 77	
1977 052D		10128	USSR	22 JUN	8 JUL 77	
1977 052E		10133	USSR	22 JUN	10 JUL 77	
1977 054B		10093	USSR	24 JUN	24 AUG 77	
1977 054C		10094	USSR	24 JUN	4 AUG 77	
1977 058A	COSMOS 922	10115	USSR	30 JUN	13 JUL 77	
1977 058B		10117	USSR	30 JUN	8 JUL 77	

OBJECTS DECAYED WITHIN THE REPORTING PERIOD

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1977 058C		10118	USSR	30 JUN	2 JUL 77	
1977 058D		10119	USSR	30 JUN	2 JUL 77	
1977 063A	COSMOS 927	10139	USSR	12 JUL	25 JUL 77	
1977 063B		10140	USSR	12 JUL	18 JUL 77	
1977 063C		10162	USSR	12 JUL	27 JUL 77	
1977 063D		10163	USSR	12 JUL	26 JUL 77	
1977 066B		10147	USSR	17 JUL	29 JUL 77	
1977 066C		10148	USSR	17 JUL	24 JUL 77	
1977 068C		10152	USSR	20 JUL	17 AUG 77	
1977 069A	COSMOS 932	10153	USSR	20 JUL	2 AUG 77	
1977 069B		10154	USSR	20 JUL	24 JUL 77	
1977 069C		10170	USSR	20 JUL	3 AUG 77	
1977 069D		10171	USSR	20 JUL	3 AUG 77	
1977 071B		10160	USSR	23 JUL	26 JUL 77	
1977 071C		10161	USSR	23 JUL	26 JUL 77	
1977 072A	COSMOS 934	10164	USSR	27 JUL	9 AUG 77	
1977 072B		10165	USSR	27 JUL	5 AUG 77	
1977 072C		10166	USSR	27 JUL	2 AUG 77	
1977 072D		10174	USSR	27 JUL	17 AUG 77	
1977 072E		10175	USSR	27 JUL	10 AUG 77	
1977 072F		10195	USSR	27 JUL	12 AUG 77	
1977 073A	COSMOS 935	10168	USSR	29 JUL	11 AUG 77	
1977 073B		10169	USSR	29 JUL	3 AUG 77	
1977 074A	COSMOS 936	10172	USSR	3 AUG	22 AUG 77	
1977 074B		10173	USSR	3 AUG	28 AUG 77	
1977 077B		10279	USSR	24 AUG	25 AUG 77	
1977 078B		10283	USSR	24 AUG	30 AUG 77	

FOOTNOTES

1* 254 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1961 OMICRON 1 AND 1961 OMICRON 2. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

2* 98 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1963 014A, 1963 014B, AND 1963 014C. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

3* 13 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1963 047A. THE OBJECT OF THIS SERIES THAT HAS DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

4* 146 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1965 020A, 1965 020B, AND 1965 020C. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

5* TRANSMITTING ON COMMAND ONLY.

6* 464 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1965 082A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

7* DEBRIS DISCOVERED IN ORBIT WHICH HAS NOT BEEN IDENTIFIED WITH ANY LAUNCH OR COUNTRY OF ORIGIN.

8* 77 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1966 056A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

9* 21 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1967 001A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

10* 81 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1968 091A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

11* 116 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1968 097A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

12* 37 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1969 029A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

13* A MANNED SPACECRAFT WHICH SUCCESSFULLY LANDED ON THE MOON AND RETURNED TO SELENOCENTRIC ORBIT.

14* 241 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1969 082A, 1969 082B, 1969 082C, 1969 082D, 1969 082E, 1969 082F, 1969 082G, 1969 082H, 1969 082J, AND 1969 082K. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

15* 325 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1970 025A AND 1970 025B. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

16* 90 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1970 089A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

17* 38 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1970 091A. THE OBJECT OF THIS SERIES THAT HAS DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

18* DEBRIS DISCOVERED IN ORBIT WHICH HAS NOT BEEN IDENTIFIED WITH ANY LAUNCH.

19* 82 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1971 015A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

FOOTNOTES (CON'T)

20* 215 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1972 058A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

21* 176 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1973 086A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

22* 124 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1974 089A, 1974 089B, AND 1974 089C. THE OBJECT OF THIS SERIES THAT HAS DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

23* 60 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1974 103A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

24* 196 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1975 004A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

25* 24 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1976 037A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

26* 40 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1976 063A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

27* 17 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1976 124A.

28* 55 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1976 126A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

29* 106 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1977 065A.

NNA NO CATALOG NUMBER ASSIGNED.