NASA

PROJECT OPERATIONS BRANCH, CODE 513
GODDARD SPACE FLIGHT CENTER
GREENBELT, MARYLAND, U.S.A. 20771

SATELLITE SITUATION REPORT

VOLUME 29, NUMBER 2 JUNE 30, 1989

(NASA-TM-102979) SATELLITE SITUATION REPORT, VOLUME 29, NUMBER 2 (NASA) 90 p N90-71417

Unclas
00/18 0271036

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VOLUME 29 NO. 2
A/O 2400Z ON JUNE 30, 1989

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SPACE OBJECTS BOX SCORE

	OBJECTS IN ORBIT			DECAYED OBJECTS		
	PAYLOAD	DEBRIS	TOTAL	PAYLOAD	DEBRIS	TOTAL
AUSTRALIA	4	0	4	1	0	1
BRAZIL	2	0	2	0	0	0
CANADA	14	0	14	0	0	0
CZECH	0	0	0	1	0	1
ESA	17	269	286	2	269	271
ESRO	0	0	0	7	3	10
FRANCE	13	19	32	7	56	63
FRANCE/FRG	2	0	2	0	0	0
FRG	7	1	8	3	5	8
INDIA	8	0	8	3	7	10
INDONESIA	4	1	5	1	0	1
INTERNATIONAL TELECOM-MUNICATIONS SATELLITE ORGANIZATION (ITSO)	36	0	36	1	0	1
ISRAEL	0	0	0	1	1	2
ITALY	1	0	1	5	0	5
JAPAN	37	48	85	6	51	57
LUXEMBOURG	1	0	1	0	0	0
MEXICO	2	0	2	0	0	0
NATO	6	0	6	0	0	0
NETHERLANDS	0	0	0	1	3	4
PRC	6	6	12	19	49	68
SAUDI ARABIA	2	0	2	0	0	0
SPAIN	1	0	1	0	0	0
SWEDEN	2	0	2	0	0	0
UK	10	1	11	6	3	9
US	549	2559	3108	576	2416	2992
USSR	1127	2162	3289	1373	8326	9699
COLUMN TOTAL	1851	5066	6917	2013	11189	13202
SUM TOTAL						20119

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1958 LAUNCHES										
BETA 1		16	US	17 MAR	137.9	34.3	4270	657		
BETA 2	VANGUARD 1	5	US	17 MAR	133.5	34.3	3891	655		
BETA 3		1576	US	17 MAR	128.5	34.2	3472	638		
1959 LAUNCHES										
ALPHA 1	VANGUARD 2	11	US	17 FEB	123.6	32.9	3123	559		
ALPHA 2		12	US	17 FEB	127.8	32.9	3493	560		
ETA 1	VANGUARD 3	20	US	18 SEP	127.4	33.4	3498	515		
IOTA 1	EXPLORER 7	22	US	13 OCT	99.4	50.3	929	535		
IOTA 2		23	US	13 OCT	91.0	50.3	348	299		
MU 1	LUNA 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	96.3	48.4	591	573		
BETA 2	TIROS 1	29	US	1 APR	98.6	48.4	712	670		
BETA 4		115	US	1 APR	98.9	48.2	749	665		
ETA 1	TRANSIT 2A	45	US	22 JUN	101.0	66.7	1015	599		
ETA 2	GREB	46	US	22 JUN	100.6	66.7	978	595		
ETA 3		47	US	22 JUN	100.7	66.7	983	596		
ETA 4		840	US	22 JUN	99.3	66.7	869	579		
ETA 5		841	US	22 JUN	99.2	66.7	859	579		
IOTA 2		50	US	12 AUG	118.1	47.2	1684	1503		
IOTA 3		51	US	12 AUG	118.3	47.2	1687	1517		
IOTA 4		52	US	12 AUG	CURRENT ELEMENTS NOT MAINTAINED					
IOTA 5		53	US	12 AUG	118.4	47.3	1686	1531		
NU 1	COURIER 1B	58	US	4 OCT	107.1	28.3	1215	967		
NU 2		59	US	4 OCT	106.6	28.2	1210	926		
XI 1	EXPLORER 8	60	US	3 NOV	105.3	49.9	1616	403		
PI 1	TIROS 2	63	US	23 NOV	97.1	48.5	657	577		
PI 3		74	US	23 NOV	90.3	48.5	295	284		
PI 4		75	US	23 NOV	94.0	48.5	484	451		
PI 5		5922	US	23 NOV	105.3	47.0	1037	975		
1961 LAUNCHES										
APSI 5		19436	US	18 SEP	96.2	58.3	584	572		
GAMMA 1	VENERA 1	80	USSR	12 FEB	HELIOCENTRIC ORBIT					
DELTA 2		82	US	16 FEB	118.0	38.9	2542	635		
DELTA 3		85	US	16 FEB	111.2	38.9	1965	595		
DELTA 6		3927	US	16 FEB	112.6	38.9	2101	588		
DELTA 7		4026	US	16 FEB	112.9	38.9	2129	591		
NU 1	EXPLORER 11	107	US	27 APR	105.5	28.8	1552	483		
NU 2		3739	US	27 APR	90.6	28.8	334	273		

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1961 LAUNCHES (CONT.)										
OMICRON 1	TRANSIT 4A	116	US	29 JUN	103.6	66.8	985	873		
OMICRON 2	INJUN-SR-3	117	US	29 JUN	103.7	66.8	989	876		
OMICRON 3 - 297			US	29 JUN	SEE NOTE	1*				1*
OMICRON 23		139	US	29 JUN	103.6	67.2	953	900		
OMICRON 39		154	US	29 JUN	103.1	66.7	975	830		
RHO 1	TIROS 3	162	US	12 JUL	100.1	47.9	798	728		
RHO 2		165	US	12 JUL	99.0	47.9	735	685		
RHO 3		166	US	12 JUL	96.3	48.0	622	536		
RHO 4		167	US	12 JUL	101.7	47.9	911	762		
SIGMA 1	MIDAS 3	163	US	12 JUL	161.4	91.2	3540	3342		
SIGMA 3		188	US	12 JUL	161.1	91.2	3544	3311		
SIGMA 4		196	US	12 JUL	161.3	91.2	3563	3353		
A DELTA 1	MIDAS 4	192	US	21 OCT	165.9	95.9	3761	3484		
A DELTA 3		194	US	21 OCT	165.5	95.9	3851	3361		
A DELTA 4		195	US	21 OCT	166.3	95.9	3867	3410		
A DELTA 5		2009	US	21 OCT	165.7	95.9	3733	3493		
A DELTA 6		2371	US	21 OCT	165.3	95.9	4711	2483		
A ETA 1	TRANSIT 4B	202	US	15 NOV	105.8	32.4	1106	954		
A ETA 2	TRAAC	205	US	15 NOV	105.8	32.4	1109	956		
A ETA 3		204	US	15 NOV	105.6	32.4	1098	951		
A ETA 4		10796	US	15 NOV	105.8	32.4	1108	955		
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	100.0	48.3	821	699		
BETA 2		227	US	8 FEB	100.8	48.2	905	688		
BETA 3		228	US	8 FEB	98.4	48.4	707	661		
BETA 4		229	US	8 FEB	98.7	48.3	736	653		
KAPPA 1		271	US	9 APR	152.9	86.7	3410	2778		
KAPPA 3		273	US	9 APR	152.5	86.7	3386	2770		
KAPPA 4		274	US	9 APR	153.3	86.7	3440	2776		
MU 2		282	US	23 APR	HELIOCENTRIC ORBIT					
A ALPHA 1	TIROS 5	309	US	19 JUN	99.7	58.1	906	584		
A ALPHA 2		311	US	19 JUN	96.2	58.1	640	508		
A ALPHA 3		312	US	19 JUN	100.6	58.3	980	590		
A ALPHA 4		313	US	19 JUN	96.2	56.0	646	502		
A EPSILON 1	TELSTAR 1	340	US	10 JUL	157.8	44.8	5634	954		
A EPSILON 2		341	US	10 JUL	157.6	44.8	5616	956		
A OMICRON 1		369	US	23 AUG	96.5	96.5	785	592		
A OMICRON 3		376	US	23 AUG	97.6	98.5	736	554		
A OMICRON 4		368	US	23 AUG	97.3	98.6	699	559		
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	98.0	58.3	674	649		
A PSI 3		399	US	18 SEP	98.1	58.4	701	637		
A PSI 4		400	US	18 SEP	82.4	58.2	250	241		
B ALPHA 1	ALOUETTE 1	424	CANADA	29 SEP	105.3	80.5	1025	988		
B ALPHA 2		426	US	29 SEP	105.3	80.5	1021	992		

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1962 LAUNCHES (CONT.)										
B ALPHA 3		510	US	29 SEP	105.2	80.5	1015	990		
B ALPHA 4		511	US	29 SEP	105.3	80.4	1033	984		
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	107.9	50.1	1182	1076		
B MU 2		447	US	31 OCT	107.6	50.1	1165	1065		
B NU 3		450	USSR	1 NOV	HELIOCENTRIC ORBIT					
B UPSILON 1	RELAY 1	503	US	13 DEC	185.1	47.5	7432	1327		
B UPSILON 2		515	US	13 DEC	184.8	47.5	7414	1327		
B CHI 1	EXPLORER 16	506	US	16 DEC	104.2	52.0	1164	747		
B PSI 3		519	US	19 DEC	93.4	90.6	448	437		
1963 LAUNCHES										
1963 004A	SYNCOM 1	553	US	14 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1963 008B	LUNA 4	566	USSR	2 APR	BARYCENTRIC ORBIT					
1963 013A	TELSTAR 2	573	US	7 MAY	225.3	42.8	10817	957		
1963 013B		575	US	7 MAY	225.0	42.8	10797	955		
1963 014A		574	US	9 MAY	166.4	87.4	3682	3601		
1963 014B	ERS 3	579	US	9 MAY	165.5	87.4	4791	2423		
1963 014C	ERS 5	608	US	9 MAY	166.4	87.3	3728	3554		
1963 014D -	14FA		US	9 MAY	SEE NOTE	2*				2*
1963 014FA		20033	US	9 MAY	162.8	85.0	6074	921		
1963 022A		594	US	16 JUN	96.0	89.8	571	559		
1963 022B		603	US	16 JUN	97.8	89.9	662	640		
1963 022C		610	US	16 JUN	98.2	90.0	709	631		
1963 024A	TIROS 7	604	US	19 JUN	95.5	58.2	548	533		
1963 025B		614	US	27 JUN	118.8	82.1	2923	329		
1963 030A	ERS 10	622	US	18 JUL	167.8	88.4	3719	3678		
1963 030B	ERS 9	635	US	18 JUL	167.8	88.4	3712	3685		
1963 030C		630	US	18 JUL	167.4	88.4	3758	3610		
1963 030E		631	US	18 JUL	168.2	88.4	3751	3680		
1963 030F		3121	US	18 JUL	167.8	88.4	3714	3683		
1963 030G		3132	US	18 JUL	167.8	88.4	3739	3660		
1963 031A	SYNCOM 2	634	US	26 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1963 031B		625	US	26 JUL	91.2	32.5	462	206		
1963 038A		669	US	28 SEP	107.0	89.9	1106	1067		
1963 038B		670	US	28 SEP	107.2	89.9	1128	1064		
1963 038C	SN 34	671	US	28 SEP	107.2	89.9	1126	1062		
1963 038D		672	US	28 SEP	106.5	89.9	1084	1042		
1963 038E		745	US	28 SEP	106.7	89.9	1087	1056		
1963 038F		2097	US	28 SEP	106.5	89.9	1089	1040		
1963 038G		3166	US	28 SEP	107.2	89.9	1128	1062		
1963 038K		12943	US	28 SEP	104.7	89.9	1082	882		
1963 039A		674	US	17 OCT	CURRENT ELEMENTS NOT MAINTAINED					
1963 039C		692	US	17 OCT	CURRENT ELEMENTS NOT MAINTAINED					
1963 047A	CENTAUR 2	694	US	27 NOV	105.5	30.4	1560	473		

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1963 LAUNCHES (CONT.)										
1963 047S - 047U			US	27 NOV	SEE NOTE		3*			3*
1963 049A		703	US	5 DEC	106.7	90.0	1086	1059		
1963 049B		704	US	5 DEC	107.0	90.0	1111	1060		
1963 049C		705	US	5 DEC	106.9	90.1	1110	1058		
1963 049D		706	US	5 DEC	106.6	90.0	1092	1046		
1963 049E		715	US	5 DEC	106.1	90.0	1066	1024		
1963 049F		753	US	5 DEC	106.7	90.0	1099	1048		
1963 049G		2432	US	5 DEC	106.9	90.0	1111	1056		
1963 049H		2620	US	5 DEC	106.4	90.0	1069	1047		
1963 053B		721	US	19 DEC	115.3	78.6	2340	599		
1963 053C		722	US	19 DEC	111.7	78.7	1946	668		
1963 053E		724	US	19 DEC	111.2	78.7	1923	639		
1963 053G		726	US	19 DEC	109.4	78.6	1794	602		
1963 053H		732	US	19 DEC	111.6	78.7	1939	657		
1963 053J		3750	US	19 DEC	110.6	78.6	1883	628		
1963 053K		17665	US	19 DEC	112.0	78.7	1950	683		
1963 054A	TIROS 4	716	US	21 DEC	98.8	58.5	715	684		
1963 054B		717	US	21 DEC	95.8	58.5	565	549		
1963 054C		720	US	21 DEC	100.4	58.5	869	683		
1963 054E		19396	US	21 DEC	98.6	58.5	719	666		
1964 LAUNCHES										
1964 001A		727	US	11 JAN	103.3	69.9	923	905		
1964 001B	GRAVITY GRADIENT 1	728	US	11 JAN	103.2	69.9	919	902		
1964 001C	SECOR (EGRS) 1	729	US	11 JAN	103.3	69.9	923	905		
1964 001D	SOLRAD 7A	730	US	11 JAN	103.3	69.9	922	904		
1964 001E	GREB	731	US	11 JAN	103.3	69.9	922	904		
1964 002A		733	US	19 JAN	100.9	99.1	825	774		
1964 002B		734	US	19 JAN	101.0	99.1	815	794		
1964 002C		735	US	19 JAN	101.0	99.1	819	794		
1964 003A	RELAY 2	737	US	21 JAN	194.7	46.4	7521	1980		
1964 003B		738	US	21 JAN	194.8	46.4	7528	1978		
1964 004B		741	US	25 JAN	108.8	81.5	1301	1040		
1964 004C		742	US	25 JAN	108.7	81.5	1296	1033		
1964 004D		743	US	25 JAN	108.6	81.5	1296	1031		
1964 005A	ELEKTRON 1	746	USSR	30 JAN	164.3	60.8	6722	395		
1964 006B	ELEKTRON 2	748	USSR	30 JAN	1356.4	64.2	58233	10190		
1964 006C - 006AA			USSR	30 JAN	SEE NOTE		52*			52*
1964 016D	ZOND 1	785	USSR	2 APR	HELIOCENTRIC ORBIT					
1964 026A		801	US	4 JUN	102.4	90.5	911	835		
1964 026B		805	US	4 JUN	102.6	90.0	914	848		
1964 026C		806	US	4 JUN	100.3	90.8	824	719		
1964 026D		809	US	4 JUN	102.7	90.5	927	841		
1964 026E		2986	US	4 JUN	102.7	90.5	929	844		
1964 031A		812	US	18 JUN	101.3	99.8	825	815		
1964 031B		813	US	18 JUN	101.3	99.8	826	817		
1964 031C		815	US	18 JUN	101.2	99.8	824	805		
1964 038A	ELEKTRON 3	829	USSR	10 JUL	162.7	60.8	6600	389		
1964 038C		831	USSR	10 JUL	145.3	60.9	5150	401		

OBJECTS IN ORBIT

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1964 LAUNCHES (CONT.)										
1964 040A		836	US	17 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1964 040B		837	US	17 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1964 041B		843	US	28 JUL	BARYCENTRIC ORBIT					
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	71.7	37480	2711		
1964 049E		898	USSR	22 AUG	719.1	71.5	37682	2738		
1964 049F		13091	USSR	22 AUG	714.4	71.1	37879	2307		
1964 051A	EXPLORER 20	870	US	25 AUG	103.7	79.9	1006	857		
1964 051B		871	US	25 AUG	103.4	79.9	985	849		
1964 053A	COSMOS 44	876	USSR	28 AUG	98.9	65.1	809	602		
1964 053B		877	USSR	28 AUG	99.1	65.1	768	667		
1964 054A	OGO 1	879	US	5 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1964 063A	NNSS 30010	893	US	6 OCT	106.2	90.0	1070	1029		
1964 063B		897	US	6 OCT	106.4	90.0	1075	1047		
1964 063C		900	US	6 OCT	105.7	90.0	1046	1012		
1964 063D		901	US	6 OCT	106.4	90.0	1073	1047		
1964 063E		902	US	6 OCT	106.5	90.0	1074	1051		
1964 063F		903	US	6 OCT	105.7	90.0	1040	1012		
1964 064A	EXPLORER 22	899	US	10 OCT	104.4	79.7	1058	876		
1964 064B		907	US	10 OCT	104.5	79.7	1061	879		
1964 064C		976	US	10 OCT	103.3	79.3	1015	814		
1964 064D		977	US	10 OCT	105.0	80.0	1093	894		
1964 073A	MARINER 3	923	US	5 NOV	HELIOCENTRIC ORBIT					
1964 076B	EXPLORER 25	932	US	21 NOV	115.0	81.4	2386	525		
1964 076C		933	US	21 NOV	114.5	81.3	2336	526		
1964 077A	MARINER 4	933	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	NNSS 30020	953	US	13 DEC	106.0	89.8	1066	1015		
1964 083B		956	US	13 DEC	105.8	89.8	1062	1003		
1964 083C		959	US	13 DEC	106.0	89.8	1071	1008		
1964 083D		965	US	13 DEC	106.2	89.8	1080	1016		
1964 083F		967	US	13 DEC	105.8	89.8	1063	1002		
1964 083G		1099	US	13 DEC	106.0	89.8	1071	1008		
1964 083J		1608	US	13 DEC	105.4	89.8	1036	987		
1964 085A	EXPLORER 26	963	US	21 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1965 LAUNCHES										
1965 004A	TIROS 9	973	US	22 JAN	119.0	96.4	2568	701		
1965 004B		979	US	22 JAN	118.9	96.4	2558	700		
1965 004C		1312	US	22 JAN	117.6	96.4	2476	671		
1965 004D		1313	US	22 JAN	120.1	96.4	2642	728		
1965 007A	OSO 2	987	US	3 FEB	90.5	32.8	306	294		
1965 008A		1001	US	11 FEB	145.4	32.1	2797	2766		
1965 008B		1000	US	11 FEB	145.7	32.1	2802	2783		
1965 008C		1002	US	11 FEB	145.8	32.1	2811	2782		
1965 010B		1057	US	17 FEB	BARYCENTRIC ORBIT					
1965 014A	COSMOS 58	1097	USSR	26 FEB	93.2	65.0	450	413		

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1965 LAUNCHES (CONT.)										
1965 016A	GREB	1271	US	9 MAR	103.3	70.1	929	897		
1965 016B	GRAVITY GRADIENT 2	1244	US	9 MAR	103.3	70.1	930	898		
1965 016C	GRAVITY GRADIENT 3	1292	US	9 MAR	103.1	70.1	922	891		
1965 016D	SOLRAD 7B	1291	US	9 MAR	103.3	70.1	932	900		
1965 016E	SECOR (EGRS) 3	1208	US	9 MAR	103.3	70.1	929	899		
1965 016F	OSCAR 3	1293	US	9 MAR	103.0	70.1	912	884		
1965 016H	SORCAL	1272	US	9 MAR	103.3	70.1	933	899		
1965 016J		1245	US	9 MAR	103.2	70.1	928	895		
1965 016K		12099	US	9 MAR	103.1	70.1	922	891		
1965 020E		1335	USSR	15 MAR	107.4	56.1	1624	591		
1965 020S		1347	USSR	15 MAR	104.8	56.0	1419	554		
1965 020AC		1370	USSR	15 MAR	104.9	56.1	1435	542		
1965 020AH		1392	USSR	15 MAR	106.4	55.9	1587	528		
1965 020BB		1477	USSR	15 MAR	112.2	55.5	1824	834		
1965 020BC		1478	USSR	15 MAR	110.5	56.1	1860	640		
1965 020BD		1479	USSR	15 MAR	115.0	56.0	2103	806		
1965 020BE		1480	USSR	15 MAR	114.9	56.1	2145	753		
1965 020BV		1495	USSR	15 MAR	105.5	55.6	1407	629		
1965 020CV		1549	USSR	15 MAR	114.6	56.2	2099	774		
1965 020ED		1634	USSR	15 MAR	115.9	56.2	2180	811		
1965 020EH		2334	USSR	15 MAR	111.0	55.7	1759	784		
1965 020EM		2934	USSR	15 MAR	115.4	55.6	1766	1184		
1965 020EN		3038	USSR	15 MAR	109.3	56.3	1800	592		
1965 020ER		3708	USSR	15 MAR	105.5	56.4	1413	623		
1965 020ES		3743	USSR	15 MAR	118.1	56.7	1813	1380		
1965 020ET		3745	USSR	15 MAR	115.3	56.0	1590	1349		
1965 020EU		3749	USSR	15 MAR	108.4	56.1	1685	624		
1965 020EV		3931	USSR	15 MAR	116.6	56.1	1697	1359		
1965 020EW		3963	USSR	15 MAR	100.1	55.9	1028	499		
1965 020EY		3965	USSR	15 MAR	117.9	56.3	1796	1373		
1965 020FD		6252	USSR	15 MAR	117.1	56.1	1696	1406		
1965 020FF		13517	USSR	15 MAR	110.0	55.6	1722	727		
1965 021A		1273	US	18 MAR	92.8	99.0	441	384		
1965 023B		1298	US	21 MAR	HELIOCENTRIC ORBIT					
1965 027A		1314	US	3 APR	111.4	90.3	1315	1270		
1965 027B	SECOR (EGRS) 4	1315	US	3 APR	111.4	90.3	1313	1265		
1965 027B - 27BB			US	3 APR	SEE NOTE	41*				41*
1965 027BB		20031	US	3 APR	111.4	90.3	1312	1270		
1965 028A	EARLY BIRD	1317	ITSO	6 APR	CURRENT ELEMENTS NOT MAINTAINED					
1965 028B		1318	US	6 APR	CURRENT ELEMENTS NOT MAINTAINED					
1965 032A	EXPLORER 27	1328	US	29 APR	107.8	41.2	1319	927		
1965 032B		1358	US	29 APR	107.8	41.2	1320	927		
1965 032C		1995	US	29 APR	98.2	41.1	782	563		
1965 032D		2011	US	29 APR	108.5	41.2	1243	1069		
1965 034A		1359	US	6 MAY	157.1	32.1	3737	2793		
1965 034B		1360	US	6 MAY	309.9	32.1	14811	2768		
1965 034C		1361	US	6 MAY	145.6	32.1	2799	2782		
1965 034D		2529	US	6 MAY	309.9	32.0	14804	2775		
1965 038A		1377	US	20 MAY	98.1	98.3	808	523		
1965 038B		1378	US	20 MAY	97.0	98.0	725	501		

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1965 LAUNCHES (CONT.)										
1965 039G		1385	US	25 MAY	89.0	31.7	232	219		
1965 044A	LUNA 5	1393	USSR	8 JUN	HELIOCENTRIC ORBIT					
1965 048A	NNSS 30040	1420	US	24 JUN	106.7	90.1	1126	1019		
1965 048B		1428	US	24 JUN	106.5	90.1	1107	1018		
1965 048C		1429	US	24 JUN	106.8	90.1	1130	1023		
1965 048D		1435	US	24 JUN	106.1	90.1	1101	986		
1965 048E		2701	US	24 JUN	106.1	90.1	1089	1003		
1965 048F		3592	US	24 JUN	106.2	90.1	1093	1003		
1965 048L		19062	US	24 JUN	105.0	89.9	1042	946		
1965 048M		19838	US	24 JUN	104.8	90.0	1114	852		
1965 051A	TIROS 10	1430	US	2 JUL	100.3	98.7	814	728		
1965 051B		1433	US	2 JUL	99.9	98.6	794	714		
1965 051C		1440	US	2 JUL	96.8	98.6	667	542		
1965 051D		1529	US	2 JUL	101.6	99.1	862	803		
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	CURRENT ELEMENTS NOT MAINTAINED					
1965 063A	SECOR (ESRO) 5	1505	US	10 AUG	122.2	69.2	2420	1134		
1965 063B		1502	US	10 AUG	122.2	69.2	2418	1137		
1965 064A	CENTAUR 6	1503	US	11 AUG	BARYCENTRIC ORBIT					
1965 065A	NNSS 30050	1509	US	13 AUG	107.8	90.0	1173	1073		
1965 065B		1508	US	13 AUG	107.6	89.9	1145	1085		
1965 065C		1510	US	13 AUG	106.2	90.0	1100	1004		
1965 065D		1511	US	13 AUG	108.0	90.0	1184	1080		
1965 065E		1512	US	13 AUG	108.0	90.0	1186	1080		
1965 065F		1514	US	13 AUG	107.9	90.0	1185	1077		
1965 065G		1515	US	13 AUG	107.4	90.0	1154	1057		
1965 065H		1520	US	13 AUG	107.9	90.0	1183	1076		
1965 065J		1521	US	13 AUG	108.0	90.0	1186	1081		
1965 065K		1577	US	13 AUG	107.9	90.0	1181	1077		
1965 065L		1522	US	13 AUG	108.0	90.0	1187	1079		
1965 065P		3310	US	13 AUG	107.4	90.0	1153	1058		
1965 065Q		5265	US	13 AUG	107.8	89.9	1154	1093		
1965 065T		11855	US	13 AUG	103.0	89.9	945	858		
1965 070A	COSMOS 80	1570	USSR	3 SEP	115.0	56.1	1541	1365		
1965 070B	COSMOS 81	1571	USSR	3 SEP	115.3	56.1	1543	1396		
1965 070C	COSMOS 82	1572	USSR	3 SEP	115.7	56.1	1551	1419		
1965 070D	COSMOS 83	1573	USSR	3 SEP	116.0	56.1	1562	1442		
1965 070E	COSMOS 84	1574	USSR	3 SEP	116.4	56.1	1572	1466		
1965 070F		1575	USSR	3 SEP	114.6	56.1	1516	1355		
1965 070G		3045	USSR	3 SEP	115.9	55.5	1729	1264		
1965 072A		1580	US	10 SEP	101.4	98.7	1007	639		
1965 072D		1583	US	10 SEP	100.7	98.6	954	626		
1965 072E		1931	US	10 SEP	102.2	98.8	1093	631		
1965 072F		1932	US	10 SEP	98.9	98.4	806	603		
1965 073A	COSMOS 86	1584	USSR	18 SEP	115.0	56.1	1627	1287		
1965 073B	COSMOS 87	1585	USSR	18 SEP	115.4	56.1	1635	1316		
1965 073C	COSMOS 88	1586	USSR	18 SEP	115.8	56.1	1648	1337		
1965 073D	COSMOS 89	1587	USSR	18 SEP	116.2	56.1	1661	1361		
1965 073E	COSMOS 90	1588	USSR	18 SEP	116.6	56.1	1671	1388		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1965 LAUNCHES (CONT.)										
1965 073F		1589	USSR	18 SEP	116.8	56.1	1681	1392		
1965 073G		1590	USSR	18 SEP	116.0	56.1	1637	1365		
1965 073H		1591	USSR	18 SEP	116.3	56.1	1654	1376		
1965 073J		1617	USSR	18 SEP	117.1	56.1	1742	1359		
1965 073K		1613	USSR	18 SEP	117.4	56.2	1746	1381		
1965 073L		2647	USSR	18 SEP	116.0	56.1	1648	1352		
1965 078A		1613	US	5 OCT	119.8	144.2	2928	410		
1965 078B		1616	US	5 OCT	118.7	144.3	2830	411		
1965 082B - 082P			US	15 OCT	SEE NOTE		5*			5*
1965 089A	EXPLORER 29	1726	US	6 NOV	120.3	59.4	2274	1114		
1965 089B		1729	US	6 NOV	120.3	59.4	2270	1114		
1965 089C		2700	US	6 NOV	119.1	59.6	2219	1065		
1965 089D		2888	US	6 NOV	121.3	59.2	2322	1155		
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	100.4	59.7	876	676		
1965 093B		1739	US	19 NOV	100.1	59.7	839	687		
1965 093C		2013	US	19 NOV	98.8	59.7	746	654		
1965 093D		2088	US	19 NOV	100.4	59.7	859	699		
1965 096A	A-1	1778	FRANCE	26 NOV	107.9	34.3	1727	528		
1965 096B		1805	FRANCE	26 NOV	106.9	34.3	1641	525		
1965 096D		1996	FRANCE	26 NOV	103.6	34.3	1340	513		
1965 098A	ALOUETTE 2	1804	CANADA	29 NOV	119.0	79.8	2768	501		
1965 098B	EXPLORER 31	1806	US	29 NOV	120.4	79.8	2898	501		
1965 098C		1807	US	29 NOV	119.5	79.8	2814	500		
1965 098D		1808	US	29 NOV	110.4	79.8	2005	488		
1965 098E		1944	US	29 NOV	109.7	79.8	1942	484		
1965 098F		1948	US	29 NOV	115.3	79.9	2441	498		
1965 098G		1951	US	29 NOV	115.6	79.7	2467	497		
1965 098H		2092	US	29 NOV	119.1	79.9	2780	504		
1965 098J		2153	US	29 NOV	119.0	79.8	2773	500		
1965 101A	FR-1	1814	FRANCE	6 DEC	99.2	75.9	724	711		
1965 101B		1815	US	6 DEC	99.0	75.9	717	707		
1965 105A	PIONEER 6	1841	US	16 DEC	HELIOCENTRIC ORBIT					
1965 106A	COSMOS 100	1843	USSR	17 DEC	96.2	65.0	625	524		
1965 106B		1844	USSR	17 DEC	95.9	65.0	575	552		
1965 109A	NNSS 30060	1864	US	22 DEC	104.7	89.1	1065	895		
1965 109B		1865	US	22 DEC	104.8	89.1	1070	897		
1965 109C		2086	US	22 DEC	101.6	89.2	856	811		
1965 109D		2226	US	22 DEC	106.9	89.1	1275	889		
1965 109E		2353	US	22 DEC	105.0	89.4	1115	875		
1965 112A	COSMOS 103	1868	USSR	28 DEC	92.8	56.1	415	406		
1965 112B		1937	USSR	28 DEC	95.4	55.9	560	513		
1966 LAUNCHES										
1966 005A	NNSS 30070	1952	US	28 JAN	105.6	89.8	1190	853		
1966 005B		1953	US	28 JAN	105.7	89.8	1196	855		
1966 005C		2140	US	28 JAN	107.3	90.1	1354	850		
1966 005D		2141	US	28 JAN	103.6	89.8	1038	821		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1966 LAUNCHES (CONT.)										
1966 005E		2899	US	28 JAN	109.4	89.5	1328	1070		
1966 005F		2939	US	28 JAN	103.8	89.9	1029	843		
1966 005J		11991	US	28 JAN	105.3	89.8	1174	845		
1966 005K		14226	US	28 JAN	95.7	89.7	598	509		
1966 005L		15341	US	28 JAN	101.7	89.8	933	748		
1966 005M		19365	US	28 JAN	103.1	89.8	1020	787		
1966 006D		2001	USSR	31 JAN	BARYCENTRIC ORBIT					
1966 008A	ESSA 1	1982	US	3 FEB	99.9	97.9	815	688		
1966 008B		1983	US	3 FEB	99.6	97.9	809	673		
1966 008C		2085	US	3 FEB	97.5	97.8	663	621		
1966 008D		2115	US	3 FEB	100.6	98.1	900	673		
1966 008E		2154	US	3 FEB	99.5	97.7	794	683		
1966 013A	D-1A	2016	FRANCE	17 FEB	116.5	34.1	2550	503		
1966 013B		2017	FRANCE	17 FEB	115.8	34.1	2476	503		
1966 013F		2023	FRANCE	17 FEB	103.0	34.0	1352	450		
1966 013G		2161	FRANCE	17 FEB	111.2	34.1	2060	507		
1966 015A	ESSA 2	2091	US	28 FEB	113.4	100.9	1413	1352		
1966 015B		2096	US	28 FEB	113.4	100.9	1413	1350		
1966 015C		2223	US	28 FEB	111.8	101.2	1382	1237		
1966 015D		2224	US	28 FEB	115.0	101.1	1562	1347		
1966 015E		6214	US	28 FEB	114.3	101.5	1515	1328		
1966 024A	NNSS 30060	2119	US	26 MAR	105.0	89.8	1104	882		
1966 024B		2120	US	26 MAR	105.1	89.8	1110	885		
1966 025A	OV1-4	2121	US	30 MAR	104.0	144.5	1011	886		
1966 025B	OV1-5	2122	US	30 MAR	105.6	144.6	1058	986		
1966 025C		2123	US	30 MAR	105.6	144.6	1058	987		
1966 025D		2124	US	30 MAR	104.0	144.5	1009	886		
1966 025E		3611	US	30 MAR	103.4	144.6	977	861		
1966 025G		5361	US	30 MAR	104.2	144.7	989	920		
1966 025H		5599	US	30 MAR	103.4	144.6	975	865		
1966 026A		2125	US	31 MAR	99.7	98.5	878	610		
1966 026B		2129	US	31 MAR	98.4	98.3	785	580		
1966 026D		2177	US	31 MAR	100.8	98.9	986	605		
1966 026F		2179	US	31 MAR	97.4	98.1	713	558		
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	100.7	35.0	798	787		
1966 031B		2144	US	8 APR	100.4	35.1	787	771		
1966 034A	OVO-1	2150	US	22 APR	136.9	82.4	4498	344		
1966 034B		2167	US	22 APR	122.1	82.4	3216	333		
1966 034D		2209	US	22 APR	98.3	82.3	1074	281		
1966 038B		2169	USSR	11 MAY	89.5	64.9	264	235		
1966 040A	NIMBUS 2	2173	US	15 MAY	108.0	100.4	1175	1092		
1966 040B		2174	US	15 MAY	107.4	100.6	1166	1082		
1966 041A	NNSS 30090	2176	US	19 MAY	103.0	90.0	957	841		
1966 041B		2180	US	19 MAY	103.1	90.0	963	845		
1966 041C		2225	US	19 MAY	99.7	89.9	769	715		
1966 041D		2644	US	19 MAY	105.1	90.0	1165	835		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1966 LAUNCHES (CONT.)										
1966 041E		3591	US	19 MAY	103.0	90.0	957	842		
1966 041F		4555	US	19 MAY	102.2	90.0	923	803		
1966 045B		2187	US	30 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	4713	643		
1966 052B		2206	US	10 JUN	142.7	40.9	4685	646		
1966 052C		2498	US	10 JUN	139.1	40.6	4445	587		
1966 052D		2516	US	10 JUN	144.7	41.0	4800	702		
1966 053A		2207	US	16 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1966 053B		2215	US	16 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1966 053C		2216	US	16 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1966 053D		2217	US	16 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1966 053E		2218	US	16 JUN	1338.6	8.0	34017	33694		
1966 053F		2219	US	16 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1966 053G		2220	US	16 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1966 053H		2221	US	16 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1966 053J		2222	US	16 JUN	1349.4	11.8	34754	33388		
1966 056A	PAGEOS 1	2253	US	24 JUN	176.8	83.8	6117	1994		
1966 056B		2255	US	24 JUN	181.1	86.9	4280	4173		
1966 056C		2256	US	24 JUN	181.3	86.9	4271	4195		
1966 056D		2511	US	24 JUN	181.5	87.0	4255	4222		
1966 056E		8064	US	24 JUN	172.4	86.7	6517	1249		
1966 056G		8066	US	24 JUN	174.9	83.4	7156	803		
1966 056H		8074	US	24 JUN	176.5	84.4	6750	1337		
1966 056J		9460	US	24 JUN	174.2	82.5	7034	875		
1966 056AH		9468	US	24 JUN	180.0	85.0	5134	3232		
1966 057A	COSMOS 122	2254	USSR	25 JUN	92.1	65.0	388	371		
1966 058A	EXPLORER 33	2258	US	1 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1966 058C		2260	US	1 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1966 063B		2327	US	14 JUL	104.4	144.2	976	951		
1966 063C		2328	US	14 JUL	105.3	144.2	1012	999		
1966 063D		2329	US	14 JUL	104.8	144.2	987	979		
1966 063E		2337	US	14 JUL	105.2	144.2	1008	1000		
1966 070A	OV3-3	2389	US	4 AUG	125.4	81.4	3494	350		
1966 070B		2404	US	4 AUG	107.0	81.4	1850	329		
1966 070D		2800	US	4 AUG	129.2	81.5	3760	414		
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	NNSS 30100	2401	US	18 AUG	106.5	88.9	1090	1042		
1966 076B		2413	US	18 AUG	106.6	88.9	1092	1046		
1966 076C		2580	US	18 AUG	104.9	89.1	1067	914		
1966 076D		2702	US	18 AUG	108.0	88.6	1203	1068		
1966 077A		2403	US	19 AUG	167.4	89.7	3708	3658		
1966 077B	SECOR (EGRS) 7	2411	US	19 AUG	167.5	89.7	3697	3673		
1966 077C	ERS 15	2412	US	19 AUG	167.6	89.7	3700	3680		
1966 078A	LUNA 11	2406	USSR	24 AUG	SELENOCENTRIC ORBIT					
1966 082A		2418	US	16 SEP	100.3	98.5	867	680		
1966 082B		2422	US	16 SEP	100.3	98.5	862	678		
1966 084B		2426	US	20 SEP	BARYCENTRIC ORBIT					

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1966 LAUNCHES (CONT.)										
1966 087A	ESSA 3	2435	US	2 OCT	114.5	101.0	1484	1383		
1966 087B		2436	US	2 OCT	114.5	101.1	1483	1381		
1966 087C		2518	US	2 OCT	115.9	100.9	1558	1430		
1966 087D		2775	US	2 OCT	113.2	101.1	1470	1278		
1966 087E		6213	US	2 OCT	113.3	101.8	1396	1361		
1966 087F		8791	US	2 OCT	CURRENT ELEMENTS NOT MAINTAINED					
1966 089A		2481	US	5 OCT	167.5	90.1	3721	3656		
1966 089B	SECOR (EGRS) 8	2520	US	5 OCT	167.6	90.1	3706	3675		
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	717.5	17.8	37171	3170		
1966 096C		11792	US	26 OCT	600.4	18.1	28608	395		
1966 110A	ATS 1	2608	US	7 DEC	1250.8	12.5	38075	26076		
1966 111A	OV1-9	2610	US	11 DEC	140.5	99.1	4674	474		
1966 111B	OV1-10	2611	US	11 DEC	97.3	93.4	670	584		
1966 111C		2621	US	11 DEC	98.1	93.4	723	613		
1966 111D		2622	US	11 DEC	140.0	99.1	4629	474		
1967 LAUNCHES										
1967 001A	INTELSAT 2 F-2	2639	ITSO	11 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1967 001D		2643	US	11 JAN	444.4	26.7	25491	335		
1967 001G		5937	US	11 JAN	519.8	26.5	29590	481		
1967 001T		5988	US	11 JAN	531.8	26.5	30127	603		
1967 001V		5990	US	11 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1967 001W		5998	US	11 JAN	412.8	30.0	23698	273		
1967 001X		6779	US	11 JAN	656.7	28.3	36627	672		
1967 001AM		14756	US	11 JAN	394.8	26.2	22652	242		
1967 001AN		19518	US	11 JAN	526.1	27.0	29870	547		
1967 001AR		20102	US	11 JAN	281.6	27.0	15446	257		
1967 003A		2645	US	18 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1967 003B		2649	US	18 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1967 003C		2650	US	18 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1967 003D		2651	US	18 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1967 003E		2652	US	18 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1967 003F		2653	US	18 JAN	896.7	6.5	30446	18403		
1967 003G		2654	US	18 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1967 003H		2655	US	18 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1967 003J		2656	US	18 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1967 006A	ESSA 4	2657	US	26 JAN	113.4	102.0	1437	1324		
1967 006B		2661	US	26 JAN	113.6	101.9	1439	1339		
1967 006C		2706	US	26 JAN	114.2	102.0	1446	1390		
1967 006D		2707	US	26 JAN	112.6	101.9	1459	1228		
1967 006E		5971	US	26 JAN	113.1	102.1	1454	1280		
1967 010A		2669	US	8 FEB	101.2	99.0	853	775		
1967 010B		2741	US	8 FEB	101.2	98.9	856	771		
1967 011A	DIADEME 1	2674	FRANCE	8 FEB	102.2	40.0	1166	556		
1967 011B		2671	FRANCE	8 FEB	102.9	40.0	1233	561		
1967 011H		2689	FRANCE	8 FEB	97.5	40.0	795	487		
1967 014A	DIADEME 2	2680	FRANCE	15 FEB	109.1	39.5	1785	586		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1967 LAUNCHES (CONT.)										
1967 014B		2632	FRANCE	15 FEB	109.5	39.5	1820	584		
1967 014C		2634	FRANCE	15 FEB	107.3	40.0	1668	582		
1967 014F		2635	FRANCE	15 FEB	106.7	39.0	1581	567		
1967 014J		14505	FRANCE	15 FEB	109.0	38.9	1797	561		
1967 014K		14633	FRANCE	15 FEB	101.4	39.4	1119	529		
1967 014L		15531	FRANCE	15 FEB	101.3	39.5	1104	530		
1967 014M		18911	FRANCE	15 FEB	112.1	38.9	2075	574		
1967 014N		18928	FRANCE	15 FEB	101.5	39.4	1128	531		
1967 014P		18929	FRANCE	15 FEB	101.7	39.4	1141	534		
1967 013B		2696	USSR	28 FEB	91.0	81.2	335	308		
1967 026A	INTELSAT 2 F-3	2717	ITSO	23 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1967 027A	COSMOS 191	2720	USSR	24 MAR	94.4	56.0	500	483		
1967 034A	NNSS 30120	2754	US	14 APR	106.3	90.2	1067	1039		
1967 034B		2755	US	14 APR	106.4	90.2	1073	1045		
1967 034C		2777	US	14 APR	103.5	90.2	1033	817		
1967 034D		2773	US	14 APR	108.3	90.2	1246	1049		
1967 034E		4343	US	14 APR	106.7	90.4	1096	1048		
1967 035B		2764	US	17 APR	BARYCENTRIC ORBIT					
1967 036A	ESSA 5	2757	US	20 APR	113.5	101.9	1419	1353		
1967 036B		2758	US	20 APR	113.5	102.0	1417	1354		
1967 036C		2976	US	20 APR	112.3	102.2	1408	1256		
1967 036D		2977	US	20 APR	114.6	101.3	1481	1388		
1967 039A	COSMOS 196	2762	USSR	27 APR	92.0	81.1	375	368		
1967 039B		2763	USSR	27 APR	94.5	81.2	531	459		
1967 040A		2765	US	28 APR	CURRENT ELEMENTS NOT MAINTAINED					
1967 040B		2766	US	28 APR	CURRENT ELEMENTS NOT MAINTAINED					
1967 040C	ERS 13	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	95.8	84.9	626	491		
1967 045A	COSMOS 198	2801	USSR	15 MAY	100.3	74.0	814	730		
1967 045B		2802	USSR	15 MAY	100.2	74.0	821	714		
1967 045C		2823	USSR	15 MAY	97.9	74.0	682	630		
1967 045D		3737	USSR	15 MAY	95.0	74.0	528	511		
1967 048A	NNSS 30130	2807	US	18 MAY	106.8	89.7	1093	1060		
1967 048B		2811	US	18 MAY	106.8	89.7	1093	1063		
1967 048C		17723	US	18 MAY	105.4	89.6	1041	983		
1967 048D		19222	US	18 MAY	105.9	89.7	1080	988		
1967 053A		2826	US	31 MAY	102.1	70.0	866	853		
1967 053B		2825	US	31 MAY	103.2	70.0	914	906		
1967 053C	GRAVITY GRADIENT 4	2828	US	31 MAY	103.2	70.0	914	905		
1967 053D	GRAVITY GRADIENT 5	2834	US	31 MAY	103.2	70.0	916	908		
1967 053E		2847	US	31 MAY	103.1	70.0	907	899		
1967 053F		2872	US	31 MAY	103.2	70.0	911	903		
1967 053G		2873	US	31 MAY	103.2	70.0	914	905		
1967 053H		2874	US	31 MAY	103.2	70.0	916	907		
1967 053J		2909	US	31 MAY	101.9	70.0	855	846		
1967 053K		19245	US	31 MAY	103.1	70.0	910	900		
1967 060A	MARINER 5	2845	US	14 JUN	HELIOCENTRIC ORBIT					

