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

SATELLITE SITUATION REPORT

VOLUME 29, NUMBER 3 SEPTEMBER 30, 1989

SATELLITE SITUATION REPORT
VOLUME 29 NO. 3
A/O 2400Z ON SEPTEMBER 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	19	249	268	2	294	296
ESRO	0	0	0	7	3	10
FRANCE	13	20	33	7	56	63
FRANCE/FRG	2	0	2	0	0	0
FRG	8	1	9	3	5	8
INDIA	8	1	9	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	47	84	7	53	60
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	5	11	19	50	69
SAUDI ARABIA	2	0	2	0	0	0
SPAIN	1	0	1	0	0	0
SWEDEN	2	0	2	0	0	0
UK	11	1	12	6	3	9
US	554	2532	3079	579	2461	3040
USSR	1136	2128	3264	1392	8476	9868
COLUMN	1864	4978	6847	2036	11412	13448
SUM TOTAL						20295

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	4272	652		
BETA 2	VANGUARD 1	5	US	17 MAR	133.4	34.2	3886	657		
BETA 3		1576	US	17 MAR	128.4	34.3	3463	642		
1959 LAUNCHES										
ALPHA 1	VANGUARD 2	11	US	17 FEB	123.5	32.9	3115	559		
ALPHA 2		12	US	17 FEB	127.8	32.9	3489	558		
ETA 1	VANGUARD 3	20	US	18 SEP	127.2	33.4	3488	513		
IOTA 1	EXPLORER 7	22	US	13 OCT	99.4	50.3	922	534		
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	96.1	48.4	582	559		
BETA 2	TIROS 1	29	US	1 APR	98.6	48.4	711	669		
BETA 4		115	US	1 APR	98.9	48.2	747	663		
ETA 1	TRANSIT 2A	45	US	22 JUN	101.0	66.7	1008	605		
ETA 2	GREB	46	US	22 JUN	100.6	66.7	969	600		
ETA 3		47	US	22 JUN	100.6	66.7	976	601		
ETA 4		840	US	22 JUN	99.2	66.7	858	579		
ETA 5		841	US	22 JUN	99.1	66.7	852	574		
IOTA 2		50	US	12 AUG	118.1	47.2	1684	1503		
IOTA 3		51	US	12 AUG	118.3	47.2	1684	1520		
IOTA 4		52	US	12 AUG	CURRENT ELEMENTS NOT MAINTAINED					
IOTA 5		53	US	12 AUG	118.4	47.3	1685	1531		
NU 1	COURIER 1B	58	US	4 OCT	107.1	28.3	1214	968		
NU 2		59	US	4 OCT	106.6	28.3	1210	926		
XI 1	EXPLORER 8	60	US	3 NOV	105.0	49.9	1589	403		
PI 1	TIROS 2	63	US	23 NOV	97.0	48.5	653	575		
PI 3		74	US	23 NOV	90.3	48.5	295	284		
PI 4		75	US	23 NOV	93.1	48.5	436	414		
PI 5		5922	US	23 NOV	105.3	47.0	1037	976		
1961 LAUNCHES										
APSI 5		19436	US	18 SEP	96.1	58.3	576	564		
GAMMA 1	VENERA 1	80	USSR	12 FEB	HELIOCENTRIC ORBIT					
DELTA 2		82	US	16 FEB	117.9	38.9	2540	636		
DELTA 3		85	US	16 FEB	110.8	38.9	1928	594		
DELTA 6		3927	US	16 FEB	112.4	38.9	2083	594		
DELTA 7		4026	US	16 FEB	112.8	38.9	2115	596		
NU 1	EXPLORER 11	107	US	27 APR	105.4	28.8	1545	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	990	868		
OMICRON 2	INJUN-SR-3	117	US	29 JUN	103.7	66.8	994	871		
OMICRON 3 - 297			US	29 JUN	SEE NOTE	1*				1*
OMICRON 25		136	US	29 JUN	103.5	67.2	948	902		
OMICRON 39		154	US	29 JUN	103.0	66.7	969	835		
RHO 1	TIROS 3	152	US	12 JUL	100.1	47.9	798	728		
RHO 2		165	US	12 JUL	98.9	47.9	733	682		
RHO 3		166	US	12 JUL	96.1	48.0	613	528		
RHO 4		167	US	12 JUL	101.6	47.9	910	761		
SIGMA 1	MIDAS 3	163	US	12 JUL	161.4	91.2	3541	3342		
SIGMA 3		183	US	12 JUL	161.1	91.2	3541	3314		