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1967 LAUNCHES (CONT.)										
1967 060B		2846	US	14 JUN	HELIOCENTRIC ORBIT					
1967 065A	SECOR (EGRS) 9	2861	US	29 JUN	172.1	90.0	3945	3793		
1967 065B	AURORA 1	2876	US	29 JUN	172.1	90.0	3946	3793		
1967 065C		2877	US	29 JUN	172.1	90.0	3949	3790		
1967 066A	TITAN 3 C-14	2862	US	1 JUL	1309.7	1.2	33540	33010		
1967 066B		2863	US	1 JUL	1310.4	1.2	33549	33030		
1967 066C		2864	US	1 JUL	1311.8	3.2	33553	33080		
1967 066D		2865	US	1 JUL	1313.7	4.3	33563	33147		
1967 066E		2866	US	1 JUL	1316.1	9.0	33613	33193		
1967 066F	DODGE	2867	US	1 JUL	1318.9	5.2	33659	33270		
1967 066G		2868	US	1 JUL	1319.1	9.0	33656	33272		
1967 068B		2883	US	14 JUL	BARYCENTRIC ORBIT					
1967 079A	EXPLORER 35	2884	US	19 JUL	SELENOCENTRIC ORBIT					
1967 075B		2908	US	1 AUG	BARYCENTRIC ORBIT					
1967 080A		2920	US	23 AUG	101.9	99.1	877	821		
1967 080B		2940	US	23 AUG	101.9	99.0	874	819		
1967 084B		2938	US	8 SEP	BARYCENTRIC OREIT					
1967 092A	NNSS 30140	2965	US	25 SEP	105.6	89.2	1101	1032		
1967 092B		2967	US	25 SEP	106.6	89.2	1102	1033		
1967 092C		2994	US	25 SEP	103.9	89.4	1017	867		
1967 092D		3122	US	25 SEP	108.9	89.1	1321	1030		
1967 092G		17176	US	25 SEP	105.2	89.2	1031	972		
1967 092H		20009	US	25 SEP	105.2	89.2	1033	969		
1967 094A	INTELSAT 2 F-4	2969	ITSO	28 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1967 094C		2971	US	28 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1967 096A		2980	US	11 OCT	99.4	99.2	818	646		
1967 096B		2985	US	11 OCT	99.3	99.1	809	645		
1967 102B		3011	USSR	24 OCT	94.7	81.2	563	448		
1967 104B		3019	USSR	27 OCT	96.7	64.1	753	443		
1967 111A	ATS 3	3029	US	5 NOV	1436.2	12.8	35854	35721		
1967 112B		3034	US	7 NOV	BARYCENTRIC ORBIT					
1967 114A	ESSA 6	3035	US	10 NOV	114.8	102.2	1482	1407		
1967 114B		3036	US	10 NOV	114.8	102.1	1483	1408		
1967 114C		3051	US	10 NOV	114.1	101.3	1482	1343		
1967 114D		3123	US	10 NOV	115.4	102.4	1493	1449		
1967 114E		5443	US	10 NOV	114.6	101.5	1484	1386		
1967 116A	COSMOS 192	3047	USSR	23 NOV	99.4	74.0	734	724		
1967 116B		3048	USSR	23 NOV	99.3	74.0	730	720		
1967 123A	PIONEER 8	3065	US	13 DEC	HELIOCENTRIC ORBIT					
1967 127A	COSMOS 178	3081	USSR	27 DEC	103.4	65.1	944	892		
1968 LAUNCHES										
1968 001B		3092	US	7 JAN	BARYCENTRIC ORBIT					
1968 002A	EXPLORER 36	3093	US	11 JAN	112.2	105.8	1571	1080		
1968 002B		3094	US	11 JAN	112.1	105.8	1563	1079		
1968 002C		3125	US	11 JAN	112.3	106.1	1581	1083		
1968 002D		3127	US	11 JAN	112.1	105.3	1570	1075		
1968 011A	COSMOS 203	3129	USSR	20 FEB	109.2	74.1	1200	1181		
1968 011B		3131	USSR	20 FEB	109.2	74.1	1203	1180		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1968 LAUNCHES (CONT.)										
1968 012A	NNSS 30160	3133	US	2 MAR	106.7	90.0	1132	1017		
1968 012B		3137	US	2 MAR	106.8	90.0	1135	1018		
1968 012C		3213	US	2 MAR	104.3	90.0	1090	876		
1968 012D		3214	US	2 MAR	108.6	90.1	1308	1019		
1968 012E		18594	US	2 MAR	104.8	90.0	1071	902		
1968 013A	ZOND 4	3134	USSR	2 MAR	HELIOCENTRIC ORBIT					
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	94.5	59.4	566	422		
1968 017D		3328	US	5 MAR	97.2	59.6	693	558		
1968 019B		3151	USSR	14 MAR	95.0	81.2	563	476		
1968 023A	COSMOS 209	3158	USSR	22 MAR	103.1	65.3	934	872		
1968 026A	OV1-13	3173	US	6 APR	198.9	100.0	9227	590		
1968 026B	OV1-14	3174	US	6 APR	207.3	100.0	9849	597		
1968 026C		3177	US	6 APR	207.2	100.0	9855	587		
1968 026D		3212	US	6 APR	198.5	100.0	9193	596		
1968 027A	LUNA 14	3176	USSR	7 APR	SELENOCENTRIC ORBIT					
1968 040A	COSMOS 220	3229	USSR	7 MAY	98.4	74.0	719	649		
1968 040B		3230	USSR	7 MAY	98.3	74.0	712	640		
1968 040C		3231	USSR	7 MAY	95.5	74.1	555	528		
1968 042A		3266	US	23 MAY	101.9	99.1	887	809		
1968 042B		3271	US	23 MAY	101.9	99.0	885	807		
1968 049B		3283	USSR	12 JUN	94.0	81.2	504	433		
1968 050A		3284	US	13 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1968 050B		3285	US	13 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1968 050C		3286	US	13 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1968 050D		3287	US	13 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1968 050E		3288	US	13 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1968 050F		3289	US	13 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1968 050G		3290	US	13 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1968 050H		3291	US	13 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1968 050J		3292	US	13 JUN	1363.7	11.9	35046	33668		
1968 055A	EXPLORER 38	3307	US	4 JUL	224.3	120.9	5858	5839		
1968 055B		3315	US	4 JUL	155.8	120.7	5760	667		
1968 055C		3848	US	4 JUL	224.1	120.9	5862	5825		
1968 055D		4841	US	4 JUL	155.5	120.8	5784	613		
1968 063A		3334	US	6 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1968 066B	EXPLORER 40	3338	US	8 AUG	118.0	80.7	2504	676		
1968 066C		3341	US	8 AUG	117.9	80.7	2493	678		
1968 066D		3342	US	8 AUG	111.3	80.6	1913	660		
1968 066E		3343	US	8 AUG	109.3	80.6	1758	629		
1968 066F		3390	US	8 AUG	111.6	80.6	1932	664		
1968 066G		3391	US	8 AUG	111.2	80.7	1914	645		
1968 066H		3392	US	8 AUG	113.3	80.7	2074	677		
1968 066J		3393	US	8 AUG	112.0	80.6	1971	662		
1968 069A	ESSA 7	3345	US	16 AUG	114.9	101.4	1471	1429		
1968 069B		3346	US	16 AUG	114.8	101.4	1463	1426		
1968 069C		3416	US	16 AUG	113.6	101.8	1485	1300		
1968 069D		3417	US	16 AUG	116.1	102.4	1558	1454		
1968 069E		3974	US	16 AUG	114.9	101.9	1477	1422		

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1968 LAUNCHES (CONT.)										
1968 069F		3975	US	16 AUG	114.9	101.7	1482	1415		
1968 069G		4499	US	16 AUG	115.1	101.5	1481	1435		
1968 070A	COSMOS 235	3347	USSR	27 AUG	93.2	56.1	435	423		
1968 081A	OV2-5	3429	US	26 SEP	1417.9	10.5	35786	35073		
1968 081C	ERS 21	3430	US	26 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1968 081D	LES 5	3431	US	26 SEP	1435.4	10.8	35821	35722		
1968 081E		3432	US	26 SEP	1419.3	10.5	35831	35081		
1968 091A	COSMOS 249	3509	USSR	20 OCT	111.6	62.3	2103	499		
1968 091B - 091P			USSR	20 OCT	SEE NOTE 7*					7*
1968 092A		3510	US	23 OCT	101.1	98.5	835	788		
1968 092B		3522	US	23 OCT	101.1	98.6	832	785		
1968 097A	COSMOS 252	3530	USSR	1 NOV	112.1	62.3	2108	541		
1968 097B - 097EU			USSR	1 NOV	SEE NOTE 8*					8*
1968 100A	PIONEER 9	3533	US	8 NOV	HELIOCENTRIC ORBIT					
1968 106A	COSMOS 256	3576	USSR	30 NOV	109.3	74.0	1220	1170		
1968 106B		3577	USSR	30 NOV	109.2	74.1	1214	1164		
1968 110A	OAO-A2	3597	US	7 DEC	100.1	35.0	765	757		
1968 110B		3598	US	7 DEC	99.8	35.0	791	706		
1968 112B		3605	US	12 DEC	114.3	80.4	1467	1380		
1968 112C		3617	US	12 DEC	114.0	80.2	1444	1374		
1968 112D		3618	US	12 DEC	114.7	80.5	1505	1376		
1968 112E		3840	US	12 DEC	114.4	80.5	1455	1402		
1968 114A	ESSA 8	3615	US	15 DEC	114.5	101.5	1461	1411		
1968 114B		3616	US	15 DEC	115.0	101.6	1468	1445		
1968 114C		3811	US	15 DEC	112.8	102.0	1463	1248		
1968 114D		3812	US	15 DEC	115.3	102.5	1571	1458		
1968 115A	INTELSAT 3 F-2	3623	ITSO	19 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1968 118B		3627	US	21 DEC	HELIOCENTRIC ORBIT					
1969 LAUNCHES										
1969 009A	ISIS 1	3659	CANADA	30 JAN	127.9	88.5	3485	574		
1969 009B		3670	US	30 JAN	127.1	88.4	3414	576		
1969 010B		3673	US	5 FEB	114.0	80.4	1432	1389		
1969 010C		3841	US	5 FEB	113.7	80.2	1420	1370		
1969 011A	INTELSAT 3 F-3	3674	ITSO	6 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1969 011B		5977	US	6 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1969 013A		3691	US	9 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1969 013B		3692	US	9 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1969 014A	MARINER 5	3759	US	25 FEB	HELIOCENTRIC ORBIT					
1969 014B		3760	US	25 FEB	HELIOCENTRIC ORBIT					
1969 016A	ESSA 9	3764	US	26 FEB	115.2	101.5	1503	1422		
1969 016B		3767	US	26 FEB	115.1	101.5	1498	1418		
1969 018B		3770	US	3 MAR	HELIOCENTRIC ORBIT					
1969 024A	COSMOS 272	3818	USSR	17 MAR	109.2	74.0	1206	1176		
1969 024B		3819	USSR	17 MAR	109.1	74.0	1194	1178		
1969 024C		6249	USSR	17 MAR	108.9	74.0	1183	1168		
1969 025C	OV1-19	3825	US	18 MAR	152.0	104.8	5638	473		
1969 025E		3827	US	18 MAR	151.1	104.7	5548	486		
1969 029A	METEOR	3835	USSR	26 MAR	96.7	81.2	619	583		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1969 LAUNCHES (CONT.)										
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	99.9	1127	1071		
1969 037B	SECOR (EGRS) 13	3891	US	14 APR	107.2	99.9	1127	1068		
1969 037C		3892	US	14 APR	107.3	99.9	1132	1073		
1969 043B		3943	US	18 MAY	HELIOCENTRIC ORBIT					
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	CURRENT ELEMENTS NOT MAINTAINED					
1969 046A	OV5-5/ERS-29	3950	US	23 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1969 046B	OV5-5	3951	US	23 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1969 046C	OV5-7	3952	US	23 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1969 046D		3954	US	23 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1969 046E		3955	US	23 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1969 046F		3956	US	23 MAY	CURRENT ELEMENTS NOT MAINTAINED					
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					9*
1969 062A		4047	US	23 JUL	101.0	98.9	840	772		
1969 062B		4048	US	23 JUL	100.9	98.8	836	770		
1969 064C		4053	US	26 JUL	128.5	30.3	3848	265		
1969 069A	ATS 5	4068	US	12 AUG	1447.5	11.7	36029	35988		
1969 069B		4069	US	12 AUG	703.3	17.1	37367	2270		
1969 069C		5991	US	12 AUG	682.2	17.2	36497	2086		
1969 070A	COSMOS 292	4070	USSR	13 AUG	99.5	74.0	744	726		
1969 070B		4071	USSR	13 AUG	99.2	74.0	734	710		
1969 070C		4084	USSR	13 AUG	99.9	74.1	765	731		
1969 070D		18912	USSR	13 AUG	99.1	74.0	753	681		
1969 082B		4256	US	30 SEP	103.2	70.0	923	896		
1969 082C		4257	US	30 SEP	103.3	70.0	928	900		
1969 082D		4259	US	30 SEP	103.3	70.0	929	901		
1969 082E		4237	US	30 SEP	103.3	70.0	928	901		
1969 082F		4247	US	30 SEP	103.3	70.0	928	900		
1969 082G		4295	US	30 SEP	103.3	70.0	928	901		
1969 082H		4168	US	30 SEP	103.3	70.0	927	901		
1969 082J		4165	US	30 SEP	101.9	70.0	861	839		
1969 082K		4132	US	30 SEP	102.6	70.0	893	866		
1969 082L - 082LF			US	30 SEP	SEE NOTE	10*				10*
1969 084A	METEOR	4119	USSR	6 OCT	96.3	81.2	600	563		
1969 084B		4120	USSR	6 OCT	96.0	81.2	630	499		
1969 091A	COSMOS 304	4138	USSR	21 OCT	99.7	74.0	752	732		
1969 091B		4139	USSR	21 OCT	99.2	74.0	724	713		
1969 097A	GRS-A/AZUR	4221	FRG	8 NOV	114.0	102.8	2442	378		
1969 097B		4222	US	8 NOV	107.9	102.9	1890	368		
1969 099B		4226	US	14 NOV	CURRENT ELEMENTS NOT MAINTAINED					
1969 101A	SKYNET A	4250	UK	22 NOV	ELEMENTS NOT AVAILABLE					
1969 101B		4251	US	22 NOV	CURRENT ELEMENTS NOT MAINTAINED					
1969 103A	COSMOS 312	4254	USSR	24 NOV	108.5	74.0	1174	1139		
1969 103B		4255	USSR	24 NOV	108.3	74.0	1157	1139		

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1970 LAUNCHES										
1970 003A	INTELSAT 3 F-6	4297	ITSO	15 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1970 003B		4298	US	15 JAN	545.4	28.2	31156	312		
1970 008A	ITOS 1	4320	US	23 JAN	115.0	101.4	1477	1431		
1970 008B	OSCAR 5	4321	AUSTRL	23 JAN	115.0	101.4	1476	1431		
1970 008C		4322	US	23 JAN	115.0	101.4	1477	1432		
1970 009A	SERT 2	4327	US	4 FEB	105.0	99.2	1044	1039		
1970 011A	OHS041	4330	JAPAN	11 FEB	123.1	31.1	3301	332		
1970 012A		4331	US	11 FEB	100.9	99.0	848	754		
1970 012B		4332	US	11 FEB	101.0	98.8	851	758		
1970 021A	NATO 1	4353	NATO	20 MAR	1436.2	10.5	35812	35763		
1970 021B		4354	US	20 MAR	576.1	26.1	32631	483		
1970 021C		5975	US	20 MAR	567.3	25.4	32278	365		
1970 025A	NIMBUS 4	4362	US	8 APR	107.1	99.8	1098	1085		
1970 025B	TOPO 1	4363	US	8 APR	106.9	99.6	1084	1083		
1970 025C - 025DD			US	8 APR	SEE NOTE	11*				11*
1970 027A		4366	US	8 APR	CURRENT ELEMENTS NOT MAINTAINED					
1970 027B		4368	US	8 APR	CURRENT ELEMENTS NOT MAINTAINED					
1970 028A	COSMOS 332	4369	USSR	11 APR	99.5	74.0	743	735		
1970 028B		4370	USSR	11 APR	99.4	74.0	741	714		
1970 028C		14614	USSR	11 APR	99.5	74.0	742	723		
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	MAO 1	4382	PRC	24 APR	112.4	68.4	2235	434		
1970 034B		4392	PRC	24 APR	105.4	68.4	1603	419		
1970 036A	COSMOS 336	4383	USSR	25 APR	115.4	74.0	1484	1461		
1970 036B	COSMOS 337	4384	USSR	25 APR	116.2	74.0	1550	1466		
1970 036C	COSMOS 338	4385	USSR	25 APR	115.8	74.0	1516	1465		
1970 036D	COSMOS 339	4386	USSR	25 APR	115.0	74.0	1467	1443		
1970 036E	COSMOS 340	4387	USSR	25 APR	114.5	74.0	1468	1405		
1970 036F	COSMOS 341	4388	USSR	25 APR	113.9	74.0	1467	1340		
1970 036G	COSMOS 342	4389	USSR	25 APR	113.5	74.0	1466	1308		
1970 036H	COSMOS 343	4390	USSR	25 APR	114.2	74.0	1466	1373		
1970 036J		4391	USSR	25 APR	116.5	74.0	1586	1466		
1970 037A	METEOR	4393	USSR	28 APR	96.3	81.2	634	577		
1970 037B		4394	USSR	28 APR	97.2	81.2	707	543		
1970 046A		4415	US	19 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1970 046B		4511	US	19 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1970 047A	METEOR	4419	USSR	23 JUN	101.9	81.2	877	818		
1970 047B		4420	USSR	23 JUN	102.1	81.2	922	792		
1970 055A	INTELSAT 3 F-8	4478	ITSO	23 JUL	1408.2	12.8	36642	33835		
1970 055B		4486	US	23 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1970 062A	SKYNET 3	4493	UK	19 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1970 064A	COSMOS 358	4497	USSR	20 AUG	92.2	74.0	384	378		
1970 067A	NNSS 30190	4507	US	27 AUG	106.3	90.1	1206	946		
1970 067B		4515	US	27 AUG	106.3	90.1	1210	947		
1970 067C		5036	US	27 AUG	103.3	90.1	937	892		
1970 067D		5447	US	27 AUG	109.3	90.1	1439	947		
1970 069A		4510	US	1 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1970 070A		4512	US	3 SEP	100.3	98.8	848	746		
1970 070B		4513	US	3 SEP	100.9	98.9	853	747		
1970 079A	COSMOS 367	4564	USSR	3 OCT	104.5	65.3	1021	917		
1970 083A	COSMOS 371	4578	USSR	12 OCT	99.5	74.0	735	732		
1970 083B		4579	USSR	12 OCT	99.3	74.0	733	716		
1970 085A	METEOR	4583	USSR	15 OCT	95.7	81.2	558	547		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1970 LAUNCHES (CONT.)										
1970 085B		4584	USSR	15 OCT	96.0	81.2	629	506		
1970 085C		6330	USSR	15 OCT	93.7	81.2	487	420		
1970 086A	COSMOS 372	4588	USSR	16 OCT	100.5	74.1	792	772		
1970 086B		4589	USSR	16 OCT	100.3	74.1	790	757		
1970 086C		5357	USSR	16 OCT	99.4	74.0	731	724		
1970 086D		5358	USSR	16 OCT	99.9	74.1	758	749		
1970 089A	COSMOS 374	4594	USSR	23 OCT	108.4	63.0	1719	587		
1970 089B - 089DG			USSR	23 OCT	SEE NOTE	12*				12*
1970 091A	COSMOS 375	4598	USSR	30 OCT	111.5	62.8	2070	515		
1970 091B - 091AX			USSR	30 OCT	SEE NOTE	13*				13*
1970 093A		4630	US	6 NOV	1198.1	15.4	36070	25906		
1970 093B		4632	US	6 NOV	1197.7	15.4	36079	25883		
1970 102A	COSMOS 381	4783	USSR	2 DEC	104.8	74.0	1007	960		
1970 102B		4784	USSR	2 DEC	104.7	74.0	998	958		
1970 102C		4840	USSR	2 DEC	101.7	74.0	850	823		
1970 102D		5225	USSR	2 DEC	104.2	74.0	971	941		
1970 102E		8764	USSR	2 DEC	104.3	74.0	979	944		
1970 102F		9794	USSR	2 DEC	102.2	74.0	878	848		
1970 103A	COSMOS 382	4786	USSR	2 DEC	171.0	55.9	5241	2413		
1970 103B		4789	USSR	2 DEC	158.3	51.6	5082	1590		
1970 103C		4790	USSR	2 DEC	159.1	51.6	5084	1613		
1970 103D		5316	USSR	2 DEC	148.0	55.9	4619	1161		
1970 103G		12854	USSR	2 DEC	149.2	50.3	3119	2763		
1970 105A	NOAA 1	4793	US	11 DEC	114.3	101.4	1471	1421		
1970 105B		4794	US	11 DEC	114.9	101.4	1478	1420		
1970 105C		8828	US	11 DEC	116.4	102.2	1541	1497		
1970 108A	COSMOS 385	4799	USSR	12 DEC	104.5	74.0	979	973		
1970 108B		4800	USSR	12 DEC	104.5	74.0	978	963		
1970 109B		4802	FRANCE	12 DEC	97.5	15.0	677	597		
1970 113A	COSMOS 389	4813	USSR	18 DEC	96.3	81.2	620	588		
1970 113B		4814	USSR	18 DEC	97.1	81.2	669	568		
1971 LAUNCHES										
1971 003A		4924	US	UNKN	95.5	18.0	906	192		14*
1971 003A	METEOR	4849	USSR	20 JAN	96.4	81.2	592	577		
1971 003B		4850	USSR	20 JAN	96.4	81.2	648	523		
1971 003C		18277	USSR	20 JAN	96.2	81.2	638	518		
1971 006A	INTELSAT 4 F-2	4881	ITSO	26 JAN	ELEMENTS NOT AVAILABLE					
1971 006B		4882	US	26 JAN	653.6	28.2	36476	665		
1971 009A	NATO 2	4902	NATO	3 FEB	1442.3	9.1	46095	25720		
1971 009B		4903	US	3 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1971 009D		5986	US	3 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1971 010A	COSMOS 394	4922	USSR	9 FEB	95.5	65.8	582	535		
1971 011A	TANSEI 1	4952	JAPAN	16 FEB	106.1	29.7	1107	987		
1971 011B		5126	JAPAN	16 FEB	104.5	29.7	994	977		
1971 012A		4953	US	17 FEB	100.5	98.6	811	749		
1971 012B		4954	US	17 FEB	100.5	98.7	813	753		
1971 012C		4957	US	17 FEB	95.0	98.4	531	509		
1971 012D		4958	US	17 FEB	94.5	98.4	502	486		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1971 LAUNCHES (CONT.)										
1971 012E		4963	US	17 FEB	96.5	98.2	599	581		
1971 015A	COSMOS 397	4964	USSR	25 FEB	113.3	65.7	2189	562		
1971 015B - 015DV			USSR	25 FEB	SEE NOTE	15*				15*
1971 016A	COSMOS 398	4966	USSR	26 FEB	136.8	51.6	4628	200		
1971 020A	COSMOS 400	5050	USSR	18 MAR	104.9	65.8	1003	979		
1971 020B		5051	USSR	18 MAR	104.7	65.8	1025	939		
1971 020C		5052	USSR	18 MAR	104.9	65.8	1001	979		
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	113.5	88.2	1422	1354		
1971 024B		5106	US	1 APR	113.5	88.2	1420	1350		
1971 024C		5360	US	1 APR	113.5	88.3	1422	1356		
1971 025A	COSMOS 402	5105	USSR	1 APR	104.9	65.0	1032	945		
1971 028A	COSMOS 405	5117	USSR	7 APR	97.3	81.2	634	628		
1971 028B		5118	USSR	7 APR	97.5	81.3	694	583		
1971 028D		5724	USSR	7 APR	97.0	81.2	618	614		
1971 031A	METEOR	5142	USSR	17 APR	94.4	81.2	497	480		
1971 031B		5143	USSR	17 APR	95.9	81.2	613	505		
1971 035A	COSMOS 407	5174	USSR	23 APR	100.7	74.0	805	778		
1971 035B		5175	USSR	23 APR	100.5	74.0	806	760		
1971 035C		5300	USSR	23 APR	100.2	74.0	777	756		
1971 035D		5301	USSR	23 APR	100.4	74.0	792	765		
1971 038A	COSMOS 409	5180	USSR	28 APR	109.3	74.0	1209	1175		
1971 038B		5181	USSR	28 APR	109.0	74.0	1223	1140		
1971 039A		5204	US	5 MAY	ELEMENTS NOT AVAILABLE					
1971 039B		5205	US	5 MAY	ELEMENTS NOT AVAILABLE					
1971 041A	COSMOS 411	5210	USSR	7 MAY	113.8	74.0	1488	1313		
1971 041B	COSMOS 412	5211	USSR	7 MAY	116.1	74.0	1533	1478		
1971 041C	COSMOS 413	5212	USSR	7 MAY	115.7	74.0	1505	1472		
1971 041D	COSMOS 414	5213	USSR	7 MAY	115.1	74.0	1491	1424		
1971 041E	COSMOS 415	5214	USSR	7 MAY	115.4	74.0	1498	1448		
1971 041F	COSMOS 416	5215	USSR	7 MAY	114.4	74.0	1489	1369		
1971 041G	COSMOS 417	5216	USSR	7 MAY	114.1	74.0	1490	1341		
1971 041H	COSMOS 418	5217	USSR	7 MAY	114.3	74.0	1491	1396		
1971 041J		5218	USSR	7 MAY	116.8	74.0	1591	1485		
1971 045A	MARS 2	5234	USSR	19 MAY	AREOCENTRIC ORBIT					
1971 046A	COSMOS 422	5236	USSR	22 MAY	105.0	74.0	1004	981		
1971 046B		5239	USSR	22 MAY	104.8	74.0	995	979		
1971 049A	MARS 3	5252	USSR	28 MAY	AREOCENTRIC ORBIT					
1971 051A	MARINER 9	5261	US	30 MAY	AREOCENTRIC ORBIT					
1971 051B		5267	US	30 MAY	HELIOCENTRIC ORBIT					
1971 052A	COSMOS 426	5281	USSR	4 JUN	103.1	74.0	1445	366		
1971 052B		5282	USSR	4 JUN	103.7	74.0	1497	369		
1971 059A	METEOR	5327	USSR	16 JUL	95.0	81.2	522	514		
1971 059B		5328	USSR	16 JUL	96.1	81.2	626	511		
1971 063D	APOLLO 15 SUBSATELLITE	5377	US	26 JUL	SELENOCENTRIC ORBIT					
1971 067B	OV1-21	5397	US	7 AUG	101.7	87.6	901	781		
1971 067C		5398	US	7 AUG	101.3	87.6	876	766		
1971 067D		5405	US	7 AUG	99.5	87.6	781	692		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1971 LAUNCHES (CONT.)										
1971 067K		5395	US	7 AUG	101.3	87.6	872	766		
1971 067L		5399	US	7 AUG	99.7	87.6	783	707		
1971 067M		5400	US	7 AUG	99.6	87.6	780	702		
1971 067N		5384	US	7 AUG	101.6	87.6	892	767		
1971 069C		5426	USSR	12 AUG	100.2	49.6	858	673		
1971 071A	EOLE 1	5435	FRANCE	16 AUG	100.1	50.2	860	662		
1971 071B		5438	US	16 AUG	100.0	50.2	857	659		
1971 071C		5440	US	16 AUG	98.4	50.7	760	604		
1971 073B		5449	USSR	2 SEP	SELENOCENTRIC ORBIT					
1971 080A	SHINSEI	5485	JAPAN	28 SEP	113.1	32.1	1867	873		
1971 080B		5498	JAPAN	28 SEP	111.9	32.0	1757	870		
1971 082A	LUNA 19	5488	USSR	28 SEP	SELENOCENTRIC ORBIT					
1971 082C		5490	USSR	28 SEP	SELENOCENTRIC ORBIT					
1971 085A	COSMOS 444	5547	USSR	13 OCT	114.1	74.0	1506	1319		
1971 085B	COSMOS 445	5548	USSR	13 OCT	114.4	74.0	1509	1348		
1971 085C	COSMOS 446	5549	USSR	13 OCT	114.8	74.0	1509	1379		
1971 085D	COSMOS 447	5550	USSR	13 OCT	115.1	74.0	1512	1408		
1971 085E	COSMOS 448	5551	USSR	13 OCT	115.5	74.0	1515	1438		
1971 085F	COSMOS 449	5552	USSR	13 OCT	116.2	74.0	1539	1481		
1971 085G	COSMOS 450	5553	USSR	13 OCT	115.8	74.0	1527	1459		
1971 085H	COSMOS 451	5554	USSR	13 OCT	116.6	74.0	1571	1487		
1971 085J		5555	USSR	13 OCT	117.3	74.0	1621	1501		
1971 087A		5557	US	14 OCT	101.3	99.1	859	779		
1971 087B		5556	US	14 OCT	101.4	99.0	874	779		
1971 089A		5560	US	17 OCT	100.1	92.7	774	748		
1971 093A	PROSPERO	5580	UK	28 OCT	105.1	82.1	1464	536		
1971 093B		5581	UK	28 OCT	105.2	82.1	1475	535		
1971 095A		5587	US	3 NOV	1436.3	10.8	35803	35776		
1971 095B		5588	US	3 NOV	1435.1	10.7	35782	35751		
1971 095C		5589	US	3 NOV	1461.7	11.3	37375	35973		
1971 096A	EXPLORER 45	5598	US	15 NOV	322.8	3.2	18149	272		
1971 099A	COSMOS 457	5614	USSR	20 NOV	109.4	74.0	1216	1181		
1971 099B		5615	USSR	20 NOV	109.3	74.0	1209	1175		
1971 110A		5678	US	14 DEC	ELEMENTS NOT AVAILABLE					
1971 110B		5679	US	14 DEC	ELEMENTS NOT AVAILABLE					
1971 110C		5680	US	14 DEC	ELEMENTS NOT AVAILABLE					
1971 110D		5681	US	14 DEC	ELEMENTS NOT AVAILABLE					
1971 110E		5682	US	14 DEC	ELEMENTS NOT AVAILABLE					
1971 111A	COSMOS 465	5683	USSR	15 DEC	104.8	74.0	1005	964		
1971 111B		5685	USSR	15 DEC	104.7	74.0	995	961		
1971 114A	COSMOS 468	5705	USSR	17 DEC	100.5	74.0	795	772		
1971 114B		5707	USSR	17 DEC	100.4	74.0	798	760		
1971 114C		5778	USSR	17 DEC	100.3	74.0	783	763		
1971 114D		5858	USSR	17 DEC	100.2	74.0	777	761		
1971 116A	INTELSAT 4 F-3	5709	ITSO	20 DEC	1445.6	7.4	36019	35924		
1971 117A	COSMOS 469	5721	USSR	25 DEC	104.7	64.5	1005	951		
1971 119A	ORBOE 1	5729	USSR	27 DEC	110.7	74.0	2127	389		
1971 119B		5730	USSR	27 DEC	110.2	74.0	2084	391		
1971 120A	METEOR	5731	USSR	29 DEC	102.5	81.3	914	839		
1971 120B		5732	USSR	29 DEC	102.1	81.3	874	840		

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1971 LAUNCHES (CONT.)										
1971 120C		8826	USSR	29 DEC	101.5	81.2	844	814		
1971 120D		8827	USSR	29 DEC	102.0	81.3	864	845		
1971 120F		15344	USSR	29 DEC	101.0	81.3	825	788		
1972 LAUNCHES										
1972 003A	INTELSAT 4 F-4	5775	ITSO	23 JAN	1442.6	6.7	35939	35887		
1972 003B		5816	US	23 JAN	653.4	28.5	36504	626		
1972 007B		5836	USSR	14 FEB	SELENOCENTRIC ORBIT					
1972 009A	COSMOS 475	5846	USSR	25 FEB	104.7	74.0	996	961		
1972 009B		5847	USSR	25 FEB	104.4	74.0	992	945		
1972 010A		5851	US	1 MAR	ELEMENTS NOT AVAILABLE					
1972 010B		5854	US	1 MAR	ELEMENTS NOT AVAILABLE					
1972 011A	COSMOS 476	5852	USSR	1 MAR	95.0	81.2	522	510		
1972 011B		5853	USSR	1 MAR	95.6	81.2	584	506		
1972 012A	PIONEER 10	5860	US	3 MAR	SOLAR SYSTEM ESCAPE TRAJECTORY					
1972 012B		5861	US	3 MAR	HELIOCENTRIC ORBIT					
1972 013A		5903	US	24 MAR	101.4	99.0	865	787		
1972 013B		5904	US	24 MAR	101.4	98.9	859	788		
1972 019A	COSMOS 480	5905	USSR	25 MAR	109.1	83.0	1198	1168		
1972 019B		5907	USSR	25 MAR	108.9	83.0	1192	1159		
1972 022A	METEOR	5917	USSR	30 MAR	102.3	81.2	880	857		
1972 022B		5918	USSR	30 MAR	102.5	81.2	920	834		
1972 023C		6073	USSR	31 MAR	166.7	52.1	7090	221		
1972 029A	PROGNOZ	5941	USSR	14 APR	CURRENT ELEMENTS NOT MAINTAINED					
1972 031C	LUNAR MODULE	6005	US	16 APR	SELENOCENTRIC ORBIT					9*
1972 035A	COSMOS 489	6019	USSR	6 MAY	104.7	74.0	997	962		
1972 035B		6020	USSR	6 MAY	104.5	74.0	986	956		
1972 041A	INTELSAT 4 F-5	6052	ITSO	13 JUN	1438.8	7.7	35842	35835		
1972 041B		6053	US	13 JUN	651.5	26.4	36428	603		
1972 043A	COSMOS 494	6059	USSR	23 JUN	100.5	74.1	791	776		
1972 043B		6061	USSR	23 JUN	100.3	74.1	790	758		
1972 043C		6063	USSR	23 JUN	100.1	74.0	771	752		
1972 043D		6065	USSR	23 JUN	100.3	74.1	789	756		
1972 049A	METEOR	6079	USSR	30 JUN	102.7	81.2	896	878		
1972 049B		6080	USSR	30 JUN	102.9	81.2	928	858		
1972 057A	COSMOS 504	6117	USSR	20 JUL	113.9	74.0	1494	1319		
1972 057B	COSMOS 505	6118	USSR	20 JUL	114.3	74.0	1494	1350		
1972 057C	COSMOS 506	6119	USSR	20 JUL	114.6	74.0	1493	1380		
1972 057D	COSMOS 507	6120	USSR	20 JUL	114.9	74.0	1494	1410		
1972 057E	COSMOS 508	6121	USSR	20 JUL	115.3	74.0	1494	1441		
1972 057F	COSMOS 509	6122	USSR	20 JUL	115.6	74.0	1496	1471		
1972 057G	COSMOS 510	6123	USSR	20 JUL	116.0	74.0	1507	1493		
1972 057H	COSMOS 511	6124	USSR	20 JUL	116.4	74.0	1544	1492		
1972 057J		6125	USSR	20 JUL	117.0	74.0	1599	1490		
1972 058A	LANDSAT 1	6126	US	23 JUL	103.1	99.2	909	898		
1972 058B - 058JL			US	23 JUL	SEE NOTE	16*				16*
1972 062A	COSMOS 514	6148	USSR	16 AUG	104.2	83.0	967	950		
1972 062B		6149	USSR	16 AUG	104.2	83.0	963	948		
1972 062C		6277	USSR	16 AUG	104.1	82.9	957	946		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1972 LAUNCHES (CONT.)										
1972 062D		7560	USSR	16 AUG	102.9	83.0	947	842		
1972 065A	COPERNICUS	6153	US	21 AUG	99.4	35.0	734	722		
1972 065B		6155	US	21 AUG	99.1	35.0	751	679		
1972 066A	COSMOS 516	6154	USSR	21 AUG	104.5	64.8	1019	925		
1972 069A	TRIAD OI-1X	6173	US	2 SEP	100.1	90.0	812	717		
1972 069B		6180	US	2 SEP	99.8	90.0	794	708		
1972 069C		6250	US	2 SEP	98.9	89.7	751	656		
1972 072A	COSMOS 520	6192	USSR	19 SEP	715.1	67.7	36383	3838		
1972 072E		6302	USSR	19 SEP	706.7	67.6	35913	3891		
1972 073A	EXPLORER 47	6197	US	23 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1972 074A	COSMOS 521	6206	USSR	29 SEP	104.9	65.8	1002	978		
1972 074B		6207	USSR	29 SEP	104.7	65.8	991	973		
1972 074C		6210	USSR	29 SEP	104.9	65.8	1003	975		
1972 076A		6212	US	2 OCT	98.4	98.6	687	674		
1972 076B		6217	US	2 OCT	99.0	98.5	722	702		
1972 076C		6218	US	2 OCT	99.3	98.5	733	713		
1972 076D		6221	US	2 OCT	98.2	98.6	676	664		
1972 079C		6822	US	10 OCT	114.7	95.6	1464	1416		
1972 079D		6823	US	10 OCT	114.8	95.8	1484	1403		
1972 079E		6824	US	10 OCT	114.6	95.5	1444	1430		
1972 082A	NOAA 2	6235	US	15 OCT	114.9	101.8	1453	1447		
1972 082B	AMSAT-OSCAR 6	6236	US	15 OCT	114.9	101.8	1452	1446		
1972 082C		6237	US	15 OCT	109.2	102.8	1465	915		
1972 085A	METEOR	6256	USSR	26 OCT	102.3	81.2	883	854		
1972 085B		6257	USSR	26 OCT	102.5	81.3	918	832		
1972 087A	COSMOS 528	6262	USSR	1 NOV	114.1	74.0	1466	1364		
1972 087B	COSMOS 529	6264	USSR	1 NOV	114.5	74.0	1466	1400		
1972 087C	COSMOS 530	6265	USSR	1 NOV	113.7	74.0	1465	1331		
1972 087D	COSMOS 531	6266	USSR	1 NOV	114.7	74.0	1467	1418		
1972 087E	COSMOS 532	6267	USSR	1 NOV	113.4	74.0	1466	1297		
1972 087F	COSMOS 533	6268	USSR	1 NOV	113.6	74.0	1466	1314		
1972 087G	COSMOS 534	6269	USSR	1 NOV	113.9	74.0	1465	1347		
1972 087H	COSMOS 535	6270	USSR	1 NOV	114.3	74.0	1467	1381		
1972 087J		6271	USSR	1 NOV	116.6	74.0	1591	1465		
1972 089A		6275	US	9 NOV	101.3	98.8	849	792		
1972 089B		6276	US	9 NOV	101.5	98.9	857	802		
1972 090A	ANIK A1	6278	CANADA	10 NOV	1457.5	4.6	36257	36150		
1972 097A	NIMBUS 5	6305	US	11 DEC	107.1	99.6	1099	1087		
1972 097B		6306	US	11 DEC	111.7	99.8	1514	1099		
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	1377	1340		
1972 102B		6320	USSR	21 DEC	112.7	74.0	1371	1333		
1972 104A	COSMOS 540	6323	USSR	25 DEC	100.5	74.1	795	768		
1972 104B		6324	USSR	25 DEC	100.2	74.1	773	760		
1972 104C		6391	USSR	25 DEC	99.7	74.1	752	731		
1972 104D		6396	USSR	25 DEC	99.6	74.1	752	727		
1973 LAUNCHES										