SIGMA 4		195	US	12 JUL	161.8	91.2	3568	3348		
A DELTA 1	MIDAS 4	192	US	21 OCT	165.9	95.9	3763	3482		
A DELTA 3		194	US	21 OCT	165.5	95.8	3849	3363		
A DELTA 4		195	US	21 OCT	166.3	95.9	3873	3405		
A DELTA 5		2009	US	21 OCT	165.7	95.8	3734	3492		
A DELTA 6		2371	US	21 OCT	165.3	95.9	4675	2522		
A ETA 1	TRANSIT 4B	202	US	15 NOV	105.8	32.4	1105	954		
A ETA 2	TRAAC	203	US	15 NOV	105.8	32.4	1109	956		
A ETA 3		204	US	15 NOV	105.6	32.4	1098	950		
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	820	698		
BETA 2		227	US	8 FEB	100.8	48.2	904	688		
BETA 3		228	US	8 FEB	98.4	48.4	703	659		
BETA 4		229	US	8 FEB	98.6	48.3	730	648		
KAPPA 1		271	US	9 APR	152.9	86.6	3408	2781		
KAPPA 3		273	US	9 APR	152.5	86.6	3382	2774		
KAPPA 4		274	US	9 APR	153.3	86.6	3442	2773		
MU 2		282	US	23 APR	HELIOCENTRIC ORBIT					
A ALPHA 1	TIROS 5	309	US	19 JUN	99.7	58.1	908	580		
A ALPHA 2		311	US	19 JUN	95.8	58.1	622	490		
A ALPHA 3		312	US	19 JUN	100.5	58.3	984	582		
A ALPHA 4		313	US	19 JUN	95.9	58.0	624	503		
A EPSILON 1	TELSTAR 1	340	US	10 JUL	157.8	44.8	5640	949		
A EPSILON 2		341	US	10 JUL	157.6	44.8	5621	951		
A OMICRON 1		369	US	23 AUG	98.5	98.5	782	591		
A OMICRON 3		378	US	23 AUG	97.4	98.5	723	547		
A OMICRON 4		383	US	23 AUG	97.2	98.6	692	555		
A RHO 1	MARINER 2	374	US	27 AUG	HELIOCENTRIC ORBIT					
A RHO 2		375	US	27 AUG	HELIOCENTRIC ORBIT					
A PSI 1	TIROS 5	397	US	18 SEP	97.9	58.3	667	653		
A PSI 3		399	US	18 SEP	98.1	58.4	699	633		
A PSI 4		400	US	18 SEP	89.4	58.2	250	241		
B ALPHA 1	ALOUETTE 1	424	CANADA	29 SEP	105.3	80.5	1023	990		
B ALPHA 2		426	US	29 SEP	105.3	80.5	1020	993		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1962 LAUNCHES (CONT.)										
3 ALPHA 3		510	US	29 SEP	105.2	80.5	1015	991		
3 ALPHA 4		511	US	29 SEP	105.3	80.4	1031	985		
3 GAMMA 2		NNA	US	2 OCT	CURRENT ELEMENTS NOT MAINTAINED					
3 ETA 1	RANGER 3	439	US	18 OCT	HELIOCENTRIC ORBIT					
3 ETA 2		440	US	18 OCT	HELIOCENTRIC ORBIT					
3 LAMBDA 1	EXPLORER 15	445	US	27 OCT	CURRENT ELEMENTS NOT MAINTAINED					
3 LAMBDA 2		NNA	US	27 OCT	CURRENT ELEMENTS NOT MAINTAINED					
3 MU 1	ANNA 1B	446	US	31 OCT	107.9	50.1	1182	1076		
3 MU 2		447	US	31 OCT	107.6	50.1	1165	1065		
3 NU 3		450	USSR	1 NOV	HELIOCENTRIC ORBIT					
3 UPSILON 1	RELAY 1	503	US	13 DEC	185.1	47.5	7429	1330		
3 UPSILON 2		515	US	13 DEC	184.4	47.5	7411	1330		
3 CHI 1	EXPLORER 16	506	US	16 DEC	104.2	52.0	1164	746		
3 PSI 3		519	US	19 DEC	89.6	90.6	265	248		
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	10802	972		
1963 013B		575	US	7 MAY	225.0	42.8	10785	968		
1963 014A		574	US	9 MAY	166.4	87.3	3682	3601		
1963 014B	ERS 9	579	US	9 MAY	165.5	87.4	4788	2426		
1963 014C	ERS 9	508	US	9 MAY	166.4	87.3	3727	3556		
1963 014D - 14FA			US	9 MAY	SEE NOTE	2*				2*
1963 014FB		20033	US	9 MAY	162.7	85.0	6064	921		
1963 022A		594	US	16 JUN	95.6	89.8	552	538		