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1973 005A	COSMOS 546	6350	USSR	26 JAN	96.0	50.7	584	553		
1973 009A	PROGNOZ 3	6364	USSR	15 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1973 013A		6380	US	6 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1973 015A	METEOR	6392	USSR	20 MAR	102.4	81.2	881	863		
1973 015B		6393	USSR	20 MAR	102.6	81.3	924	835		
1973 019A	PIONEER 11	6421	US	6 APR	SOLAR SYSTEM ESCAPE TRAJECTORY					
1973 019B		6425	US	6 APR	HELIOCENTRIC ORBIT					
1973 023A	ANIK A2	6437	CANADA	20 APR	1442.0	7.2	38979	32823		
1973 034A	METEOR	6659	USSR	29 MAY	102.2	81.2	884	844		
1973 034B		6660	USSR	29 MAY	102.5	81.2	911	843		
1973 037A	COSMOS 564	6675	USSR	8 JUN	114.6	74.0	1479	1392		
1973 037B	COSMOS 565	6676	USSR	8 JUN	115.3	74.0	1488	1447		
1973 037C	COSMOS 566	6677	USSR	8 JUN	115.0	74.0	1481	1431		
1973 037D	COSMOS 567	6678	USSR	8 JUN	114.8	74.0	1481	1410		
1973 037E	COSMOS 568	6679	USSR	8 JUN	114.4	74.0	1479	1372		
1973 037F	COSMOS 569	6680	USSR	8 JUN	114.2	74.0	1478	1355		
1973 037G	COSMOS 570	6681	USSR	8 JUN	113.9	74.0	1478	1335		
1973 037H	COSMOS 571	6682	USSR	8 JUN	113.7	74.0	1477	1317		
1973 037J		6683	USSR	8 JUN	116.8	74.0	1594	1482		
1973 039A	EXPLORER 49	6686	US	10 JUN	SELENOCENTRIC ORBIT					
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	ELEMENTS NOT AVAILABLE					
1973 040B		11940	US	12 JUN	ELEMENTS NOT AVAILABLE					
1973 042A	COSMOS 574	6707	USSR	20 JUN	105.0	82.9	1007	978		
1973 042B		6708	USSR	20 JUN	104.8	82.9	996	978		
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	AREOCENTRIC 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	101.1	98.7	832	788		
1973 054B		6788	US	17 AUG	101.2	98.8	837	793		
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	1316.1	5.5	34442	32365		
1973 058B		6797	US	23 AUG	652.9	28.1	36569	534		
1973 064A	COSMOS 585	6825	USSR	8 SEP	113.5	74.0	1402	1373		
1973 064B		6826	USSR	8 SEP	113.4	74.0	1403	1358		
1973 065A	COSMOS 586	6828	USSR	14 SEP	104.7	82.9	1003	960		
1973 065B		6829	USSR	14 SEP	104.6	82.9	993	958		
1973 069A	COSMOS 588	6845	USSR	2 OCT	115.3	74.0	1491	1446		
1973 069B	COSMOS 589	6846	USSR	2 OCT	114.9	74.0	1486	1413		
1973 069C	COSMOS 590	6847	USSR	2 OCT	115.1	74.0	1485	1431		
1973 069D	COSMOS 591	6848	USSR	2 OCT	114.1	74.0	1483	1345		
1973 069E	COSMOS 592	6849	USSR	2 OCT	113.9	74.0	1482	1328		
1973 069F	COSMOS 593	6850	USSR	2 OCT	114.3	74.0	1483	1362		
1973 069G	COSMOS 594	6851	USSR	2 OCT	114.5	74.0	1483	1379		
1973 069H	COSMOS 595	6852	USSR	2 OCT	114.7	74.0	1483	1397		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1973 LAUNCHES (CONT.)										
1973 069J		6853	USSR	2 OCT	117.1	74.0	1620	1483		
1973 078A	EXPLORER 50	6893	US	26 OCT	ELEMENTS NOT AVAILABLE					
1973 078C		6895	US	26 OCT	103.1	28.9	1462	348		
1973 078D		6896	US	26 OCT	CURRENT ELEMENTS NOT MAINTAINED					
1973 080A	COSMOS 604	6907	USSR	29 OCT	95.1	81.2	531	514		
1973 080B		6908	USSR	29 OCT	95.3	81.2	566	499		
1973 081A	NNSS 30200	6909	US	30 OCT	105.3	89.9	1127	889		
1973 081B		6910	US	30 OCT	105.3	89.9	1129	890		
1973 081C		15764	US	30 OCT	105.9	90.4	1178	892		
1973 084A	COSMOS 606	6916	USSR	2 NOV	717.5	67.6	37467	2873		
1973 084D		6939	USSR	2 NOV	706.6	67.5	37012	2787		
1973 085A	MARINER 10	6919	US	3 NOV	HELIOCENTRIC ORBIT					
1973 086A	NOAA 3	6920	US	6 NOV	116.1	102.0	1509	1499		
1973 086B	086HF		US	6 NOV	SEE NOTE	17*				17*
1973 088D		6938	US	10 NOV	114.5	96.9	1455	1412		
1973 088E		7559	US	10 NOV	114.6	96.8	1477	1400		
1973 098A	COSMOS 614	6965	USSR	4 DEC	100.3	74.1	792	757		
1973 098B		6966	USSR	4 DEC	100.2	74.1	786	752		
1973 098C		6967	USSR	4 DEC	99.4	74.1	745	716		
1973 098D		9569	USSR	4 DEC	100.1	74.1	778	750		
1973 100A		6973	US	13 DEC	1437.2	2.8	35816	35801		
1973 100B		6974	US	13 DEC	1436.1	10.2	35794	35778		
1973 100D		6976	US	13 DEC	1515.0	11.0	38492	36142		
1973 104A	COSMOS 617	6985	USSR	19 DEC	113.9	74.0	1481	1332		
1973 104B	COSMOS 618	6986	USSR	19 DEC	115.2	74.0	1484	1442		
1973 104C	COSMOS 619	6987	USSR	19 DEC	115.0	74.0	1485	1421		
1973 104D	COSMOS 620	6988	USSR	19 DEC	115.4	74.0	1491	1456		
1973 104E	COSMOS 621	6989	USSR	19 DEC	114.7	74.0	1483	1404		
1973 104F	COSMOS 622	6990	USSR	19 DEC	114.3	74.0	1482	1368		
1973 104G	COSMOS 623	6991	USSR	19 DEC	114.5	74.0	1483	1385		
1973 104H	COSMOS 624	6992	USSR	19 DEC	114.1	74.0	1483	1349		
1973 104J		6993	USSR	19 DEC	117.0	74.0	1620	1473		
1973 107A	ORBOL 2	7003	USSR	26 DEC	105.4	74.0	1630	392		
1973 107B		7004	USSR	26 DEC	104.9	74.0	1594	383		
1973 108A	COSMOS 626	7005	USSR	27 DEC	104.0	65.4	988	903		
1973 109A	COSMOS 627	7008	USSR	29 DEC	104.9	83.0	1015	965		
1973 109B		7009	USSR	29 DEC	104.5	82.9	992	960		
1974 LAUNCHES										
1974 001A	COSMOS 628	7094	USSR	17 JAN	104.7	83.0	1009	951		
1974 001B		7095	USSR	17 JAN	104.5	83.0	999	944		
1974 011A	METEOR	7209	USSR	5 MAR	102.0	81.2	880	824		
1974 011B		7210	USSR	5 MAR	102.0	81.2	913	794		
1974 013A	UK-X4	7213	UK	9 MAR	100.5	97.9	886	684		
1974 013B		7228	US	9 MAR	100.6	97.9	881	694		
1974 015A		7215	US	16 MAR	101.1	99.0	856	765		
1974 015B		7219	US	16 MAR	101.3	99.0	869	771		
1974 017A	COSMOS 637	7229	USSR	26 MAR	1426.9	10.7	35820	35472		
1974 017F		11567	USSR	26 MAR	1425.9	10.5	35782	35386		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1974 LAUNCHES (CONT.)										
1974 022B		7244	US	10 APR	ELEMENTS NOT AVAILABLE					
1974 022A	WESTAR 1	7250	US	13 APR	1441.4	6.1	35921	35859		
1974 024A	COSMOS 641	7265	USSR	23 APR	114.5	74.0	1479	1385		
1974 024B	COSMOS 642	7266	USSR	23 APR	113.7	74.0	1478	1317		
1974 024C	COSMOS 643	7267	USSR	23 APR	114.1	74.0	1479	1350		
1974 024D	COSMOS 644	7268	USSR	23 APR	113.9	74.0	1480	1332		
1974 024E	COSMOS 645	7269	USSR	23 APR	114.3	74.0	1480	1367		
1974 024F	COSMOS 646	7270	USSR	23 APR	114.7	74.0	1482	1402		
1974 024G	COSMOS 647	7271	USSR	23 APR	114.9	74.0	1481	1420		
1974 024H	COSMOS 648	7272	USSR	23 APR	115.1	74.0	1487	1435		
1974 024J		7273	USSR	23 APR	117.0	74.0	1605	1485		
1974 025A	METEOR	7274	USSR	24 APR	102.4	81.2	884	855		
1974 025B		7275	USSR	24 APR	102.5	81.2	917	832		
1974 026A	MOLNIYA 2-9	7276	USSR	26 APR	714.0	62.8	39950	217		
1974 026B		7373	USSR	26 APR	732.6	63.2	40542	540		
1974 028A	COSMOS 650	7281	USSR	29 APR	113.4	74.0	1398	1365		
1974 028B		7284	USSR	29 APR	113.2	74.0	1387	1361		
1974 029A	COSMOS 651	7291	USSR	15 MAY	103.4	65.0	953	885		
1974 032A	COSMOS 654	7297	USSR	17 MAY	104.4	64.9	1021	911		
1974 033A	SMS 1	7298	US	17 MAY	ELEMENTS NOT AVAILABLE					
1974 037A	LUNA 22	7315	USSR	29 MAY	SELENOCENTRIC ORBIT					
1974 039A	ATS 6	7316	US	30 MAY	1412.1	10.0	35425	35205		
1974 039C		7324	US	30 MAY	1430.7	10.2	35776	35584		
1974 044A	COSMOS 660	7337	USSR	18 JUN	105.9	83.0	1687	387		
1974 044B		7338	USSR	18 JUN	104.1	83.0	1514	390		
1974 048A	COSMOS 663	7349	USSR	27 JUN	104.7	83.0	999	961		
1974 048B		7350	USSR	27 JUN	104.6	82.9	987	960		
1974 050A	COSMOS 665	7352	USSR	29 JUN	716.7	63.2	39613	690		
1974 050C		7354	USSR	29 JUN	706.3	62.6	39479	333		
1974 052A	METEOR	7363	USSR	9 JUL	102.9	81.2	909	885		
1974 052B		7364	USSR	9 JUL	102.5	81.2	910	845		
1974 054A		7369	US	14 JUL	468.7	124.9	13764	13455		
1974 054C		8599	US	14 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1974 056A	MOLNIYA 2-10	7376	USSR	23 JUL	717.2	62.0	39775	551		
1974 056B		7382	USSR	23 JUL	732.9	62.9	40738	359		
1974 060A	MOLNIYA 1-5	7392	USSR	29 JUL	1665.8	4.8	44412	35930		
1974 063A		7411	US	9 AUG	101.3	98.7	855	787		
1974 063B		7412	US	9 AUG	101.4	98.7	860	790		
1974 066A	COSMOS 673	7417	USSR	16 AUG	94.7	81.2	516	491		
1974 066B		7418	USSR	16 AUG	95.7	81.2	584	521		
1974 066C		8424	USSR	16 AUG	92.3	81.2	414	410		
1974 069A	COSMOS 675	7424	USSR	29 AUG	113.6	74.1	1421	1362		
1974 069B		7426	USSR	29 AUG	113.5	74.1	1420	1351		
1974 071A	COSMOS 676	7433	USSR	11 SEP	100.7	74.0	803	784		
1974 071B		7434	USSR	11 SEP	100.6	74.0	802	771		
1974 071C		8756	USSR	11 SEP	100.2	74.1	774	764		
1974 071D		8829	USSR	11 SEP	100.7	74.1	807	775		
1974 072A	COSMOS 677	7435	USSR	19 SEP	114.4	74.0	1465	1394		
1974 072B	COSMOS 678	7436	USSR	19 SEP	115.9	74.0	1530	1465		
1974 072C	COSMOS 679	7437	USSR	19 SEP	115.7	74.0	1508	1464		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1974 LAUNCHES (CONT.)										
1974 072D	COSMOS 680	7438	USSR	19 SEP	115.5	74.0	1489	1464		
1974 072E	COSMOS 681	7439	USSR	19 SEP	115.3	74.0	1470	1463		
1974 072F	COSMOS 682	7440	USSR	19 SEP	115.1	74.0	1464	1450		
1974 072G	COSMOS 683	7441	USSR	19 SEP	114.9	74.0	1464	1432		
1974 072H	COSMOS 684	7442	USSR	19 SEP	114.6	74.0	1465	1413		
1974 072J		7443	USSR	19 SEP	117.7	74.0	1682	1472		
1974 075A	WESTAR 2	7466	US	10 OCT	1442.3	5.5	36246	35568		
1974 075C		7468	US	10 OCT	341.8	24.3	19410	219		
1974 079A	COSMOS 689	7476	USSR	18 OCT	105.0	82.9	1014	969		
1974 079B		7477	USSR	18 OCT	104.8	82.9	1012	960		
1974 083A	METEOR	7490	USSR	28 OCT	102.2	81.2	897	832		
1974 083B		7493	USSR	28 OCT	102.4	81.2	905	837		
1974 083C		15521	USSR	28 OCT	102.4	81.2	904	836		
1974 089A	NOAA 4	7529	US	15 NOV	114.9	101.7	1456	1443		
1974 089B	AMSAT-OSCAR 7	7530	US	15 NOV	114.8	101.7	1456	1438		
1974 089C	INTASAT	7531	SPAIN	15 NOV	114.8	101.7	1457	1439		
1974 089D - 089FD			US	15 NOV	SEE NOTE	18*				18*
1974 092E		7546	USSR	21 NOV	733.3	64.5	40785	330		
1974 093A	INTELSAT 4 F-3	7544	ITSO	21 NOV	1443.2	5.0	35951	35901		
1974 093B		7545	US	21 NOV	653.0	25.8	36477	633		
1974 094A	SKYNET 2B	7547	UK	23 NOV	1437.7	9.0	35838	35798		
1974 094D		7550	US	23 NOV	96.4	28.2	895	274		
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	102.1	81.2	881	838		
1974 099B		7575	USSR	17 DEC	102.1	81.3	906	814		
1974 101A	SYMPHONIE-A	7578	FR/FRG	19 DEC	1440.6	9.0	35903	35847		
1974 101G		9330	US	19 DEC	661.4	12.4	37182	352		
1974 102D		7586	USSR	21 DEC	438.5	62.0	25390	92		
1974 105A	COSMOS 700	7593	USSR	26 DEC	104.6	82.9	993	959		
1974 105B		7594	USSR	26 DEC	104.5	82.9	982	959		
1975 LAUNCHES										
1975 004A	LANDSAT 2	7615	US	22 JAN	103.1	98.8	912	901		
1975 004B - 004HR			US	22 JAN	SEE NOTE	19*				19*
1975 007A	COSMOS 705	7625	USSR	30 JAN	717.9	67.8	33670	6690		
1975 007D		7629	USSR	30 JAN	716.5	67.9	34155	6134		
1975 009D		7653	USSR	6 FEB	685.8	64.1	38462	304		
1975 010A	STARLETTE	7646	FRANCE	6 FEB	104.2	49.8	1108	805		
1975 010B		7647	FRANCE	6 FEB	104.4	49.8	1129	802		
1975 010C		7654	FRANCE	6 FEB	103.3	49.9	1075	799		
1975 010D		7655	FRANCE	6 FEB	103.8	49.8	1081	798		
1975 010E		7659	FRANCE	6 FEB	104.0	49.8	1096	798		
1975 011A	SMS 2	7648	US	6 FEB	1447.1	8.4	36062	35940		
1975 012A	COSMOS 708	7663	USSR	12 FEB	113.5	69.2	1405	1370		
1975 012B		7665	USSR	12 FEB	113.3	69.2	1394	1366		
1975 016A	COSMOS 711	7678	USSR	28 FEB	115.4	74.0	1491	1459		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1975 LAUNCHES (CONT.)										
1975 016B	COSMOS 712	7679	USSR	28 FEB	114.9	74.0	1488	1409		
1975 016C	COSMOS 713	7680	USSR	28 FEB	114.7	74.0	1485	1394		
1975 016D	COSMOS 714	7681	USSR	28 FEB	115.2	74.0	1489	1442		
1975 016E	COSMOS 715	7682	USSR	28 FEB	115.7	74.0	1502	1467		
1975 016F	COSMOS 716	7683	USSR	28 FEB	115.9	74.0	1512	1477		
1975 016G	COSMOS 717	7684	USSR	28 FEB	116.1	74.0	1534	1477		
1975 016H	COSMOS 718	7685	USSR	28 FEB	115.0	74.0	1486	1428		
1975 016J		7686	USSR	28 FEB	117.9	74.0	1718	1457		
1975 017A		7687	US	10 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1975 017B		7688	US	10 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1975 023A	METEOR	7714	USSR	1 APR	102.4	81.2	886	855		
1975 023B		7715	USSR	1 APR	102.4	81.2	912	835		
1975 024A	COSMOS 723	7718	USSR	2 APR	103.7	64.7	953	909		
1975 025A	COSMOS 724	7727	USSR	7 APR	103.0	65.6	948	849		
1975 027A	GEOS 3	7734	US	9 APR	101.6	115.0	843	829		
1975 027B		7735	US	9 APR	101.4	115.0	841	804		
1975 027C		10728	US	9 APR	101.6	115.2	884	781		
1975 027E		10730	US	9 APR	103.6	115.0	1022	836		
1975 028A	COSMOS 726	7736	USSR	11 APR	104.5	83.0	990	952		
1975 028B		7737	USSR	11 APR	104.4	83.0	980	951		
1975 029D		7741	USSR	14 APR	732.9	62.4	40745	351		
1975 033A	ARIABAT	7752	INDIA	19 APR	94.6	50.7	510	489		
1975 034A	COSMOS 729	7768	USSR	22 APR	104.9	83.0	1005	971		
1975 034B		7769	USSR	22 APR	104.8	83.0	996	971		
1975 036A	MOLNIYA 1-29	7780	USSR	29 APR	717.7	63.5	39556	795		
1975 036D		7800	USSR	29 APR	732.8	63.9	39695	1398		
1975 038A	ANIK A3	7790	CANADA	7 MAY	1439.3	5.1	36012	35687		
1975 038D		7794	US	7 MAY	444.7	24.3	25556	285		
1975 042A	INTELSAT 4 F-1	7815	ITSO	22 MAY	1450.8	5.0	36116	36032		
1975 042B		7902	US	22 MAY	653.8	25.7	36526	621		
1975 043A		7816	US	24 MAY	ELEMENTS NOT AVAILABLE					
1975 043B		7817	US	24 MAY	ELEMENTS NOT AVAILABLE					
1975 045A	COSMOS 732	7820	USSR	28 MAY	114.6	74.0	1469	1401		
1975 045B	COSMOS 733	7822	USSR	28 MAY	116.2	74.0	1552	1468		
1975 045C	COSMOS 734	7823	USSR	28 MAY	115.0	74.0	1469	1441		
1975 045D	COSMOS 735	7824	USSR	28 MAY	115.2	74.0	1472	1459		
1975 045E	COSMOS 736	7825	USSR	28 MAY	115.5	74.0	1484	1467		
1975 045F	COSMOS 737	7826	USSR	28 MAY	115.9	74.0	1527	1468		
1975 045G	COSMOS 738	7827	USSR	28 MAY	115.7	74.0	1507	1467		
1975 045H	COSMOS 739	7828	USSR	28 MAY	114.8	74.0	1470	1420		
1975 045J		7831	USSR	28 MAY	117.9	74.0	1693	1484		
1975 049B	SRET 2	7910	FRANCE	5 JUN	737.8	62.8	40825	513		
1975 049F		8548	USSR	5 JUN	563.8	62.7	32108	346		
1975 050A	VENERA 9	7915	USSR	8 JUN	HELIOCENTRIC ORBIT					
1975 051C	SSU 1	7937	US	8 JUN	113.5	95.1	1394	1383		
1975 051D		7938	US	8 JUN	113.2	95.0	1402	1344		
1975 051E		7939	US	8 JUN	113.9	95.2	1424	1383		
1975 052A	NIMBUS 6	7924	US	12 JUN	107.4	99.6	1112	1099		
1975 052B		7946	US	12 JUN	107.2	99.7	1100	1091		
1975 054A	VENERA 10	7947	USSR	14 JUN	HELIOCENTRIC ORBIT					

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1975 LAUNCHES (CONT.)										
1975 055A		7963	US	18 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1975 055B		7964	US	18 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1975 056A	COSMOS 744	7968	USSR	20 JUN	95.0	81.2	528	505		
1975 056B		7969	USSR	20 JUN	95.8	81.3	583	530		
1975 063A	MOLNIYA 2-13	8015	USSR	8 JUL	718.0	63.7	39534	828		
1975 063B		8018	USSR	8 JUL	733.0	64.1	39731	1371		
1975 064A	METEOR 2	8026	USSR	11 JUL	102.2	81.3	879	849		
1975 064B		8027	USSR	11 JUL	102.4	81.3	911	832		
1975 064C		8039	USSR	11 JUL	102.3	81.3	882	849		
1975 064D		8110	USSR	11 JUL	102.1	81.3	889	829		
1975 072A	COS-B	8062	ESA	9 AUG	2203.9	90.3	99002	442		
1975 072B		8063	US	9 AUG	126.3	89.3	3597	323		
1975 074A	COSMOS 755	8072	USSR	14 AUG	104.8	82.9	1006	966		
1975 074B		8073	USSR	14 AUG	104.7	82.9	995	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	95.4	81.2	544	534		
1975 076B		8128	USSR	22 AUG	96.1	81.2	603	537		
1975 077A	SYMPHONIE-B	8132	FR/FRG	27 AUG	1440.3	9.4	35883	35855		
1975 077B		8133	US	27 AUG	105.3	25.3	1611	404		
1975 077C		8134	US	27 AUG	650.1	13.3	36613	349		
1975 081A	MOLNIYA 2-14	8196	USSR	9 SEP	717.7	63.4	39736	613		
1975 081B		8418	USSR	9 SEP	733.7	63.9	40044	1095		
1975 082A	KIKU	8197	JAPAN	9 SEP	105.0	47.0	1103	976		
1975 082B		8352	JAPAN	9 SEP	105.9	47.0	1101	974		
1975 083A	VIKING ORBITER 2	8199	US	9 SEP	AREOCENTRIC ORBIT					
1975 083B		8272	US	9 SEP	HELIOCENTRIC ORBIT					
1975 085A	COSMOS 761	8285	USSR	17 SEP	114.6	74.0	1479	1398		
1975 085B	COSMOS 762	8286	USSR	17 SEP	115.1	74.0	1482	1436		
1975 085C	COSMOS 763	8287	USSR	17 SEP	115.4	74.0	1508	1472		
1975 085D	COSMOS 764	8288	USSR	17 SEP	116.0	74.0	1524	1476		
1975 085E	COSMOS 765	8289	USSR	17 SEP	116.3	74.0	1548	1476		
1975 085F	COSMOS 766	8290	USSR	17 SEP	114.9	74.0	1482	1416		
1975 085G	COSMOS 767	8291	USSR	17 SEP	115.3	74.0	1485	1453		
1975 085H	COSMOS 768	8292	USSR	17 SEP	115.5	74.0	1489	1469		
1975 085J		8295	USSR	17 SEP	117.8	74.0	1682	1480		
1975 087A	METEOR	8293	USSR	18 SEP	102.1	81.3	914	801		
1975 087B		8294	USSR	18 SEP	102.3	81.3	914	820		
1975 089A	COSMOS 770	8325	USSR	24 SEP	109.1	83.0	1205	1162		
1975 089B		8326	USSR	24 SEP	109.0	83.0	1197	1159		
1975 091A	INTELSAT 4A F-1	8330	ITSO	26 SEP	1441.2	3.0	35898	35872		
1975 091B		8331	US	26 SEP	653.7	21.5	36673	470		
1975 094A	COSMOS 773	8343	USSR	30 SEP	100.6	74.1	794	778		
1975 094B		8344	USSR	30 SEP	100.4	74.1	794	762		
1975 094C		8346	USSR	30 SEP	99.4	74.1	739	716		
1975 094D		14665	USSR	30 SEP	100.5	74.0	789	772		
1975 097A	COSMOS 775	8357	USSR	8 OCT	1437.1	9.0	35846	35766		
1975 097B		8415	USSR	8 OCT	CURRENT ELEMENTS NOT MAINTAINED					
1975 097F		11676	USSR	8 OCT	1438.3	10.5	35943	35735		
1975 099A	TIP 2	8361	US	12 OCT	98.0	90.4	628	507		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1975 LAUNCHES (CONT.)										
1975 100A	GOES 1	8360	US	16 OCT	1436.4	8.9	35802	35797		
1975 100C		8368	US	16 OCT	185.1	23.4	8510	254		
1975 103A	COSMOS 778	8419	USSR	4 NOV	104.5	83.0	1001	966		
1975 103B		8421	USSR	4 NOV	104.6	83.0	995	959		
1975 105A	MOLNIYA 3-3	8425	USSR	14 NOV	717.7	63.7	39578	770		
1975 105D		8462	USSR	14 NOV	733.9	64.1	39912	1232		
1975 112A	COSMOS 783	8458	USSR	28 NOV	100.7	74.1	803	783		
1975 112B		8459	USSR	28 NOV	100.6	74.1	798	771		
1975 112C		8757	USSR	28 NOV	100.1	74.0	765	757		
1975 112D		14601	USSR	28 NOV	100.8	74.1	802	785		
1975 112E		18500	USSR	28 NOV	100.9	74.1	813	788		
1975 116A	COSMOS 785	8473	USSR	12 DEC	104.2	65.1	1025	887		
1975 117A	RCA SATCOM 1	8476	US	13 DEC	1446.0	5.1	36078	35882		
1975 118A		8482	US	14 DEC	ELEMENTS NOT AVAILABLE					
1975 118C		8516	US	14 DEC	ELEMENTS NOT AVAILABLE					
1975 118D		8517	US	14 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1975 121A	MOLNIYA 2-15	8492	USSR	17 DEC	570.6	62.8	32456	363		
1975 122A	PROGNOZ 4	8510	USSR	22 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1975 123A	RADUGA 1	8513	USSR	22 DEC	ELEMENTS NOT AVAILABLE					
1975 123D		8546	USSR	22 DEC	385.0	46.1	21940	363		
1975 123E		8547	USSR	22 DEC	438.7	46.9	25218	273		
1975 123F		11568	USSR	22 DEC	1433.1	10.1	35795	35661		
1975 124A	METEOR	8519	USSR	25 DEC	102.2	81.3	883	840		
1975 124D		8520	USSR	25 DEC	102.3	81.3	903	830		
1976 LAUNCHES										
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	9.4	35830	35746		
1976 005A	COSMOS 789	8591	USSR	20 JAN	104.9	83.0	1011	967		
1976 005B		8597	USSR	20 JAN	104.8	83.0	1001	964		
1976 006A	MOLNIYA 1-32	8601	USSR	22 JAN	720.2	63.7	38999	1474		
1976 006D		8701	USSR	22 JAN	695.4	63.9	38206	1037		
1976 008A	COSMOS 791	8607	USSR	28 JAN	114.7	74.1	1485	1399		
1976 008B	COSMOS 792	8608	USSR	28 JAN	115.1	74.1	1489	1433		
1976 008C	COSMOS 793	8609	USSR	28 JAN	114.9	74.1	1488	1415		
1976 008D	COSMOS 794	8610	USSR	28 JAN	115.3	74.1	1492	1449		
1976 008E	COSMOS 795	8611	USSR	28 JAN	115.6	74.1	1496	1465		
1976 008F	COSMOS 796	8612	USSR	28 JAN	115.8	74.1	1513	1470		
1976 008G	COSMOS 797	8613	USSR	28 JAN	116.0	74.1	1527	1477		
1976 008H	COSMOS 798	8614	USSR	28 JAN	116.3	74.1	1552	1476		
1976 008J		8615	USSR	28 JAN	117.9	74.0	1693	1481		
1976 010A	INTELSAT 4A F-2	8620	ITSO	29 JAN	1444.5	5.2	35967	35932		
1976 010D		8621	US	29 JAN	654.3	21.7	36538	634		
1976 011A	COSMOS 800	8645	USSR	3 FEB	105.0	83.0	1010	975		
1976 011D		8646	USSR	3 FEB	104.8	83.0	990	983		
1976 014A	COSMOS 803	8688	USSR	12 FEB	95.7	65.8	587	518		
1976 017A	MARISAT 1	8697	US	19 FEB	1436.2	7.8	35794	35782		

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1976 LAUNCHES (CONT.)										
1976 017C		8702	US	19 FEB	191.1	24.4	8968	258		
1976 019A	UME	8709	JAPAN	29 FEB	105.1	69.7	1007	988		
1976 019B		8710	JAPAN	29 FEB	105.1	69.7	1011	989		
1976 021A	MOLNIYA 1-33	8741	USSR	11 MAR	717.6	62.8	39710	634		
1976 021D		9411	USSR	11 MAR	731.1	63.1	39875	1132		
1976 022A	COSMOS 807	8744	USSR	12 MAR	106.2	83.0	1712	387		
1976 022B		8745	USSR	12 MAR	104.1	82.9	1527	378		
1976 023A	LES 8	8746	US	15 MAR	1436.0	19.6	35882	35685		
1976 023B	LES 9	8747	US	15 MAR	1436.1	20.3	35795	35778		
1976 023C	SOLRAD 11A	8748	US	15 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1976 023D	SOLRAD 11B	8749	US	15 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1976 023F		8751	US	15 MAR	1465.6	20.7	36967	35755		
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 023K		13753	US	15 MAR	1421.9	7.9	35502	35477		
1976 024A	COSMOS 808	8754	USSR	16 MAR	95.5	81.2	556	532		
1976 024B		8755	USSR	16 MAR	95.6	81.3	583	511		
1976 029A	RCA SATCOM II	8774	US	26 MAR	1460.2	4.6	36605	35908		
1976 032A	METEOR	8799	USSR	7 APR	102.1	81.3	884	831		
1976 032B		8800	USSR	7 APR	102.2	81.2	934	793		
1976 035A	NATO III-A	8808	NATO	22 APR	1436.2	7.4	35806	35770		
1976 038A		8818	US	30 APR	ELEMENTS NOT AVAILABLE					
1976 038B		8819	US	30 APR	ELEMENTS NOT AVAILABLE					
1976 038C	SSU-1	8835	US	30 APR	ELEMENTS NOT AVAILABLE					
1976 038D	SSU-2	8836	US	30 APR	ELEMENTS NOT AVAILABLE					
1976 038E		8839	US	30 APR	ELEMENTS NOT AVAILABLE					
1976 038F		8842	US	30 APR	ELEMENTS NOT AVAILABLE					
1976 038G		8843	US	30 APR	ELEMENTS NOT AVAILABLE					
1976 038H		8859	US	30 APR	ELEMENTS NOT AVAILABLE					
1976 038J	SSU-3	8834	US	30 APR	ELEMENTS NOT AVAILABLE					
1976 038K		9796	US	30 APR	ELEMENTS NOT AVAILABLE					
1976 038L		9996	US	30 APR	ELEMENTS NOT AVAILABLE					
1976 039A	LAGEOS	8820	US	4 MAY	225.4	109.8	5946	5836		
1976 039B		8821	US	4 MAY	113.3	109.6	2467	289		
1976 039C		8822	US	4 MAY	225.4	109.8	5943	5835		
1976 039D		14514	US	4 MAY	119.5	110.0	3029	289		
1976 041A	MOLNIYA 3-5	8833	USSR	12 MAY	714.2	62.2	39830	345		
1976 041D		8844	USSR	12 MAY	730.5	61.9	40602	378		
1976 042A	COMSTAR 1	8838	US	13 MAY	1442.7	5.0	35928	35903		
1976 042B		8840	US	13 MAY	648.6	21.0	36278	608		
1976 043A	METEOR	8845	USSR	15 MAY	102.1	81.3	887	827		
1976 043B		8846	USSR	15 MAY	102.3	81.2	907	826		
1976 047A	P 76-5	8860	US	22 MAY	105.5	99.6	1047	985		
1976 047B		8861	US	22 MAY	105.5	99.6	1049	987		
1976 047C		8867	US	22 MAY	106.4	99.3	1115	1000		
1976 047D		8868	US	22 MAY	104.7	100.1	1017	939		
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	83.0	1005	971		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1976 LAUNCHES (CONT.)										
1976 053B		8874	USSR	2 JUN	104.8	83.0	1002	965		
1976 053A	MARISAT 2	8882	US	10 JUN	1436.2	6.7	35806	35768		
1976 053F		8910	US	10 JUN	507.6	25.4	29118	284		
1976 054A	COSMOS 825	8889	USSR	15 JUN	114.6	74.0	1485	1393		
1976 054B	COSMOS 826	8890	USSR	15 JUN	116.2	74.0	1542	1480		
1976 054C	COSMOS 827	8891	USSR	15 JUN	114.9	74.0	1487	1411		
1976 054D	COSMOS 828	8892	USSR	15 JUN	115.1	74.0	1487	1430		
1976 054E	COSMOS 829	8893	USSR	15 JUN	115.3	74.0	1488	1448		
1976 054F	COSMOS 830	8894	USSR	15 JUN	115.5	74.0	1491	1466		
1976 054G	COSMOS 831	8895	USSR	15 JUN	115.8	74.0	1505	1473		
1976 054H	COSMOS 832	8896	USSR	15 JUN	116.0	74.0	1518	1480		
1976 054J		8897	USSR	15 JUN	117.9	74.0	1686	1485		
1976 059A		8916	US	26 JUN	ELEMENTS NOT AVAILABLE					
1976 059C		8918	US	26 JUN	ELEMENTS NOT AVAILABLE					
1976 059D		8919	US	26 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1976 061A	COSMOS 836	8923	USSR	29 JUN	100.7	74.1	805	779		
1976 061B		8924	USSR	29 JUN	100.6	74.1	794	774		
1976 061C		9572	USSR	29 JUN	99.9	74.1	757	752		
1976 061D		14815	USSR	29 JUN	100.1	74.1	774	749		
1976 066C		9008	US	8 JUL	ELEMENTS NOT AVAILABLE					
1976 066A	PALAPA 1	9009	INDNSA	8 JUL	1466.8	3.4	36553	36219		
1976 066C		9017	US	8 JUL	376.9	24.5	21588	225		
1976 067A	COSMOS 839	9011	USSR	8 JUL	115.7	65.9	2055	914		
1976 067B	67BU		USSR	8 JUL	SEE NOTE	20*				20*
1976 067BU		20030	USSR	8 JUL	115.5	65.8	2281	672		
1976 069A	COSMOS 841	9022	USSR	15 JUL	100.5	74.0	794	774		
1976 069B		9023	USSR	15 JUL	100.4	74.0	792	763		
1976 069C		9704	USSR	15 JUL	100.1	74.1	764	760		
1976 069D		13499	USSR	15 JUL	100.8	74.1	816	779		
1976 070A	COSMOS 842	9025	USSR	21 JUL	104.8	83.0	1006	963		
1976 070B		9044	USSR	21 JUL	104.7	83.0	989	967		
1976 073A	COMSTAR 2	9047	US	22 JUL	1436.1	4.8	35789	35786		
1976 073B		9329	US	22 JUL	646.6	21.4	36272	508		
1976 074E		9269	USSR	23 JUL	684.3	62.6	38097	590		
1976 077A	NOAA 5	9057	US	29 JUL	116.2	101.9	1520	1503		
1976 077B	077FP		US	29 JUL	SEE NOTE	21*				21*
1976 078A	COSMOS 846	9061	USSR	29 JUL	104.6	82.9	1009	946		
1976 078B		9062	USSR	29 JUL	104.5	82.9	993	948		
1976 080A		9270	US	6 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1976 080B		9271	US	6 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1976 085A	COSMOS 851	9389	USSR	27 AUG	90.7	81.2	313	300		
1976 085B		9390	USSR	27 AUG	94.8	81.1	551	468		
1976 091A	DMSP-F1	9415	US	11 SEP	ELEMENTS NOT AVAILABLE					
1976 091B		9419	US	11 SEP	ELEMENTS NOT AVAILABLE					
1976 091C		9420	US	11 SEP	ELEMENTS NOT AVAILABLE					
1976 091F		9484	US	11 SEP	ELEMENTS NOT AVAILABLE					
1976 091G		9518	US	11 SEP	ELEMENTS NOT AVAILABLE					
1976 092A	RADUGA 2	9416	USSR	11 SEP	ELEMENTS NOT AVAILABLE					
1976 092F		17872	USSR	11 SEP	1436.7	9.8	35846	35748		
1976 098A	COSMOS 855	9443	USSR	29 SEP	100.7	74.0	799	779		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1976 LAUNCHES (CONT.)										
1976 098B		9444	USSR	29 SEP	100.5	74.0	793	772		
1976 098C		14816	USSR	29 SEP	100.8	74.0	811	779		
1976 098D		14817	USSR	29 SEP	100.1	74.1	775	746		
1976 098E		18504	USSR	29 SEP	100.3	74.1	790	756		
1976 101A	MARISAT 3	9478	US	14 OCT	1436.1	8.2	35791	35782		
1976 102A	METEOR	9481	USSR	15 OCT	102.2	81.3	885	844		
1976 102B		9482	USSR	15 OCT	102.4	81.3	915	827		
1976 103A	COSMOS 850	9486	USSR	17 OCT	104.3	64.7	1015	905		
1976 103F		19297	USSR	17 OCT	103.4	64.7	970	871		
1976 104A	COSMOS 851	9494	USSR	21 OCT	104.2	64.9	1008	909		
1976 105A	COSMOS 852	9495	USSR	22 OCT	716.2	67.0	38652	1722		
1976 105B - 105P			USSR	22 OCT	SEE NOTE		22*			22*
1976 107A	EKRAN	9503	USSR	26 OCT	1436.4	9.7	36072	35512		
1976 107F		11569	USSR	26 OCT	1419.3	9.6	35504	35409		
1976 108A	COSMOS 864	9509	USSR	29 OCT	104.7	82.9	1004	958		
1976 108B		9510	USSR	29 OCT	104.6	82.9	994	955		
1976 112A	PROGNOZ 5	9557	USSR	25 NOV	CURRENT ELEMENTS NOT MAINTAINED					
1976 116A	MOLNIYA 2-16	9574	USSR	2 DEC	718.2	62.2	39592	780		
1976 116D		9579	USSR	2 DEC	731.9	62.3	40045	1003		
1976 118A	COSMOS 871	9588	USSR	7 DEC	114.5	74.0	1462	1415		
1976 118B	COSMOS 872	9589	USSR	7 DEC	114.4	74.0	1462	1396		
1976 118C	COSMOS 873	9590	USSR	7 DEC	115.5	74.0	1494	1462		
1976 118D	COSMOS 874	9591	USSR	7 DEC	115.7	74.0	1514	1462		
1976 118E	COSMOS 875	9592	USSR	7 DEC	114.8	74.0	1462	1435		
1976 118F	COSMOS 876	9593	USSR	7 DEC	116.0	74.0	1537	1462		
1976 118G	COSMOS 877	9594	USSR	7 DEC	115.0	74.0	1462	1453		
1976 118H	COSMOS 878	9595	USSR	7 DEC	115.3	74.0	1473	1462		
1976 118J		9598	USSR	7 DEC	117.6	74.0	1682	1464		
1976 120B - 120BC			USSR	9 DEC	SEE NOTE		23*			23*
1976 122A	COSMOS 883	9610	USSR	15 DEC	104.7	83.0	1006	952		
1976 122B		9613	USSR	15 DEC	104.6	83.0	998	951		
1976 125A	COSMOS 886	9634	USSR	27 DEC	114.8	65.8	2302	588		
1976 125B - 125CF			USSR	27 DEC	SEE NOTE		24*			24*
1976 127A	MOLNIYA 3-6	9635	USSR	28 DEC	617.4	62.3	35038	243		
1976 128A	COSMOS 887	9637	USSR	28 DEC	104.7	82.9	1012	945		
1976 128B		9636	USSR	28 DEC	104.5	82.9	995	948		
1977 LAUNCHES										
1977 002A	METEOR 2-2	9661	USSR	6 JAN	102.7	81.3	895	880		
1977 002B		9662	USSR	6 JAN	102.8	81.3	932	853		
1977 002C		9663	USSR	6 JAN	102.7	81.3	892	881		
1977 002D		9664	USSR	6 JAN	102.8	81.3	895	882		
1977 004A	COSMOS 890	9737	USSR	20 JAN	105.0	83.0	1013	975		
1977 004B		9738	USSR	20 JAN	104.9	83.0	998	976		
1977 005A	NATO III-3	9785	NATO	28 JAN	1436.2	7.0	35808	35770		
1977 005B		9786	US	28 JAN	104.0	28.0	1271	619		
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					

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1977 LAUNCHES (CONT.)										
1977 007A		9803	US	6 FEB	ELEMENTS NOT AVAILABLE					
1977 007C		9855	US	6 FEB	ELEMENTS NOT AVAILABLE					
1977 007D		9856	US	6 FEB	ELEMENTS NOT AVAILABLE					
1977 010A	MOLNIYA 2-17	9829	USSR	11 FEB	717.9	63.8	38717	1641		
1977 010E		9850	USSR	11 FEB	731.0	64.1	38753	2253		
1977 012A	TANSEI 3	9841	JAPAN	19 FEB	134.1	65.8	3800	802		
1977 012C		9843	JAPAN	19 FEB	134.1	65.7	3799	800		
1977 012E		9981	JAPAN	19 FEB	133.5	65.2	3748	799		
1977 012F		9982	JAPAN	19 FEB	133.6	65.9	3775	785		
1977 012G		9983	JAPAN	19 FEB	134.2	65.6	3801	809		
1977 012H		12857	JAPAN	19 FEB	134.1	66.3	3799	803		
1977 012J		13133	JAPAN	19 FEB	133.3	65.8	3728	802		
1977 012L		19314	JAPAN	19 FEB	133.6	65.4	3915	638		
1977 013A	COSMOS 894	9846	USSR	21 FEB	104.8	82.9	1009	963		
1977 013B		9848	USSR	21 FEB	104.7	82.9	993	968		
1977 014A	KIKU 2	9852	JAPAN	23 FEB	1436.1	8.0	35790	35783		
1977 014B		9859	JAPAN	23 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1977 015A	COSMOS 895	9853	USSR	26 FEB	95.2	81.2	539	521		
1977 015B		9854	USSR	26 FEB	95.7	81.2	598	510		
1977 018A	PALAPA 2	9862	INDNSA	10 MAR	1436.2	10.1	35805	35773		
1977 021A	MOLNIYA 1-36	9880	USSR	24 MAR	717.8	63.8	38894	1463		
1977 021D		9927	USSR	24 MAR	732.8	64.1	38992	2101		
1977 024A	METEOR	9903	USSR	5 APR	102.3	81.3	889	846		
1977 024B		9904	USSR	5 APR	102.4	81.3	913	833		
1977 024C		9907	USSR	5 APR	103.4	82.9	940	893		
1977 027A	COSMOS 903	9911	USSR	11 APR	717.8	67.5	36511	3842		
1977 027D		9921	USSR	11 APR	723.9	67.7	37106	3552		
1977 027E		10946	USSR	11 APR	CURRENT ELEMENTS NOT MAINTAINED					
1977 029A	ESA-GEOS	9931	ESA	20 APR	734.1	27.7	38361	2796		
1977 029C		9933	US	20 APR	106.9	25.9	1947	217		
1977 032A	MOLNIYA 3-7	9941	USSR	28 APR	717.9	63.8	38863	1496		
1977 034A		10000	US	12 MAY	1489.6	8.5	36912	36741		
1977 034B		10001	US	12 MAY	1437.0	8.1	35817	35792		
1977 034C		10002	US	12 MAY	1506.9	8.7	38391	35932		
1977 036A	COSMOS 909	10010	USSR	19 MAY	117.0	65.9	2111	981		
1977 036B		10011	USSR	19 MAY	116.9	65.9	2101	979		
1977 036C		10013	USSR	19 MAY	117.0	65.9	2111	981		
1977 038A		10016	US	23 MAY	ELEMENTS NOT AVAILABLE					
1977 038B		10017	US	23 MAY	ELEMENTS NOT AVAILABLE					
1977 038C		15422	US	23 MAY	ELEMENTS NOT AVAILABLE					
1977 039A	COSMOS 911	10019	USSR	25 MAY	104.7	82.9	998	963		
1977 039D		10020	USSR	25 MAY	104.5	82.9	996	949		
1977 041A	INTELSAT 4A F-4	10024	ITSO	26 MAY	1436.2	3.9	35793	35781		
1977 041B		10025	US	26 MAY	648.5	21.6	36306	574		
1977 044A	DMSP-F2	10033	US	5 JUN	ELEMENTS NOT AVAILABLE					
1977 044B		10034	US	5 JUN	ELEMENTS NOT AVAILABLE					
1977 044C		10037	US	5 JUN	ELEMENTS NOT AVAILABLE					
1977 044D		10085	US	5 JUN	ELEMENTS NOT AVAILABLE					
1977 047A	COSMOS 917	10059	USSR	16 JUN	716.7	67.6	34423	5879		
1977 047D		10089	USSR	16 JUN	722.4	67.5	35069	5513		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1977 LAUNCHES (CONT.)										
1977 048A	GOES 2	10061	US	16 JUN	1436.0	7.2	35813	35756		
1977 048B		10062	US	16 JUN	108.6	28.4	1746	576		
1977 048F		10409	US	16 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1977 053A		10091	US	23 JUN	718.1	64.7	20313	20057		
1977 053B		10960	US	23 JUN	314.4	64.4	16801	1072		
1977 054A	MOLNIYA 1-37	10092	USSR	24 JUN	717.9	63.0	38924	1435		
1977 054D		10155	USSR	24 JUN	695.3	63.5	37601	1640		
1977 055A	COSMOS 921	10095	USSR	24 JUN	97.4	75.8	670	599		
1977 055B		10096	USSR	24 JUN	97.4	75.8	672	598		
1977 057A	METEOR	10113	USSR	29 JUN	95.5	97.4	569	520		
1977 057B		10114	USSR	29 JUN	96.8	97.7	619	594		
1977 059A	COSMOS 923	10120	USSR	1 JUL	100.8	74.0	804	786		
1977 059B		10121	USSR	1 JUL	100.6	74.0	802	773		
1977 059C		14802	USSR	1 JUL	100.5	74.1	793	774		
1977 059D		14818	USSR	1 JUL	100.3	74.1	780	760		
1977 061A	COSMOS 925	10134	USSR	7 JUL	95.4	81.2	546	531		
1977 061B		10135	USSR	7 JUL	95.8	81.2	593	524		
1977 062A	COSMOS 926	10137	USSR	8 JUL	105.0	82.9	1017	967		
1977 062B		10138	USSR	8 JUL	104.9	82.9	1004	970		
1977 064A	COSMOS 928	10141	USSR	13 JUL	104.6	83.0	1004	949		
1977 064B		10142	USSR	13 JUL	104.5	83.0	1001	940		
1977 065A	HIMAWARI	10143	JAPAN	14 JUL	1436.0	7.1	36139	35432		
1977 065B	65GC		US	14 JUL	SEE NOTE	25*				25*
1977 068A	COSMOS 931	10150	USSR	20 JUL	717.7	67.5	35648	4704		
1977 068D		10167	USSR	20 JUL	710.2	68.2	35235	4743		
1977 068E		12906	USSR	20 JUL	715.6	68.1	35502	4742		
1977 068F		12996	USSR	20 JUL	704.4	61.8	38095	1596		
1977 068G		14000	USSR	20 JUL	718.6	65.7	36856	3540		
1977 068J		19881	USSR	20 JUL	685.9	61.0	37593	1175		
1977 071A	RADUGA 3	10159	USSR	23 JUL	1437.2	9.3	35839	35778		
1977 071F		11570	USSR	23 JUL	1473.3	9.6	36561	36463		
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 079A	COSMOS 939	10282	USSR	24 AUG	114.8	74.0	1460	1430		
1977 079B	COSMOS 940	10286	USSR	24 AUG	114.4	74.0	1460	1392		
1977 079C	COSMOS 941	10287	USSR	24 AUG	114.6	74.0	1460	1411		
1977 079D	COSMOS 942	10288	USSR	24 AUG	115.9	74.0	1531	1460		
1977 079E	COSMOS 943	10289	USSR	24 AUG	115.0	74.0	1460	1448		
1977 079F	COSMOS 944	10290	USSR	24 AUG	115.2	74.0	1469	1459		
1977 079G	COSMOS 945	10291	USSR	24 AUG	115.4	74.0	1489	1460		
1977 079H	COSMOS 946	10292	USSR	24 AUG	115.6	74.0	1508	1460		
1977 079J		10293	USSR	24 AUG	117.5	74.0	1676	1460		
1977 080A	SIRIO	10294	ITALY	25 AUG	1436.5	5.9	35862	35728		
1977 080B		10295	US	25 AUG	115.5	27.1	2083	875		
1977 082A	MOLNIYA 1-36	10315	USSR	30 AUG	683.1	62.9	38335	294		
1977 082E		10369	USSR	30 AUG	634.4	63.9	35919	238		
1977 084A	VOYAGER 1	10321	US	5 SEP	HELIOCENTRIC ORBIT					
1977 084B		10322	US	5 SEP	HELIOCENTRIC ORBIT					
1977 084C		10323	US	5 SEP	HELIOCENTRIC ORBIT					