1963 022B		603	US	16 JUN	97.7	89.8	658	635		
1963 022C		610	US	16 JUN	97.9	90.0	695	621		
1963 024A	TIROS 7	604	US	19 JUN	95.3	58.2	545	524		
1963 025B		514	US	27 JUN	118.4	82.1	2886	327		
1963 030A	ERS 10	622	US	18 JUL	167.8	88.4	3721	3676		
1963 030B	ERS 9	635	US	18 JUL	167.8	88.4	3715	3682		
1963 030C		630	US	18 JUL	167.4	88.4	3755	3613		
1963 030E		631	US	18 JUL	168.2	88.4	3752	3679		
1963 030F		3121	US	18 JUL	168.1	88.3	3742	3680		
1963 030G		3132	US	18 JUL	167.8	88.4	3741	3658		
1963 030H		20153	US	18 JUL	163.8	88.3	6006	1070		
1963 031A	SYNCOM 2	634	US	26 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1963 033A		669	US	28 SEP	107.0	89.9	1107	1066		
1963 033B		670	US	28 SEP	107.2	89.9	1125	1066		
1963 033C	SV 39	671	US	28 SEP	107.1	89.9	1123	1065		
1963 033D		672	US	28 SEP	106.5	89.9	1087	1037		
1963 033E		745	US	28 SEP	106.6	89.9	1086	1056		
1963 033F		2097	US	28 SEP	106.5	89.9	1091	1036		
1963 033G		3166	US	28 SEP	107.2	89.9	1126	1064		
1963 033H		12943	US	28 SEP	104.7	89.9	1081	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	105.4	30.4	1557	472		

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 047B - 047U			US	27 NOV	SEE NOTE		3*			3*
1963 049A		703	US	5 DEC	106.7	90.0	1084	1061		
1963 049B		704	US	5 DEC	107.0	90.0	1112	1059		
1963 049C		705	US	5 DEC	106.9	90.1	1109	1059		
1963 049D		706	US	5 DEC	106.6	90.0	1092	1046		
1963 049E		715	US	5 DEC	106.1	90.0	1064	1024		
1963 049F		753	US	5 DEC	106.7	90.0	1098	1048		
1963 049G		2432	US	5 DEC	106.9	90.1	1108	1059		
1963 049H		2620	US	5 DEC	106.4	90.0	1069	1046		
1963 053B		721	US	19 DEC	115.3	78.6	2339	599		
1963 053C		722	US	19 DEC	111.7	78.7	1941	664		
1963 053E		724	US	19 DEC	111.0	78.7	1916	633		
1963 053G		726	US	19 DEC	109.1	78.6	1772	598		
1963 053H		732	US	19 DEC	111.5	78.7	1936	653		
1963 053J		3750	US	19 DEC	110.4	78.6	1862	627		
1963 053K		17665	US	19 DEC	111.9	78.7	1949	674		
1963 054A	TIROS 8	715	US	21 DEC	98.7	58.5	721	676		
1963 054B		717	US	21 DEC	95.4	58.5	545	530		
1963 054C		720	US	21 DEC	100.4	58.5	870	680		
1963 054E		19396	US	21 DEC	98.6	58.5	725	655		
1964 LAUNCHES										
1964 001A		727	US	11 JAN	103.3	69.9	925	902		
1964 001B	GRAVITY GRADIENT 1	728	US	11 JAN	103.2	69.9	922	899		
1964 001C	SECOR (EGRS) 1	729	US	11 JAN	103.3	69.9	925	903		
1964 001D	SOLRAD 7A	730	US	11 JAN	103.3	69.9	925	901		
1964 001E	GREB	731	US	11 JAN	103.3	69.9	924	901		
1964 002A		733	US	19 JAN	100.9	99.1	824	774		
1964 002B		734	US	19 JAN	101.0	99.1	815	793		
1964 002C		735	US	19 JAN	101.0	99.1	819	794		
1964 003A	RELAY 2	737	US	21 JAN	194.7	46.4	7518	1984		
1964 003B		738	US	21 JAN	194.8	46.4	7524	1982		
1964 004B		741	US	25 JAN	108.8	81.5	1302	1039		
1964 004C		742	US	25 JAN	108.7	81.5	1297	1032		
1964 004D		743	US	25 JAN	108.6	81.5	1296	1030		
1964 006A	ELEKTRON 1	746	USSR	30 JAN	164.2	60.8	6707	400		
1964 006B	ELEKTRON 2	748	USSR	30 JAN	1356.4	63.9	58338	10084		