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1977 LAUNCHES (CONT.)										
1977 087A	COSMOS 951	10352	USSR	13 SEP	104.8	83.0	1010	960		
1977 087B		10355	USSR	13 SEP	104.7	83.0	1005	955		
1977 088A	COSMOS 952	10358	USSR	16 SEP	104.1	64.9	990	912		
1977 091A	COSMOS 955	10362	USSR	20 SEP	96.2	81.2	577	571		
1977 091B		10363	USSR	20 SEP	96.2	81.2	612	540		
1977 092A	EKRAN	10365	USSR	20 SEP	1436.6	9.2	35967	35624		
1977 092G		11571	USSR	20 SEP	1421.8	9.1	35547	35463		
1977 093A	PROGNOZ 6	10370	USSR	22 SEP	ELEMENTS NOT AVAILABLE					
1977 102D		10425	US	22 OCT	CURRENT ELEMENTS NOT MAINTAINED					
1977 105A	MOLNIYA 3-8	10455	USSR	28 OCT	717.6	63.5	38330	2013		
1977 105E		10485	USSR	28 OCT	731.6	63.7	38859	2172		
1977 106A	NNSS 30110	10457	US	28 OCT	106.8	89.7	1100	1059		
1977 106B		10462	US	28 OCT	106.9	89.7	1101	1061		
1977 106C		12858	US	28 OCT	106.9	89.5	1100	1066		
1977 107A	COSMOS 962	10459	USSR	28 OCT	104.8	83.0	1004	962		
1977 107B		10461	USSR	28 OCT	104.6	82.9	1000	953		
1977 108A	METEOSAT 1	10489	ESA	23 NOV	1434.7	8.4	35798	35720		
1977 108B		10490	US	23 NOV	115.8	28.3	2490	492		
1977 108C		10950	US	23 NOV	201.3	27.1	9812	184		
1977 109A	COSMOS 963	10491	USSR	24 NOV	109.2	82.9	1205	1175		
1977 109B		10492	USSR	24 NOV	109.1	82.9	1200	1170		
1977 112A		10502	US	8 DEC	ELEMENTS NOT AVAILABLE					
1977 112B		10504	US	8 DEC	ELEMENTS NOT AVAILABLE					
1977 112C		10528	US	8 DEC	ELEMENTS NOT AVAILABLE					
1977 112D		10529	US	8 DEC	ELEMENTS NOT AVAILABLE					
1977 112E		10544	US	8 DEC	ELEMENTS NOT AVAILABLE					
1977 112F		10594	US	8 DEC	ELEMENTS NOT AVAILABLE					
1977 112G		10595	US	8 DEC	ELEMENTS NOT AVAILABLE					
1977 112H		12859	US	8 DEC	ELEMENTS NOT AVAILABLE					
1977 114A		10508	US	11 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1977 114B		10509	US	11 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1977 116A	COSMOS 967	10512	USSR	13 DEC	104.7	65.8	992	970		
1977 116B		10513	USSR	13 DEC	104.5	65.8	986	957		
1977 116C		10518	USSR	13 DEC	104.7	65.8	987	968		
1977 116D		10526	USSR	13 DEC	104.8	65.8	1005	968		
1977 117A	METEOR 2-3	10514	USSR	14 DEC	102.2	81.2	875	852		
1977 117B		10515	USSR	14 DEC	102.3	81.2	900	834		
1977 117C		14950	USSR	14 DEC	102.3	81.2	900	834		
1977 118A	SAKURA	10516	JAPAN	15 DEC	1455.8	6.7	36182	36161		
1977 118B		10517	US	15 DEC	110.0	28.7	1967	484		
1977 118C		10519	US	15 DEC	110.2	29.1	1931	543		
1977 119A	COSMOS 968	10520	USSR	16 DEC	100.5	74.0	796	769		
1977 119B		10521	USSR	16 DEC	100.3	74.0	790	757		
1977 119C		10524	USSR	16 DEC	100.5	74.0	795	764		
1977 119D		10525	USSR	16 DEC	100.5	74.0	799	765		
1977 119E		18512	USSR	16 DEC	100.3	74.0	782	765		
1977 121A	COSMOS 970	10531	USSR	21 DEC	105.9	65.9	1150	922		
1977 121B - 121BW			USSR	21 DEC	SEE NOTE 26*					26*
1977 121BW		20032	USSR	21 DEC	109.0	65.7	1790	567		
1977 122A	COSMOS 971	10536	USSR	23 DEC	104.9	82.9	1005	972		

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1977 LAUNCHES (CONT.)										
1977 122B		10537	USSR	23 DEC	104.7	82.9	997	965		
1977 123A	COSMOS 972	10539	USSR	27 DEC	103.7	75.8	1160	710		
1977 123B		10541	USSR	27 DEC	103.7	75.8	1157	710		
1978 LAUNCHES										
1978 002A	INTELSAT 4A F-3	10557	ITSO	7 JAN	1441.5	3.4	35896	35886		
1978 002B		10722	US	17 JAN	650.5	21.5	36350	630		
1978 004A	COSMOS 975	10561	USSR	10 JAN	96.3	81.2	588	577		
1978 004B		10582	USSR	10 JAN	96.5	81.2	631	556		
1978 005A	COSMOS 976	10581	USSR	10 JAN	115.1	74.0	1462	1453		
1978 005B	COSMOS 977	10584	USSR	10 JAN	114.4	74.0	1462	1397		
1978 005C	COSMOS 978	10585	USSR	10 JAN	114.7	74.0	1462	1416		
1978 005D	COSMOS 979	10586	USSR	10 JAN	114.9	74.0	1462	1435		
1978 005E	COSMOS 980	10587	USSR	10 JAN	115.3	74.0	1474	1461		
1978 005F	COSMOS 981	10588	USSR	10 JAN	115.5	74.0	1494	1462		
1978 005G	COSMOS 982	10589	USSR	10 JAN	115.7	74.0	1513	1461		
1978 005H	COSMOS 983	10590	USSR	10 JAN	116.0	74.0	1535	1462		
1978 005J		10591	USSR	10 JAN	117.7	74.0	1691	1461		
1978 007A	COSMOS 985	10599	USSR	17 JAN	104.5	82.9	1015	938		
1978 007B		10600	USSR	17 JAN	104.5	82.9	1008	936		
1978 009A	MOLNIYA 3-9	10605	USSR	24 JAN	690.1	63.6	38824	155		
1978 009E		10802	USSR	24 JAN	731.1	64.2	40752	259		
1978 012A	IUE	10637	US	26 JAN	1436.2	31.8	42391	29185		
1978 012C		10723	US	26 JAN	628.2	29.8	35555	284		
1978 014A	KYOKKO	10664	JAPAN	4 FEB	134.1	65.4	3953	645		
1978 014C		12329	JAPAN	4 FEB	133.9	65.3	3935	649		
1978 014D		12330	JAPAN	4 FEB	134.1	65.4	3960	641		
1978 014E		12331	JAPAN	4 FEB	133.0	64.8	3877	627		
1978 014F		12406	JAPAN	4 FEB	133.5	65.9	3901	647		
1978 016A	FLTSATCOM 1	10669	US	9 FEB	1436.0	7.5	35793	35775		
1978 016C		12903	US	9 FEB	223.8	26.5	11420	244		
1978 018A	UME 2	10674	JAPAN	16 FEB	107.2	69.4	1217	973		
1978 018B		10675	JAPAN	16 FEB	107.1	69.4	1213	973		
1978 018C		13132	JAPAN	16 FEB	107.9	69.2	1287	971		
1978 019A	COSMOS 990	10676	USSR	17 FEB	100.5	74.0	795	770		
1978 019B		10677	USSR	17 FEB	100.4	74.0	787	763		
1978 019C		14803	USSR	17 FEB	100.0	74.1	762	751		
1978 019D		13500	USSR	17 FEB	100.5	74.1	793	771		
1978 019E		18501	USSR	17 FEB	100.5	74.1	797	771		
1978 020A		10684	US	22 FEB	718.0	63.6	20470	19893		
1978 020B		10801	US	22 FEB	268.4	53.8	14167	644		
1978 020C		18598	US	22 FEB	291.2	63.4	12942	673		
1978 021A		10688	US	25 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1978 021B		10689	US	25 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1978 022A	COSMOS 991	10692	USSR	28 FEB	104.7	83.0	1004	952		
1978 022B		10693	USSR	28 FEB	104.6	83.0	989	959		
1978 024A	MOLNIYA 1-35	10696	USSR	2 MAR	717.9	62.4	39810	549		
1978 024B		10803	USSR	2 MAR	729.2	62.8	40398	516		
1978 026A	LANDSAT 3	10702	US	5 MAR	103.1	98.8	918	895		

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1978 LAUNCHES (CONT.)										
1978 025B	AMSAT-OSCAR-8	10703	US	5 MAR	103.0	99.0	906	896		
1978 025C - 025HT			US	5 MAR	SEE NOTE	27*				27*
1978 025HS		20029	USSR	5 MAR	101.5	98.6	886	768		
1978 028A	COSMOS 994	10731	USSR	15 MAR	104.9	82.9	1006	970		
1978 028B		10732	USSR	15 MAR	104.7	82.9	995	968		
1978 029B		10734	US	16 MAR	ELEMENTS NOT AVAILABLE					
1978 031A	COSMOS 995	10744	USSR	28 MAR	104.6	82.9	1005	949		
1978 031B		10745	USSR	28 MAR	104.5	82.9	996	946		
1978 034A	COSMOS 1000	10776	USSR	31 MAR	104.7	82.9	1008	955		
1978 034B		10777	USSR	31 MAR	104.6	82.9	995	955		
1978 035A	INTELSAT 4A F-5	10778	ITSO	31 MAR	1437.6	1.7	35860	35769		
1978 035B		10779	US	31 MAR	648.4	22.0	36248	626		
1978 038A		10787	US	7 APR	CURRENT ELEMENTS NOT MAINTAINED					
1978 038B		10788	US	7 APR	CURRENT ELEMENTS NOT MAINTAINED					
1978 039A	YURI	10792	JAPAN	7 APR	1433.7	4.5	37702	33775		
1978 039B		10793	US	7 APR	111.1	28.2	1984	573		
1978 039C		10794	US	7 APR	236.0	26.9	12275	271		
1978 042A		10820	US	1 MAY	101.0	98.6	810	798		
1978 042B		10853	US	1 MAY	98.9	98.3	711	704		
1978 042C		10854	US	1 MAY	99.1	98.3	718	711		
1978 044A	OTS-2	10855	ESA	11 MAY	1436.3	5.5	35805	35776		
1978 044B		10856	US	11 MAY	139.9	28.0	3530	1569		
1978 044C		10857	US	11 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1978 045A	COSMOS 1003	10860	USSR	12 MAY	96.1	81.2	581	564		
1978 045B		10861	USSR	12 MAY	96.7	81.2	632	566		
1978 047A		10893	US	13 MAY	718.0	64.5	20591	19773		
1978 047B		10894	US	13 MAY	287.1	63.9	15342	735		
1978 051A	PIONEER VENUS ORBITER	10911	US	20 MAY	ELEMENTS NOT AVAILABLE					
1978 051B		10912	US	20 MAY	HELIOCENTRIC ORBIT					
1978 053A	COSMOS 1011	10917	USSR	23 MAY	104.7	82.9	1008	954		
1978 053B		10918	USSR	23 MAY	104.6	82.9	998	953		
1978 055A	MOLNIYA 1-40	10925	USSR	2 JUN	718.0	63.3	38613	1750		
1978 055B		10949	USSR	2 JUN	732.5	63.6	39337	1741		
1978 056A	COSMOS 1013	10930	USSR	7 JUN	116.3	74.0	1552	1476		
1978 056B	COSMOS 1014	10931	USSR	7 JUN	116.1	74.0	1529	1476		
1978 056C	COSMOS 1015	10932	USSR	7 JUN	115.8	74.0	1515	1471		
1978 056D	COSMOS 1016	10933	USSR	7 JUN	115.6	74.0	1496	1469		
1978 056E	COSMOS 1017	10934	USSR	7 JUN	115.4	74.0	1490	1456		
1978 056F	COSMOS 1018	10935	USSR	7 JUN	115.2	74.0	1486	1440		
1978 056G	COSMOS 1019	10936	USSR	7 JUN	115.0	74.0	1486	1422		
1978 056H	COSMOS 1020	10937	USSR	7 JUN	114.8	74.0	1482	1405		
1978 056J		10938	USSR	7 JUN	117.9	74.0	1690	1478		
1978 058A		10941	US	10 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1978 058B		10942	US	10 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1978 062A	GOES 3	10953	US	16 JUN	1436.2	6.1	35820	35756		
1978 062B		10954	US	16 JUN	107.7	28.4	1683	556		
1978 063A	COSMOS 1023	10961	USSR	21 JUN	100.5	74.1	793	770		
1978 063B		10962	USSR	21 JUN	100.3	74.1	788	758		
1978 063C		14804	USSR	21 JUN	99.5	74.0	744	723		

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1978 LAUNCHES (CONT.)										
1978 063D		13497	USSR	21 JUN	100.7	74.1	809	778		
1978 064A	SEASAT 1	10967	US	27 JUN	100.3	108.0	775	772		
1978 066A	COSMOS 1024	10970	USSR	28 JUN	718.2	68.9	35082	5290		
1978 066D		10998	USSR	28 JUN	720.1	68.0	35319	5148		
1978 067A	COSMOS 1025	10973	USSR	28 JUN	96.8	82.5	617	591		
1978 067B		10974	USSR	28 JUN	97.4	82.5	646	618		
1978 068A	CONSTAR 3	10975	US	29 JUN	1451.7	3.2	36175	36006		
1978 068B		10976	US	29 JUN	649.2	21.1	36331	583		
1978 071A	ESA GEOS 2	10981	ESA	14 JUL	1449.1	8.3	36059	36020		
1978 071C		10983	US	14 JUL	471.5	25.5	27147	230		
1978 072A	MOLNIYA 1-41	10984	USSR	14 JUL	693.3	62.6	38924	218		
1978 072D		11073	USSR	14 JUL	715.8	63.3	40079	178		
1978 073A	RADUGA 4	10987	USSR	18 JUL	1436.3	8.7	35845	35753		
1978 073D		11074	USSR	18 JUL	506.0	46.6	31966	606		
1978 073E		11941	USSR	18 JUL	1475.9	9.0	36633	36491		
1978 074A	COSMOS 1027	10991	USSR	27 JUL	104.5	82.9	997	958		
1978 074B		10992	USSR	27 JUL	104.5	82.9	987	960		
1978 075A		10993	US	5 AUG	ELEMENTS NOT AVAILABLE					
1978 075B		10994	US	5 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1978 078C		11003	US	8 AUG	HELIOCENTRIC ORBIT					
1978 079A	ICE	11004	US	12 AUG	HELIOCENTRIC ORBIT					
1978 079C		11006	US	12 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1978 079D		13413	US	12 AUG	ELEMENTS NOT AVAILABLE					
1978 080A	MOLNIYA 1-42	11007	USSR	22 AUG	717.8	64.0	38834	1522		
1978 080D		11075	USSR	22 AUG	732.3	64.3	39069	2001		
1978 083A	COSMOS 1030	11015	USSR	6 SEP	718.4	67.7	36418	3964		
1978 083D		11076	USSR	6 SEP	723.6	66.0	36934	3708		
1978 083E		12907	USSR	6 SEP	711.4	64.0	36813	3227		
1978 083F		12919	USSR	6 SEP	719.5	64.0	37421	3020		
1978 083G		13959	USSR	6 SEP	721.7	63.7	37601	2948		
1978 084A	VENERA 11	11020	USSR	9 SEP	HELIOCENTRIC ORBIT					
1978 085A	VENERA 12	11025	USSR	14 SEP	HELIOCENTRIC ORBIT					
1978 087A	JIKI*KEN	11027	JAPAN	16 SEP	405.4	31.2	23278	253		
1978 087B		11028	JAPAN	16 SEP	380.3	31.3	21768	250		
1978 091A	COSMOS 1034	11042	USSR	4 OCT	114.9	74.0	1479	1420		
1978 091B	COSMOS 1035	11044	USSR	4 OCT	114.5	74.0	1478	1400		
1978 091C	COSMOS 1036	11045	USSR	4 OCT	115.1	74.0	1478	1440		
1978 091D	COSMOS 1037	11046	USSR	4 OCT	115.3	74.0	1480	1459		
1978 091E	COSMOS 1038	11047	USSR	4 OCT	115.5	74.0	1485	1475		
1978 091F	COSMOS 1039	11048	USSR	4 OCT	116.3	74.0	1550	1476		
1978 091G	COSMOS 1040	11049	USSR	4 OCT	116.0	74.0	1525	1477		
1978 091H	COSMOS 1041	11050	USSR	4 OCT	115.8	74.0	1506	1475		
1978 091J		11051	USSR	4 OCT	118.0	74.0	1697	1480		
1978 093A		11054	US	7 OCT	718.0	64.1	20327	20036		
1978 093B		11078	US	7 OCT	226.0	63.1	11616	210		
1978 094A	COSMOS 1043	11055	USSR	10 OCT	95.8	81.2	563	555		
1978 094B		11056	USSR	10 OCT	96.1	81.2	609	536		
1978 095A	MOLNIYA 3-10	11057	USSR	13 OCT	717.7	63.1	39063	1285		
1978 095E		11079	USSR	13 OCT	734.2	63.3	40062	1101		
1978 096A	TIROS-N	11060	US	13 OCT	101.8	98.9	851	833		

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1978 LAUNCHES (CONT.)										
1978 096B		11061	US	13 OCT	100.9	98.9	803	800		
1978 096C		11062	US	13 OCT	100.9	98.9	803	798		
1978 098A	NIMBUS 7	11080	US	24 OCT	104.0	99.2	956	942		
1978 098B	CAMEO	11081	US	24 OCT	104.0	99.4	969	925		
1978 100A	COSMOS 1045	11084	USSR	26 OCT	120.3	82.5	1703	1682		
1978 100B	RADIO 1	11085	USSR	26 OCT	120.3	82.5	1704	1684		
1978 100C	RADIO 2	11086	USSR	26 OCT	120.3	82.5	1703	1683		
1978 100D		11087	USSR	26 OCT	120.2	82.5	1698	1684		
1978 100D	100AJ		USSR	26 OCT	SEE NOTE		49*			49*
1978 105A	COSMOS 1048	11111	USSR	16 NOV	100.6	74.0	803	773		
1978 105B		11112	USSR	16 NOV	100.5	74.0	812	755		
1978 105C		11113	USSR	16 NOV	100.4	74.0	785	771		
1978 105D		11114	USSR	16 NOV	100.2	74.0	779	761		
1978 106A	NATO III-C	11115	NATO	19 NOV	1436.2	4.1	35792	35783		
1978 109A	COSMOS 1051	11128	USSR	5 DEC	114.6	74.0	1483	1393		
1978 109B	COSMOS 1052	11129	USSR	5 DEC	114.8	74.0	1486	1409		
1978 109C	COSMOS 1053	11130	USSR	5 DEC	115.0	74.0	1486	1427		
1978 109D	COSMOS 1054	11131	USSR	5 DEC	115.2	74.0	1487	1444		
1978 109E	COSMOS 1055	11132	USSR	5 DEC	115.5	74.0	1489	1462		
1978 109F	COSMOS 1056	11133	USSR	5 DEC	115.7	74.0	1501	1470		
1978 109G	COSMOS 1057	11134	USSR	5 DEC	115.9	74.0	1514	1478		
1978 109H	COSMOS 1058	11135	USSR	5 DEC	116.1	74.0	1536	1478		
1978 109J		11136	USSR	5 DEC	118.1	74.0	1706	1482		
1978 112A		11141	US	11 DEC	717.9	63.6	20334	20027		
1978 112B		11142	US	11 DEC	270.1	63.6	14410	515		
1978 113A		11144	US	14 DEC	1436.4	6.0	35801	35784		
1978 113B		11145	US	14 DEC	1436.1	5.9	35792	35779		
1978 113D		11147	US	14 DEC	1339.2	3.9	35596	32137		
1978 116A	ANIK 31	11153	CANADA	16 DEC	1442.6	2.7	35920	35906		
1978 117A	COSMOS 1063	11155	USSR	19 DEC	96.3	81.2	580	578		
1978 117B		11156	USSR	19 DEC	96.3	81.2	621	539		
1978 118A	GORIZONT 1	11158	USSR	19 DEC	1436.7	17.9	50257	21337		
1978 118C		11926	USSR	19 DEC	1417.4	17.8	49540	21300		
1978 119A	COSMOS 1064	11161	USSR	20 DEC	92.6	82.9	467	333		
1978 121A	COSMOS 1066	11165	USSR	23 DEC	102.1	81.2	893	822		
1978 121B		11166	USSR	23 DEC	102.0	81.2	900	801		
1978 121C		19643	USSR	23 DEC	101.9	81.2	899	802		
1978 122A	COSMOS 1067	11168	USSR	26 DEC	109.0	83.0	1208	1156		
1978 122B		11170	USSR	26 DEC	108.9	83.0	1194	1157		
1979 LAUNCHES										
1979 003A	COSMOS 1072	11238	USSR	16 JAN	104.8	82.9	1013	957		
1979 003B		11239	USSR	16 JAN	104.7	82.9	1012	949		
1979 004A	MOLNIYA 3-11	11240	USSR	18 JAN	717.7	64.0	38101	2248		
1979 004D		11553	USSR	18 JAN	732.9	64.2	38626	2472		
1979 005A	METEOR 1-29	11251	USSR	25 JAN	96.8	97.6	636	574		
1979 005B		11252	USSR	25 JAN	96.0	97.5	576	561		
1979 007A	SCATHA	11255	US	30 JAN	1415.7	6.5	42296	28475		
1979 009A	AYAME 1	11261	JAPAN	6 FEB	1312.5	1.2	37036	29626		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1979 LAUNCHES (CONT.)										
1979 011A	COSMOS 1076	11256	USSR	12 FEB	96.5	82.5	605	579		
1979 011B		11257	USSR	12 FEB	97.3	82.5	644	615		
1979 012A	COSMOS 1077	11268	USSR	13 FEB	96.1	81.2	572	567		
1979 012B		11269	USSR	13 FEB	96.2	81.2	614	534		
1979 015A	EKRAN 3	11273	USSR	21 FEB	1422.7	8.7	37669	33379		
1979 015B		13900	USSR	21 FEB	1421.0	8.3	35530	35449		
1979 017A	SOLWIND	11276	US	24 FEB	94.7	97.9	521	489		
1979 017A -	017EZ		US	24 FEB	SEE NOTE		37*			37*
1979 020A	INTERCOSMOS 19	11285	USSR	27 FEB	97.9	74.0	840	477		
1979 020B		11286	USSR	27 FEB	98.0	74.0	856	474		
1979 021A	METEOR 2-4	11288	USSR	1 MAR	102.1	81.2	875	838		
1979 021B		11289	USSR	1 MAR	102.1	81.2	915	801		
1979 021C		11290	USSR	1 MAR	102.1	81.2	892	826		
1979 021D		14632	USSR	1 MAR	102.9	81.3	932	855		
1979 024A	COSMOS 1081	11296	USSR	15 MAR	114.5	74.0	1463	1402		
1979 024B	COSMOS 1082	11297	USSR	15 MAR	114.7	74.0	1463	1421		
1979 024C	COSMOS 1083	11298	USSR	15 MAR	114.9	74.0	1463	1440		
1979 024D	COSMOS 1084	11299	USSR	15 MAR	115.1	74.0	1462	1459		
1979 024E	COSMOS 1085	11300	USSR	15 MAR	115.5	74.0	1502	1463		
1979 024F	COSMOS 1086	11301	USSR	15 MAR	115.4	74.0	1480	1463		
1979 024G	COSMOS 1087	11302	USSR	15 MAR	115.8	74.0	1522	1464		
1979 024H	COSMOS 1088	11303	USSR	15 MAR	116.1	74.0	1545	1463		
1979 024J		11304	USSR	15 MAR	117.5	74.0	1683	1458		
1979 025B		11306	US	16 MAR	ELEMENTS NOT AVAILABLE					
1979 025A	COSMOS 1089	11308	USSR	21 MAR	104.7	83.0	997	966		
1979 026B		11309	USSR	21 MAR	104.5	83.0	989	963		
1979 028A	COSMOS 1091	11320	USSR	7 APR	104.8	82.9	1006	961		
1979 028B		11321	USSR	7 APR	104.7	82.9	991	965		
1979 030A	COSMOS 1092	11326	USSR	11 APR	104.7	82.9	1003	960		
1979 030B		11327	USSR	11 APR	104.6	82.9	999	955		
1979 031A	MOLNIYA 1-43	11328	USSR	12 APR	713.4	64.0	39936	199		
1979 031D		11561	USSR	12 APR	731.8	64.6	40724	322		
1979 032A	COSMOS 1093	11331	USSR	14 APR	96.0	81.2	570	559		
1979 032B		11332	USSR	14 APR	96.5	81.3	636	547		
1979 035A	RADUGA 5	11343	USSR	25 APR	1436.2	8.3	35798	35779		
1979 035E		17873	USSR	25 APR	1437.4	8.3	35929	35695		
1979 038A	FLTSATCOM 2	11353	US	4 MAY	1436.1	6.1	35848	35723		
1979 045A	COSMOS 1104	11378	USSR	31 MAY	104.7	82.9	1005	954		
1979 045B		11379	USSR	31 MAY	104.6	82.9	992	958		
1979 047A	UK 6	11382	UK	2 JUN	94.7	55.0	518	486		
1979 048A	MOLNIYA 3-12	11384	USSR	5 JUN	717.5	63.8	40050	290		
1979 048B		11554	USSR	5 JUN	237.4	65.0	12507	136		
1979 050A		11389	US	6 JUN	ELEMENTS NOT AVAILABLE					
1979 050B		11402	US	6 JUN	ELEMENTS NOT AVAILABLE					
1979 050C		11405	US	6 JUN	ELEMENTS NOT AVAILABLE					
1979 050D		11410	US	6 JUN	ELEMENTS NOT AVAILABLE					
1979 050G		11534	US	6 JUN	ELEMENTS NOT AVAILABLE					
1979 053A		11397	US	10 JUN	ELEMENTS NOT AVAILABLE					
1979 053C		11436	US	10 JUN	ELEMENTS NOT AVAILABLE					
1979 057A	NOAA 6	11416	US	27 JUN	100.9	98.5	812	793		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1979 LAUNCHES (CONT.)										
1979 057B		11419	US	27 JUN	100.2	98.4	771	765		
1979 057C		11634	US	27 JUN	100.1	98.4	765	761		
1979 058A	COSMOS 1109	11417	USSR	27 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1979 058D		11555	USSR	27 JUN	721.3	67.4	37218	3333		
1979 058E		12833	USSR	27 JUN	715.2	67.4	37025	3199		
1979 058F		12834	USSR	27 JUN	718.9	67.9	35991	4416		
1979 058G		12909	USSR	27 JUN	719.6	68.2	39114	1329		
1979 058H		12995	USSR	27 JUN	698.7	66.3	38251	1169		
1979 058J		13960	USSR	27 JUN	720.5	67.3	37953	2534		
1979 060A	COSMOS 1110	11425	USSR	28 JUN	100.7	74.0	801	781		
1979 060B		11427	USSR	28 JUN	100.5	74.0	799	768		
1979 060C		14866	USSR	28 JUN	100.1	74.1	766	760		
1979 060D		15764	USSR	28 JUN	100.4	74.0	784	774		
1979 062A	GORIZONT 2	11440	USSR	5 JUL	1435.7	7.8	35788	35767		
1979 062B		14005	USSR	5 JUL	1474.4	8.1	36565	36498		
1979 067A	COSMOS 1115	11457	USSR	20 JUL	95.4	81.2	556	522		
1979 067B		11458	USSR	20 JUL	96.0	81.2	603	530		
1979 070A	MOLNIYA 1-44	11474	USSR	31 JUL	717.8	63.9	38217	2137		
1979 070B		11556	USSR	31 JUL	733.1	64.2	38904	2202		
1979 072A	WESTAR 3	11484	US	10 AUG	1436.2	1.5	35792	35783		
1979 077A	COSMOS 1124	11509	USSR	28 AUG	717.0	68.2	36004	4311		
1979 077D		11550	USSR	28 AUG	723.8	68.3	36383	4266		
1979 077E		12814	USSR	28 AUG	612.5	63.3	33209	1813		
1979 077F		12815	USSR	28 AUG	708.7	64.3	36960	2947		
1979 077G		12816	USSR	28 AUG	686.5	63.6	36895	1904		
1979 077H		12817	USSR	28 AUG	720.6	63.3	37929	2564		
1979 078A	COSMOS 1125	11510	USSR	28 AUG	100.7	74.0	801	782		
1979 078B		11511	USSR	28 AUG	100.6	74.0	797	773		
1979 078C		14805	USSR	28 AUG	100.1	74.1	768	759		
1979 078D		14806	USSR	28 AUG	100.9	74.0	805	795		
1979 078E		18650	USSR	28 AUG	100.0	74.1	766	754		
1979 084A	COSMOS 1130	11538	USSR	25 SEP	114.6	74.0	1478	1395		
1979 084B	COSMOS 1131	11539	USSR	25 SEP	114.8	74.0	1480	1409		
1979 084C	COSMOS 1132	11540	USSR	25 SEP	114.9	74.0	1480	1424		
1979 084D	COSMOS 1133	11541	USSR	25 SEP	115.1	74.0	1481	1437		
1979 084E	COSMOS 1134	11542	USSR	25 SEP	115.3	74.0	1482	1452		
1979 084F	COSMOS 1135	11543	USSR	25 SEP	115.4	74.0	1490	1460		
1979 084G	COSMOS 1136	11544	USSR	25 SEP	228.9	64.0	11907	128		
1979 084H	COSMOS 1137	11545	USSR	25 SEP	115.8	74.0	1512	1470		
1979 084J		11546	USSR	25 SEP	117.3	74.0	1682	1480		
1979 086A		11553	US	1 OCT	ELEMENTS NOT AVAILABLE					
1979 086C		11560	US	1 OCT	ELEMENTS NOT AVAILABLE					
1979 087A	EKRAN 4	11561	USSR	3 OCT	1435.1	7.2	38435	33098		
1979 087C		17939	USSR	3 OCT	1435.7	7.7	35784	35773		
1979 089A	COSMOS 1140	11573	USSR	11 OCT	100.5	74.1	793	769		
1979 089B		11574	USSR	11 OCT	100.3	74.1	787	760		
1979 089C		14807	USSR	11 OCT	100.1	74.1	769	756		
1979 089D		14345	USSR	11 OCT	100.5	74.0	793	769		
1979 089E		19048	USSR	11 OCT	100.6	74.0	801	769		
1979 090A	COSMOS 1141	11585	USSR	16 OCT	104.6	82.9	998	953		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1979 LAUNCHES (CONT.)										
1979 090B		11586	USSR	16 OCT	104.5	82.9	990	947		
1979 090C		11587	USSR	16 OCT	103.3	82.9	934	893		
1979 091A	MOLNIYA 1-45	11589	USSR	20 OCT	717.7	64.0	39776	572		
1979 091D		11602	USSR	20 OCT	732.3	64.5	40376	692		
1979 093A	COSMOS 1143	11600	USSR	26 OCT	96.5	81.2	598	580		
1979 093B		11601	USSR	26 OCT	96.6	81.3	630	559		
1979 095A	METEOR 2-5	11605	USSR	31 OCT	102.4	81.2	881	863		
1979 095B		11608	USSR	31 OCT	102.5	81.2	917	834		
1979 098A		11621	US	21 NOV	1436.2	5.6	35790	35785		
1979 098B		11622	US	21 NOV	1436.0	5.6	35792	35777		
1979 098C		11623	US	21 NOV	1510.8	6.7	38519	35953		
1979 099A	COSMOS 1145	11629	USSR	27 NOV	96.2	81.2	579	569		
1979 099B		11630	USSR	27 NOV	95.4	81.2	628	545		
1979 101A	RCA SATCOM III	11635	US	7 DEC	758.9	10.1	35551	8257		
1979 104A	ARIANE V1	11645	ESA	24 DEC	259.1	17.8	14047	125		
1979 105A	GORIZONT 3	11648	USSR	28 DEC	1436.3	7.5	35799	35782		
1979 105E		11684	USSR	28 DEC	1459.3	7.6	36301	36176		
1980 LAUNCHES										
1980 002A	MOLNIYA 1-46	11662	USSR	11 JAN	717.8	64.0	39020	1337		
1980 002F		11670	USSR	11 JAN	732.6	64.3	39378	1707		
1980 003A	COSMOS 1150	11667	USSR	14 JAN	104.9	83.0	1012	962		
1980 003B		11658	USSR	14 JAN	104.7	82.9	998	963		
1980 004A	FLTSATCOM 3	11669	US	18 JAN	1436.1	5.6	35803	35767		
1980 004B		11719	US	18 JAN	150.9	25.9	5851	169		
1980 005A	COSMOS 1151	11671	USSR	23 JAN	97.1	82.5	631	603		
1980 005B		11672	USSR	23 JAN	97.4	82.5	646	618		
1980 007A	COSMOS 1153	11680	USSR	25 JAN	104.8	82.9	1015	958		
1980 007B		11681	USSR	25 JAN	104.7	82.9	1010	953		
1980 008A	COSMOS 1154	11682	USSR	30 JAN	96.6	81.2	598	593		
1980 008B		11683	USSR	30 JAN	96.7	81.2	643	559		
1980 011A		11690	US	9 FEB	718.0	64.0	20415	19949		
1980 011B		11705	US	9 FEB	290.0	63.6	15742	526		
1980 012A	COSMOS 1156	11691	USSR	11 FEB	114.5	74.0	1472	1396		
1980 012B	COSMOS 1157	11692	USSR	11 FEB	114.8	74.0	1475	1413		
1980 012C	COSMOS 1158	11693	USSR	11 FEB	115.0	74.0	1474	1431		
1980 012D	COSMOS 1159	11694	USSR	11 FEB	115.2	74.0	1476	1448		
1980 012E	COSMOS 1160	11695	USSR	11 FEB	115.4	74.0	1481	1463		
1980 012F	COSMOS 1161	11696	USSR	11 FEB	115.6	74.0	1500	1466		
1980 012G	COSMOS 1162	11697	USSR	11 FEB	115.8	74.0	1517	1470		
1980 012H	COSMOS 1163	11698	USSR	11 FEB	116.1	74.0	1541	1469		
1980 012J		11699	USSR	11 FEB	117.8	74.0	1692	1467		
1980 014A	SMM	11703	US	14 FEB	92.7	28.4	411	406		
1980 016A	RADUGA 6	11708	USSR	20 FEB	1436.4	7.6	35799	35787		
1980 016D		11728	USSR	20 FEB	1475.1	7.9	36589	36504		
1980 018A	AYAME 2	11715	JAPAN	22 FEB	1486.5	1.4	36839	32785		
1980 018C		11718	JAPAN	22 FEB	373.6	24.4	21367	244		
1980 019A		11720	US	3 MAR	ELEMENTS NOT AVAILABLE					
1980 019B		11721	US	3 MAR	ELEMENTS NOT AVAILABLE					

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1980 LAUNCHES (CONT.)										
1980 019C		11731	US	3 MAR	ELEMENTS NOT AVAILABLE					
1980 019D		11732	US	3 MAR	ELEMENTS NOT AVAILABLE					
1980 019E		11733	US	3 MAR	ELEMENTS NOT AVAILABLE					
1980 019F		11734	US	3 MAR	ELEMENTS NOT AVAILABLE					
1980 019G		11745	US	3 MAR	ELEMENTS NOT AVAILABLE					
1980 019H		11746	US	3 MAR	ELEMENTS NOT AVAILABLE					
1980 022A	COSMOS 1168	11735	USSR	17 MAR	104.8	82.9	1008	957		
1980 022B		11736	USSR	17 MAR	104.6	82.9	1002	953		
1980 022C		12404	USSR	17 MAR	103.8	82.9	963	914		
1980 026A	COSMOS 1171	11750	USSR	3 APR	104.8	65.8	995	976		
1980 026B		11751	USSR	3 APR	104.6	65.8	981	974		
1980 026C		11752	USSR	3 APR	104.8	65.8	994	974		
1980 028A	COSMOS 1172	11758	USSR	12 APR	716.6	66.2	36787	3509		
1980 028E		11762	USSR	12 APR	722.1	66.7	37363	3201		
1980 030A	COSMOS 1174	11765	USSR	18 APR	104.1	66.1	1522	378		
1980 030B - 030AY			USSR	18 APR	SEE NOTE		28*			28*
1980 032A		11783	US	26 APR	717.9	64.1	20548	19814		
1980 032B		11791	US	26 APR	247.5	63.3	13066	294		
1980 034A	COSMOS 1176	11788	USSR	29 APR	103.4	64.8	950	887		
1980 034D		11971	USSR	29 APR	103.1	64.8	936	872		
1980 037A	COSMOS 1179	11796	USSR	14 MAY	89.6	82.9	307	202		
1980 039A	COSMOS 1181	11803	USSR	20 MAY	104.8	82.9	1003	968		
1980 039B		11804	USSR	20 MAY	104.7	82.9	995	963		
1980 044A	COSMOS 1184	11821	USSR	4 JUN	96.5	81.2	600	580		
1980 044B		11822	USSR	4 JUN	96.9	81.3	645	572		
1980 049A	GORIZONT 4	11841	USSR	14 JUN	1460.1	7.2	36273	36236		
1980 049F		11862	USSR	14 JUN	1470.4	7.4	36584	36325		
1980 050A	COSMOS 1186	11844	USSR	14 JUN	717.7	67.4	36269	4078		
1980 050B		11847	USSR	14 JUN	722.8	67.4	36496	4107		
1980 051A	METEOR 1-30	11848	USSR	18 JUN	95.5	97.7	566	516		
1980 051B		11849	USSR	18 JUN	96.8	97.5	628	580		
1980 052C		11852	US	18 JUN	ELEMENTS NOT AVAILABLE					
1980 053A	MOLNIYA 1-47	11856	USSR	21 JUN	717.6	64.6	39731	613		
1980 053D		11861	USSR	21 JUN	733.1	64.9	40288	817		
1980 056A	COSMOS 1190	11869	USSR	1 JUL	100.7	74.0	796	783		
1980 056B		11870	USSR	1 JUL	100.6	74.1	797	772		
1980 056C		14808	USSR	1 JUL	101.1	74.0	828	796		
1980 056D		14809	USSR	1 JUL	101.0	74.0	816	792		
1980 057A	COSMOS 1191	11871	USSR	2 JUL	716.5	68.0	35919	4373		
1980 057D		11888	USSR	2 JUL	722.0	68.0	36327	4233		
1980 057E		13999	USSR	2 JUL	708.6	65.6	37648	2254		
1980 058A	COSMOS 1192	11875	USSR	9 JUL	114.5	74.0	1472	1394		
1980 058B	COSMOS 1193	11876	USSR	9 JUL	114.7	74.0	1473	1411		
1980 058C	COSMOS 1194	11877	USSR	9 JUL	114.9	74.0	1473	1429		
1980 058D	COSMOS 1195	11878	USSR	9 JUL	115.1	74.0	1473	1447		
1980 058E	COSMOS 1196	11879	USSR	9 JUL	115.3	74.0	1473	1466		
1980 058F	COSMOS 1197	11880	USSR	9 JUL	115.5	74.0	1490	1469		
1980 058G	COSMOS 1198	11881	USSR	9 JUL	115.7	74.0	1506	1471		
1980 058H	COSMOS 1199	11882	USSR	9 JUL	116.0	74.0	1529	1471		
1980 058J		11883	USSR	9 JUL	117.6	74.0	1680	1467		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1980 LAUNCHES (CONT.)										
1980 060A	EKRAN 5	11690	USSR	14 JUL	1438.4	9.6	69711	1953		
1980 060F		14193	USSR	14 JUL	1417.3	7.4	35486	35349		
1980 063A	MOLNIYA 3-13	11896	USSR	18 JUL	717.7	64.0	39485	864		
1980 063D		11909	USSR	18 JUL	732.5	64.2	40169	909		
1980 069A	COSMOS 1206	11932	USSR	15 AUG	96.5	81.2	594	588		
1980 069B		11933	USSR	15 AUG	96.3	81.2	645	563		
1980 073A	METEOR 2-5	11962	USSR	9 SEP	102.2	81.2	889	836		
1980 073B		11963	USSR	9 SEP	102.2	81.2	905	824		
1980 074A	GOES 4	11964	US	9 SEP	1446.3	4.8	36706	35364		
1980 074C		11970	US	9 SEP	2254.5	2.0	67235	33916		
1980 081A	RADUGA 7	12003	USSR	5 OCT	1436.5	7.3	35765	35747		
1980 081F		12447	USSR	5 OCT	1440.4	7.3	35894	35845		
1980 085A	COSMOS 1217	12032	USSR	24 OCT	716.5	67.2	36210	4078		
1980 085D		12035	USSR	24 OCT	721.3	67.4	36803	3749		
1980 087A	FLTSATCOM 4	12046	US	31 OCT	1436.2	5.4	35794	35781		
1980 087B		12059	US	31 OCT	211.1	26.1	10485	246		
1980 089A	COSMOS 1220	12054	USSR	4 NOV	98.8	65.0	833	570		
1980 089B - 089CG			USSR	4 NOV	SEE NOTE		29*			29*
1980 091A	SBS 1	12055	US	15 NOV	1436.1	1.3	35793	35780		
1980 092A	MOLNIYA 1-46	12056	USSR	16 NOV	714.1	64.4	39212	960		
1980 092D		12070	USSR	16 NOV	733.6	64.5	39760	1371		
1980 093A	COSMOS 1222	12071	USSR	21 NOV	96.7	81.2	601	598		
1980 093B		12072	USSR	21 NOV	96.7	81.2	645	559		
1980 095A	COSMOS 1223	12078	USSR	27 NOV	718.6	67.1	36269	4125		
1980 095E		12085	USSR	27 NOV	723.4	67.0	36759	3871		
1980 097A	COSMOS 1225	12087	USSR	5 DEC	104.8	82.9	1024	944		
1980 097B		12086	USSR	5 DEC	104.6	82.9	1012	941		
1980 098A	INTELSAT 5 F-2	12089	ITSO	6 DEC	1437.3	0.6	35819	35802		
1980 098B		12445	US	6 DEC	237.2	23.7	12334	296		
1980 099A	COSMOS 1226	12091	USSR	10 DEC	104.3	82.9	1008	960		
1980 099B		12092	USSR	10 DEC	104.5	82.9	998	955		
1980 100A		12093	US	13 DEC	ELEMENTS NOT AVAILABLE					
1980 100B		12094	US	13 DEC	ELEMENTS NOT AVAILABLE					
1980 102A	COSMOS 1228	12107	USSR	23 DEC	114.4	74.0	1462	1392		
1980 102B	COSMOS 1229	12108	USSR	23 DEC	114.6	74.0	1462	1413		
1980 102C	COSMOS 1230	12109	USSR	23 DEC	114.4	74.0	1462	1398		
1980 102D	COSMOS 1231	12110	USSR	23 DEC	114.5	74.0	1462	1404		
1980 102E	COSMOS 1232	12111	USSR	23 DEC	114.6	74.0	1462	1411		
1980 102F	COSMOS 1233	12112	USSR	23 DEC	114.7	74.0	1462	1417		
1980 102G	COSMOS 1234	12113	USSR	23 DEC	114.5	74.0	1462	1408		
1980 102H	COSMOS 1235	12114	USSR	23 DEC	114.6	74.0	1462	1412		
1980 102J		12115	USSR	23 DEC	114.9	74.0	1467	1436		
1980 103A	PROGNOZ 9	12116	USSR	25 DEC	5667.3	65.8	197364	978		
1980 104A	EKRAN 6	12120	USSR	26 DEC	1436.5	7.1	35819	35769		
1980 104E		12471	USSR	26 DEC	1421.0	7.1	35629	35352		
1981 LAUNCHES										
1981 002A	MOLNIYA 3-14	12133	USSR	9 JAN	717.8	64.0	38550	1806		
1981 002B		12134	USSR	9 JAN	732.2	64.3	39248	1814		