1964 006C - AD			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	910	835		
1964 026B		805	US	4 JUN	102.6	90.0	909	849		
1964 026C		806	US	4 JUN	100.2	90.8	819	715		
1964 026D		809	US	4 JUN	102.6	90.5	926	840		
1964 026E		2986	US	4 JUN	102.7	90.5	929	844		
1964 031A		812	US	18 JUN	101.3	99.8	824	815		
1964 031B		813	US	18 JUN	101.3	99.8	826	817		
1964 031C		815	US	18 JUN	101.2	99.8	823	804		
1964 038A	ELEKTRON 3	829	USSR	10 JUL	162.6	60.8	6582	395		
1964 038C		831	USSR	10 JUL	144.6	60.8	5091	400		

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	71.6	37635	2565		
1964 049E		898	USSR	22 AUG	718.6	71.5	37798	2595		
1964 049F		13091	USSR	22 AUG	714.4	71.1	37879	2307		
1964 051A	EXPLORER 20	870	US	25 AUG	103.7	79.9	1005	857		
1964 051B		871	US	25 AUG	103.3	79.9	985	848		
1964 053A	COSMOS 44	876	USSR	28 AUG	98.9	65.1	803	606		
1964 053B		877	USSR	28 AUG	99.1	65.1	759	674		
1964 054A	OGO 1	879	US	5 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1964 063A	NNSS 30010	893	US	6 OCT	106.2	90.0	1071	1028		
1964 063B		897	US	6 OCT	106.4	90.0	1073	1049		
1964 063C		900	US	6 OCT	105.7	90.0	1045	1011		
1964 063D		901	US	6 OCT	106.4	90.0	1070	1049		
1964 063E		902	US	6 OCT	106.5	90.0	1073	1052		
1964 063F		903	US	6 OCT	105.7	90.0	1041	1008		
1964 064A	EXPLORER 22	899	US	10 OCT	104.4	79.7	1058	875		
1964 064B		907	US	10 OCT	104.5	79.7	1061	878		
1964 064C		976	US	10 OCT	103.3	79.3	1012	815		
1964 064D		977	US	10 OCT	105.0	80.0	1094	892		
1964 073A	MARINER 3	923	US	5 NOV	HELIOCENTRIC ORBIT					
1964 075B	EXPLORER 25	932	US	21 NOV	115.0	81.3	2385	524		
1964 075C		933	US	21 NOV	114.4	81.3	2334	524		
1964 077A	MARINER 4	938	US	28 NOV	HELIOCENTRIC ORBIT					
1964 077B		942	US	28 NOV	HELIOCENTRIC ORBIT					
1964 078C	ZOND 2	945	USSR	30 NOV	HELIOCENTRIC ORBIT					
1964 083A	NNSS 30020	953	US	13 DEC	106.0	89.8	1066	1015		
1964 083B		956	US	13 DEC	105.8	89.8	1062	1001		
1964 083C		959	US	13 DEC	106.0	89.8	1071	1008		
1964 083D		965	US	13 DEC	106.2	89.8	1079	1017		
1964 083F		967	US	13 DEC	105.8	89.8	1062	1002		
1964 083G		1099	US	13 DEC	106.0	89.8	1070	1008		
1964 083J		1608	US	13 DEC	105.3	89.8	1036	985		
1964 086A	EXPLORER 26	963	US	21 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1965 LAUNCHES										
1965 004A	TIROS 9	978	US	22 JAN	119.0	96.4	2567	701		
1965 004B		979	US	22 JAN	118.9	96.4	2556	701		
1965 004C		1312	US	22 JAN	117.6	96.4	2476	669		
1965 004D		1313	US	22 JAN	120.1	96.4	2640	730		
1965 008A		1001	US	11 FEB	145.4	32.1	2797	2766		
1965 008B		1000	US	11 FEB	145.7	32.1	2801	2785		
1965 008C		1002	US	11 FEB	145.8	32.1	2809	2783		
1965 010B		1087	US	17 FEB	BARYCENTRIC ORBIT					
1965 014A	COSMOS 55	1097	USSR	26 FEB	92.5	65.0	410	379		
1965 016A	GREB	1271	US	9 MAR	103.3	70.1	926	899		

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1965 LAUNCHES (CONT.)										
1965 016B	GRAVITY GRADIENT 2	1244	US	9 MAR	103.3	70.1	928	900		
1965 016C	GRAVITY GRADIENT 3	1292	US	9 MAR	103.1	70.1	920	892		
1965 016D	SOLRAD 7B	1291	US	9 MAR	103.3	70.1	930	902		
1965 016E	SECOR (EGRS) 3	1208	US	9 MAR	103.3	70.1	927	900		
1965 016F	OSCAR 3	1293	US	9 MAR	102.9	70.1	911	883		
1965 016H	SORCAL	1272	US	9 MAR	103.3	70.1	931	901		
1965 016J		1245	US	9 MAR	103.2	70.1	925	897		
1965 016K		12099	US	9 MAR	103.1	70.1	920	891		
1965 020E		1335	USSR	15 MAR	107.4	56.1	1619	590		
1965 020S		1347	USSR	15 MAR	104.6	56.0	1399	550		
1965 020AC		1370	USSR	15 MAR	104.7	56.1	1422	538		
1965 020AH		1392	USSR	15 MAR	106.2	55.9	1574	526		
1965 020BB		1477	USSR	15 MAR	112.2	55.5	1824	829		
1965 020BC		1478	USSR	15 MAR	110.4	56.1	1856	636		
1965 020BD		1479	USSR	15 MAR	115.0	56.0	2102	805		
1965 020BE		1480	USSR	15 MAR	114.8	56.1	2144	751		
1965 020BV		1495	USSR	15 MAR	105.3	55.6	1393	624		
1965 020CV		1549	USSR	15 MAR	114.6	56.1	2103	767		
1965 020ED		1634	USSR	15 MAR	115.9	56.1	2181	809		
1965 020EH		2334	USSR	15 MAR	111.0	55.7	1755	786		
1965 020EM		2934	USSR	15 MAR	115.4	55.6	1767	1182		
1965 020EN		3038	USSR	15 MAR	109.1	56.3	1777	595		
1965 020ER		3708	USSR	15 MAR	105.2	56.3	1390	618		
1965 020ES		3743	USSR	15 MAR	118.1	56.7	1803	1390		
1965 020ET		3745	USSR	15 MAR	115.3	56.1	1593	1345		
1965 020EU		3749	USSR	15 MAR	108.3	56.1	1672	627		
1965 020EV		3931	USSR	15 MAR	116.6	56.1	1699	1357		
1965 020EW		3963	USSR	15 MAR	99.7	55.9	997	492		
1965 020EY		3965	USSR	15 MAR	117.8	56.3	1791	1377		
1965 020FD		6252	USSR	15 MAR	117.1	56.0	1699	1403		
1965 020FF		13517	USSR	15 MAR	109.9	55.6	1717	728		
1965 021A		1273	US	18 MAR	91.9	99.0	386	345		
1965 023B		1298	US	21 MAR	HELIOCENTRIC ORBIT					
1965 027A		1314	US	3 APR	111.4	90.3	1316	1268		
1965 027B	SECOR (EGRS) 4	1315	US	3 APR	111.4	90.3	1312	1266		
1965 027B - 027BD			US	3 APR	SEE NOTE	41*				41*
1965 027BB		20031	US	3 APR	111.4	90.3	1312	1269		
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	96.8	41.1	668	539		
1965 032D		2011	US	29 APR	108.5	41.2	1236	1075		
1965 034A		1359	US	6 MAY	157.1	32.1	3736	2794		
1965 034B		1360	US	6 MAY	309.9	32.1	14792	2787		
1965 034C		1361	US	6 MAY	145.6	32.1	2798	2784		
1965 034D		2529	US	6 MAY	309.9	32.1	14791	2787		
1965 038A		1377	US	20 MAY	98.0	98.3	802	521		
1965 038B		1378	US	20 MAY	96.8	98.0	714	498		
1965 044A	LUNA 6	1393	USSR	8 JUN	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
1965 LAUNCHES (CONT.)										
1965 048A	NNSS 30040	1420	US	24 JUN	106.7	90.1	1126	1019		
1965 048B		1428	US	24 JUN	106.5	90.1	1106	1019		
1965 048C		1425	US	24 JUN	106.8	90.1	1130	1022		
1965 048D		1435	US	24 JUN	106.0	90.1	1098	987		
1965 048E		2701	US	24 JUN	106.1	90.1	1090	1001		
1965 048F		3592	US	24 JUN	106.2	90.1	1093	1003		
1965 048L		19062	US	24 JUN	104.6	89.9	1043	911		
1965 048M		19838	US	24 JUN	107.2	90.8	1194	1000		
1965 051A	TIROS 10	1430	US	2 JUL	100.3	98.7	813	727		
1965 051B		1433	US	2 JUL	99.9	98.6	791	713		
1965 051C		1440	US	2 JUL	96.7	98.6	658	538		
1965 051D		1529	US	2 JUL	101.6	99.1	861	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 (EGRS) 5	1506	US	10 AUG	122.2	69.2	2422	1132		
1965 063B		1502	US	10 AUG	122.2	69.2	2420	1135		
1965 064A	CENTAUR 6	1503	US	11 AUG	BARYCENTRIC ORBIT					
1965 065A	NNSS 30050	1504	US	13 AUG	107.8	90.0	1171	1074		