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1981 LAUNCHES (CONT.)										
1981 003A	COSMOS 1233	12136	USSR	16 JAN	107.6	83.0	1827	400		
1981 003B		12139	USSR	16 JAN	106.7	83.0	1754	396		
1981 006A	COSMOS 1241	12149	USSR	21 JAN	104.9	65.8	1008	974		
1981 006B		12150	USSR	21 JAN	104.7	65.8	1018	937		
1981 006C		12151	USSR	21 JAN	104.9	65.6	1005	971		
1981 008A	COSMOS 1242	12154	USSR	27 JAN	97.0	81.2	626	601		
1981 008B		12155	USSR	27 JAN	97.0	81.2	666	563		
1981 009A	MOLNIYA 1-49	12156	USSR	30 JAN	715.3	64.1	39023	1355		
1981 009B		12159	USSR	30 JAN	731.5	64.4	39685	1348		
1981 012A	KIKU 3	12295	JAPAN	11 FEB	475.2	28.5	27339	246		
1981 012C		12787	JAPAN	11 FEB	557.4	28.1	31798	316		
1981 013A	COSMOS 1244	12297	USSR	12 FEB	104.7	83.0	1006	958		
1981 013B		12298	USSR	12 FEB	104.6	82.9	1000	954		
1981 016A	COSMOS 1247	12303	USSR	19 FEB	711.1	67.9	36249	3773		
1981 016E		12311	USSR	19 FEB	703.5	67.7	35904	3744		
1981 016F		12984	USSR	19 FEB	710.5	67.8	36209	3786		
1981 016G		12985	USSR	19 FEB	710.1	65.4	37292	2682		
1981 016H		12992	USSR	19 FEB	706.6	65.8	38696	1106		
1981 017A	ASTRO A	12307	JAPAN	21 FEB	95.3	31.4	552	518		
1981 017B		12308	JAPAN	21 FEB	95.3	31.3	550	513		
1981 018A	COMSTAR 4	12309	US	21 FEB	1436.1	3.2	35790	35786		
1981 018B		12363	US	21 FEB	650.2	21.0	36353	613		
1981 021A	COSMOS 1249	12319	USSR	5 MAR	103.9	65.0	985	897		
1981 021C		12551	USSR	5 MAR	103.6	65.0	968	884		
1981 022A	COSMOS 1250	12320	USSR	6 MAR	114.4	74.0	1469	1388		
1981 022B	COSMOS 1251	12321	USSR	6 MAR	114.6	74.0	1471	1401		
1981 022C	COSMOS 1252	12322	USSR	6 MAR	114.7	74.0	1470	1415		
1981 022D	COSMOS 1253	12323	USSR	6 MAR	115.6	74.0	1494	1466		
1981 022E	COSMOS 1254	12324	USSR	6 MAR	114.9	74.0	1471	1429		
1981 022F	COSMOS 1255	12325	USSR	6 MAR	115.0	74.0	1470	1443		
1981 022G	COSMOS 1256	12326	USSR	6 MAR	115.2	74.0	1474	1454		
1981 022H	COSMOS 1257	12327	USSR	6 MAR	115.4	74.0	1477	1466		
1981 022J		12328	USSR	6 MAR	117.6	74.0	1694	1454		
1981 025A		12339	US	16 MAR	ELEMENTS NOT AVAILABLE					
1981 025C		12371	US	16 MAR	ELEMENTS NOT AVAILABLE					
1981 027A	RADUGA 6	12351	USSR	18 MAR	1434.3	7.1	36093	35410		
1981 027F		14194	USSR	18 MAR	1474.5	7.3	36612	36457		
1981 028B - 028W			USSR	20 MAR	SEE NOTE		30*			30*
1981 030A	MOLNIYA 3-15	12368	USSR	24 MAR	717.8	64.9	38686	1668		
1981 030B		12383	USSR	24 MAR	732.7	65.1	39096	1991		
1981 031A	COSMOS 1261	12376	USSR	31 MAR	716.7	67.8	36693	3606		
1981 031B		12384	USSR	31 MAR	707.5	67.7	36159	3687		
1981 031E		12892	USSR	31 MAR	719.5	67.4	36594	3845		
1981 031F		12893	USSR	31 MAR	716.1	64.2	37401	2868		
1981 031G		12894	USSR	31 MAR	718.4	65.3	37210	3174		
1981 033A	COSMOS 1263	12388	USSR	9 APR	107.5	83.0	1826	391		
1981 033B		12389	USSR	9 APR	106.3	83.0	1728	379		
1981 036E		12427	USSR	16 APR	103.1	99.0	1032	774		
1981 037A	COSMOS 1266	12409	USSR	21 APR	103.6	64.8	951	904		
1981 037B		12435	USSR	21 APR	103.4	64.8	928	906		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1981 LAUNCHES (CONT.)										
1981 038A		12418	US	24 APR	ELEMENTS NOT AVAILABLE					
1981 038B		12446	US	24 APR	ELEMENTS NOT AVAILABLE					
1981 041A	COSMOS 1269	12442	USSR	7 MAY	100.8	74.1	801	787		
1981 041B		12443	USSR	7 MAY	100.7	74.1	792	788		
1981 041C		13498	USSR	7 MAY	100.7	74.0	801	777		
1981 041D		14346	USSR	7 MAY	100.3	74.1	783	762		
1981 043A	METEOR 2-7	12456	USSR	14 MAY	102.3	81.3	883	847		
1981 043B		12457	USSR	14 MAY	102.4	81.3	919	825		
1981 043C		15769	USSR	14 MAY	102.4	81.3	918	826		
1981 044A	NNSS 30450	12458	US	15 MAY	ELEMENTS NOT AVAILABLE					
1981 046A	COSMOS 1271	12464	USSR	19 MAY	97.0	81.2	622	603		
1981 046B		12465	USSR	19 MAY	97.2	81.2	663	583		
1981 049A	GOES 5	12472	US	22 MAY	1435.9	2.5	35790	35780		
1981 050A	INTELSAT 5 F-1	12474	ITSO	23 MAY	1436.2	1.2	35804	35773		
1981 050B		12497	US	23 MAY	230.6	23.9	11795	359		
1981 053A	COSMOS 1275	12504	USSR	4 JUN	104.7	83.0	1007	956		
1981 053B - 053AR			USSR	4 JUN	SEE NOTE		31*			31*
1981 054A	MOLNIYA 3-16	12512	USSR	9 JUN	717.7	64.0	38606	1743		
1981 054B		12519	USSR	9 JUN	733.5	64.3	39328	1799		
1981 057A	METEOSAT 2	12544	ESA	19 JUN	1436.2	2.4	35794	35783		
1981 057B	APPLE	12545	INDIA	19 JUN	1447.7	0.8	36478	35548		
1981 057C		12546	ESA	19 JUN	557.2	10.8	31848	254		
1981 057D		12562	ESA	19 JUN	347.8	10.5	19724	281		
1981 057E		14125	ESA	19 JUN	405.9	10.3	23313	247		
1981 058A	COSMOS 1276	12547	USSR	19 JUN	717.4	67.2	36270	4066		
1981 058B		12561	USSR	19 JUN	724.0	67.5	36784	3878		
1981 058E		17255	USSR	19 JUN	717.2	67.2	36264	4063		
1981 059A	NOAA 7	12553	US	23 JUN	101.3	99.1	852	834		
1981 059B		12559	US	23 JUN	101.4	99.0	829	823		
1981 059C		12560	US	23 JUN	101.4	99.0	828	823		
1981 060A	MOLNIYA 1-50	12556	USSR	24 JUN	718.0	64.8	39224	1140		
1981 060B		12563	USSR	24 JUN	732.0	65.0	39630	1422		
1981 061A	EKRAN 7	12564	USSR	25 JUN	1436.9	6.8	35846	35757		
1981 061B		12851	USSR	25 JUN	1425.7	6.7	35609	35554		
1981 065A	METEOR 1-31	12585	USSR	10 JUL	97.2	97.7	648	602		
1981 065B		12586	USSR	10 JUL	97.3	97.7	646	613		
1981 065D		19236	USSR	10 JUL	96.1	97.7	579	562		
1981 069A	RADUGA 9	12618	USSR	30 JUL	1435.2	5.7	35776	35760		
1981 069B		12850	USSR	30 JUL	1474.0	5.9	36620	36428		
1981 070A	DE 1	12624	US	3 AUG	410.2	89.2	23329	494		
1981 070B		12679	US	3 AUG	412.0	89.2	23426	497		
1981 070J		14620	US	3 AUG	404.0	89.2	22966	481		
1981 070K		14621	US	3 AUG	402.9	88.8	22898	483		
1981 070L		19476	US	3 AUG	408.0	89.2	23173	515		
1981 071A	COSMOS 1285	12627	USSR	4 AUG	727.0	67.8	37232	3575		
1981 071D		12680	USSR	4 AUG	722.7	67.3	36958	3639		
1981 071E		12993	USSR	4 AUG	727.7	67.8	37214	3630		
1981 071F		13951	USSR	4 AUG	726.5	64.2	38048	2748		
1981 073A	FLTSATCOM 5	12635	US	6 AUG	1460.0	5.4	36267	36239		
1981 074A	COSMOS 1287	12636	USSR	6 AUG	115.7	74.0	1511	1462		

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1981 LAUNCHES (CONT.)										
1981 074D	COSMOS 1285	12637	USSR	6 AUG	115.5	74.0	1490	1463		
1981 074C	COSMOS 1289	12638	USSR	6 AUG	114.7	74.0	1462	1424		
1981 074D	COSMOS 1290	12639	USSR	6 AUG	114.9	74.0	1462	1439		
1981 074E	COSMOS 1291	12640	USSR	6 AUG	115.1	74.0	1462	1456		
1981 074F	COSMOS 1292	12641	USSR	6 AUG	115.3	74.0	1474	1462		
1981 074G	COSMOS 1293	12642	USSR	6 AUG	114.6	74.0	1462	1407		
1981 074H	COSMOS 1294	12643	USSR	6 AUG	114.4	74.0	1462	1391		
1981 074J		12644	USSR	6 AUG	117.4	74.0	1669	1462		
1981 075A	INTERCOSMOS	12645	USSR	7 AUG	101.7	81.2	887	791		
1981 075B		12646	USSR	7 AUG	101.8	81.2	894	794		
1981 076A	GMS 2	12677	JAPAN	10 AUG	1668.8	6.5	46204	34246		
1981 076C		12810	JAPAN	10 AUG	283.8	28.5	15667	190		
1981 077A	COSMOS 1298	12681	USSR	12 AUG	104.6	82.9	1010	945		
1981 077B		12682	USSR	12 AUG	104.5	82.9	997	944		
1981 081A	COSMOS 1299	12783	USSR	24 AUG	104.0	65.1	983	907		
1981 082A	COSMOS 1300	12785	USSR	24 AUG	97.3	82.5	643	617		
1981 082B		12786	USSR	24 AUG	97.5	82.5	652	624		
1981 084A	COSMOS 1302	12791	USSR	28 AUG	100.6	74.0	803	774		
1981 084B		12792	USSR	28 AUG	100.5	74.0	793	772		
1981 084C		12793	USSR	28 AUG	100.6	74.0	789	781		
1981 084D		14810	USSR	28 AUG	101.0	74.0	825	788		
1981 087A	COSMOS 1304	12803	USSR	4 SEP	103.8	82.9	974	905		
1981 087B		12804	USSR	4 SEP	103.7	82.9	967	902		
1981 088A	COSMOS 1305	12818	USSR	11 SEP	263.7	63.4	13425	1060		
1981 088F		12827	USSR	11 SEP	262.4	63.4	13364	1031		
1981 088G		14131	USSR	11 SEP	250.0	63.1	12719	814		
1981 091A	COSMOS 1308	12835	USSR	18 SEP	104.7	82.9	1001	961		
1981 091B		12836	USSR	18 SEP	104.6	82.9	994	961		
1981 094A	OREOL 3	12848	USSR	21 SEP	107.8	82.5	1847	397		
1981 094B		12849	USSR	21 SEP	108.7	82.5	1933	400		
1981 095A	SOS 2	12855	US	24 SEP	1436.1	1.3	35792	35783		
1981 098A	COSMOS 1312	12879	USSR	30 SEP	115.9	82.6	1501	1488		
1981 098B		12880	USSR	30 SEP	115.3	82.6	1498	1485		
1981 100A	SME	12867	US	6 OCT	94.1	97.6	478	476		
1981 100B	UOSAT	12868	UK	6 OCT	92.0	97.6	374	372		
1981 100C		12889	US	6 OCT	119.0	99.9	2723	550		
1981 102A	RADOSA 10	12897	USSR	9 OCT	1435.9	6.5	35792	35771		
1981 102F		14195	USSR	9 OCT	1437.9	6.5	35872	35770		
1981 103A	COSMOS 1315	12903	USSR	13 OCT	97.2	81.2	641	604		
1981 103B		12904	USSR	13 OCT	97.3	81.2	663	598		
1981 105A	MOLNIYA 3-17	12915	USSR	17 OCT	713.6	64.4	38617	1532		
1981 105E		12920	USSR	17 OCT	733.2	64.6	39059	2052		
1981 106A	VENERA 13	12927	USSR	30 OCT	HELIOCENTRIC ORBIT					
1981 107A		12930	US	31 OCT	ELEMENTS NOT AVAILABLE					
1981 107C		12932	US	31 OCT	ELEMENTS NOT AVAILABLE					
1981 108A	COSMOS 1317	12933	USSR	31 OCT	719.0	66.2	36377	4037		
1981 108D		12940	USSR	31 OCT	723.3	66.4	36856	3769		
1981 108E		14734	USSR	31 OCT	713.6	65.3	36709	3438		
1981 108F		14735	USSR	31 OCT	714.7	65.1	36478	3725		
1981 108G		14736	USSR	31 OCT	719.4	62.9	38860	1576		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1981 LAUNCHES (CONT.)										
1981 113A	VENERA 14	12938	USSR	4 NOV	HELIOCENTRIC ORBIT					
1981 113A	MOLNIYA 1-51	12959	USSR	17 NOV	717.6	64.1	38745	1599		
1981 113B		12986	USSR	17 NOV	698.9	64.3	37713	1705		
1981 114A	RCA SATCOM IIIR	12967	US	20 NOV	1436.1	0.1	35795	35779		
1981 115A	BHASKARA 2	12968	INDIA	20 NOV	94.2	50.7	489	473		
1981 115B		12969	USSR	20 NOV	91.3	50.7	372	353		
1981 116A	COSMOS 1320	12975	USSR	28 NOV	117.2	74.0	1633	1479		
1981 116B	COSMOS 1321	12976	USSR	28 NOV	117.2	74.0	1629	1479		
1981 116C	COSMOS 1322	12977	USSR	28 NOV	117.2	74.0	1627	1479		
1981 116D	COSMOS 1323	12978	USSR	28 NOV	117.1	74.0	1623	1479		
1981 116E	COSMOS 1324	12979	USSR	28 NOV	117.1	74.0	1618	1479		
1981 116F	COSMOS 1325	12980	USSR	28 NOV	117.0	74.0	1615	1479		
1981 116G	COSMOS 1326	12981	USSR	28 NOV	117.0	74.0	1609	1479		
1981 116H	COSMOS 1327	12982	USSR	28 NOV	116.9	74.0	1601	1480		
1981 116J		12983	USSR	28 NOV	117.5	74.0	1658	1482		
1981 117A	COSMOS 1329	12987	USSR	3 DEC	97.4	82.5	646	620		
1981 117B		12988	USSR	3 DEC	97.5	82.5	653	625		
1981 119A	INTELSAT 5 F-3	12994	ITSO	15 DEC	1436.2	0.2	35805	35772		
1981 119B		13007	US	15 DEC	238.6	23.6	12456	274		
1981 120A	RADIO 3	12997	USSR	17 DEC	118.4	83.0	1657	1560		
1981 120B	RADIO 3	12998	USSR	17 DEC	119.6	83.0	1680	1649		
1981 120C	RADIO 5	12999	USSR	17 DEC	119.4	83.0	1662	1648		
1981 120D	RADIO 4	13000	USSR	17 DEC	119.3	83.0	1662	1634		
1981 120E	RADIO 7	13001	USSR	17 DEC	119.1	83.0	1657	1621		
1981 120F	RADIO 6	13002	USSR	17 DEC	118.5	83.0	1659	1576		
1981 120G		13003	USSR	17 DEC	120.8	83.0	1778	1655		
1981 122A	MARECS A	13010	ESA	20 DEC	1436.1	3.2	35803	35773		
1981 122B	CAT 4	13011	ESA	20 DEC	580.9	10.3	33128	236		
1981 123A	MOLNIYA 1-52	13012	USSR	23 DEC	717.5	64.1	39231	1110		
1981 123B		13016	USSR	23 DEC	695.2	64.3	38037	1198		
1982 LAUNCHES										
1982 001A	COSMOS 1331	13027	USSR	7 JAN	100.5	74.0	799	763		
1982 001B		13028	USSR	7 JAN	100.5	74.0	796	766		
1982 001C		13029	USSR	7 JAN	100.6	74.0	795	774		
1982 001D		13030	USSR	7 JAN	100.2	74.0	786	747		
1982 003A	COSMOS 1333	13033	USSR	14 JAN	104.9	82.9	1012	965		
1982 003B		13034	USSR	14 JAN	104.7	82.9	1005	959		
1982 004A	RCA SATCOM IV	13035	US	16 JAN	1436.1	0.0	35798	35776		
1982 006C		13103	US	21 JAN	ELEMENTS NOT AVAILABLE					
1982 006D		13104	US	21 JAN	ELEMENTS NOT AVAILABLE					
1982 006E		13105	US	21 JAN	ELEMENTS NOT AVAILABLE					
1982 006F		13102	US	21 JAN	ELEMENTS NOT AVAILABLE					
1982 009A	EKRAN 3	13056	USSR	5 FEB	1441.0	6.3	36004	35759		
1982 009D		13059	USSR	5 FEB	538.2	49.3	29461	1614		
1982 009F		14117	USSR	5 FEB	1426.1	6.2	35757	35423		
1982 012A	COSMOS 1339	13065	USSR	17 FEB	104.7	82.9	1013	948		
1982 012B		13066	USSR	17 FEB	104.6	82.9	1008	942		
1982 013A	COSMOS 1340	13067	USSR	19 FEB	97.2	81.2	630	615		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1982 LAUNCHES (CONT.)										
1982 013B		13068	USSR	19 FEB	97.2	81.2	651	599		
1982 014A	WESTAR 4	13069	US	26 FEB	1436.2	0.1	35798	35777		
1982 014B		13136	US	26 FEB	138.1	27.0	4797	146		
1982 015A	MOLNIYA 1-53	13070	USSR	26 FEB	717.8	63.9	39068	1287		
1982 015B		13075	USSR	26 FEB	730.9	63.9	39465	1532		
1982 016A	COSMOS 1341	13080	USSR	3 MAR	719.0	67.6	36845	3571		
1982 016B		13090	USSR	3 MAR	709.0	67.7	36427	3490		
1982 017A	INTELSAT 5 F-4	13083	ITSO	5 MAR	1436.2	0.2	35802	35777		
1982 019A		13086	US	6 MAR	ELEMENTS NOT AVAILABLE					
1982 019B		13089	US	6 MAR	ELEMENTS NOT AVAILABLE					
1982 020A	GORIZONT 5	13092	USSR	15 MAR	1436.3	6.1	35933	35647		
1982 020B		13899	USSR	15 MAR	1460.0	6.2	36385	36120		
1982 023A	MOLNIYA 3-18	13107	USSR	24 MAR	717.6	64.8	38766	1578		
1982 023B		13112	USSR	24 MAR	732.3	65.0	39284	1784		
1982 024A	COSMOS 1344	13110	USSR	24 MAR	104.8	82.9	1007	964		
1982 024B		13111	USSR	24 MAR	104.7	82.9	1011	950		
1982 025A	METEOR 2	13113	USSR	25 MAR	104.0	82.5	959	934		
1982 025B		13114	USSR	25 MAR	104.0	82.5	957	934		
1982 026A	COSMOS 1345	13118	USSR	31 MAR	91.6	74.0	369	355		
1982 026B		13119	USSR	31 MAR	90.9	74.0	325	308		
1982 027A	COSMOS 1346	13120	USSR	31 MAR	97.2	81.2	640	605		
1982 027B		13121	USSR	31 MAR	97.3	81.2	663	595		
1982 029A	COSMOS 1348	13124	USSR	7 APR	718.6	65.3	36598	3795		
1982 029B		13167	USSR	7 APR	705.4	65.8	36218	3524		
1982 030A	COSMOS 1349	13127	USSR	8 APR	104.8	82.9	1009	963		
1982 030B		13128	USSR	8 APR	104.7	82.9	1002	958		
1982 031A	INSAT-1A	13129	INDIA	10 APR	1434.2	0.1	35936	35562		
1982 033A	SALYUT 7	13136	USSR	19 APR	93.4	51.6	439	438		BX*
1982 033EA		15970	USSR	19 APR	89.5	51.6	257	249		
1982 033FB		16164	USSR	19 APR	90.3	51.6	295	286		
1982 033FT		16167	USSR	19 APR	90.5	51.7	311	284		
1982 033GZ		16811	USSR	19 APR	88.3	51.6	220	214		
1982 033HJ		17109	USSR	19 APR	90.5	51.6	322	279		
1982 037A	COSMOS 1354	13148	USSR	28 APR	100.8	74.0	801	788		
1982 037B		13149	USSR	28 APR	100.7	74.0	799	779		
1982 037C		14811	USSR	28 APR	101.2	74.0	833	793		
1982 039A	COSMOS 1356	13153	USSR	5 MAY	97.4	81.2	651	617		
1982 039B		13154	USSR	5 MAY	97.5	81.2	685	600		
1982 040A	COSMOS 1357	13160	USSR	6 MAY	114.6	74.0	1476	1399		
1982 040B	COSMOS 1358	13161	USSR	6 MAY	114.8	74.0	1479	1413		
1982 040C	COSMOS 1359	13162	USSR	6 MAY	115.0	74.0	1479	1430		
1982 040D	COSMOS 1360	13163	USSR	6 MAY	115.2	74.0	1480	1444		
1982 040E	COSMOS 1361	13164	USSR	6 MAY	115.3	74.0	1481	1459		
1982 040F	COSMOS 1362	13165	USSR	6 MAY	115.5	74.0	1493	1465		
1982 040G	COSMOS 1363	13166	USSR	6 MAY	115.7	74.0	1503	1472		
1982 040H	COSMOS 1364	13167	USSR	6 MAY	115.9	74.0	1522	1471		
1982 040J		13168	USSR	6 MAY	117.7	74.1	1675	1482		
1982 041C		13172	US	11 MAY	ELEMENTS NOT AVAILABLE					
1982 043A	COSMOS 1365	13175	USSR	14 MAY	103.6	65.1	962	899		
1982 043B		13594	USSR	14 MAY	103.4	65.1	947	886		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1982 LAUNCHES (CONT.)										
1982 044A	COSMOS 1366	13177	USSR	17 MAY	1436.1	5.7	35797	35774		
1982 044F		14114	USSR	17 MAY	1436.2	5.9	38711	32864		
1982 045A	COSMOS 1367	13205	USSR	20 MAY	718.7	64.5	36813	3584		
1982 045D		13215	USSR	20 MAY	704.1	65.0	36356	3318		
1982 050A	MOLNIYA 1-54	13237	USSR	28 MAY	717.8	64.8	38562	1794		
1982 050C		13253	USSR	28 MAY	732.1	65.0	39137	1922		
1982 051A	COSMOS 1371	13241	USSR	1 JUN	100.8	74.0	805	786		
1982 051B		13242	USSR	1 JUN	100.6	74.0	806	769		
1982 051C		14398	USSR	1 JUN	100.8	74.1	802	794		
1982 051D		18502	USSR	1 JUN	100.9	74.1	800	798		
1982 051E		18509	USSR	1 JUN	100.9	74.0	809	788		
1982 051F		18510	USSR	1 JUN	100.9	74.0	815	786		
1982 051G		19102	USSR	1 JUN	100.8	74.1	811	783		
1982 052A	COSMOS 1372	13243	USSR	1 JUN	103.9	64.9	970	914		
1982 052D		13416	USSR	1 JUN	103.6	64.9	940	916		
1982 055A	COSMOS 1375	13259	USSR	6 JUN	105.0	65.8	1006	984		
1982 055B	0559L		USSR	6 JUN	SEE NOTE		43*			43*
1982 058A	WESTAR 5	13269	US	9 JUN	1436.2	0.0	35793	35782		
1982 058B		13294	US	9 JUN	229.3	27.1	11900	162		
1982 059A	COSMOS 1378	13271	USSR	10 JUN	97.4	82.5	648	620		
1982 059B		13272	USSR	10 JUN	97.5	82.5	654	624		
1982 064A	COSMOS 1382	13295	USSR	25 JUN	718.1	67.3	36685	3683		
1982 064D		13298	USSR	25 JUN	708.4	67.3	36500	3391		
1982 066A	COSMOS 1383	13301	USSR	29 JUN	105.2	82.9	1026	983		
1982 066B		13302	USSR	29 JUN	105.1	82.9	1023	977		
1982 069A	COSMOS 1386	13353	USSR	7 JUL	104.6	83.0	1007	948		
1982 069B		13354	USSR	7 JUL	104.5	83.0	999	943		
1982 072A	LANDSAT 4	13367	US	16 JUL	98.7	98.2	701	697		
1982 073A	COSMOS 1388	13375	USSR	21 JUL	114.5	74.0	1473	1391		
1982 073B	COSMOS 1389	13376	USSR	21 JUL	114.7	74.0	1473	1407		
1982 073C	COSMOS 1390	13377	USSR	21 JUL	114.9	74.0	1473	1424		
1982 073D	COSMOS 1391	13378	USSR	21 JUL	115.0	74.0	1473	1440		
1982 073E	COSMOS 1392	13379	USSR	21 JUL	115.2	74.0	1473	1458		
1982 073F	COSMOS 1393	13380	USSR	21 JUL	115.4	74.0	1481	1468		
1982 073G	COSMOS 1394	13381	USSR	21 JUL	115.6	74.0	1494	1472		
1982 073H	COSMOS 1395	13382	USSR	21 JUL	115.8	74.0	1514	1472		
1982 073J		13385	USSR	21 JUL	117.9	74.0	1710	1463		
1982 074A	MOLNIYA 1-55	13383	USSR	21 JUL	717.8	64.9	38716	1640		
1982 074D		13390	USSR	21 JUL	698.6	64.8	37812	1590		
1982 079A	COSMOS 1400	13402	USSR	5 AUG	97.2	81.2	633	611		
1982 079B		13403	USSR	5 AUG	97.4	81.2	671	593		
1982 082A	ANIK D-1	13431	CANADA	26 AUG	1436.1	0.0	35797	35776		
1982 083A	MOLNIYA 3-19	13432	USSR	27 AUG	718.2	64.2	39394	981		
1982 083C		13446	USSR	27 AUG	733.1	64.3	40146	961		
1982 087A	ETS 3	13492	JAPAN	3 SEP	107.2	44.5	1228	966		
1982 087B		13493	JAPAN	3 SEP	105.1	44.6	1009	993		
1982 087C		13510	JAPAN	3 SEP	107.2	44.5	1237	959		
1982 087D		14569	JAPAN	3 SEP	106.3	44.9	1147	964		
1982 092A	COSMOS 1408	13552	USSR	16 SEP	97.4	82.6	651	617		
1982 092B		13553	USSR	16 SEP	97.5	82.6	657	622		

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1982 LAUNCHES (CONT.)										
1982 093A	EKRAN 9	13554	USSR	16 SEP	1389.6	6.4	37889	31855		
1982 093F		14115	USSR	16 SEP	1422.2	5.7	35550	35476		
1982 095A	COSMOS 1409	13585	USSR	22 SEP	718.5	64.4	36905	3485		
1982 095D		13591	USSR	22 SEP	707.2	65.0	36566	3267		
1982 096A	COSMOS 1410	13589	USSR	24 SEP	115.9	82.6	1499	1490		
1982 096B		13590	USSR	24 SEP	115.8	82.5	1497	1488		
1982 097A	INTELSAT 5F 5	13595	ITSO	28 SEP	1436.0	0.0	35807	35765		
1982 097B		13599	US	28 SEP	167.0	24.4	7123	212		
1982 099A	COSMOS 1412	13600	USSR	2 OCT	103.9	64.8	978	907		
1982 099E		13653	USSR	2 OCT	103.6	64.8	952	903		
1982 100A	COSMOS 1413	13603	USSR	12 OCT	673.3	64.7	19073	19063		
1982 100D	COSMOS 1414	13606	USSR	12 OCT	675.7	64.7	19198	19059		
1982 100F	COSMOS 1415	13607	USSR	12 OCT	673.5	64.7	19075	19070		
1982 100F		13608	USSR	12 OCT	315.8	52.4	17657	311		
1982 100G		13609	USSR	12 OCT	323.5	52.2	18104	361		
1982 100H		13610	USSR	12 OCT	673.1	64.7	19219	18907		
1982 102A	COSMOS 1417	13617	USSR	19 OCT	104.7	83.0	1007	956		
1982 102B		13619	USSR	19 OCT	104.6	83.0	997	955		
1982 103A	GORIZONT 6	13624	USSR	20 OCT	1435.6	5.3	35782	35771		
1982 103E		13630	USSR	20 OCT	1435.4	5.3	35829	35717		
1982 105A	RCA SATCOM-V	13631	US	28 OCT	1436.1	0.0	35788	35786		
1982 106A		13636	US	30 OCT	1436.1	3.8	35793	35777		
1982 106B		13637	US	30 OCT	1436.1	0.1	35802	35772		
1982 106D		13643	US	30 OCT	1449.0	3.9	36230	35847		
1982 109A	COSMOS 1420	13648	USSR	11 NOV	100.7	74.0	804	775		
1982 109B		13649	USSR	11 NOV	100.6	74.0	798	771		
1982 109C		14227	USSR	11 NOV	98.9	74.0	715	699		
1982 109D		15523	USSR	11 NOV	100.8	74.0	807	781		
1982 110B	SBS 3	13651	US	11 NOV	1436.1	2.0	35795	35779		35*
1982 110C	ANIK C-3	13652	CANADA	12 NOV	1436.0	0.0	35790	35780		35*
1982 110D		13658	US	11 NOV	647.6	23.3	36471	362		
1982 110E		13666	US	11 NOV	646.8	23.0	36429	365		
1982 113A	RADUGA 11	13669	USSR	26 NOV	1473.8	4.7	36688	36355		
1982 113F		13954	USSR	26 NOV	1475.9	4.9	36677	36446		
1982 115B - 115AJ			USSR	8 DEC	SEE NOTE		32*			32*
1982 116A	METEOR 2-9	13718	USSR	14 DEC	101.8	81.2	885	805		
1982 116B		13719	USSR	14 DEC	101.9	81.3	898	798		
1982 116C		13720	USSR	14 DEC	101.8	81.2	885	804		
1982 116D		17755	USSR	14 DEC	101.9	81.3	899	797		
1982 118A		13736	US	21 DEC	101.1	98.7	818	807		
1982 118B		13737	US	21 DEC	100.1	98.6	766	760		
1982 118C		13738	US	21 DEC	100.5	98.6	785	779		
1982 118D		13773	US	21 DEC	100.0	98.6	760	755		
1982 118E		13774	US	21 DEC	100.1	98.6	769	760		
1982 121A	COSMOS 1427	13750	USSR	29 DEC	91.2	65.8	351	319		
1983 LAUNCHES										
1983 001A	COSMOS 1428	13757	USSR	12 JAN	104.6	82.9	1001	950		
1983 001B		13758	USSR	12 JAN	104.5	82.9	991	952		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1983 LAUNCHES (CONT.)										
1983 001C		14565	USSR	12 JAN	104.1	82.9	971	929		
1983 002A	COSMOS 1429	13761	USSR	19 JAN	115.8	74.0	1516	1464		
1983 002B	COSMOS 1430	13762	USSR	19 JAN	115.6	74.0	1497	1465		
1983 002C	COSMOS 1431	13763	USSR	19 JAN	115.4	74.0	1481	1463		
1983 002D	COSMOS 1432	13764	USSR	19 JAN	115.2	74.0	1465	1461		
1983 002E	COSMOS 1433	13765	USSR	19 JAN	115.0	74.0	1465	1444		
1983 002F	COSMOS 1434	13766	USSR	19 JAN	114.8	74.0	1465	1429		
1983 002G	COSMOS 1435	13767	USSR	19 JAN	114.7	74.0	1466	1412		
1983 002H	COSMOS 1436	13768	USSR	19 JAN	114.5	74.0	1465	1397		
1983 002J		13769	USSR	19 JAN	117.9	74.0	1693	1476		
1983 003A	COSMOS 1437	13770	USSR	20 JAN	97.3	81.2	641	613		
1983 003B		13771	USSR	20 JAN	97.3	81.2	668	593		
1983 004A	IRAS	13777	US	26 JAN	102.9	99.0	904	887		
1983 004B		13778	US	26 JAN	102.4	100.0	886	853		
1983 004C		13783	US	26 JAN	102.9	99.1	904	887		
1983 006A	CS-2A	13782	JAPAN	4 FEB	1436.1	1.8	35791	35781		
1983 006B		13786	JAPAN	4 FEB	214.0	28.5	10732	213		
1983 008A		13791	US	9 FEB	ELEMENTS NOT AVAILABLE					
1983 008B		13792	US	9 FEB	ELEMENTS NOT AVAILABLE					
1983 008C		13834	US	9 FEB	ELEMENTS NOT AVAILABLE					
1983 008D		13835	US	9 FEB	ELEMENTS NOT AVAILABLE					
1983 008E		13844	US	9 FEB	ELEMENTS NOT AVAILABLE					
1983 008F		13845	US	9 FEB	ELEMENTS NOT AVAILABLE					
1983 008G		13849	US	9 FEB	ELEMENTS NOT AVAILABLE					
1983 008H		13874	US	9 FEB	ELEMENTS NOT AVAILABLE					
1983 010A	COSMOS 1441	13818	USSR	16 FEB	97.1	81.1	622	615		
1983 010B		13819	USSR	16 FEB	97.2	81.1	668	579		
1983 015A	MOLNIYA 3-20	13875	USSR	11 MAR	718.0	63.5	38864	1498		
1983 015B		13882	USSR	11 MAR	732.0	63.6	39290	1761		
1983 016A	EKRAN 19	13878	USSR	12 MAR	1515.4	6.1	37501	37147		
1983 016F		14086	USSR	12 MAR	1424.4	5.8	35615	35497		
1983 019A	MOLNIYA 1-56	13890	USSR	16 MAR	720.6	63.5	38504	1990		
1983 019B		13897	USSR	16 MAR	732.5	63.7	38919	2166		
1983 020A	ASTRON	13901	USSR	23 MAR	5915.8	79.8	178817	25128		
1983 021A	COSMOS 1447	13916	USSR	24 MAR	104.7	82.9	1012	953		
1983 021B		13917	USSR	24 MAR	104.6	82.9	998	956		
1983 022A	NOAA 6	13923	US	28 MAR	101.1	98.5	824	799		
1983 022B		13924	US	28 MAR	100.1	98.6	772	758		
1983 022C		14477	US	28 MAR	100.0	98.7	766	753		
1983 023A	COSMOS 1448	13949	USSR	30 MAR	104.7	83.0	1002	956		
1983 023B		13950	USSR	30 MAR	104.6	83.0	1006	948		
1983 025A	MOLNIYA 1-57	13964	USSR	2 APR	718.5	64.0	39572	817		
1983 025B		13967	USSR	2 APR	699.3	64.3	38438	999		
1983 026B	TDRS 1	13969	US	4 APR	1440.6	3.6	35882	35867		
1983 026C		13970	US	4 APR	1087.7	2.1	35097	22301		
1983 026D		13971	US	4 APR	550.1	25.6	33059	267		
1983 027A	COSMOS 1450	13972	USSR	6 APR	93.0	65.8	436	407		
1983 028A	RADUGA 12	13974	USSR	8 APR	1436.1	4.5	35795	35778		
1983 028F		13983	USSR	8 APR	1439.5	4.5	35747	35747		
1983 030A	RCA SATCOM VI	13984	US	11 APR	1436.1	0.0	35793	35780		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1983 LAUNCHES (CONT.)										
1983 030S		13985	US	11 APR	123.5	25.4	3373	301		
1983 031A	COSMOS 1452	13991	USSR	12 APR	100.7	74.1	804	779		
1983 031B		13992	USSR	12 APR	100.6	74.1	799	774		
1983 031D		14812	USSR	12 APR	101.2	74.1	830	795		
1983 033A	ROHINI 3	14002	INDIA	17 APR	94.5	46.6	630	359		
1983 037A	COSMOS 1455	14032	USSR	23 APR	97.4	82.5	651	621		
1983 037B		14033	USSR	23 APR	97.5	82.5	656	626		
1983 038A	COSMOS 1456	14034	USSR	25 APR	718.3	66.8	37137	3243		
1983 038E		14041	USSR	25 APR	707.3	66.7	36647	3188		
1983 038H		14297	USSR	25 APR	718.9	66.9	37149	3262		
1983 038J		14301	USSR	25 APR	789.5	67.0	43591	246		
1983 038K		14306	USSR	25 APR	720.6	64.3	39697	795		
1983 041A	GOES 6	14050	US	28 APR	1436.0	1.3	35793	35779		
1983 041B		14051	US	28 APR	117.5	25.4	2729	406		
1983 041C		14069	US	28 APR	1703.3	1.2	54325	27405		
1983 041D		14176	US	28 APR	364.7	23.7	20854	204		
1983 042A	COSMOS 1459	14057	USSR	6 MAY	104.6	83.0	1014	940		
1983 042B		14059	USSR	6 MAY	104.5	83.0	1005	938		
1983 044A	COSMOS 1461	14054	USSR	7 MAY	99.2	65.0	856	581		
1983 044B - 044FP			USSR	7 MAY	SEE NOTE	36*				36*
1983 044FN		19668	USSR	7 MAY	99.6	64.5	951	531		
1983 045A	COSMOS 1463	14075	USSR	19 MAY	99.9	82.9	1216	294		
1983 046B		14076	USSR	19 MAY	94.1	82.9	681	263		
1983 047A	INTELSAT 5 F-5	14077	ITSO	19 MAY	1436.1	0.0	35802	35773		
1983 048A	COSMOS 1464	14084	USSR	24 MAY	104.8	82.9	1005	963		
1983 048B		14085	USSR	24 MAY	104.7	82.9	999	958		
1983 051B		14096	US	26 MAY	119.1	72.3	2523	756		
1983 053A	VENERA 15	14104	USSR	2 JUN	HELIOCENTRIC ORBIT					
1983 054A	VENERA 16	14107	USSR	7 JUN	HELIOCENTRIC ORBIT					
1983 056A		14112	US	9 JUN	ELEMENTS NOT AVAILABLE					
1983 056B		14113	US	9 JUN	ELEMENTS NOT AVAILABLE					
1983 056C		14143	US	9 JUN	ELEMENTS NOT AVAILABLE					
1983 056D		14144	US	9 JUN	ELEMENTS NOT AVAILABLE					
1983 056E		14145	US	9 JUN	ELEMENTS NOT AVAILABLE					
1983 056F		14146	US	9 JUN	ELEMENTS NOT AVAILABLE					
1983 056G		14180	US	9 JUN	ELEMENTS NOT AVAILABLE					
1983 056H		14181	US	9 JUN	ELEMENTS NOT AVAILABLE					
1983 058A	ECS 1	14128	ESA	16 JUN	1436.1	0.1	35802	35769		
1983 058B	OSCAR 10	14129	FRG	16 JUN	699.5	26.2	35532	3917		
1983 058C		14130	ESA	16 JUN	438.5	8.5	25270	209		
1983 058E		17302	ESA	16 JAN	203.8	6.4	14320	172		
1983 058F		17331	ESA	16 JUN	434.6	7.6	24981	271		
1983 059B	ANIK C2	14133	CANADA	18 JUN	1436.1	0.0	35792	35783		35*
1983 059C	PALAPA B1	14134	INDNSA	18 JUN	1436.3	0.0	35792	35787		35*
1983 059D		14135	US	18 JUN	623.5	22.9	35214	382		
1983 059E		14136	US	18 JUN	662.1	25.6	37246	324		
1983 060C		14139	US	20 JUN	ELEMENTS NOT AVAILABLE					
1983 061A	COSMOS 1470	14147	USSR	22 JUN	97.5	82.5	657	620		
1983 061B		14148	USSR	22 JUN	97.6	82.5	660	624		
1983 063A		14154	US	27 JUN	100.8	82.0	829	764		