1965 065B		1508	US	13 AUG	107.6	89.9	1144	1085		
1965 065C		1510	US	13 AUG	106.2	90.0	1096	1003		
1965 065D		1511	US	13 AUG	108.0	90.0	1185	1079		
1965 065E		1512	US	13 AUG	108.0	90.0	1187	1079		
1965 065F		1514	US	13 AUG	107.9	90.0	1185	1077		
1965 065G		1515	US	13 AUG	107.4	90.0	1152	1057		
1965 065H		1520	US	13 AUG	107.9	90.0	1183	1075		
1965 065J		1521	US	13 AUG	108.0	90.0	1187	1080		
1965 065K		1577	US	13 AUG	107.9	90.0	1183	1076		
1965 065L		1522	US	13 AUG	108.0	90.0	1188	1078		
1965 065P		3810	US	13 AUG	107.4	90.0	1154	1056		
1965 065Q		5265	US	13 AUG	107.8	89.9	1153	1093		
1965 065T		11855	US	13 AUG	102.3	89.9	904	826		
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	1546	1393		
1965 070C	COSMOS 82	1572	USSR	3 SEP	115.7	56.1	1552	1418		
1965 070D	COSMOS 83	1573	USSR	3 SEP	116.0	56.1	1559	1445		
1965 070E	COSMOS 84	1574	USSR	3 SEP	116.4	56.1	1570	1468		
1965 070F		1575	USSR	3 SEP	114.6	56.1	1513	1358		
1965 070G		3045	USSR	3 SEP	115.9	55.5	1729	1263		
1965 072A		1580	US	10 SEP	101.4	98.7	1006	638		
1965 072D		1583	US	10 SEP	100.6	98.6	950	625		
1965 072E		1931	US	10 SEP	102.2	98.8	1090	631		
1965 072F		1932	US	10 SEP	98.8	98.3	800	602		
1965 073A	COSMOS 86	1584	USSR	18 SEP	115.0	56.1	1628	1286		
1965 073B	COSMOS 87	1585	USSR	18 SEP	115.4	56.1	1637	1313		
1965 073C	COSMOS 88	1586	USSR	18 SEP	115.8	56.1	1647	1338		
1965 073D	COSMOS 89	1587	USSR	18 SEP	116.2	56.1	1658	1364		
1965 073E	COSMOS 90	1588	USSR	18 SEP	116.6	56.1	1672	1388		
1965 073F		1589	USSR	18 SEP	116.8	56.0	1682	1390		
1965 073G		1590	USSR	18 SEP	116.0	56.1	1640	1361		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1965 LAUNCHES (CONT.)										
1965 073H		1591	USSR	18 SEP	116.3	56.1	1652	1378		
1965 073J		1617	USSR	18 SEP	117.1	56.1	1738	1362		
1965 073K		1618	USSR	18 SEP	117.4	56.2	1748	1379		
1965 073L		2647	USSR	18 SEP	116.0	56.1	1645	1355		
1965 078A		1613	US	5 OCT	119.6	144.2	2914	408		
1965 078B		1616	US	5 OCT	118.5	144.2	2816	409		
1965 082B - 082DP			US	15 OCT	SEE NOTE	5*				5*
1965 089A	EXPLORER 29	1726	US	6 NOV	120.3	59.4	2276	1111		
1965 089B		1729	US	6 NOV	120.3	59.4	2273	1111		
1965 089C		2700	US	6 NOV	119.1	59.6	2217	1067		
1965 089D		2888	US	6 NOV	121.4	58.9	2125	1358		
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	884	667		
1965 093B		1739	US	19 NOV	100.1	59.7	842	681		
1965 093C		2013	US	19 NOV	98.7	59.7	744	649		
1965 093D		2088	US	19 NOV	100.4	59.7	855	699		
1965 095A	A-1	1778	FRANCE	26 NOV	107.8	34.3	1725	528		
1965 096B		1805	FRANCE	26 NOV	106.9	34.3	1636	525		
1965 096D		1996	FRANCE	26 NOV	103.4	34.3	1328	511		
1965 098A	ALOUETTE 2	1804	CANADA	29 NOV	118.9	79.8	2759	501		
1965 098B	EXPLORER 31	1806	US	29 NOV	120.4	79.8	2894	501		
1965 098C		1807	US	29 NOV	119.4	79.8	2805	502		
1965 098D		1808	US	29 NOV	109.9	79.8	1955	487		
1965 098E		1944	US	29 NOV	109.1	79.8	1884	484		
1965 098F		1948	US	29 NOV	115.0	79.9	2414	498		
1965 098G		1951	US	29 NOV	115.4	79.7	2455	494		
1965 098H		2092	US	29 NOV	119.1	79.9	2775	504		
1965 098J		2153	US	29 NOV	118.9	79.8	2765	501		
1965 101A	FR-1	1814	FRANCE	6 DEC	99.1	75.9	722	711		
1965 101B		1815	US	6 DEC	99.0	75.9	715	705		
1965 105A	PIONEER 6	1841	US	16 DEC	HELIOCENTRIC ORBIT					
1965 106A	COSMOS 100	1843	USSR	17 DEC	96.1	65.0	627	514		
1965 106B		1844	USSR	17 DEC	95.8	65.0	570	546		
1965 109A	NNSS 30060	1864	US	22 DEC	104.7	89.1	1066	894		
1965 109B		1865	US	22 DEC	104.8	89.1	1070	897		
1965 109C		2086	US	22 DEC	101.5	89.2	850	806		
1965 109D		2226	US	22 DEC	106.9	89.1	1272	890		
1965 109E		2353	US	22 DEC	105.0	89.4	1114	875		
1965 112A	COSMOS 103	1863	USSR	28 DEC	91.9	56.1	369	361		
1965 112B		1937	USSR	28 DEC	95.3	55.9	552	512		
1966 LAUNCHES										
1966 005A	NNSS 30070	1952	US	28 JAN	105.6	89.8	1188	854		
1966 005B		1953	US	28 JAN	105.7	89.8	1195	855		
1966 005C		2140	US	28 JAN	107.3	90.1	1353	850		
1966 005D		2141	US	28 JAN	103.6	89.8	1037	820		
1966 005E		2889	US	28 JAN	109.4	89.5	1328	1070		
1966 005F		2989	US	28 JAN	103.7	89.9	1028	842		

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 005J		11991	US	28 JAN	105.3	89.8	1169	847		
1966 005L		15341	US	28 JAN	100.4	89.8	860	690		
1966 005M		19366	US	28 JAN	102.3	89.8	953	785		
1966 006D		2001	USSR	31 JAN	BARYCENTRIC ORBIT					
1966 008A	ESSA 1	1982	US	3 FEB	99.8	97.9	813	688		
1966 008B		1983	US	3 FEB	99.6	97.9	807	672		
1966 008C		2085	US	3 FEB	97.5	97.8	660	617		
1966 008D		2116	US	3 FEB	100.6	98.1	899	672		
1966 008E		2154	US	3 FEB	99.5	97.7	781	683		
1966 013A	D-1A	2016	FRANCE	17 FEB	116.5	34.1	2543	504		
1966 013B		2017	FRANCE	17 FEB	115.7	34.1	2471	503		
1966 013F		2023	FRANCE	17 FEB	102.0	34.0	1257	447		
1966 013G		2161	FRANCE	17 FEB	111.0	34.1	2036	510		
1966 016A	ESSA 2	2091	US	28 FEB	113.4	100.9	1412	1352		
1966 016B		2096	US	28 FEB	113.4	100.9	1412	1351		
1966 016C		2223	US	28 FEB	111.8	101.2	1382	1238		
1966 016D		2224	US	28 FEB	115.0	101.1	1562	1346		
1966 016E		6214	US	28 FEB	114.3	101.6	1517	1326		
1966 024A	NNSS 30080	2119	US	26 MAR	105.0	89.8	1104	882		
1966 024B		2120	US	26 MAR	105.1	89.8	1111	884		
1966 025A	OV1-4	2121	US	30 MAR	104.0	144.5	1010	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	1057	987		
1966 025D		2124	US	30 MAR	104.0	144.5	1008	887		
1966 025E		3611	US	30 MAR	103.3	144.6	973	856		
1966 025G		5361	US	30 MAR	104.1	144.6	988	916		
1966 025H		5599	US	30 MAR	103.3	144.6	968	863		
1966 025A		2125	US	31 MAR	99.7	98.5	875	610		
1966 025B		2129	US	31 MAR	98.3	98.3	778	579		
1966 025D		2177	US	31 MAR	100.7	98.9	980	605		
1965 025F		2179	US	31 MAR	97.3	98.1	701	555		
1966 027A	LUNA 10	2126	USSR	31 MAR	SELENOCENTRIC ORBIT					
1966 027D		2130	USSR	31 MAR	HELIOCENTRIC ORBIT					
1966 027L		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	786		
1966 031B		2144	US	8 APR	100.4	35.0	784	772		
1966 034A	OV3-1	2150	US	22 APR	136.5	82.4	4467	344		
1966 034B		2167	US	22 APR	121.2	82.4	3132	332		
1966 034D		2209	US	22 APR	94.6	82.3	739	261		
1966 040A	NIMBUS 2	2173	US	15 MAY	108.0	100.5	1175	1091		
1966 040B		2174	US	15 MAY	107.8	100.6	1166	1082		
1966 041A	NNSS 30090	2176	US	19 MAY	103.0	90.0	955	841		
1966 041B		2180	US	19 MAY	103.1	90.0	963	845		
1966 041C		2225	US	19 MAY	99.6	89.9	765	711		
1966 041D		2644	US	19 MAY	105.1	90.0	1166	832		
1966 041E		3591	US	19 MAY	103.0	90.0	956	842		
1966 041F		4555	US	19 MAY	102.2	90.0	918	804		
1966 045B		2187	US	30 MAY	BARYCENTRIC ORBIT					
1966 049A	OGO 3	2195	US	7 JUN	CURRENT ELEMENTS NOT MAINTAINED					

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 052A		2201	US	10 JUN	143.0	40.9	4715	641		
1966 052B		2206	US	10 JUN	142.7	40.9	4687	644		
1966 052C		2498	US	10 JUN	139.1	40.6	4442	587		
1966 052D		2516	US	10 JUN	144.7	41.0	4801	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	34730	33413		