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1983 LAUNCHES (CONT.)										
1983 063B		14155	US	27 JUN	100.8	82.0	827	762		
1983 063C		14222	US	27 JUN	100.2	82.4	786	744		
1983 063D		14223	US	27 JUN	101.1	81.7	862	763		
1983 065A	GALAXY 1	14158	US	28 JUN	1436.2	0.0	35789	35786		
1983 065C		14168	US	28 JUN	418.0	23.1	24057	221		
1983 066A	GORIZONT 7	14160	USSR	30 JUN	1436.1	4.1	35808	35766		
1983 066E		14167	USSR	30 JUN	296.3	46.6	16461	225		
1983 066F		15141	USSR	30 JUN	1475.2	4.3	36590	36506		
1983 067A	PROGNOZ 9	14163	USSR	1 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1983 069A	COSMOS 1473	14171	USSR	6 JUL	114.4	74.0	1461	1392		
1983 069B	COSMOS 1474	14172	USSR	6 JUL	114.6	74.0	1461	1409		
1983 069C	COSMOS 1475	14173	USSR	6 JUL	114.8	74.0	1461	1427		
1983 069D	COSMOS 1476	14174	USSR	6 JUL	114.9	74.0	1460	1444		
1983 069E	COSMOS 1477	14175	USSR	6 JUL	115.1	74.0	1463	1459		
1983 069F	COSMOS 1478	14176	USSR	6 JUL	115.3	74.0	1480	1460		
1983 069G	COSMOS 1479	14177	USSR	6 JUL	115.5	74.0	1498	1461		
1983 069H	COSMOS 1480	14178	USSR	6 JUL	115.8	74.0	1518	1461		
1983 069J		14179	USSR	6 JUL	117.4	74.0	1672	1459		
1983 070A	COSMOS 1481	14182	USSR	8 JUL	707.3	67.5	37064	2769		
1983 070D		14191	USSR	8 JUL	707.9	67.6	37022	2845		
1983 070E		14192	USSR	8 JUL	708.9	67.6	37158	2757		
1983 072A		14189	US	14 JUL	717.9	63.2	20543	19819		
1983 072B		14190	US	14 JUL	371.8	63.6	20571	927		
1983 073A	MOLNIYA 1-58	14199	USSR	19 JUL	624.6	64.0	34701	952		
1983 073D		14206	USSR	19 JUL	149.5	63.8	5772	136		
1983 075A	COSMOS 1484	14207	USSR	24 JUL	96.9	97.7	642	578		
1983 075B		14208	USSR	24 JUL	97.3	97.7	656	598		
1983 075C		14209	USSR	24 JUL	97.0	97.7	648	578		
1983 075D		14229	USSR	24 JUL	97.5	97.7	672	609		
1983 075E		14631	USSR	24 JUL	96.9	97.6	635	589		
1983 075F		14928	USSR	24 JUL	97.3	97.7	655	599		
1983 077A	TELSTAR 3A	14234	US	28 JUL	1436.2	0.0	35796	35779		
1983 077C		14236	US	28 JUL	390.7	22.8	22431	217		
1983 078A		14237	US	31 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1983 078B		14238	US	31 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1983 079A	COSMOS 1486	14240	USSR	3 AUG	100.7	74.1	800	778		
1983 079B		14241	USSR	3 AUG	100.5	74.1	799	773		
1983 079C		14344	USSR	3 AUG	101.1	74.1	823	793		
1983 079D		14813	USSR	3 AUG	101.2	74.1	835	792		
1983 079E		15756	USSR	3 AUG	100.4	74.1	791	767		
1983 081A	CS-2B	14246	JAPAN	5 AUG	1435.1	1.1	35791	35783		
1983 081C		14287	JAPAN	5 AUG	320.3	28.5	18078	177		
1983 084A	COSMOS 1490	14253	USSR	10 AUG	675.7	64.8	19172	19086		
1983 084B	COSMOS 1491	14259	USSR	10 AUG	665.4	64.7	19085	18804		
1983 084C	COSMOS 1492	14260	USSR	10 AUG	676.8	54.7	19160	19153		
1983 084F		14264	USSR	10 AUG	675.3	54.8	19158	19128		
1983 084G		14277	USSR	10 AUG	332.8	51.8	18713	348		
1983 084H		14279	USSR	10 AUG	331.8	52.0	18687	310		
1983 088A	RADUGA 13	14307	USSR	25 AUG	1466.9	4.1	36450	36322		
1983 088F		14333	USSR	25 AUG	1475.3	4.3	36597	36503		

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1983 LAUNCHES (CONT.)										
1983 089B	INSAT 1B	14318	INDIA	31 AUG	1436.1	0.0	35800	35774		
1983 089C		14524	US	31 AUG	606.3	23.9	34452	247		
1983 090A	MOLNIYA 3-21	14313	USSR	30 AUG	717.1	64.4	39553	766		
1983 090D		14319	USSR	30 AUG	731.3	64.3	40286	733		
1983 091C - 091AC			USSR	31 AUG	SEE NOTE		33#			33#
1983 094A	RCA SATCOM VII	14328	US	8 SEP	1436.2	0.0	35800	35774		
1983 094B		14329	US	8 SEP	122.2	25.5	3266	290		
1983 095A	GALAXY 2	14365	US	22 SEP	1436.2	0.0	35795	35780		
1983 099A	COSMOS 1500	14372	USSR	28 SEP	97.5	82.5	652	622		
1983 099B		14373	USSR	28 SEP	97.6	82.5	657	626		
1983 100A	EKRAN 11	14377	USSR	30 SEP	1436.9	4.9	35807	35797		
1983 100F		14394	USSR	30 SEP	1425.0	4.9	35644	35494		
1983 103A	COSMOS 1503	14401	USSR	12 OCT	100.8	74.0	804	784		
1983 103B		14402	USSR	12 OCT	100.6	74.0	807	768		
1983 105A	INTELSAT 5 F-7	14421	ITSO	19 OCT	1436.1	0.0	35803	35771		
1983 108A	COSMOS 1506	14450	USSR	26 OCT	104.7	82.9	1009	948		
1983 108B		14451	USSR	26 OCT	104.6	82.9	999	947		
1983 109A	METEOR 2-10	14452	USSR	28 OCT	101.2	81.2	884	745		
1983 109B		14453	USSR	28 OCT	101.2	81.2	896	737		
1983 109C		14454	USSR	28 OCT	101.2	81.2	884	741		
1983 111A	COSMOS 1508	14483	USSR	11 NOV	108.3	82.9	1900	394		
1983 111B		14484	USSR	11 NOV	107.5	82.9	1851	372		
1983 113A		14506	US	18 NOV	101.2	98.5	826	806		
1983 113B		14553	US	18 NOV	100.3	98.6	780	768		
1983 113C		14554	US	18 NOV	100.4	98.6	781	769		
1983 113D		14609	US	18 NOV	100.4	98.6	787	768		
1983 113E		14610	US	18 NOV	100.7	98.6	799	782		
1983 114A	MOLNIYA 1-59	14516	USSR	23 NOV	718.0	64.1	39727	638		
1983 114B		14520	USSR	23 NOV	699.2	64.3	38671	761		
1983 115A	COSMOS 1510	14521	USSR	24 NOV	116.0	73.6	1522	1478		
1983 115B		14522	USSR	24 NOV	115.9	73.6	1518	1477		
1983 118A	GORIZONT 3	14532	USSR	30 NOV	1465.4	3.7	36472	36245		
1983 118F		14548	USSR	30 NOV	1436.0	3.3	35968	35602		
1983 120A	COSMOS 1513	14546	USSR	8 DEC	104.8	82.9	1015	955		
1983 120B		14547	USSR	8 DEC	104.5	82.9	1011	940		
1983 122A	COSMOS 1515	14551	USSR	15 DEC	97.5	82.5	652	623		
1983 122B		14552	USSR	15 DEC	97.6	82.5	655	628		
1983 123A	MOLNIYA 3-22	14570	USSR	21 DEC	717.7	64.8	38559	1790		
1983 123D		14582	USSR	21 DEC	732.4	65.0	39247	1828		
1983 126A	COSMOS 1518	14587	USSR	28 DEC	714.1	66.9	37387	2788		
1983 126D		14596	USSR	28 DEC	705.5	66.9	36973	2772		
1983 127A	COSMOS 1519	14590	USSR	29 DEC	675.7	65.8	19185	19073		
1983 127B	COSMOS 1520	14591	USSR	29 DEC	675.7	65.9	19207	19052		
1983 127C	COSMOS 1521	14592	USSR	29 DEC	673.4	65.8	19145	18996		
1983 127F		14595	USSR	29 DEC	673.1	65.7	19147	18978		
1983 127G		14607	USSR	29 DEC	336.3	52.0	18944	336		
1983 127H		14608	USSR	29 DEC	337.6	51.9	19015	350		
1984 LAUNCHES										

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1984 001A	COSMOS 1522	14611	USSR	5 JAN	115.4	74.0	1491	1459		
1984 001B	COSMOS 1522	14612	USSR	5 JAN	114.4	74.0	1459	1394		
1984 001C	COSMOS 1524	14613	USSR	5 JAN	114.5	74.0	1460	1409		
1984 001D	COSMOS 1525	14614	USSR	5 JAN	114.7	74.0	1459	1425		
1984 001E	COSMOS 1526	14615	USSR	5 JAN	114.9	74.0	1460	1440		
1984 001F	COSMOS 1527	14616	USSR	5 JAN	115.1	74.0	1460	1457		
1984 001G	COSMOS 1528	14617	USSR	5 JAN	115.3	74.0	1475	1459		
1984 001H	COSMOS 1529	14618	USSR	5 JAN	115.5	74.0	1509	1459		
1984 001J		14619	USSR	5 JAN	117.5	74.0	1679	1461		
1984 003A	COSMOS 1531	14624	USSR	11 JAN	105.0	82.9	1007	977		
1984 003B		14625	USSR	11 JAN	104.8	82.9	1003	968		
1984 005A	BS-2A	14659	JAPAN	23 JAN	1436.4	0.6	35800	35782		
1984 007A	COSMOS 1534	14668	USSR	26 JAN	93.3	65.8	455	418		
1984 008A	PRC 14	14670	PRC	29 JAN	163.2	36.1	6556	475		
1984 009A		14675	US	31 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1984 009C		14677	US	31 JAN	ELEMENTS NOT AVAILABLE					
1984 010A	COSMOS 1535	14679	USSR	2 FEB	104.8	83.0	1013	952		
1984 010B		14680	USSR	2 FEB	104.7	83.0	1004	952		
1984 011E		14693	US	6 FEB	98.0	28.2	1053	276		
1984 011F		14694	US	3 FEB	99.3	27.7	1143	305		
1984 011U		14824	US	6 FEB	94.3	27.4	689	283		
1984 012A		14690	US	5 FEB	ELEMENTS NOT AVAILABLE					
1984 012B		14691	US	5 FEB	ELEMENTS NOT AVAILABLE					
1984 012C		14728	US	5 FEB	ELEMENTS NOT AVAILABLE					
1984 012D		14729	US	5 FEB	ELEMENTS NOT AVAILABLE					
1984 012F		14795	US	5 FEB	ELEMENTS NOT AVAILABLE					
1984 012J		15347	US	5 FEB	ELEMENTS NOT AVAILABLE					
1984 012K		15348	US	5 FEB	ELEMENTS NOT AVAILABLE					
1984 012L		15349	US	5 FEB	ELEMENTS NOT AVAILABLE					
1984 013A	COSMOS 1536	14699	USSR	8 FEB	97.5	82.5	653	621		
1984 013B		14700	USSR	8 FEB	97.6	82.5	658	625		
1984 015A	JIKIDA	14722	JAPAN	14 FEB	90.3	74.6	332	248		
1984 016A	RADUGA 14	14725	USSR	15 FEB	1436.1	3.7	35810	35761		
1984 016D		14742	USSR	15 FEB	347.3	46.9	19885	124		
1984 016F		17874	USSR	15 FEB	1435.5	3.7	35926	35626		
1984 019A	COSMOS 1539	14759	USSR	21 FEB	100.7	74.0	806	773		
1984 019B		14760	USSR	21 FEB	100.5	74.0	809	765		
1984 019C		15785	USSR	21 FEB	100.5	74.0	798	776		
1984 019D		18519	USSR	21 FEB	100.5	74.1	802	772		
1984 021A	LANDSAT 5	14750	US	1 MAR	98.7	98.1	701	697		
1984 021B	UOSAT 2	14751	UK	1 MAR	98.3	98.0	686	669		
1984 021C		14782	US	1 MAR	95.7	100.0	632	469		
1984 022A	COSMOS 1540	14783	USSR	2 MAR	1436.0	4.0	35797	35773		
1984 022E		14789	USSR	2 MAR	635.7	47.4	35994	232		
1984 022F		14948	USSR	2 MAR	1441.8	4.4	35993	35803		
1984 023A	INTELSAT 5 F-3	14755	ITSO	5 MAR	1436.1	0.0	35800	35774		
1984 023B		14787	ESA	5 MAR	554.3	11.0	31648	298		
1984 024A	COSMOS 1541	14790	USSR	6 MAR	717.3	63.6	37674	2655		
1984 024B		14795	USSR	6 MAR	709.7	63.7	37262	2693		
1984 027A	COSMOS 1544	14819	USSR	15 MAR	97.5	82.5	653	619		

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1984 LAUNCHES (CONT.)										
1984 027B		14820	USSR	15 MAR	97.5	82.5	657	624		
1984 028A	EKRAN 12	14821	USSR	16 MAR	1499.1	5.1	37059	36961		
1984 028D		14825	USSR	16 MAR	624.7	46.6	35418	238		
1984 028F		15139	USSR	16 MAR	1419.8	4.9	35550	35383		
1984 029A	MOLNIYA 1-50	14825	USSR	16 MAR	716.4	64.9	38437	1849		
1984 029D		14830	USSR	16 MAR	730.9	64.9	39117	1885		
1984 031A	COSMOS 1545	14857	USSR	29 MAR	1435.3	3.6	35891	35691		
1984 031D		14887	USSR	29 MAR	566.7	45.3	32280	345		
1984 031F		14951	USSR	29 MAR	1445.3	3.6	36072	35978		
1984 033A	COSMOS 1547	14864	USSR	4 APR	724.6	67.2	38157	2532		
1984 033D		14894	USSR	4 APR	706.5	67.4	37437	2361		
1984 034B	LDEF	14898	US	6 APR	92.9	28.5	416	413		354
1984 035A	PRC 15	14899	PRC	8 APR	1436.6	2.2	37476	34115		
1984 035D		14900	PRC	8 APR	628.4	30.7	35404	445		
1984 037A		14930	US	14 APR	ELEMENTS NOT AVAILABLE					
1984 037B		14931	US	14 APR	ELEMENTS NOT AVAILABLE					
1984 041A	GORIZONT 9	14940	USSR	22 APR	1435.5	3.4	35783	35766		
1984 041D		14943	USSR	22 APR	1460.7	3.5	36591	35942		
1984 041E		14944	USSR	22 APR	471.0	49.1	26940	408		
1984 043A	COSMOS 1550	14965	USSR	11 MAY	104.9	83.0	1009	970		
1984 043B		14966	USSR	11 MAY	104.5	83.0	998	972		
1984 046A	COSMOS 1553	14973	USSR	17 MAY	104.7	82.9	1007	957		
1984 046B		14974	USSR	17 MAY	104.6	82.9	998	954		
1984 047A	COSMOS 1554	14977	USSR	19 MAY	675.7	65.8	19168	19090		
1984 047B	COSMOS 1555	14978	USSR	19 MAY	675.7	65.8	19150	19108		
1984 047C	COSMOS 1556	14979	USSR	19 MAY	676.3	65.9	19156	19132		
1984 047F		14984	USSR	19 MAY	675.5	65.8	19141	19107		
1984 047G		15053	USSR	19 MAY	338.5	51.9	19017	402		
1984 047H		15054	USSR	19 MAY	332.2	52.0	18681	340		
1984 049A	SPACENET 1	14985	US	23 MAY	1436.2	0.0	35794	35781		
1984 052A	COSMOS 1559	14998	USSR	28 MAY	115.7	74.0	1508	1468		
1984 052B	COSMOS 1560	14999	USSR	28 MAY	115.5	74.0	1490	1468		
1984 052C	COSMOS 1561	15000	USSR	28 MAY	115.4	74.0	1483	1459		
1984 052D	COSMOS 1562	15001	USSR	28 MAY	115.2	74.0	1475	1451		
1984 052E	COSMOS 1563	15002	USSR	28 MAY	115.0	74.0	1474	1436		
1984 052F	COSMOS 1564	15003	USSR	28 MAY	114.8	74.0	1474	1422		
1984 052G	COSMOS 1565	15004	USSR	28 MAY	114.7	74.0	1474	1406		
1984 052H	COSMOS 1566	15005	USSR	28 MAY	114.5	74.0	1472	1392		
1984 052J		15006	USSR	28 MAY	117.7	74.0	1678	1472		
1984 055A	COSMOS 1569	15027	USSR	6 JUN	716.5	66.1	37816	2481		
1984 055D		15030	USSR	6 JUN	706.9	66.2	37268	2548		
1984 056A	COSMOS 1570	15031	USSR	8 JUN	100.8	74.1	805	786		
1984 056B		15032	USSR	8 JUN	100.7	74.1	803	777		
1984 056C		15033	USSR	8 JUN	101.1	74.1	826	798		
1984 056D		15757	USSR	8 JUN	99.6	74.1	751	731		
1984 059A		15039	US	13 JUN	718.0	63.0	20224	20139		
1984 059B		15040	US	13 JUN	367.5	62.5	20623	609		
1984 062A	COSMOS 1574	15055	USSR	21 JUN	104.8	83.0	1004	965		
1984 062D		15056	USSR	21 JUN	104.7	83.0	997	961		
1984 063A	RADUGA 15	15057	USSR	22 JUN	1437.3	3.4	35825	35794		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1984 LAUNCHES (CONT.)										
1984 063E		15076	USSR	22 JUN	443.5	47.0	25785	275		
1984 063F		15693	USSR	22 JUN	1394.2	3.3	35027	34895		
1984 065C		15071	US	25 JUN	ELEMENTS NOT AVAILABLE					
1984 067A	COSMOS 1577	15077	USSR	27 JUN	104.7	83.0	1006	955		
1984 067B		15078	USSR	27 JUN	104.6	83.0	993	958		
1984 068A	COSMOS 1578	15080	USSR	28 JUN	101.2	50.7	1337	289		
1984 068B		15081	USSR	28 JUN	97.3	50.7	981	274		
1984 069A	COSMOS 1579	15085	USSR	29 JUN	103.9	65.0	983	903		
1984 069D		15330	USSR	29 JUN	103.6	65.0	963	894		
1984 069E		19453	USSR	29 JUN	103.3	65.3	983	844		
1984 071A	COSMOS 1581	15095	USSR	3 JUL	721.0	67.0	37744	2769		
1984 071D		15098	USSR	3 JUL	705.5	67.2	37291	2460		
1984 072A	METEOR 2-11	15099	USSR	5 JUL	104.0	82.5	956	939		
1984 072B		15100	USSR	5 JUL	104.0	82.5	955	939		
1984 078A	GORIZONT 10	15144	USSR	1 AUG	1436.3	3.1	35808	35772		
1984 078F		15181	USSR	1 AUG	1435.1	3.1	35863	35671		
1984 079A	COSMOS 1586	15147	USSR	2 AUG	718.7	64.2	37966	2434		
1984 079D		15156	USSR	2 AUG	705.8	64.3	37314	2445		
1984 080A	GMS 3	15152	JAPAN	2 AUG	1436.2	1.0	35789	35787		
1984 080C		15157	JAPAN	2 AUG	358.5	28.7	20553	124		
1984 081A	ECS 2	15158	ESA	4 AUG	1436.1	0.2	35815	35758		
1984 081B	TELECOM 1A	15159	FRANCE	4 AUG	1436.2	0.0	35793	35781		
1984 081C		15165	ESA	4 AUG	328.4	7.0	18600	181		
1984 081D		15166	ESA	4 AUG	599.5	7.1	33731	620		
1984 083B	OBAX		USSR	7 AUG	SEE NOTE		39*			39*
1984 084A	COSMOS 1589	15171	USSR	8 AUG	115.9	82.6	1500	1490		
1984 084B		15172	USSR	8 AUG	115.8	82.6	1498	1487		
1984 085A	MOLNIYA 1-61	15182	USSR	10 AUG	716.3	63.3	39623	660		
1984 085D		15188	USSR	10 AUG	731.0	63.3	40267	735		
1984 088A	CCE	15199	US	16 AUG	939.5	5.0	49671	1121		
1984 088B	IRM	15200	FRG	16 AUG	2653.4	27.0	113818	402		
1984 088C	UKS	15201	UK	16 AUG	2659.6	26.9	113417	1002		
1984 088D		15202	US	16 AUG	134.2	28.9	4063	546		
1984 088E		15205	US	16 AUG	133.5	28.7	3998	552		
1984 088F		15206	US	16 AUG	932.3	28.8	49978	489		
1984 088G		19008	US	16 AUG	133.0	28.7	3952	552		
1984 088H		19599	US	16 AUG	133.5	28.7	4001	553		
1984 089A	MOLNIYA 1-62	15214	USSR	24 AUG	717.3	63.3	38196	2160		
1984 089D		15223	USSR	24 AUG	739.0	63.8	38972	2422		
1984 090A	EKRAN 13	15219	USSR	24 AUG	1499.7	4.2	37078	36965		
1984 090F		17875	USSR	24 AUG	1422.1	4.0	35580	35442		
1984 091A		15226	US	28 AUG	ELEMENTS NOT AVAILABLE					
1984 091D		15227	US	28 AUG	ELEMENTS NOT AVAILABLE					
1984 093B	SMS 4	15235	US	31 AUG	1436.1	0.0	35791	35782		35*
1984 093C	SYNCOM IV-2	15236	US	31 AUG	1436.1	1.1	35792	35781		35*
1984 093D	TELSTAR 3C	15237	US	1 SEP	1436.0	0.0	35795	35778		35*
1984 093E		15244	US	31 AUG	272.1	27.2	14726	337		
1984 093F		15245	US	31 AUG	617.4	22.9	34950	330		
1984 093G		15246	US	1 SEP	657.5	24.8	37040	296		
1984 095A	COSMOS 1593	15259	USSR	4 SEP	675.7	64.8	19174	19084		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1984 LAUNCHES (CONT.)										
1984 095B		15260	USSR	4 SEP	677.2	64.7	19191	19141		
1984 095C		15261	USSR	4 SEP	675.7	64.7	19177	19081		
1984 095F		15264	USSR	4 SEP	675.9	64.7	19160	19108		
1984 095G		15265	USSR	4 SEP	335.8	52.0	18903	345		
1984 095H		15266	USSR	4 SEP	337.6	52.1	19023	339		
1984 096A	COSMOS 1596	15267	USSR	7 SEP	718.9	65.8	37563	2847		
1984 096B		15270	USSR	7 SEP	703.2	66.1	37022	2610		
1984 097A		15271	US	8 SEP	718.0	63.5	20411	19952		
1984 097B		15272	US	8 SEP	369.2	63.4	20608	731		
1984 100A	COSMOS 1598	15292	USSR	13 SEP	104.9	82.9	1014	964		
1984 100B		15293	USSR	13 SEP	104.8	82.9	1002	966		
1984 101A	GALAXY 3	15308	US	21 SEP	1436.1	0.0	35793	35780		
1984 104A	COSMOS 1601	15326	USSR	27 SEP	92.6	65.8	414	387		
1984 104B	104AF		USSR	27 SEP	SEE NOTE		38*			38*
1984 105A	COSMOS 1602	15331	USSR	28 SEP	97.5	82.5	657	621		
1984 105B		15332	USSR	28 SEP	97.6	82.5	661	624		
1984 105A	COSMOS 1603	15333	USSR	28 SEP	101.9	71.0	870	829		
1984 106C		15335	USSR	28 SEP	101.5	66.6	843	818		
1984 106F		15338	USSR	28 SEP	101.8	66.6	845	838		
1984 106G		17358	USSR	28 SEP	101.9	71.0	852	846		
1984 107A	COSMOS 1604	15350	USSR	4 OCT	717.4	64.7	37286	3049		
1984 107D		15355	USSR	4 OCT	708.1	64.9	36946	2930		
1984 108B	ERBS	15354	US	5 OCT	96.6	56.9	603	594		
1984 109A	COSMOS 1605	15359	USSR	11 OCT	104.7	82.9	1015	948		
1984 109B		15360	USSR	11 OCT	104.6	82.9	1004	950		
1984 110A		15362	US	12 OCT	108.9	90.0	1197	1152		
1984 111A	COSMOS 1606	15369	USSR	18 OCT	97.5	82.5	655	618		
1984 111B		15370	USSR	18 OCT	97.5	82.5	659	622		
1984 112A	COSMOS 1607	15375	USSR	31 OCT	104.1	65.0	973	929		
1984 112C		15503	USSR	31 OCT	103.8	65.0	951	922		
1984 113B	ANIK D2	15383	CANADA	9 NOV	1436.1	0.0	35792	35782		35*
1984 113C	SYNCOM IV-1	15384	US	10 NOV	1436.2	0.9	35873	35702		35*
1984 113D		15387	US	9 NOV	629.7	25.1	35542	373		
1984 113E		15390	US	10 NOV	272.9	27.0	14785	329		
1984 114A	SPACENET 2	15385	US	10 NOV	1436.2	0.0	35827	35748		
1984 114B	MARECS B2	15386	ESA	10 NOV	1436.1	2.8	35779	35779		
1984 114C		15388	ESA	10 NOV	623.4	7.2	35204	385		
1984 115A	NATO III-D	15391	NATO	14 NOV	1436.6	2.2	35952	35642		
1984 115B		15392	US	14 NOV	115.9	21.5	2318	676		
1984 115C		15402	US	14 NOV	644.9	23.4	36298	398		
1984 118A	COSMOS 1610	15398	USSR	15 NOV	104.8	82.9	1009	964		
1984 118B		15399	USSR	15 NOV	104.7	82.9	1003	955		
1984 122A		15423	US	4 DEC	ELEMENTS NOT AVAILABLE					
1984 123A	NOAA 9	15427	US	12 DEC	101.9	99.1	859	839		
1984 123B		15440	US	12 DEC	101.2	99.0	820	814		
1984 123C		15441	US	12 DEC	101.2	99.0	817	808		
1984 124A	MOLNIYA 1-63	15429	USSR	14 DEC	723.8	63.2	38460	2192		
1984 124H		15439	USSR	14 DEC	733.4	63.3	38729	2391		
1984 125A	VEGA 1	15432	USSR	15 DEC	HELIOCENTRIC ORBIT					
1984 125B		15447	USSR	15 DEC	HELIOCENTRIC ORBIT					

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1984 LAUNCHES (CONT.)										
1984 127A	COSMOS 1515	15446	USSR	20 DEC	92.7	65.8	423	389		
1984 128A	VEGA 2	15449	USSR	21 DEC	HELIOCENTRIC ORBIT					
1984 128B		15450	USSR	21 DEC	HELIOCENTRIC ORBIT					
1984 129A		15453	US	22 DEC	ELEMENTS NOT AVAILABLE					
1984 129B		15454	US	22 DEC	ELEMENTS NOT AVAILABLE					
1985 LAUNCHES										
1985 001A	MS-T5	15464	JAPAN	7 JAN	HELIOCENTRIC ORBIT					
1985 001B		15465	JAPAN	7 JAN	HELIOCENTRIC ORBIT					
1985 003A	COSMOS 1617	15469	USSR	15 JAN	114.0	82.6	1411	1411		
1985 003B	COSMOS 1618	15470	USSR	15 JAN	114.0	82.6	1410	1405		
1985 003C	COSMOS 1619	15471	USSR	15 JAN	113.7	82.6	1410	1381		
1985 003D	COSMOS 1620	15472	USSR	15 JAN	113.3	82.6	1410	1388		
1985 003E	COSMOS 1621	15473	USSR	15 JAN	113.9	82.6	1410	1393		
1985 003F	COSMOS 1622	15474	USSR	15 JAN	113.9	82.6	1410	1398		
1985 003G		15475	USSR	15 JAN	114.7	82.6	1469	1411		
1985 004A	MOLNIYA 3-23	15476	USSR	16 JAN	717.7	64.8	39437	915		
1985 004B		15481	USSR	16 JAN	731.7	65.1	40153	886		
1985 006A	COSMOS 1624	15482	USSR	17 JAN	100.7	74.0	803	780		
1985 006B		15483	USSR	17 JAN	100.6	74.0	802	770		
1985 006C		15490	USSR	17 JAN	100.8	74.0	797	792		
1985 006D		15491	USSR	17 JAN	101.1	74.0	827	796		
1985 007A	GORIZONT 11	15484	USSR	18 JAN	1436.2	2.7	35794	35781		
1985 007D		15487	USSR	18 JAN	1397.4	2.5	35091	34975		
1985 007F		15489	USSR	18 JAN	475.5	47.0	27326	277		
1985 009A	COSMOS 1626	15494	USSR	24 JAN	97.4	82.5	653	618		
1985 009B		15495	USSR	24 JAN	97.5	82.5	657	622		
1985 010B		15543	US	24 JAN	ELEMENTS NOT AVAILABLE					35*
1985 010C		15544	US	24 JAN	ELEMENTS NOT AVAILABLE					
1985 010D		15545	US	24 JAN	ELEMENTS NOT AVAILABLE					
1985 011A	COSMOS 1627	15505	USSR	1 FEB	104.8	82.9	1016	953		
1985 011B		15506	USSR	1 FEB	104.7	82.9	1006	953		
1985 013A	METEOR 2-12	15516	USSR	6 FEB	104.0	82.5	959	933		
1985 013B		15517	USSR	6 FEB	104.0	82.5	957	933		
1985 014A		15546	US	8 FEB	ELEMENTS NOT AVAILABLE					
1985 014B		15547	US	8 FEB	ELEMENTS NOT AVAILABLE					
1985 015A	ARABSAT 1	15560	SA	8 FEB	1436.1	0.1	35814	35758		
1985 015B	SBTS 1	15561	BRAZIL	8 FEB	1436.2	0.0	35852	35724		
1985 015C		15562	ESA	8 FEB	615.5	7.3	34852	331		
1985 016A	COSMOS 1629	15574	USSR	21 FEB	1435.0	2.8	35779	35749		
1985 016F		15581	USSR	21 FEB	1446.6	2.8	36149	35912		
1985 018A	COSMOS 1631	15584	USSR	27 FEB	93.5	65.9	453	440		
1985 018B		15585	USSR	27 FEB	92.1	65.8	379	374		
1985 020A	COSMOS 1633	15592	USSR	5 MAR	97.4	82.5	646	624		
1985 021A	GEOSAT	15595	US	13 MAR	100.5	108.0	785	783		
1985 021B		15596	US	13 MAR	100.5	108.0	807	754		
1985 021C		15613	US	13 MAR	99.0	108.5	755	667		
1985 021D		15614	US	13 MAR	99.9	108.2	773	736		
1985 021E		15615	US	13 MAR	100.8	107.8	836	754		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1985 LAUNCHES (CONT.)										
1985 021F		15616	US	13 MAR	101.3	107.5	901	734		
1985 022A	COSMOS 1634	15597	USSR	14 MAR	104.7	82.9	1007	957		
1985 022B		15598	USSR	14 MAR	104.6	82.9	998	955		
1985 023A	COSMOS 1635	15617	USSR	21 MAR	115.8	74.1	1510	1472		
1985 023B	COSMOS 1636	15618	USSR	21 MAR	115.6	74.1	1492	1472		
1985 023C	COSMOS 1637	15619	USSR	21 MAR	115.4	74.1	1486	1463		
1985 023D	COSMOS 1638	15620	USSR	21 MAR	115.2	74.1	1478	1454		
1985 023E	COSMOS 1639	15621	USSR	21 MAR	115.1	74.1	1478	1438		
1985 023F	COSMOS 1640	15622	USSR	21 MAR	114.9	74.1	1478	1424		
1985 023G	COSMOS 1641	15623	USSR	21 MAR	114.8	74.1	1478	1409		
1985 023H	COSMOS 1642	15624	USSR	21 MAR	114.6	74.1	1476	1396		
1985 023J		15625	USSR	21 MAR	118.0	74.1	1710	1474		
1985 024A	EKRAN 14	15626	USSR	22 MAR	1479.4	0.8	43161	30098		
1985 024B		15630	USSR	22 MAR	1422.5	3.5	35576	35464		
1985 025A	INTELSAT VF10	15629	ITSO	22 MAR	1436.2	0.0	35798	35778		
1985 025B		15631	US	22 MAR	496.7	23.3	28558	235		
1985 027J		15650	USSR	3 APR	89.7	70.3	272	249		
1985 028B	ANIK C1	15642	CANADA	13 APR	1436.0	0.0	35862	35779		35*
1985 028C	SYNCOM IV-3	15643	US	12 APR	1436.1	0.7	35847	35727		35*
1985 028D		15644	US	13 APR	612.0	23.6	34677	319		
1985 028E		16229	US	12 APR	284.4	27.0	15565	327		
1985 030D - 030AA			USSR	18 APR	SEE NOTE		47*			47*
1985 033A	PROGNOZ 10	15661	USSR	26 APR	5783.7	76.8	194734	5975		
1985 033D		15664	USSR	26 APR	5784.8	65.0	200315	420		
1985 035A	GSTAR 1	15677	US	8 MAY	1436.2	0.0	35859	35717		
1985 035B	TELECOM 1B	15678	FRANCE	8 MAY	1434.6	1.3	35767	35746		
1985 035C		15679	ESA	8 MAY	574.1	6.7	32734	270		
1985 035D		15680	ESA	8 MAY	305.0	6.7	16709	553		
1985 037A	COSMOS 1650	15697	USSR	17 MAY	675.7	64.8	19176	19082		
1985 037B	COSMOS 1651	15698	USSR	17 MAY	675.0	64.9	19623	18601		
1985 037C	COSMOS 1652	15699	USSR	17 MAY	675.8	64.8	19148	19116		
1985 037F		15702	USSR	17 MAY	675.0	64.8	19167	19057		
1985 037G		15714	USSR	17 MAY	339.0	51.9	19091	363		
1985 037H		15715	USSR	17 MAY	337.8	52.0	19025	353		
1985 040A	MOLNIYA 3-24	15738	USSR	29 MAY	717.9	63.1	38501	1860		
1985 040D		15741	USSR	29 MAY	732.3	63.1	39005	2061		
1985 041A	COSMOS 1655	15751	USSR	30 MAY	105.0	82.9	1015	973		
1985 041B		15752	USSR	30 MAY	104.9	82.9	1011	968		
1985 042A	COSMOS 1656	15755	USSR	30 MAY	101.5	71.1	855	805		
1985 042D		15772	USSR	30 MAY	101.5	71.1	854	804		
1985 042E		15773	USSR	30 MAY	101.2	66.6	847	784		
1985 042F		15774	USSR	30 MAY	101.3	66.6	846	797		
1985 042G		18764	USSR	30 MAY	100.3	66.6	859	689		
1985 042H		18765	USSR	30 MAY	101.8	66.6	854	829		
1985 042J		18766	USSR	30 MAY	103.2	66.6	967	851		
1985 042K		18767	USSR	30 MAY	104.8	66.6	1118	849		
1985 042L		18819	USSR	30 MAY	102.8	66.6	936	848		
1985 045A	COSMOS 1658	15808	USSR	11 JUN	717.3	65.3	38561	1768		
1985 045D		15811	USSR	11 JUN	709.3	65.7	38071	1865		
1985 047A	COSMOS 1660	15821	USSR	14 JUN	116.0	73.6	1523	1480		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1985 LAUNCHES (CONT.)										
1985 047B		15822	USSR	14 JUN	116.0	73.6	1519	1479		
1985 048B	MORELOS A	15824	MEXICO	17 JUN	1436.1	0.0	35795	35779		35*
1985 048C	ARABSAT 1B	15825	SA	18 JUN	1405.3	0.2	37758	32605		35*
1985 048D	TELSTAR 3D	15826	US	19 JUN	1436.1	0.0	35794	35779		35*
1985 048F		15832	US	17 JUN	632.4	25.5	35667	386		
1985 048G		15836	US	18 JUN	625.4	26.8	35321	370		
1985 048H		15837	US	18 JUN	658.3	25.3	37032	348		
1985 049A	COSMOS 1661	15827	USSR	18 JUN	717.6	64.5	37719	2627		
1985 049B		15830	USSR	18 JUN	724.8	65.0	38098	2601		
1985 050A	COSMOS 1662	15833	USSR	19 JUN	92.5	65.8	410	386		CD*
1985 055A	INTELSAT VA F11	15873	ITSO	30 JUN	1436.2	0.0	35799	35778		
1985 055B		15874	US	30 JUN	579.7	23.0	32954	351		
1985 056A	GIOTTO	15875	ESA	2 JUL	HELIOCENTRIC ORBIT					
1985 056B		15876	ESA	2 JUL	498.2	8.1	28592	288		
1985 056C		17255	ESA	2 JUL	598.8	8.5	33993	314		
1985 056D		17325	ESA	2 JUL	597.5	7.8	33943	300		
1985 056E		17332	ESA	2 JUL	607.2	7.5	34377	373		
1985 058A	COSMOS 1666	15889	USSR	8 JUL	97.5	82.5	654	623		
1985 058B		15890	USSR	8 JUL	97.6	82.5	657	626		
1985 058C		19241	USSR	8 JUL	97.4	82.5	652	619		
1985 059C		15920	USSR	10 JUL	90.1	82.4	344	217		
1985 061A	MOLNIYA 3-25	15909	USSR	17 JUL	717.6	63.4	39504	839		
1985 061D		15916	USSR	17 JUL	737.9	63.4	40439	902		
1985 064A	COSMOS 1670	15930	USSR	1 AUG	104.1	64.9	994	907		
1985 066A	NNSS 30300	15935	US	3 AUG	107.9	89.9	1257	1000		
1985 066B	NNSS 30240	15936	US	3 AUG	107.9	89.9	1258	1000		
1985 066C		15938	US	3 AUG	107.9	89.9	1259	1000		
1985 066D		15950	US	3 AUG	107.5	89.9	1233	989		
1985 066E		15951	US	3 AUG	107.6	89.8	1238	992		
1985 066F		16020	US	3 AUG	107.6	90.3	1224	1006		
1985 066G		17164	US	3 AUG	108.2	89.4	1300	989		
1985 069A	COSMOS 1674	15944	USSR	8 AUG	97.4	82.5	653	620		
1985 069B		15945	USSR	8 AUG	97.5	82.5	656	624		
1985 070A	RADUGA 15	15946	USSR	8 AUG	1435.3	2.3	35777	35764		
1985 070F		15963	USSR	8 AUG	1472.4	2.4	36548	36438		
1985 071A	COSMOS 1675	15952	USSR	12 AUG	716.6	67.1	38500	1796		
1985 071B		15955	USSR	12 AUG	708.3	67.1	38138	1746		
1985 073A	PLANET A	15967	JAPAN	18 AUG	HELIOCENTRIC ORBIT					
1985 073C		15969	JAPAN	18 AUG	HELIOCENTRIC ORBIT					
1985 074A	MOLNIYA 1-54	15977	USSR	22 AUG	717.7	64.3	39606	742		
1985 074B		15983	USSR	22 AUG	732.4	64.3	40306	765		
1985 075A	COSMOS 1677	15986	USSR	23 AUG	103.9	64.7	986	897		
1985 076B	AUSSAT 1	15993	AUSTRL	27 AUG	1436.2	0.0	35795	35780		35*
1985 076C	ASC 1	15994	US	27 AUG	1436.1	0.0	35796	35776		35*
1985 076D	SYNCOM IV-4	15995	US	29 AUG	1440.4	0.3	36519	35233		35*
1985 076E		15996	US	27 AUG	638.0	25.6	35945	395		
1985 076F		16001	US	29 AUG	283.1	27.4	15424	381		
1985 076G		16007	US	29 AUG	634.9	26.2	35801	379		
1985 077K		16389	USSR	29 AUG	104.8	71.0	1129	842		
1985 077K		18608	USSR	29 AUG	100.7	74.1	808	778		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1985 LAUNCHES (CONT.)										
1985 077L		16390	USSR	29 AUG	105.1	71.0	1158	842		
1985 077M		16391	USSR	29 AUG	104.8	71.0	1129	840		
1985 077N		16392	USSR	29 AUG	105.0	71.0	1145	840		
1985 079A	COSMOS 1680	16011	USSR	4 SEP	100.7	74.1	802	780		
1985 079B		16012	USSR	4 SEP	100.6	74.1	797	775		
1985 079C		17754	USSR	4 SEP	101.1	74.1	828	792		
1985 082B	0822		USSR	19 SEP	SEE NOTE		45*			45*
1985 084A	COSMOS 1684	16064	USSR	24 SEP	718.8	62.4	38384	2018		
1985 084D		16070	USSR	24 SEP	706.0	63.3	37692	2078		
1985 086A	COSMOS 1686	16095	USSR	27 SEP	93.4	51.6	439	438		
1985 087A	INTELSAT VA F-12	16101	ITSO	29 SEP	1436.2	0.0	35799	35775		
1985 087B		16102	US	29 SEP	563.9	23.4	32193	269		
1985 088A	COSMOS 1687	16103	USSR	30 SEP	718.0	63.8	37500	2865		
1985 088D		16106	USSR	30 SEP	703.7	64.0	37064	2590		
1985 090A	COSMOS 1689	16110	USSR	3 OCT	96.6	97.8	633	556		
1985 090B		16111	USSR	3 OCT	97.0	97.8	657	571		
1985 091A	MOLNIYA 3-26	16112	USSR	3 OCT	717.7	64.6	38741	1609		
1985 091D		16125	USSR	3 OCT	734.0	64.8	39476	1674		
1985 092B		16116	US	3 OCT	ELEMENTS NOT AVAILABLE					35*
1985 092C		16117	US	3 OCT	ELEMENTS NOT AVAILABLE					35*
1985 092D		16118	US	3 OCT	ELEMENTS NOT AVAILABLE					
1985 092E		16119	US	3 OCT	ELEMENTS NOT AVAILABLE					
1985 093A		16129	US	9 OCT	718.0	63.7	20492	19870		
1985 093B		16137	US	9 OCT	368.2	63.5	20409	869		
1985 094A	COSMOS 1690	16138	USSR	9 OCT	113.7	82.6	1415	1378		
1985 094B	COSMOS 1691	16139	USSR	9 OCT	114.0	82.6	1413	1409		
1985 094C	COSMOS 1692	16140	USSR	9 OCT	113.8	82.6	1414	1386		
1985 094D	COSMOS 1693	16141	USSR	9 OCT	113.8	82.6	1414	1390		
1985 094E	COSMOS 1694	16142	USSR	9 OCT	113.9	82.6	1414	1395		
1985 094F	COSMOS 1695	16143	USSR	9 OCT	114.0	82.6	1414	1402		
1985 094G		16144	USSR	9 OCT	114.7	82.6	1468	1412		
1985 094H		16264	USSR	9 OCT	110.9	82.6	1549	986		
1985 094J		16265	USSR	9 OCT	108.7	82.6	1441	892		
1985 094K		16266	USSR	9 OCT	114.1	82.6	1434	1390		
1985 094L		16267	USSR	9 OCT	113.4	82.6	1475	1293		
1985 094M		16268	USSR	9 OCT	115.0	82.7	1524	1386		
1985 094N		16269	USSR	9 OCT	114.1	82.6	1426	1401		
1985 094P		16270	USSR	9 OCT	113.8	82.7	1606	1191		
1985 094Q		16271	USSR	9 OCT	114.0	82.6	1414	1403		
1985 094R		16272	USSR	9 OCT	113.5	82.6	1426	1349		
1985 094S		17168	USSR	9 OCT	113.7	82.6	1435	1354		
1985 094U		18777	USSR	9 OCT	114.0	82.6	1412	1410		
1985 097A	COSMOS 1697	16181	USSR	22 OCT	101.9	71.0	855	842		
1985 097B		16182	USSR	22 OCT	101.7	71.0	846	836		
1985 098A	COSMOS 1698	16183	USSR	22 OCT	719.0	63.2	37884	2529		
1985 098D		16186	USSR	22 OCT	707.9	63.4	37367	2498		
1985 099A	MOLNIYA 1-65	16187	USSR	23 OCT	717.5	64.7	38742	1599		
1985 099E		16197	USSR	23 OCT	698.0	64.6	37788	1587		
1985 100A	METEOR 3	16191	USSR	24 OCT	109.3	82.5	1207	1180		
1985 100B		16194	USSR	24 OCT	110.2	82.6	1246	1221		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1985 LAUNCHES (CONT.)										
1985 102A	COSMOS 1700	16199	USSR	25 OCT	1436.6	2.0	35811	35781		
1985 102D		16214	USSR	25 OCT	1431.2	1.9	35780	35601		
1985 103A	MOLNIYA 1-56	16220	USSR	28 OCT	717.7	63.4	39727	623		
1985 103D		16223	USSR	28 OCT	701.1	63.4	38713	813		
1985 105A	COSMOS 1701	16235	USSR	9 NOV	718.2	66.8	38678	1695		
1985 105D		16243	USSR	9 NOV	706.2	67.1	38112	1668		
1985 107A	RADUGA 17	16250	USSR	15 NOV	1436.2	2.0	35792	35786		
1985 107F		16339	USSR	15 NOV	1477.0	2.2	36680	36487		
1985 108A	COSMOS 1703	16262	USSR	22 NOV	97.5	82.5	655	623		
1985 108D		16263	USSR	22 NOV	97.6	82.5	658	626		
1985 109B	MORELOS 8	16274	MEXICO	27 NOV	1436.1	0.0	35792	35782		35*
1985 109C	AUSSAT 2	16275	AUSTRL	27 NOV	1436.2	0.0	35793	35783		35*
1985 109D	SATCOM K02	16276	US	28 NOV	1436.2	0.0	35794	35782		35*
1985 109F		16293	US	27 NOV	647.6	25.4	36460	375		
1985 109G		16294	US	27 NOV	644.7	25.7	36282	403		
1985 109H		16295	US	28 NOV	624.0	26.0	35262	360		
1985 110A	COSMOS 1704	16291	USSR	28 NOV	104.8	82.9	1006	961		
1985 110D		16292	USSR	28 NOV	104.6	82.9	996	955		
1985 113A	COSMOS 1707	16326	USSR	12 DEC	97.5	82.5	655	622		
1985 113D		16327	USSR	12 DEC	97.6	82.5	658	625		
1985 115A	COSMOS 1709	16368	USSR	19 DEC	104.8	82.9	1009	959		
1985 115D		16369	USSR	19 DEC	104.6	82.9	1002	953		
1985 117A	MOLNIYA 3-27	16393	USSR	24 DEC	717.7	63.1	38183	2169		
1985 117F		16402	USSR	24 DEC	732.7	63.2	38820	2265		
1985 118A	COSMOS 1710	16396	USSR	24 DEC	675.7	65.6	19148	19110		
1985 118D	COSMOS 1711	16397	USSR	24 DEC	675.7	65.6	19149	19109		
1985 118C	COSMOS 1712	16398	USSR	24 DEC	676.3	65.6	19154	19133		
1985 118F		16404	USSR	24 DEC	675.5	65.6	19132	19116		
1985 118K		16445	USSR	24 DEC	340.4	65.3	18873	669		
1985 118L		16446	USSR	24 DEC	340.4	65.1	18889	651		
1985 119A	METEOR 2-13	16408	USSR	26 DEC	104.0	82.5	957	935		
1985 119D		16409	USSR	26 DEC	104.0	82.5	955	935		
1985 121D		16437	USSR	28 DEC	95.3	71.0	699	417		
1985 121E		16438	USSR	28 DEC	95.4	71.0	679	396		
1985 121F		16439	USSR	28 DEC	95.2	71.0	664	390		
1985 121G		16440	USSR	28 DEC	94.1	71.0	585	365		
1986 LAUNCHES										
1986 002A	COSMOS 1715	16449	USSR	9 JAN	115.5	74.0	1490	1462		
1986 002B	COSMOS 1717	16450	USSR	9 JAN	115.6	74.0	1511	1473		
1986 002C	COSMOS 1718	16451	USSR	9 JAN	115.5	74.0	1494	1473		
1986 002D	COSMOS 1719	16452	USSR	9 JAN	115.3	74.0	1482	1453		
1986 002E	COSMOS 1720	16453	USSR	9 JAN	115.1	74.0	1482	1438		
1986 002F	COSMOS 1721	16454	USSR	9 JAN	115.9	74.0	1481	1425		
1986 002G	COSMOS 1722	16455	USSR	9 JAN	114.3	74.0	1482	1410		
1986 002H	COSMOS 1723	16456	USSR	9 JAN	114.5	74.0	1480	1398		
1986 002J		16457	USSR	9 JAN	117.9	74.0	1695	1479		
1986 003B	SATCOM K01	16462	US	12 JAN	1436.2	0.0	35794	35783		
1986 003C		16463	US	12 JAN	625.4	27.5	35358	334		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1986 LAUNCHES (CONT.)										
1986 005A	COSMOS 1725	16493	USSR	17 JAN	104.8	82.9	1001	966		
1986 005B		16494	USSR	17 JAN	104.7	82.9	992	963		
1986 006A	COSMOS 1726	16495	USSR	17 JAN	97.4	82.5	652	620		
1986 006B		16496	USSR	17 JAN	97.5	82.5	656	623		
1986 007A	RADUGA 19	16497	USSR	17 JAN	1426.1	2.0	35752	35427		
1986 007E		16501	USSR	17 JAN	647.7	47.0	36585	252		
1986 007F		16870	USSR	17 JAN	1472.4	2.0	36625	36364		
1986 008A	COSMOS 1727	16510	USSR	23 JAN	104.8	82.9	1014	956		
1986 008B		16511	USSR	23 JAN	104.7	82.9	1004	957		
1986 010A	PRC 19	16526	PRC	1 FEB	1436.8	0.8	35785	35776		
1986 010B		16528	PRC	1 FEB	629.9	30.6	35399	528		
1986 011A	COSMOS 1727	16527	USSR	1 FEB	717.6	62.9	38864	1479		
1986 011F		16533	USSR	1 FEB	705.7	63.4	38207	1547		
1986 014A		16591	US	9 FEB	ELEMENTS NOT AVAILABLE					
1986 014B		16592	US	9 FEB	ELEMENTS NOT AVAILABLE					
1986 014C		16622	US	9 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1986 014D		16623	US	9 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1986 014E		16624	US	9 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1986 014F		16625	US	9 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1986 014G		16630	US	9 FEB	ELEMENTS NOT AVAILABLE					
1986 014H		16631	US	9 FEB	ELEMENTS NOT AVAILABLE					
1986 015A	COSMOS 1732	16593	USSR	11 FEB	116.0	73.6	1523	1477		
1986 015B		16594	USSR	11 FEB	115.9	73.6	1520	1476		
1986 016A	BS-2B	16597	JAPAN	12 FEB	1436.2	0.0	35805	35770		
1986 016C		16600	JAPAN	12 FEB	531.2	27.9	30509	190		
1986 017A	MIR	16609	USSR	19 FEB	92.5	51.6	405	391		
1986 017B - 017BT			USSR	19 FEB	SEE NOTE	51*				51*
1986 018A	COSMOS 1733	16611	USSR	19 FEB	97.5	82.5	650	622		
1986 018B		16612	USSR	19 FEB	97.5	82.5	653	626		
1986 019A	SPOT 1	16613	FRANCE	22 FEB	101.3	98.7	823	821		
1986 019B	VIKING	16614	SWEDEN	22 FEB	261.6	98.8	13529	812		
1986 019C - 019VC			ESA	22 FEB	SEE NOTE	42*				42*
1986 022C		16863	USSR	13 MAR	89.5	51.6	253	244		
1986 024A	COSMOS 1736	16647	USSR	21 MAR	104.4	65.0	1009	923		
1986 024B - 024AF			USSR	21 MAR	SEE NOTE	40*				40*
1986 026A	GSTAR 2	16649	US	28 MAR	1436.2	0.0	35794	35781		
1986 026B	SBTS 2	16650	BRAZIL	28 MAR	1436.2	0.1	35819	35758		
1986 026C		16657	ESA	28 MAR	655.2	6.8	36788	430		
1986 026E		17253	ESA	28 MAR	537.6	7.9	30733	309		
1986 026F		17254	ESA	28 MAR	521.1	8.6	29713	430		
1986 027A	COSMOS 1735	16667	USSR	4 APR	1436.2	1.8	35826	35750		
1986 027F		16676	USSR	4 APR	1474.1	1.8	36686	36367		
1986 030A	COSMOS 1741	16681	USSR	18 APR	100.7	74.0	806	778		
1986 030B		16682	USSR	18 APR	100.6	74.0	798	775		
1986 030C		17842	USSR	18 APR	101.2	74.0	828	798		
1986 030D		17843	USSR	18 APR	101.1	74.0	828	796		
1986 030E		18274	USSR	18 APR	100.7	74.1	826	756		
1986 030F		18526	USSR	18 APR	100.7	74.0	799	788		
1986 030G		18681	USSR	18 APR	101.2	74.0	829	798		
1986 030H		19235	USSR	18 APR	104.1	74.0	956	947		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1986 LAUNCHES (CONT.)										
1986 031A	MOLNIYA 3-28	16683	USSR	18 APR	717.6	64.7	39311	1032		
1986 031D		16686	USSR	18 APR	733.5	64.9	40123	1003		
1986 034A	COSMOS 1743	16719	USSR	15 MAY	97.5	82.6	654	622		
1986 034B		16720	USSR	15 MAY	97.6	82.6	658	625		
1986 037A	COSMOS 1745	16727	USSR	23 MAY	104.8	83.0	1009	961		
1986 037B		16728	USSR	23 MAY	104.7	83.0	1000	957		
1986 038A	EKRAN 15	16729	USSR	24 MAY	1491.6	2.6	36932	36798		
1986 038D		16732	USSR	24 MAY	1420.5	2.5	35568	35392		
1986 038E		16733	USSR	24 MAY	254.4	47.9	13280	559		
1986 039A	METEOR 2-14	16735	USSR	27 MAY	104.0	82.5	958	935		
1986 039B		16736	USSR	27 MAY	104.0	82.5	956	935		
1986 042A	COSMOS 1748	16758	USSR	6 JUN	115.1	74.0	1468	1451		
1986 042B	COSMOS 1749	16759	USSR	6 JUN	114.4	74.0	1467	1391		
1986 042C	COSMOS 1750	16760	USSR	6 JUN	114.6	74.0	1468	1406		
1986 042D	COSMOS 1751	16761	USSR	6 JUN	115.6	74.0	1503	1465		
1986 042E	COSMOS 1752	16762	USSR	6 JUN	115.4	74.0	1484	1466		
1986 042F	COSMOS 1753	16763	USSR	6 JUN	115.3	74.0	1475	1459		
1986 042G	COSMOS 1754	16764	USSR	6 JUN	114.9	74.0	1468	1436		
1986 042H	COSMOS 1755	16765	USSR	6 JUN	114.3	74.0	1468	1421		
1986 042J		16766	USSR	6 JUN	117.7	74.0	1681	1469		
1986 044A	GORIZONT 12	16769	USSR	10 JUN	1436.1	1.5	35817	35758		
1986 044D		16789	USSR	10 JUN	272.7	47.0	14959	143		
1986 044F		16797	USSR	10 JUN	1474.4	1.5	36565	36500		
1986 046A	COSMOS 1758	16791	USSR	12 JUN	97.5	82.5	659	622		
1986 046B		16792	USSR	12 JUN	97.6	82.5	661	624		
1986 047A	COSMOS 1759	16798	USSR	18 JUN	104.7	82.9	1001	963		
1986 047B		16799	USSR	18 JUN	104.5	82.9	1026	925		
1986 049A	MOLNIYA 3-29	16802	USSR	19 JUN	718.4	64.4	39970	415		
1986 049D		16805	USSR	19 JUN	733.6	64.5	40728	402		
1986 050A	COSMOS 1761	16849	USSR	5 JUL	718.3	62.9	38031	2346		
1986 050D		16854	USSR	5 JUL	710.0	63.3	37591	2378		
1986 052A	COSMOS 1763	16860	USSR	16 JUL	100.4	74.0	801	752		
1986 052B		16864	USSR	16 JUL	100.4	74.0	801	752		
1986 052C		16865	USSR	16 JUL	100.3	74.0	797	745		
1986 052D		16866	USSR	16 JUL	100.2	74.0	794	743		
1986 052E		16867	USSR	16 JUL	100.3	74.0	796	747		
1986 055A	COSMOS 1766	16881	USSR	28 JUL	97.5	82.5	658	623		
1986 055B		16882	USSR	28 JUL	97.6	82.5	661	625		
1986 057A	MOLNIYA 1-67	16885	USSR	30 JUL	717.1	64.6	39755	563		
1986 057D		16889	USSR	30 JUL	731.7	64.9	40504	534		
1986 061A	EGP	16908	JAPAN	12 AUG	115.7	50.0	1497	1479		
1986 061B	JAS-1	16909	JAPAN	12 AUG	115.7	50.0	1497	1480		
1986 061C		16910	JAPAN	12 AUG	116.9	50.0	1595	1484		
1986 062A	COSMOS 1771	16917	USSR	20 AUG	104.2	65.0	988	922		
1986 062C		17035	USSR	20 AUG	103.9	65.0	961	920		
1986 065A	COSMOS 1774	16922	USSR	28 AUG	717.7	64.6	39087	1262		
1986 065D		16925	USSR	28 AUG	707.0	65.0	38435	1385		
1986 067A	COSMOS 1776	16928	USSR	3 SEP	92.8	74.0	417	403		
1986 067B		16929	USSR	3 SEP	92.2	74.0	391	376		
1986 067B - 067AD			USSR	3 SEP	SEE NOTE		50*			50*

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1986 LAUNCHES (CONT.)										
1986 068A	MOLNIYA 1-58	16934	USSR	5 SEP	717.3	64.5	39231	1123		
1986 068B		16939	USSR	5 SEP	731.3	64.7	39909	1108		
1986 070A	COSMOS 1777	16952	USSR	10 SEP	100.7	74.0	807	774		
1986 070B		16953	USSR	10 SEP	100.5	74.0	789	775		
1986 071A	COSMOS 1778	16961	USSR	16 SEP	675.7	64.8	19146	19112		
1986 071B	COSMOS 1779	16962	USSR	16 SEP	675.7	64.8	19145	19113		
1986 071C	COSMOS 1780	16963	USSR	16 SEP	675.7	64.8	19154	19104		
1986 071F		16968	USSR	16 SEP	675.2	65.0	19157	19076		
1986 071G		16984	USSR	16 SEP	340.0	64.8	19043	471		
1986 071H		16985	USSR	16 SEP	339.9	64.9	19050	462		
1986 073A	NOAA 10	16969	US	17 SEP	101.1	98.6	821	803		
1986 073B		16982	US	17 SEP	100.6	98.7	793	783		
1986 073C		16983	US	17 SEP	100.4	98.7	791	767		
1986 074A	COSMOS 1782	16986	USSR	30 SEP	97.5	82.5	654	627		
1986 074B		16987	USSR	30 SEP	97.6	82.5	656	629		
1986 075A	COSMOS 1783	16993	USSR	3 OCT	358.0	63.2	19812	833		
1986 075B		16996	USSR	3 OCT	357.0	63.1	19750	831		
1986 078A	COSMOS 1785	17031	USSR	15 OCT	717.5	66.2	38934	1407		
1986 078B		17037	USSR	15 OCT	707.7	66.7	38447	1407		
1986 079A	MOLNIYA 3-30	17038	USSR	20 OCT	717.8	64.7	39760	596		
1986 079B		17041	USSR	20 OCT	699.0	64.7	38797	627		
1986 082A	RADUGA 19	17046	USSR	25 OCT	1436.0	1.2	35787	35783		
1986 082B		17052	USSR	25 OCT	637.1	45.9	36043	252		
1986 082E		17053	USSR	25 OCT	232.5	46.7	12135	158		
1986 082F		17065	USSR	25 OCT	1475.5	0.9	36680	36426		
1986 083A	COSMOS 1788	17050	USSR	27 OCT	93.6	65.8	461	443		
1986 083B		17051	USSR	27 OCT	92.8	65.8	421	401		
1986 086A	COSMOS 1791	17066	USSR	13 NOV	104.7	82.9	1011	949		
1986 086B		17067	USSR	13 NOV	104.6	82.9	999	949		
1986 086C		18552	USSR	13 NOV	104.3	82.9	989	935		
1986 088A	POLAR BEAR	17070	US	14 NOV	104.8	89.5	1014	959		
1986 088B		17071	US	14 NOV	104.8	89.5	1013	959		
1986 088C		18426	US	14 NOV	105.2	89.1	1053	951		
1986 088D		18525	US	14 NOV	104.4	89.9	968	959		
1986 089A	MOLNIYA 1-59	17078	USSR	15 NOV	717.7	63.2	38501	1851		
1986 089B		17081	USSR	15 NOV	735.8	63.2	39207	2032		
1986 090A	GORIZONT 13	17083	USSR	18 NOV	1436.3	1.0	35795	35784		
1986 090B		17125	USSR	18 NOV	1434.6	1.0	35799	35716		
1986 090E		17148	USSR	18 NOV	631.7	46.7	35825	193		
1986 090F		17149	USSR	18 NOV	632.9	47.3	35812	268		
1986 091A	COSMOS 1793	17134	USSR	20 NOV	717.8	63.8	38363	1993		
1986 091B		17147	USSR	20 NOV	705.9	64.3	37869	1897		
1986 092A	COSMOS 1794	17138	USSR	21 NOV	115.5	74.0	1498	1464		
1986 092B	COSMOS 1795	17139	USSR	21 NOV	115.4	74.0	1480	1464		
1986 092C	COSMOS 1796	17140	USSR	21 NOV	115.2	74.0	1476	1452		
1986 092D	COSMOS 1797	17141	USSR	21 NOV	115.0	74.0	1470	1442		
1986 092E	COSMOS 1798	17142	USSR	21 NOV	114.9	74.0	1470	1426		
1986 092F	COSMOS 1799	17143	USSR	21 NOV	114.7	74.0	1470	1412		
1986 092G	COSMOS 1800	17144	USSR	21 NOV	114.5	74.0	1470	1397		
1986 092H	COSMOS 1801	17145	USSR	21 NOV	114.4	74.0	1469	1383		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1986 LAUNCHES (CONT.)										
1986 092J		17146	USSR	21 NOV	117.6	74.0	1676	1472		
1986 093A	COSMOS 1802	17159	USSR	24 NOV	104.9	82.9	1021	959		
1986 093B		17160	USSR	24 NOV	104.8	82.9	1017	952		
1986 094A	COSMOS 1803	17177	USSR	2 DEC	115.9	82.6	1501	1494		
1986 094J		17176	USSR	2 DEC	115.9	82.6	1498	1492		
1986 096A		17181	US	5 DEC	1436.1	3.0	35863	35709		
1986 097A	COSMOS 1805	17191	USSR	10 DEC	97.5	82.5	652	624		
1986 097J		17192	USSR	10 DEC	97.5	82.5	655	626		
1986 098A	COSMOS 1806	17213	USSR	12 DEC	718.2	62.7	38841	1533		
1986 098J		17215	USSR	12 DEC	705.9	63.1	38268	1497		
1986 100A	COSMOS 1808	17239	USSR	17 DEC	105.0	82.9	1016	969		
1986 100B		17240	USSR	17 DEC	104.8	82.9	1009	965		
1986 100C		18545	USSR	17 DEC	104.6	82.9	995	959		
1986 101A	COSMOS 1809	17241	USSR	18 DEC	104.1	82.5	963	940		
1986 101B		17242	USSR	18 DEC	104.1	82.5	961	940		
1986 101C		17265	USSR	18 DEC	103.9	82.6	966	919		
1986 101D		17269	USSR	18 DEC	104.3	82.6	974	952		
1986 101E		17270	USSR	18 DEC	104.2	82.4	958	951		
1986 101F		17271	USSR	18 DEC	103.7	82.4	955	909		
1986 101G		17272	USSR	18 DEC	103.7	82.5	941	921		
1986 101H		17273	USSR	18 DEC	103.6	82.5	939	917		
1986 101J		17274	USSR	18 DEC	104.4	82.5	991	941		
1986 101K		17844	USSR	18 DEC	103.6	82.5	944	916		
1986 101L		18650	USSR	18 DEC	103.7	82.5	943	921		
1986 103A	MOLNIYA 1-70	17264	USSR	26 DEC	717.7	63.0	38811	1538		
1986 103J		17257	USSR	26 DEC	698.8	62.9	38054	1359		
1987 LAUNCHES										
1987 001A	METEOR 2-15	17290	USSR	5 JAN	104.0	82.5	956	939		
1987 001B		17291	USSR	5 JAN	104.0	82.5	954	939		
1987 003A	COSMOS 1812	17295	USSR	14 JAN	97.5	82.5	654	626		
1987 003J		17296	USSR	14 JAN	97.5	82.5	656	628		
1987 004C - 004HC			USSR	15 JAN	SEE NOTE		46*			46*
1987 005A	COSMOS 1814	17303	USSR	21 JAN	100.6	74.1	805	766		
1987 005B		17304	USSR	21 JAN	100.5	74.1	799	763		
1987 005C		18257	USSR	21 JAN	100.7	74.0	795	785		
1987 008A	MOLNIYA 3-31	17326	USSR	22 JAN	717.8	63.1	38602	1751		
1987 008B		17333	USSR	22 JAN	730.7	63.1	39188	1801		
1987 009A	COSMOS 1816	17359	USSR	29 JAN	104.8	82.9	1009	960		
1987 009B		17360	USSR	29 JAN	104.5	82.9	1006	948		
1987 011A	COSMOS 1818	17369	USSR	1 FEB	100.7	65.0	804	777		
1987 011C		17399	USSR	1 FEB	99.5	65.0	749	715		
1987 011D		17400	USSR	1 FEB	99.3	65.0	740	706		
1987 012A	ASTRO C	17480	JAPAN	5 FEB	96.9	31.1	631	495		
1987 012B		17491	JAPAN	5 FEB	96.5	31.1	680	505		
1987 012D		18235	JAPAN	5 FEB	94.0	31.1	503	433		
1987 012E		18407	JAPAN	5 FEB	92.7	31.3	431	379		
1987 012H		18523	JAPAN	5 FEB	92.2	31.0	407	359		
1987 012K		18927	JAPAN	5 FEB	96.1	30.6	640	504		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1987 LAUNCHES (CONT.)										
1987 015A		17506	US	12 FEB	ELEMENTS NOT AVAILABLE					
1987 015B		17507	US	12 FEB	ELEMENTS NOT AVAILABLE					
1987 017A	COSMOS 1821	17525	USSR	18 FEB	104.8	82.9	1015	958		
1987 017B		17526	USSR	18 FEB	104.7	82.9	1009	946		
1987 018A	MOS-1	17527	JAPAN	19 FEB	103.2	99.1	909	907		
1987 018B		17528	JAPAN	19 FEB	100.1	97.4	892	631		
1987 020A	COSMOS 1823	17535	USSR	20 FEB	116.0	73.6	1522	1477		
1987 020B		17536	USSR	20 FEB	115.9	73.6	1519	1476		
1987 020C - 020D			USSR	20 FEB	SEE NOTE		48*			48*
1987 022A	GOES 7	17561	US	26 FEB	1436.1	0.0	35815	35756		
1987 022B		17562	US	26 FEB	117.5	21.8	2897	248		
1987 022C		17563	US	26 FEB	692.0	18.0	38783	291		
1987 024A	COSMOS 1825	17566	USSR	3 MAR	97.5	82.5	654	621		
1987 024B		17567	USSR	3 MAR	97.5	82.5	657	624		
1987 026A	COSMOS 1827	17582	USSR	13 MAR	113.8	82.6	1407	1395		
1987 026B	COSMOS 1828	17583	USSR	13 MAR	113.7	82.6	1407	1383		
1987 026C	COSMOS 1829	17584	USSR	13 MAR	114.0	82.6	1413	1407		
1987 026D	COSMOS 1830	17585	USSR	13 MAR	113.9	82.6	1407	1406		
1987 026E	COSMOS 1831	17586	USSR	13 MAR	113.8	82.5	1407	1390		
1987 026F	COSMOS 1832	17587	USSR	13 MAR	113.9	82.6	1407	1400		
1987 026G		17588	USSR	13 MAR	114.6	82.6	1469	1408		
1987 027A	COSMOS 1833	17589	USSR	18 MAR	101.9	70.9	854	844		
1987 027B		17590	USSR	18 MAR	101.7	71.0	842	837		
1987 027C		18416	USSR	18 MAR	104.8	71.0	1125	842		
1987 027D		18417	USSR	18 MAR	105.0	71.0	1148	841		
1987 027E		18527	USSR	18 MAR	104.9	71.0	1138	842		
1987 027F		18550	USSR	18 MAR	104.7	71.0	1116	839		
1987 028A	RADUGA 20	17611	USSR	19 MAR	1436.1	1.3	35793	35779		
1987 028B		17705	USSR	19 MAR	1441.8	1.3	36008	35789		
1987 028C		17709	USSR	19 MAR	635.6	47.4	35901	318		
1987 029A	PALAPA B-2P	17706	INDNSA	20 MAR	1436.2	0.1	35791	35786		
1987 029C		17708	INDNSA	20 MAR	299.8	24.2	16787	134		
1987 030A	KVANT 1	17845	USSR	31 MAR	92.5	51.6	405	391		
1987 036A	COSMOS 1838	17902	USSR	24 APR	293.3	64.9	16271	215		
1987 036B	COSMOS 1839	17903	USSR	24 APR	295.5	64.9	16423	214		
1987 036C	COSMOS 1840	17904	USSR	24 APR	300.3	65.0	16725	228		
1987 036G		17910	USSR	24 APR	290.8	65.0	16124	201		
1987 036H		17913	USSR	24 APR	176.2	64.7	7858	210		
1987 038A	COSMOS 1842	17911	USSR	27 APR	97.5	82.5	657	625		
1987 038B		17912	USSR	27 APR	97.6	82.5	658	627		
1987 040A	GORIZONT 14	17969	USSR	11 MAY	1436.2	2.8	35792	35785		
1987 040D		17972	USSR	11 MAY	1397.9	2.8	35093	34976		
1987 040E		18111	USSR	11 MAY	606.7	47.1	34547	177		
1987 040F		18112	USSR	11 MAY	616.1	47.2	34963	247		
1987 041A	COSMOS 1844	17973	USSR	13 MAY	101.9	71.0	853	844		
1987 041B		17974	USSR	13 MAY	101.7	71.0	848	828		
1987 041C		18410	USSR	13 MAY	105.0	71.0	1149	843		
1987 041D		18411	USSR	13 MAY	104.9	71.0	1130	844		
1987 041E		18412	USSR	13 MAY	104.9	71.0	1134	841		
1987 041F		18476	USSR	13 MAY	105.1	71.0	1156	842		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1987 LAUNCHES (CONT.)										
1987 041G		18687	USSR	13 MAY	101.3	71.0	825	815		
1987 043A		17997	US	15 MAY	ELEMENTS NOT AVAILABLE					
1987 043B		17998	US	15 MAY	ELEMENTS NOT AVAILABLE					
1987 043C		18007	US	15 MAY	ELEMENTS NOT AVAILABLE					
1987 043D		18008	US	15 MAY	ELEMENTS NOT AVAILABLE					
1987 043E		18009	US	15 MAY	ELEMENTS NOT AVAILABLE					
1987 043F		18010	US	15 MAY	ELEMENTS NOT AVAILABLE					
1987 043G		18024	US	15 MAY	ELEMENTS NOT AVAILABLE					
1987 043H		18025	US	15 MAY	ELEMENTS NOT AVAILABLE					
1987 048A	COSMOS 1849	18083	USSR	4 JUN	717.7	65.3	39076	1236		
1987 048B		18086	USSR	4 JUN	706.2	65.6	38542	1236		
1987 049A	COSMOS 1850	18095	USSR	9 JUN	100.7	74.0	803	779		
1987 049B		18096	USSR	9 JUN	100.6	74.0	800	771		
1987 050A	COSMOS 1851	18103	USSR	12 JUN	717.7	62.7	39282	1068		
1987 050B		18106	USSR	12 JUN	707.4	63.1	38750	1089		
1987 051A	COSMOS 1852	18113	USSR	16 JUN	115.6	74.0	1497	1471		
1987 051B	COSMOS 1853	18114	USSR	16 JUN	115.4	74.0	1480	1471		
1987 051C	COSMOS 1854	18115	USSR	16 JUN	115.3	74.0	1479	1456		
1987 051D	COSMOS 1855	18116	USSR	16 JUN	115.1	74.0	1475	1444		
1987 051E	COSMOS 1856	18117	USSR	16 JUN	114.9	74.0	1476	1429		
1987 051F	COSMOS 1857	18118	USSR	16 JUN	114.8	74.0	1475	1415		
1987 051G	COSMOS 1858	18119	USSR	16 JUN	114.6	74.0	1476	1400		
1987 051H	COSMOS 1859	18120	USSR	16 JUN	114.4	74.0	1474	1385		
1987 051J		18121	USSR	16 JUN	117.8	74.0	1685	1475		
1987 052A	COSMOS 1860	18122	USSR	18 JUN	104.0	65.0	980	913		
1987 052B		18241	USSR	18 JUL	103.7	65.0	960	902		
1987 053A		18123	US	20 JUN	101.8	98.8	854	834		
1987 053B		18127	US	20 JUN	101.5	98.8	837	818		
1987 053C		18128	US	20 JUN	101.3	98.8	825	814		
1987 054A	COSMOS 1861	18129	USSR	23 JUN	104.9	82.9	998	980		
1987 054B		18130	USSR	23 JUN	104.7	82.9	992	965		
1987 054C		18131	USSR	23 JUN	105.1	82.9	1023	973		
1987 055A	COSMOS 1862	18152	USSR	1 JUL	97.5	82.5	659	622		
1987 057A	COSMOS 1864	18160	USSR	6 JUL	104.7	82.9	1005	955		
1987 057B		18161	USSR	6 JUL	104.6	82.9	994	956		
1987 060A	COSMOS 1867	18187	USSR	10 JUL	100.7	65.0	806	778		
1987 060C		18191	USSR	10 JUL	99.0	65.0	727	695		
1987 060D		18524	USSR	10 JUL	99.3	65.0	740	712		
1987 062A	COSMOS 1869	18214	USSR	16 JUL	97.5	82.5	658	623		
1987 062B		18215	USSR	16 JUL	97.6	82.5	661	625		
1987 064A	COSMOS 1870	18225	USSR	25 JUL	89.9	71.9	278	263		
1987 065C		19033	USSR	1 AUG	115.6	102.0	1510	1455		
1987 068A	METEOR 2-18	18312	USSR	18 AUG	104.0	82.6	958	939		
1987 068B		18313	USSR	18 AUG	104.0	82.6	955	939		
1987 070A	ETS-V	18316	JAPAN	27 AUG	1436.2	0.0	36010	35565		
1987 070C		18320	JAPAN	27 AUG	521.1	28.0	29942	200		
1987 073A	EKRAN 16	18323	USSR	4 SEP	1436.1	1.3	35804	35767		
1987 073D		18331	USSR	4 SEP	1420.4	1.2	35564	35392		
1987 073E		18332	USSR	4 SEP	487.9	47.4	27972	331		
1987 074A	COSMOS 1875	18334	USSR	7 SEP	113.7	82.6	1407	1384		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1987 LAUNCHES (CONT.)										
1987 074B	COSMOS 1876	18335	USSR	7 SEP	114.0	82.6	1413	1407		
1987 074C	COSMOS 1877	18336	USSR	7 SEP	113.9	82.6	1407	1406		
1987 074D	COSMOS 1878	18337	USSR	7 SEP	113.9	82.6	1406	1400		
1987 074E	COSMOS 1879	18338	USSR	7 SEP	113.8	82.6	1407	1395		
1987 074F	COSMOS 1880	18339	USSR	7 SEP	113.8	82.6	1407	1390		
1987 074G		18340	USSR	7 SEP	114.6	82.6	1470	1408		
1987 078A	AUSSAT K3	18350	AUSTRL	16 SEP	1436.1	0.1	35796	35777		
1987 078B	ECS 4	18351	ESA	16 SEP	1436.1	0.0	35952	35620		
1987 078C		18352	ESA	16 SEP	490.3	7.1	28230	208		
1987 079A	COSMOS 1883	18355	USSR	16 SEP	675.7	65.3	19152	19106		
1987 079B	COSMOS 1884	18356	USSR	16 SEP	675.7	65.3	19151	19107		
1987 079C	COSMOS 1885	18357	USSR	16 SEP	675.7	65.3	19151	19106		
1987 079F		18360	USSR	16 SEP	674.8	65.3	19142	19068		
1987 079G		18374	USSR	16 SEP	339.8	65.1	19006	496		
1987 079H		18375	USSR	16 SEP	339.7	65.0	19014	486		
1987 080A		18361	US	16 SEP	107.2	90.3	1179	1013		
1987 080B		18362	US	16 SEP	107.2	90.3	1181	1013		
1987 080C		18363	US	16 SEP	107.2	90.3	1181	1014		
1987 080E		18365	US	16 SEP	107.1	90.3	1173	1012		
1987 080F		18530	US	16 SEP	106.5	90.4	1129	996		
1987 080G		18561	US	16 SEP	107.1	90.3	1170	1017		
1987 080H		18562	US	16 SEP	107.9	90.2	1267	989		
1987 084A	COSMOS 1888	18384	USSR	1 OCT	1436.0	0.2	35805	35763		
1987 084E		18388	USSR	1 OCT	129.5	89.0	4108	89		
1987 084F		18420	USSR	1 OCT	492.7	46.7	28468	102		
1987 087A	COSMOS 1891	18402	USSR	14 OCT	104.9	82.9	1023	951		
1987 087B		18403	USSR	14 OCT	104.7	82.9	1023	936		
1987 088A	COSMOS 1892	18421	USSR	20 OCT	97.5	82.5	655	623		
1987 088B		18422	USSR	20 OCT	97.6	82.5	660	625		
1987 090A		18441	US	26 OCT	ELEMENTS NOT AVAILABLE					
1987 091A	COSMOS 1894	18443	USSR	28 OCT	1436.2	0.3	35794	35784		
1987 091D		18446	USSR	28 OCT	1437.7	0.3	35900	35733		
1987 091E		18447	USSR	28 OCT	655.7	52.1	37126	117		
1987 091F		18448	USSR	28 OCT	599.4	46.8	34204	135		
1987 095A	TVSAT 1	18570	FRG	21 NOV	1435.2	0.2	39813	31722		
1987 096A	COSMOS 1897	18575	USSR	26 NOV	1436.1	0.1	35812	35761		
1987 096D		18578	USSR	26 NOV	1432.0	0.1	35795	35618		
1987 096E		18579	USSR	26 NOV	622.5	46.8	35353	188		
1987 097A		18583	US	29 NOV	ELEMENTS NOT AVAILABLE					
1987 097B		18584	US	29 NOV	ELEMENTS NOT AVAILABLE					
1987 098A	COSMOS 1898	18585	USSR	1 DEC	100.7	74.0	806	774		
1987 098B		18586	USSR	1 DEC	100.6	74.0	801	768		
1987 098C		18697	USSR	1 DEC	100.8	74.0	802	790		
1987 098D		18698	USSR	1 DEC	101.1	74.0	826	796		
1987 100A	RADUGA 21	18631	USSR	10 DEC	1436.3	0.3	35793	35788		
1987 100D		18634	USSR	10 DEC	1392.7	0.4	34991	34872		
1987 100E		18635	USSR	10 DEC	389.2	46.9	22344	216		
1987 100F		18636	USSR	10 DEC	376.5	45.0	21658	129		
1987 101A	COSMOS 1900	18665	USSR	12 DEC	99.3	66.1	749	701		
1987 105A	COSMOS 1903	18701	USSR	21 DEC	717.6	63.7	39431	914		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1987 LAUNCHES (CONT.)										
1987 105D		18704	USSR	21 DEC	705.1	63.8	38850	879		
1987 106A	COSMOS 1904	18709	USSR	23 DEC	104.3	82.9	1005	964		
1987 106B		18710	USSR	23 DEC	104.7	82.9	998	961		
1987 109A	EKRAN 17	18715	USSR	27 DEC	1436.1	0.2	35793	35777		
1987 109D		18718	USSR	27 DEC	1428.1	0.3	35882	35378		
1987 109E		18719	USSR	27 DEC	571.3	46.6	32737	147		
1988 LAUNCHES										
1988 001A	COSMOS 1908	18748	USSR	6 JAN	97.5	82.5	656	626		
1988 001B		18749	USSR	6 JAN	97.5	82.5	657	627		
1988 002A	COSMOS 1909	18788	USSR	15 JAN	114.0	82.6	1411	1408		
1988 002B	COSMOS 1910	18789	USSR	15 JAN	113.9	82.6	1408	1405		
1988 002C	COSMOS 1911	18790	USSR	15 JAN	113.9	82.6	1408	1398		
1988 002D	COSMOS 1912	18791	USSR	15 JAN	113.8	82.6	1408	1393		
1988 002E	COSMOS 1913	18792	USSR	15 JAN	113.8	82.6	1408	1388		
1988 002F	COSMOS 1914	18793	USSR	15 JAN	113.7	82.6	1408	1382		
1988 002G		18794	USSR	15 JAN	114.6	82.6	1470	1408		
1988 005A	METEOR 2-17	18820	USSR	30 JAN	104.0	82.5	957	934		
1988 005B		18821	USSR	30 JAN	103.9	82.5	954	935		
1988 006A		18822	US	3 FEB	101.3	98.7	823	815		
1988 006B		18845	US	3 FEB	100.8	98.7	801	792		
1988 006C		18846	US	3 FEB	100.7	98.7	797	790		
1988 006D		18955	US	3 FEB	100.8	98.7	800	795		
1988 006F		18984	US	3 FEB	101.0	98.7	808	798		
1988 012A	GS-3A	18877	JAPAN	19 FEB	1436.2	0.1	35793	35784		
1988 012C		18879	JAPAN	19 FEB	568.1	27.3	32521	164		
1988 013A	COSMOS 1922	18881	USSR	26 FEB	717.5	62.8	39014	1325		
1988 013C		18883	USSR	26 FEB	705.7	63.0	38443	1315		
1988 014A	PRC 22	18922	PRC	7 MAR	1436.1	0.1	35794	35778		
1988 014B		18923	PRC	7 MAR	187.0	30.3	7214	119		
1988 015H		18991	USSR	10 MAR	90.7	72.9	376	241		
1988 016A	COSMOS 1924	18937	USSR	11 MAR	115.7	74.0	1513	1458		
1988 016B	COSMOS 1925	18938	USSR	11 MAR	115.5	74.0	1495	1457		
1988 016C	COSMOS 1926	18939	USSR	11 MAR	115.3	74.0	1477	1458		
1988 016D	COSMOS 1927	18940	USSR	11 MAR	115.1	74.0	1465	1453		
1988 016E	COSMOS 1928	18941	USSR	11 MAR	114.9	74.0	1459	1442		
1988 016F	COSMOS 1929	18942	USSR	11 MAR	114.7	74.0	1458	1427		
1988 016G	COSMOS 1930	18943	USSR	11 MAR	114.5	74.0	1458	1412		
1988 016H	COSMOS 1931	18944	USSR	11 MAR	114.4	74.0	1458	1396		
1988 016J		18945	USSR	11 MAR	117.5	74.0	1685	1462		
1988 016K		19461	USSR	11 MAR	117.5	74.0	1683	1461		
1988 017A	MOLNIYA 1-71	18946	USSR	11 MAR	717.3	63.1	39180	1176		
1988 017D		18949	USSR	11 MAR	695.5	62.9	38769	485		
1988 018A	SPACENET 5R	18951	US	11 MAR	1436.2	0.0	35790	35784		
1988 018B	TELECOM 1C	18952	FRANCE	11 MAR	1436.2	0.0	35794	35781		
1988 018C		18953	ESA	11 MAR	616.5	5.7	34820	413		
1988 019A	COSMOS 1932	18957	USSR	14 MAR	104.4	65.0	987	942		
1988 019D		19162	USSR	14 MAR	104.0	65.0	957	941		
1988 020A	COSMOS 1933	18958	USSR	15 MAR	97.5	82.5	653	625		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1986 LAUNCHES (CONT.)										
1986 020B		18959	USSR	15 MAR	97.6	82.5	654	628		
1986 021A	IRS-1A	18960	INDIA	17 MAR	103.1	99.0	913	894		
1986 021B		18961	USSR	17 MAR	102.8	99.0	919	863		
1986 022A	MOLNIYA 1-72	18980	USSR	17 MAR	717.3	64.0	39805	548		
1986 022B		18983	USSR	17 MAR	731.8	64.1	40493	550		
1986 023A	COSMOS 1934	18985	USSR	22 MAR	104.5	83.0	1007	946		
1986 023B		18986	USSR	22 MAR	104.5	83.0	996	947		
1986 028A	GORIZONT 15	19017	USSR	31 MAR	1436.2	0.3	35790	35784		
1986 028B		19020	USSR	31 MAR	1472.7	0.4	36597	36402		
1986 028E		19036	USSR	31 MAR	640.4	46.4	36344	122		
1986 028F		19037	USSR	31 MAR	621.6	46.4	35148	346		
1986 029A	COSMOS 1937	19038	USSR	5 APR	100.6	74.0	803	766		
1986 029B		19039	USSR	5 APR	100.5	74.1	799	762		
1986 032A	COSMOS 1939	19045	USSR	20 APR	97.3	97.9	647	606		
1986 032B		19046	USSR	20 APR	97.5	97.9	680	601		
1986 033A		19070	US	26 APR	108.5	90.3	1305	1012		
1986 033B		19071	US	26 APR	108.5	90.3	1302	1013		
1986 033C		19072	US	26 APR	108.5	90.3	1305	1013		
1986 033D		19077	US	26 APR	108.4	90.3	1293	1011		
1986 033E		19078	US	26 APR	107.7	90.6	1240	997		
1986 033F		19140	US	26 APR	108.4	90.3	1292	1012		
1986 033G		19181	US	26 APR	109.2	90.2	1384	993		
1986 034A	COSMOS 1940	19073	USSR	26 APR	1430.3	0.2	35777	35569		
1986 034B		19076	USSR	26 APR	1438.3	0.3	35942	35728		
1986 034E		19082	USSR	26 APR	639.3	48.6	36022	387		
1986 034F		19083	USSR	26 APR	649.6	47.3	36714	223		
1986 036A	EKRAN 18	19090	USSR	6 MAY	1436.2	0.6	35793	35784		
1986 036B		19093	USSR	6 MAY	1436.4	0.6	35797	35787		
1986 036E		19094	USSR	6 MAY	1424.1	0.6	35632	35470		
1986 036F		19095	USSR	6 MAY	130.9	46.5	4200	120		
1986 039A	COSMOS 1943	19119	USSR	15 MAY	101.9	71.0	853	841		
1986 039B		19120	USSR	15 MAY	101.6	71.0	850	815		
1986 039C		19125	USSR	15 MAY	104.5	71.0	1115	839		
1986 039D		19126	USSR	15 MAY	104.7	71.0	1123	841		
1986 039E		19127	USSR	15 MAY	105.1	71.0	1160	842		
1986 039F		19128	USSR	15 MAY	105.1	71.0	1156	843		
1986 040A	INTELSAT 5A F-13	19121	ITSO	17 MAY	1436.1	0.0	35793	35782		
1986 040B		19122	US	17 MAY	636.3	7.2	35727	529		
1986 043A	COSMOS 1946	19163	USSR	21 MAY	675.7	64.9	19148	19110		
1986 043B	COSMOS 1947	19164	USSR	21 MAY	675.7	64.9	19144	19114		
1986 043C	COSMOS 1948	19165	USSR	21 MAY	675.7	64.9	19142	19116		
1986 043F		19168	USSR	21 MAY	674.5	64.9	19120	19076		
1986 043G		19169	USSR	21 MAY	339.9	65.2	18961	551		
1986 043H		19170	USSR	21 MAY	340.0	65.2	18949	567		
1986 044A	MOLNIYA 3-32	19189	USSR	26 MAY	717.8	63.8	39796	556		
1986 044B		19190	USSR	26 MAY	733.0	63.8	40567	536		
1986 045A	COSMOS 1949	19193	USSR	28 MAY	92.8	65.0	416	402		
1986 045A	COSMOS 1950	19195	USSR	30 MAY	116.0	73.6	1519	1483		
1986 045B		19196	USSR	30 MAY	116.0	73.6	1514	1482		
1986 046C		19386	USSR	7 JUN	89.4	51.6	253	239		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1988 LAUNCHES (CONT.)										
1988 050A	COSMOS 1953	19210	USSR	14 JUN	97.6	82.5	660	623		
1988 050B		19211	USSR	14 JUN	97.6	82.5	661	624		
1988 051A	METEOSAT	19215	ESA	15 JUN	1436.3	0.4	35793	35787		
1988 051B	OSCAR 13	19216	US	15 JUN	686.7	57.2	36741	2069		
1988 051C	PAS-1	19217	US	15 JUN	1436.1	0.0	35798	35775		
1988 051D		19218	ESA	15 JUN	571.7	10.1	32658	222		
1988 051E		19219	ESA	15 JUN	630.6	10.0	35682	279		
1988 051F		19220	ESA	15 JUN	599.4	10.0	34054	287		
1988 051G		19857	ESA	15 JUN	633.8	6.9	35482	642		
1988 051H		19951	ESA	15 JUN	633.6	7.5	35283	833		
1988 052A		19223	US	16 JUN	108.9	90.0	1197	1151		
1988 053A	COSMOS 1954	19256	USSR	21 JUN	100.7	74.1	802	776		
1988 053B		19257	USSR	21 JUN	100.5	74.1	801	766		
1988 053C		19260	USSR	21 JUN	100.8	74.1	805	791		
1988 053D		19261	USSR	21 JUN	100.9	74.1	811	789		
1988 055F		19285	USSR	23 JUN	90.3	82.4	302	272		
1988 055G		19286	USSR	23 JUN	91.4	82.4	393	291		
1988 056A	OKEAN 1	19274	USSR	5 JUL	97.5	82.5	658	626		
1988 056B		19275	USSR	5 JUL	97.6	82.5	660	628		
1988 058A	PHOBOS 1	19281	USSR	7 JUL	TRANS-MARS TRAJECTORY					
1988 058B		19282	USSR	7 JUL	HELIOCENTRIC ORBIT					
1988 059A	PHOBOS 2	19287	USSR	12 JUL	TRANS-MARS TRAJECTORY					
1988 059B		19288	USSR	12 JUL	HELIOCENTRIC ORBIT					
1988 062A	COSMOS 1959	19324	USSR	18 JUL	104.7	83.0	1005	952		
1988 062B		19325	USSR	18 JUL	104.6	83.0	998	950		
1988 063A	INSAT 1C	19330	INDIA	21 JUL	1436.2	0.1	35790	35784		
1988 063B	ECS 5	19331	ESA	21 JUL	1436.1	0.2	35809	35763		
1988 063C		19332	ESA	21 JUL	580.2	7.6	33096	234		
1988 063D		19335	ESA	21 JUL	138.9	7.3	4866	146		
1988 064A	METEOR 3-2	19336	USSR	26 JUL	109.3	82.5	1208	1179		
1988 064B		19337	USSR	26 JUL	109.3	82.5	1205	1180		
1988 065A	COSMOS 1960	19338	USSR	28 JUL	93.4	65.8	455	429		
1988 065B		19339	USSR	28 JUL	93.1	65.8	441	408		
1988 066A	COSMOS 1961	19344	USSR	1 AUG	1436.2	0.6	35793	35782		
1988 066D		19347	USSR	1 AUG	1459.6	0.6	36378	36113		
1988 066E		19348	USSR	1 AUG	521.8	46.5	30042	142		
1988 069A	MOLNIYA 1-73	19377	USSR	12 AUG	717.6	63.5	39925	420		
1988 069D		19380	USSR	12 AUG	734.9	63.6	40883	312		
1988 071A	GORIZONT 16	19397	USSR	18 AUG	1436.2	0.6	35808	35768		
1988 071D		19400	USSR	18 AUG	1432.1	0.7	35777	35639		
1988 071E		19401	USSR	18 AUG	599.9	46.6	34298	115		
1988 071F		19402	USSR	18 AUG	434.3	46.7	27974	126		
1988 074A		19419	US	25 AUG	107.4	89.9	1178	1031		
1988 074B		19420	US	25 AUG	107.3	89.9	1176	1031		
1988 074C		19421	US	25 AUG	107.4	89.9	1176	1034		
1988 074D		19515	US	25 AUG	107.3	89.9	1178	1028		
1988 074E		19516	US	25 AUG	107.3	90.0	1171	1029		
1988 074F		19559	US	25 AUG	107.3	89.4	1174	1027		
1988 074G		19577	US	25 AUG	107.3	90.5	1171	1032		
1988 075A	COSMOS 1966	19445	USSR	30 AUG	717.5	63.3	39318	1026		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1988 LAUNCHES (CONT.)										
1988 076D		19448	USSR	30 AUG	705.5	63.4	38740	1007		
1988 077A		19458	US	2 SEP	ELEMENTS NOT AVAILABLE					
1988 077B		19459	US	2 SEP	ELEMENTS NOT AVAILABLE					
1988 077C		19490	US	2 SEP	ELEMENTS NOT AVAILABLE					
1988 078A		19460	US	5 SEP	ELEMENTS NOT AVAILABLE					
1988 078B		19461	US	5 SEP	ELEMENTS NOT AVAILABLE					
1988 080A	FENGYUN 1	19467	PRC	6 SEP	102.7	99.2	898	877		
1988 080B		19468	PRC	6 SEP	102.7	99.1	941	832		
1988 081A	GSTAR 3	19483	US	8 SEP	1186.3	1.9	36073	25414		
1988 081B	SBS 5	19484	US	8 SEP	1436.1	0.1	36008	35566		
1988 081C		19485	ESA	8 SEP	592.6	7.4	33766	219		
1988 081D		19487	ESA	8 SEP	561.1	6.6	32036	274		
1988 085A	COSMOS 1970	19501	USSR	16 SEP	675.7	65.0	19159	19098		
1988 085B	COSMOS 1971	19502	USSR	16 SEP	675.7	65.0	19145	19113		
1988 085C	COSMOS 1972	19503	USSR	16 SEP	675.0	65.1	19128	19094		
1988 085E		19505	USSR	16 SEP	674.9	65.0	19119	19097		
1988 085F		19535	USSR	16 SEP	339.7	65.1	19057	442		
1988 085G		19537	USSR	16 SEP	339.8	65.0	19057	444		
1988 086A	CS-3B	19508	JAPAN	16 SEP	1436.2	0.0	35791	35785		
1988 086C		19558	JAPAN	16 SEP	629.3	27.9	35800	95		
1988 086J		19591	USSR	22 SEP	91.7	72.9	380	335		
1988 089A	NOAA 11	19531	US	24 SEP	102.0	98.9	861	844		
1988 089B		19532	US	24 SEP	101.6	98.9	839	828		
1988 089C		19534	US	24 SEP	101.5	98.9	836	820		
1988 090A	MOLNIYA 3-33	19541	USSR	29 SEP	717.8	63.4	39878	476		
1988 090D		19544	USSR	29 SEP	698.6	63.4	38914	488		
1988 091B	TDRS 3	19548	US	29 SEP	1436.3	0.5	35798	35781		35*
1988 091C		19549	US	29 SEP	627.9	27.0	35516	306		
1988 091D		19550	US	29 SEP	1433.2	0.1	36763	34694		
1988 092A	COSMOS 1974	19554	USSR	3 OCT	718.0	62.9	39614	749		
1988 092D		19557	USSR	3 OCT	705.5	63.0	38994	751		
1988 093A	COSMOS 1975	19573	USSR	11 OCT	97.5	82.5	660	622		
1988 093B		19574	USSR	11 OCT	97.6	82.5	660	623		
1988 095A	RADUGA 22	19596	USSR	20 OCT	1436.1	0.9	35833	35739		
1988 095E		19600	USSR	20 OCT	602.7	46.8	34334	182		
1988 095F		19601	USSR	20 OCT	545.2	46.6	31321	138		
1988 095F		19777	USSR	20 OCT	1470.3	0.9	36505	36403		
1988 096A	COSMOS 1977	19608	USSR	25 OCT	718.0	62.9	39461	902		
1988 096D		19611	USSR	25 OCT	704.9	63.0	38831	886		
1988 098A	TDF-1	19621	FRANCE	28 OCT	1436.2	0.0	35800	35775		
1988 098B		19622	FRANCE	28 OCT	617.3	3.9	34958	317		
1988 099A		19625	US	6 NOV	ELEMENTS NOT AVAILABLE					
1988 099B		19626	US	6 NOV	ELEMENTS NOT AVAILABLE					
1988 101A	COSMOS 1979	19647	USSR	18 NOV	92.7	65.0	415	402		
1988 102A	COSMOS 1980	19649	USSR	23 NOV	101.9	71.0	852	845		
1988 102B		19650	USSR	23 NOV	101.8	71.0	853	831		
1988 102C		19656	USSR	23 NOV	105.2	71.0	1164	843		
1988 102D		19657	USSR	23 NOV	105.2	71.0	1162	842		
1988 102E		19658	USSR	23 NOV	105.0	71.0	1142	842		
1988 102F		19659	USSR	23 NOV	104.8	71.0	1125	843		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1988 LAUNCHES (CONT.)										
1988 102G		19811	USSR	23 NOV	105.0	71.0	1142	842		
1988 102H		19813	USSR	23 NOV	105.2	71.0	1162	842		
1988 105B		19671	US	2 DEC	ELEMENTS NOT AVAILABLE					
1988 108A	EKRAN 19	19683	USSR	8 DEC	1436.0	0.9	35792	35776		
1988 108D		19686	USSR	8 DEC	1418.5	1.0	35499	35383		
1988 108E		19691	USSR	8 DEC	607.7	46.7	34610	163		
1988 108F		19699	USSR	10 DEC	572.2	46.7	32759	146		
1988 109A	SKYNET 4B	19687	UK	11 DEC	1436.1	2.6	35800	35773		
1988 109B	ASTRA 1A	19688	LUXBRG	11 DEC	1436.1	0.1	35790	35783		
1988 109C		19689	ESA	11 DEC	644.1	6.0	36181	471		
1988 109D		19690	ESA	11 DEC	583.0	5.7	33194	281		
1988 111A	PRC 25	19710	PRC	22 DEC	1436.1	0.1	35788	35786		
1988 112A	MOLNIYA 3-34	19713	USSR	22 DEC	717.7	62.8	39616	735		
1988 112D		19716	USSR	22 DEC	696.1	62.9	38555	724		
1988 113A	COSMOS 1988	19720	USSR	23 DEC	94.9	73.5	516	506		
1988 113H		19764	USSR	23 DEC	95.0	73.5	525	511		
1988 113M		19943	USSR	23 DEC	93.2	73.5	449	416		
1988 115A	MOLNIYA 1-74	19730	USSR	28 DEC	717.7	63.0	39790	561		
1988 115D		19733	USSR	28 DEC	696.9	63.0	38755	564		
1989 LAUNCHES										
1989 001A	COSMOS 1987	19749	USSR	10 JAN	675.7	64.9	19148	19110		
1989 001B	COSMOS 1988	19750	USSR	10 JAN	675.7	64.9	19148	19110		
1989 001C	COSMOS 1989	19751	USSR	10 JAN	675.5	64.9	19149	19100		
1989 001E		19753	USSR	10 JAN	675.5	64.9	19156	19093		
1989 001F		19754	USSR	10 JAN	674.7	64.9	19146	19062		
1989 001G		19755	USSR	10 JAN	339.8	64.8	19040	465		
1989 001H		19856	USSR	10 JAN	339.8	65.0	19033	470		
1989 004A	GORIZONT 17	19765	USSR	26 JAN	1436.2	1.1	35789	35786		
1989 004D		19768	USSR	26 JAN	636.7	46.6	35967	307		
1989 004E		19771	USSR	26 JAN	643.5	46.8	36417	212		
1989 004F		19776	USSR	26 JAN	1469.5	1.1	36536	36340		
1989 005A	COSMOS 1992	19769	USSR	26 JAN	100.6	74.1	802	770		
1989 005B		19770	USSR	26 JAN	100.4	74.0	781	775		
1989 005C		19831	USSR	26 JAN	100.8	74.1	811	781		
1989 005D		19945	USSR	26 JAN	101.0	74.1	831	783		
1989 006A	INTELSAT 5A F-15	19772	ITSO	27 JAN	1435.1	0.0	35804	35769		
1989 006B		19773	ESA	27 JAN	636.7	8.1	35810	566		
1989 009A	COSMOS 1994	19785	USSR	10 FEB	113.9	82.6	1414	1392		
1989 009B	COSMOS 1995	19786	USSR	10 FEB	114.1	82.6	1415	1410		
1989 009C	COSMOS 1996	19787	USSR	10 FEB	114.0	82.6	1415	1404		
1989 009D	COSMOS 1997	19788	USSR	10 FEB	113.9	82.6	1415	1397		
1989 009E	COSMOS 1998	19789	USSR	10 FEB	113.8	82.6	1414	1388		
1989 009F	COSMOS 1999	19790	USSR	10 FEB	113.7	82.6	1415	1381		
1989 009G		19791	USSR	10 FEB	114.7	82.6	1468	1414		
1989 011A	COSMOS 2001	19796	USSR	14 FEB	718.0	62.8	39507	858		
1989 011D		19799	USSR	14 FEB	705.7	62.9	38908	849		
1989 012A	COSMOS 2002	19800	USSR	14 FEB	102.0	65.8	1525	179		
1989 012B		19801	USSR	14 FEB	95.5	65.8	926	163		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1989 LAUNCHES (CONT.)										
1989 013A		19802	US	14 FEB	718.0	55.1	20361	20004		
1989 013C		19804	US	14 FEB	231.4	37.3	12074	141		
1989 014A	MOLNIYA 1-75	19807	USSR	15 FEB	717.7	63.0	39802	546		
1989 014D		19810	USSR	15 FEB	694.5	63.0	38663	534		
1989 016A	EXOS-D	19822	JAPAN	21 FEB	208.9	75.1	10291	275		
1989 016C		19824	JAPAN	21 FEB	207.7	75.1	10202	275		
1989 016K		19952	JAPAN	21 FEB	199.6	75.1	9592	275		
1989 016L		19962	JAPAN	21 FEB	203.4	75.7	9889	271		
1989 016M		19963	JAPAN	21 FEB	206.9	75.2	10144	277		
1989 016P		20034	JAPAN	21 FEB	207.5	74.5	10182	279		
1989 017A	COSMOS 2004	19826	USSR	22 FEB	105.0	83.0	1014	971		
1989 018A	METEOR 2-18	19851	USSR	28 FEB	104.0	82.5	956	938		
1989 018B		19852	USSR	28 FEB	104.0	82.5	960	936		
1989 020A	JCSAT-1	19874	JAPAN	6 MAR	1436.2	0.0	35792	35784		
1989 020B	MOP-1	19876	ESA	6 MAR	1436.3	1.0	35798	35783		
1989 020C		19877	ESA	6 MAR	619.3	6.9	35138	238		
1989 020D		19878	ESA	6 MAR	609.2	6.9	34591	262		
1989 021B	TDRS-D	19883	US	13 MAR	1432.2	0.3	35737	35682		
1989 021C		19884	US	13 MAR	621.1	26.0	35269	202		
1989 021D		19913	US	13 MAR	1431.3	2.3	35816	35570		
1989 022H		19916	USSR	16 MAR	90.7	62.8	333	280		
1989 024A	COSMOS 2007	19900	USSR	23 MAR	89.4	64.7	262	224		
1989 025A	COSMOS 2008	19902	USSR	24 MAR	114.5	74.0	1469	1391		
1989 025B	COSMOS 2009	19903	USSR	24 MAR	114.6	74.0	1470	1406		
1989 025C	COSMOS 2010	19904	USSR	24 MAR	114.8	74.0	1470	1422		
1989 025D	COSMOS 2011	19905	USSR	24 MAR	115.0	74.0	1470	1437		
1989 025E	COSMOS 2012	19906	USSR	24 MAR	115.2	74.0	1470	1454		
1989 025F	COSMOS 2013	19907	USSR	24 MAR	115.3	74.0	1478	1463		
1989 025G	COSMOS 2014	19908	USSR	24 MAR	115.5	74.0	1488	1468		
1989 025H	COSMOS 2015	19909	USSR	24 MAR	115.7	74.0	1508	1468		
1989 025J		19910	USSR	24 MAR	117.7	74.0	1684	1470		
1989 025A		19911	US	24 MAR	94.5	47.7	509	476		
1989 027A	TELE-X	19919	SWEDEN	2 APR	1436.1	0.1	35915	35658		
1989 027B		19920	ESA	2 APR	630.5	3.2	35795	163		
1989 028A	COSMOS 2016	19921	USSR	4 APR	104.7	83.0	1013	951		
1989 028B		19922	USSR	4 APR	104.6	83.0	1003	949		
1989 030A	RADUGA 23	19928	USSR	14 APR	1436.3	1.2	35794	35786		
1989 030D		19931	USSR	14 APR	1470.5	1.3	36534	36380		
1989 030E		19932	USSR	14 APR	647.8	47.1	36571	269		
1989 030F		19933	USSR	14 APR	644.0	47.1	36434	214		
1989 033B	MAGELLAN	19969	US	4 MAY	TRANS-VENUS TRAJECTORY					
1989 033C		19970	US	4 MAY	448.3	27.9	25749	300		
1989 033D		19971	US	4 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1989 035A		19976	US	10 MAY	ELEMENTS NOT AVAILABLE					
1989 035B		19977	US	10 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1989 035C		19983	US	10 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1989 036A	COSMOS 2020	19986	USSR	17 MAY	89.1	64.8	280	178		
1989 037A	COSMOS 2021	20000	USSR	24 MAY	89.4	69.9	280	204		
1989 038C		20056	USSR	25 MAY	89.1	82.3	236	221		
1989 038D		20060	USSR	25 MAY	89.1	82.3	237	224		

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1989 LAUNCHES (CONT.)										
1989 038H		20079	USSR	25 MAY	ELEMENTS NOT AVAILABLE					
1989 039A	COSMOS 2022	20024	USSR	31 MAY	675.7	64.8	19135	19123		
1989 039B	COSMOS 2023	20025	USSR	31 MAY	675.7	64.8	19164	19094		
1989 039C	COSMOS 2024	20026	USSR	31 MAY	675.4	64.8	19143	19098		
1989 039E		20028	USSR	31 MAY	674.5	65.1	19167	19031		
1989 039F		20044	USSR	31 MAY	675.4	64.8	19139	19102		
1989 039G		20081	USSR	31 MAY	340.2	64.8	19113	413		
1989 039H		20082	USSR	31 MAY	340.0	64.9	19105	412		
1989 040H		20072	USSR	1 JUN	90.1	65.6	326	232		
1989 041A	SUPERBIRD A	20040	JAPAN	5 JUN	1436.1	0.1	35802	35768		
1989 041B		20041	FRG	5 JUN	1436.1	0.1	35865	35708		
1989 041C		20042	ESA	5 JUN	628.7	6.8	35639	222		
1989 041D		20043	ESA	5 JUN	612.1	7.1	34792	212		
1989 042A	COSMOS 2026	20045	USSR	7 JUN	104.7	82.9	1007	950		
1989 042B		20046	USSR	7 JUN	104.6	82.9	998	948		
1989 043A	MOLNIYA 3-35	20052	USSR	8 JUN	717.7	62.9	39769	583		
1989 043B		20053	USSR	8 JUN	88.6	62.8	244	169		
1989 043C		20054	USSR	8 JUN	89.7	62.8	345	178		
1989 043D		20055	USSR	8 JUN	734.7	62.8	40608	578		
1989 043E		20057	USSR	8 JUN	89.6	62.8	325	189		
1989 044A		20061	US	10 JUN	717.5	54.6	20368	19970		
1989 044B		20062	US	10 JUN	91.9	30.3	560	172		
1989 044C		20063	US	10 JUN	350.3	37.6	19996	166		
1989 045A	COSMOS 2027	20064	USSR	14 JUN	94.5	65.8	511	478		
1989 045B		20065	USSR	14 JUN	94.4	65.8	509	471		
1989 046A		20066	US	14 JUN	ELEMENTS NOT AVAILABLE					
1989 046B		20067	US	14 JUN	ELEMENTS NOT AVAILABLE					
1989 046C		20068	US	14 JUN	ELEMENTS NOT AVAILABLE					
1989 046D		20069	US	14 JUN	ELEMENTS NOT AVAILABLE					
1989 047A	COSMOS 2028	20073	USSR	16 JUN	89.0	70.0	243	204		
1989 048A	RADUGA 1-1	20083	USSR	21 JUN	1436.4	1.4	35815	35768		
1989 048D		20086	USSR	21 JUN	1471.1	1.4	36559	36378		
1989 048E		20093	USSR	21 JUN	647.4	47.2	36513	311		
1989 048F		20094	USSR	21 JUN	648.6	47.3	36527	357		
1989 049A		20095	USSR	27 JUN	89.8	82.6	269	255		

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

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLIN-NATION	APOGEE KM.	PERIGEE KM.	NOTES
1989 049B		20096	USSR	27 JUN	88.6	82.5	253	209	
1989 029A	COSMOS 2017	19923	USSR	6 APR	89.7	62.8	295	227	
1989 029B		19924	USSR	6 APR	88.9	62.8	222	216	
1989 029C		19925	USSR	6 APR	INITIAL ELEMENTS NOT AVAILABLE				
1989 029D		19926	USSR	6 APR	INITIAL ELEMENTS NOT AVAILABLE				
1989 029E		19927	USSR	6 APR	89.5	62.8	266	233	
1989 029F		19934	USSR	6 APR	INITIAL ELEMENTS NOT AVAILABLE				
1989 029G		19935	USSR	6 APR	88.9	62.8	214	166	
1989 029H		19936	USSR	6 APR	INITIAL ELEMENTS NOT AVAILABLE				
1989 029J		19937	USSR	6 APR	INITIAL ELEMENTS NOT AVAILABLE				
1989 030B		19929	USSR	14 APR	87.3	51.6	143	139	
1989 030C		19930	USSR	14 APR	87.3	51.6	144	134	
1989 031B		19939	USSR	20 APR	86.7	62.8	123	102	
1989 032C		19978	USSR	26 APR	89.8	62.8	326	204	
1989 032D		19979	USSR	26 APR	88.0	62.8	195	155	
1989 032E		19984	USSR	26 APR	90.8	62.8	351	272	
1989 032F		19985	USSR	26 APR	88.4	62.7	226	167	
1989 033A	STS 30	19968	US	4 MAY	91.6	28.8	364	357	
1989 034A	COSMOS 2019	19972	USSR	5 MAY	89.5	62.9	268	247	
1989 034B		19973	USSR	5 MAY	89.2	62.9	250	233	
1989 034C		19974	USSR	5 MAY	INITIAL ELEMENTS NOT AVAILABLE				
1989 034D		19975	USSR	5 MAY	INITIAL ELEMENTS NOT AVAILABLE				
1989 034E		19988	USSR	5 MAY	INITIAL ELEMENTS NOT AVAILABLE				
1989 034F		19989	USSR	5 MAY	INITIAL ELEMENTS NOT AVAILABLE				
1989 036B		19987	USSR	17 MAY	89.5	64.8	348	179	
1989 037C		20002	USSR	24 MAY	INITIAL ELEMENTS NOT AVAILABLE				
1989 038B		20007	USSR	25 MAY	88.6	82.3	282	266	
1989 038F		20077	USSR	25 MAY	INITIAL ELEMENTS NOT AVAILABLE				
1989 038J		20080	USSR	25 MAY	INITIAL ELEMENTS NOT AVAILABLE				
1989 039D		20027	USSR	31 MAY	INITIAL ELEMENTS NOT AVAILABLE				
1989 040A	COSMOS 2025	20035	USSR	1 JUN	89.6	62.8	282	266	
1989 040B		20036	USSR	1 JUN	89.4	62.7	266	265	
1989 040C		20037	USSR	1 JUN	INITIAL ELEMENTS NOT AVAILABLE				
1989 040D		20038	USSR	1 JUN	INITIAL ELEMENTS NOT AVAILABLE				
1989 040E		20039	USSR	1 JUN	INITIAL ELEMENTS NOT AVAILABLE				
1989 040G		20071	USSR	1 JUN	INITIAL ELEMENTS NOT AVAILABLE				
1989 043F		20058	USSR	8 JUN	INITIAL ELEMENTS NOT AVAILABLE				
1989 047B		20074	USSR	16 JUN	89.2	69.9	288	254	
1989 047C		20075	USSR	16 JUN	INITIAL ELEMENTS NOT AVAILABLE				
1989 048B		20084	USSR	21 JUN	88.2	51.6	210	200	

OBJECTS DECAYED WITHIN THE REPORTING PERIOD

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
OMICRON 28		18890	US	29 JUN	30 JUN 89	
OMICRON 23		19031	US	29 JUN	26 JUN 89	
OMICRON 13		415	US	29 JUN	27 MAY 89	
OMICRON 26		14500	US	29 JUN	6 MAY 89	
1963 047C		697	US	27 NOV	24 JUN 89	
1964 076K		960	US	21 NOV	30 APR 89	
1965 020AE		1372	USSR	15 MAR	24 JUN 89	
1965 082JW		2083	US	15 OCT	20 JUN 89	
1965 082KG		2385	US	15 OCT	16 APR 89	
1966 013P		14845	FRANCE	17 FEB	23 APR 89	
1967 011L		2692	FRANCE	8 FEB	21 APR 89	
1967 102A	COSMOS 164	3010	USSR	24 OCT	2 APR 89	
1968 019A	COSMOS 206	3150	USSR	14 MAR	22 APR 89	
1968 091DM		19879	USSR	20 OCT	30 APR 89	
1969 029B		3836	USSR	26 MAR	10 JUN 89	
1969 062KP		15550	US	30 SEP	20 APR 89	
1970 025DJ		4770	US	8 APR	16 MAY 89	
1970 025NY		15520	US	8 APR	6 JUN 89	
1970 069CZ		14836	USSR	23 OCT	7 APR 89	
1970 069DG		20049	USSR	23 OCT	15 JUN 89	
1971 015DC		17664	USSR	25 FEB	5 JUN 89	
1972 058AA		7854	US	23 JUL	17 APR 89	
1972 058CV		7974	US	23 JUL	4 JUN 89	
1975 004AK		8953	US	22 JAN	7 JUN 89	
1975 004HJ		17730	US	22 JAN	9 MAY 89	
1977 065D		10190	US	14 JUL	24 APR 89	
1977 065CY		10302	US	14 JUL	16 APR 89	
1977 065FL		14495	US	14 JUL	10 JUN 89	
1978 016D		13998	US	9 FEB	21 JUN 89	
1978 026CM		12244	US	5 MAR	18 JUN 89	
1978 026CS		12249	US	5 MAR	16 APR 89	
1978 042E		10914	US	1 MAY	16 JUN 89	
1979 013A	SAGE	11270	US	18 FEB	11 APR 89	
1979 017X		16044	US	24 FEB	20 MAY 89	
1979 017Y		16045	US	24 FEB	23 MAY 89	
1979 017AB		16073	US	24 FEB	1 MAY 89	
1979 017EJ		16460	US	24 FEB	19 MAY 89	
1979 017FL		16489	US	24 FEB	17 APR 89	
1979 017JX		17774	US	24 FEB	26 APR 89	
1979 017KN		17826	US	24 FEB	21 MAY 89	
1979 017LC		18304	US	24 FEB	22 JUN 89	
1979 017LL		18604	US	24 FEB	21 APR 89	
1979 017LQ		18776	US	24 FEB	6 APR 89	
1979 017LU		18873	US	24 FEB	26 APR 89	
1979 017LZ		19350	US	24 FEB	7 APR 89	
1980 014B		11704	US	14 FEB	16 MAY 89	
1980 089CC		18495	USSR	4 NOV	14 MAY 89	
1981 028BK		13919	USSR	20 MAR	4 JUN 89	
1981 089J		14837	USSR	14 SEP	8 APR 89	
1981 095A	COSMOS 1310	12852	USSR	23 SEP	3 APR 89	
1983 034A	COSMOS 1453	14006	USSR	19 APR	8 MAY 89	

OBJECTS DECAYED WITHIN THE REPORTING PERIOD

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1983 044Y		15705	USSR	7 MAY	28 APR 89	
1983 044AH		15716	USSR	7 MAY	23 MAY 89	
1983 044AJ		15717	USSR	7 MAY	3 JUN 89	
1983 044AR		15724	USSR	7 MAY	26 JUN 89	
1983 044BB		15796	USSR	7 MAY	14 JUN 89	
1983 044BF		15800	USSR	7 MAY	18 APR 89	
1983 044BP		15816	USSR	7 MAY	10 JUN 89	
1983 044BG		15817	USSR	7 MAY	27 APR 89	
1983 044BR		16774	USSR	7 MAY	11 APR 89	
1983 044CG		17016	USSR	7 MAY	13 MAY 89	
1983 044CK		17096	USSR	7 MAY	17 APR 89	
1983 044CL		17097	USSR	7 MAY	30 APR 89	
1983 044CP		17163	USSR	7 MAY	13 JUN 89	
1983 044CR		17643	USSR	7 MAY	8 APR 89	
1983 044CT		17645	USSR	7 MAY	11 APR 89	
1983 044CY		17735	USSR	7 MAY	11 MAY 89	
1983 044DE		17741	USSR	7 MAY	6 MAY 89	
1983 044DL		17747	USSR	7 MAY	10 APR 89	
1983 044DM		17748	USSR	7 MAY	1 APR 89	
1983 044DN		17749	USSR	7 MAY	17 APR 89	
1983 044DQ		17751	USSR	7 MAY	5 JUN 89	
1983 044DS		17753	USSR	7 MAY	14 MAY 89	
1983 044DT		17833	USSR	7 MAY	11 MAY 89	
1983 044DU		17834	USSR	7 MAY	22 MAY 89	
1983 044DW		17836	USSR	7 MAY	10 APR 89	
1983 044EH		18379	USSR	7 MAY	4 JUN 89	
1983 044EJ		18473	USSR	7 MAY	13 APR 89	
1983 044EP		18483	USSR	7 MAY	23 APR 89	
1983 044EU		18544	USSR	7 MAY	23 MAY 89	
1983 044EV		18566	USSR	7 MAY	3 APR 89	
1983 044FE		19296	USSR	7 MAY	15 MAY 89	
1983 044FH		19308	USSR	7 MAY	27 MAY 89	
1983 044FK		19361	USSR	7 MAY	7 APR 89	
1983 101A	COSMOS 1501	14380	USSR	30 SEP	26 MAY 89	
1984 007B		14669	USSR	26 JAN	30 JUN 89	
1984 011Y		17839	US	6 FEB	12 APR 89	
1984 083AE		16673	USSR	7 AUG	18 APR 89	
1984 127B		15448	USSR	20 DEC	9 APR 89	
1985 114A		15328	US	13 DEC	11 MAY 89	
1986 019J		17114	ESA	22 FEB	5 APR 89	
1986 019AE		17151	ESA	22 FEB	4 MAY 89	
1986 019BP		17211	ESA	22 FEB	21 APR 89	
1986 019BT		17221	ESA	22 FEB	19 JUN 89	
1986 019CB		17229	ESA	22 FEB	3 JUN 89	
1986 019CR		17309	ESA	22 FEB	15 JUN 89	
1986 019CS		17310	ESA	22 FEB	8 APR 89	
1986 019DS		17345	ESA	22 FEB	16 APR 89	
1986 019DT		17346	ESA	22 FEB	11 MAY 89	
1986 019EL		17378	ESA	22 FEB	9 APR 89	
1986 019ET		17385	ESA	22 FEB	24 APR 89	
1986 019FE		17396	ESA	22 FEB	16 APR 89	

OBJECTS DECAYED WITHIN THE REPORTING PERIOD

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1986 019FF		17397	ESA	22 FEB	14 APR 89	
1986 019FV		17434	ESA	22 FEB	1 APR 89	
1986 019GA		17439	ESA	22 FEB	10 APR 89	
1986 019GL		17449	ESA	22 FEB	17 JUN 89	
1986 019GR		17454	ESA	22 FEB	12 JUN 89	
1986 019JD		17549	ESA	22 FEB	23 APR 89	
1986 019JV		17594	ESA	22 FEB	19 MAY 89	
1986 019JY		17597	ESA	22 FEB	26 APR 89	
1986 019KD		17602	ESA	22 FEB	8 APR 89	
1986 019KH		17606	ESA	22 FEB	23 MAY 89	
1986 019LA		17684	ESA	22 FEB	8 MAY 89	
1986 019LG		17690	ESA	22 FEB	8 JUN 89	
1986 019LP		17697	ESA	22 FEB	19 MAY 89	
1986 019MH		17942	ESA	22 FEB	13 APR 89	
1986 019MJ		17943	ESA	22 FEB	23 APR 89	
1986 019NL		17984	ESA	22 FEB	21 APR 89	
1986 019NV		17993	ESA	22 FEB	3 JUN 89	
1986 019PV		18164	ESA	22 FEB	26 JUN 89	
1986 019QL		18173	ESA	22 FEB	25 MAY 89	
1986 019RL		18213	ESA	22 FEB	6 APR 89	
1986 019SG		18298	ESA	22 FEB	19 APR 89	
1986 019SQ		18452	ESA	22 FEB	28 APR 89	
1986 019ST		18455	ESA	22 FEB	12 APR 89	
1986 019SY		18460	ESA	22 FEB	14 MAY 89	
1986 019TH		18558	ESA	22 FEB	19 MAY 89	
1986 019TV		18774	ESA	22 FEB	2 APR 89	
1986 019UA		18767	ESA	22 FEB	18 APR 89	
1986 019UG		18914	ESA	22 FEB	30 MAY 89	
1986 019VC		19642	ESA	22 FEB	11 APR 89	
1986 019VG		19867	ESA	22 FEB	6 MAY 89	
1987 004W		17415	USSR	15 JAN	13 JUN 89	
1987 004DS		17925	USSR	15 JAN	19 JUN 89	
1987 020BS		19186	USSR	20 FEB	23 APR 89	
1987 020CN		19339	USSR	20 FEB	1 APR 89	
1989 049B		20096	USSR	27 JUN	29 JUN 89	
1988 065F		19349	USSR	1 AUG	2 JUN 89	
1988 067H		19474	PRC	5 AUG	26 JUN 89	
1988 094C		19614	USSR	13 OCT	14 APR 89	
1988 104A	SOYUZ TM-7	19660	USSR	26 NOV	27 APR 89	
1988 105E		19696	USSR	30 NOV	27 APR 89	
1988 113G		19885	USSR	23 DEC	4 MAY 89	
1988 113K		19886	USSR	23 DEC	26 APR 89	
1988 113L		19912	USSR	23 DEC	25 APR 89	
1988 113N		19944	USSR	23 DEC	16 JUN 89	
1988 113P		19958	USSR	23 DEC	17 JUN 89	
1988 113Q		19959	USSR	23 DEC	17 JUN 89	
1989 003H		19780	USSR	16 JAN	18 JUN 89	
1989 010C		19864	USSR	10 FEB	30 MAY 89	
1989 011E		19956	USSR	14 FEB	30 APR 89	
1989 015G		19823	JAPAN	21 FEB	4 APR 89	
1989 019A	COSMOS 2005	19862	USSR	2 MAR	25 APR 89	

OBJECTS DECAYED WITHIN THE REPORTING PERIOD

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1989 022B		19894	USSR	16 MAR	3 APR 89	
1989 022F		19914	USSR	16 MAR	17 APR 89	
1989 022J		19917	USSR	16 MAR	26 APR 89	
1989 022K		19916	USSR	16 MAR	12 APR 89	
1989 023A	PROGRESS 41	19895	USSR	16 MAR	25 APR 89	
1989 023C		19940	USSR	16 MAR	3 MAY 89	
1989 029A	COSMOS 2017	19923	USSR	6 APR	19 APR 89	
1989 029B		19924	USSR	6 APR	16 APR 89	
1989 029C		19925	USSR	6 APR	7 APR 89	
1989 029D		19926	USSR	6 APR	7 APR 89	
1989 029E		19927	USSR	6 APR	8 APR 89	
1989 029F		19934	USSR	6 APR	22 APR 89	
1989 029G		19935	USSR	6 APR	27 APR 89	
1989 029H		19936	USSR	6 APR	19 APR 89	
1989 029J		19937	USSR	6 APR	21 APR 89	
1989 030B		19929	USSR	14 APR	16 APR 89	
1989 030C		19930	USSR	14 APR	14 APR 89	
1989 031A	COSMOS 2018	19938	USSR	20 APR	19 JUN 89	
1989 031B		19939	USSR	20 APR	24 APR 89	
1989 032A	FOTON 2	19941	USSR	26 APR	11 MAY 89	
1989 032B		19942	USSR	26 APR	8 MAY 89	
1989 032C		19978	USSR	26 APR	31 MAY 89	
1989 032D		19979	USSR	26 APR	15 MAY 89	
1989 032E		19984	USSR	26 APR	18 MAY 89	
1989 032F		19985	USSR	26 APR	15 MAY 89	
1989 033A	STS 30	19968	US	4 MAY	8 MAY 89	
1989 034A	COSMOS 2019	19972	USSR	5 MAY	18 MAY 89	
1989 034B		19973	USSR	5 MAY	11 MAY 89	
1989 034C		19974	USSR	5 MAY	6 MAY 89	
1989 034D		19975	USSR	5 MAY	7 MAY 89	
1989 034E		19988	USSR	5 MAY	20 MAY 89	
1989 034F		19989	USSR	5 MAY	19 MAY 89	
1989 036B		19987	USSR	17 MAY	21 MAY 89	
1989 037B		20001	USSR	24 MAY	27 MAY 89	
1989 037C		20002	USSR	24 MAY	25 MAY 89	
1989 038A	RESURS-F	20006	USSR	25 MAY	17 JUN 89	
1989 038B		20007	USSR	25 MAY	26 MAY 89	
1989 038E		20076	USSR	25 MAY	20 JUN 89	
1989 038F		20077	USSR	25 MAY	19 JUN 89	
1989 038G		20078	USSR	25 MAY	20 JUN 89	
1989 038J		20080	USSR	25 MAY	19 JUN 89	
1989 040A	COSMOS 2025	20035	USSR	1 JUN	15 JUN 89	
1989 040B		20036	USSR	1 JUN	8 JUN 89	
1989 040C		20037	USSR	1 JUN	3 JUN 89	
1989 040D		20038	USSR	1 JUN	3 JUN 89	
1989 040E		20039	USSR	1 JUN	2 JUN 89	
1989 040F		20070	US	1 JUN	17 JUN 89	
1989 040G		20071	USSR	1 JUN	15 JUN 89	
1989 043F		20058	USSR	8 JUN	29 JUN 89	
1989 047B		20074	USSR	16 JUN	21 JUN 89	
1989 047C		20075	USSR	16 JUN	17 JUN 89	

OBJECTS DECAYED WITHIN THE REPORTING PERIOD

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1989 048B		20084	USSR	21 JUN	23 JUN 89	
1989 048C		20085	USSR	21 JUN	22 JUN 89	

FOOTNOTES

1* 297 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* 145 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* 19 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.

5* 470 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.

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

7* 110 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.

8* 134 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.

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

10* 270 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.

11* 364 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.

12* 103 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.

13* 46 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1970 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.

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

15* 115 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 (CONT)

16* 227 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.

17* 198 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.

18* 145 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1974 089A, 1974 089B, AND 1974 089C. 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.

19* 208 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.

20* 67 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1976 067A. 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* 158 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1976 077A. 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* 14 OBJECT HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1976 105A. 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.

23* 51 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1976 120A. 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* 78.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.

25* 171 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1977 065A. 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* 69.OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1977 121A. 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.

27* 210 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1978 026A AND 1978 026B. 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.

28* 47 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1980 030A. 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 (CONT)

29* 79 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1980 089A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMATY SATELLITE SITUATION REPORT.

30* 59 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1981 028A. 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.

31* 304 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1981 053A 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.

32* 33 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1982 115A. 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.

33* 27 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1983 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.

35* DEPLOYED FROM SPACE TRANSPORTATION VEHICLE.

36* 155 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1983 044A. OBJECTS IN 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.

37* 288 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1979 017A. OBJECTS IN 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.

38* 30 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1984 104A. OBJECTS IN 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.

39* 45 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1984 083A. OBJECTS IN 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.

40* 30 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1986 024A. OBJECTS IN 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.

41* 50 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1965 027A. OBJECTS IN 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.

42* 492 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1986 019A. OBJECTS IN 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.

43* 57 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1982 055A. OBJECTS IN 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 (CONT)

45* 24 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1985 082A. OBJECTS IN 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.

46* 195 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1987 004A. OBJECTS IN 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.

47* 25 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1985 030A. OBJECTS IN 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.

48* 98 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1987 020A. OBJECTS IN 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.

49* 38 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1978 100A, 1978 100B, AND 1978 100C. OBJECTS IN 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.

50* 28 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1986 067A. OBJECTS IN 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.

51* 71 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1986 017A. OBJECTS IN 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.

52* 27 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUCHED WITH 1964 006A. OBJECTS IN 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.

NNN NO NATIONAL NAME