1966 056A	PAGEOS 1	2253	US	24 JUN	176.8	84.2	6194	1915		
1966 056B		2255	US	24 JUN	181.1	86.9	4278	4174		
1966 056C		2256	US	24 JUN	181.3	86.9	4271	4195		
1966 056D		2511	US	24 JUN	181.5	87.0	4253	4224		
1966 056E		8064	US	24 JUN	168.0	83.3	6911	506		
1966 056G		8066	US	24 JUN	166.8	81.9	6807	514		
1966 056H		8074	US	24 JUN	176.2	83.7	6864	1201		
1966 056Z		9460	US	24 JUN	171.0	81.2	6910	740		
1966 056AH		9468	US	24 JUN	180.0	84.8	5363	3001		
1966 057A	COSMOS 122	2254	USSR	25 JUN	90.6	64.9	312	297		
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	104.3	144.2	974	949		
1966 063C		2328	US	14 JUL	105.2	144.2	1013	998		
1966 063D		2329	US	14 JUL	104.7	144.2	988	976		
1966 063E		2337	US	14 JUL	105.2	144.2	1008	1000		
1966 070A	OV3-3	2389	US	4 AUG	125.2	81.4	3469	351		
1966 070B		2404	US	4 AUG	106.1	81.4	1769	326		
1966 070D		2800	US	4 AUG	129.1	81.5	3759	406		
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	1089	1042		
1966 076B		2413	US	18 AUG	106.6	88.9	1092	1046		
1966 076C		2580	US	18 AUG	104.9	89.1	1066	914		
1966 076D		2702	US	18 AUG	108.0	88.6	1204	1066		
1966 077A		2403	US	19 AUG	167.4	89.7	3708	3659		
1966 077B	SECOR (EGRS) 7	2411	US	19 AUG	167.5	89.7	3698	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	679		
1966 082B		2422	US	16 SEP	100.2	98.5	862	677		
1966 084B		2426	US	20 SEP	BARYCENTRIC ORBIT					
1966 087A	ESSA 3	2435	US	2 OCT	114.5	101.0	1483	1384		
1966 087B		2436	US	2 OCT	114.5	101.1	1482	1381		
1966 087C		2518	US	2 OCT	115.9	100.8	1557	1430		
1966 087D		2775	US	2 OCT	113.2	101.1	1471	1277		

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 067E		6213	US	2 OCT	113.2	101.9	1400	1350		
1966 087F		8791	US	2 OCT	CURRENT ELEMENTS NOT MAINTAINED					
1966 089A		2481	US	5 OCT	167.5	90.1	3719	3657		
1966 089B	SECOR (EGRS) 8	2520	US	5 OCT	167.6	90.1	3706	3676		
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	717.6	18.2	37131	3214		
1966 096C		11792	US	26 OCT	497.0	17.7	28400	413		
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	4672	474		
1966 111B	OV1-10	2611	US	11 DEC	97.2	93.4	667	582		
1966 111C		2621	US	11 DEC	98.1	93.4	722	612		
1966 111D		2622	US	11 DEC	139.9	99.1	4624	475		
1967 LAUNCHES										
1967 001A	INTELSAT 2 F-2	2639	ITSO	11 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1967 001D		2643	US	11 JAN	440.9	26.7	25306	316		
1967 001S		5987	US	11 JAN	518.0	26.7	29497	476		
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	407.6	29.8	23396	269		
1967 001X		6779	US	11 JAN	656.7	28.5	36627	670		
1967 001AM		14756	US	11 JAN	388.9	26.6	22280	259		
1967 001AN		19518	US	11 JAN	516.5	26.5	29352	537		
1967 001AR		20102	US	11 JAN	273.6	26.4	14936	225		
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		2660	US	18 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1967 006A	ESSA 4	2657	US	26 JAN	113.4	102.1	1438	1323		
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	99.1	852	775		
1967 010B		2741	US	8 FEB	101.2	98.9	855	771		
1967 011A	DIADEME 1	2674	FRANCE	8 FEB	102.1	40.0	1156	554		
1967 011B		2671	FRANCE	8 FEB	102.9	40.0	1226	561		
1967 011H		2689	FRANCE	8 FEB	96.7	39.9	721	477		
1967 014A	DIADEME 2	2680	FRANCE	15 FEB	109.1	39.5	1781	588		
1967 014B		2682	FRANCE	15 FEB	109.5	39.5	1819	584		
1967 014C		2684	FRANCE	15 FEB	107.7	40.0	1653	583		
1967 014F		2685	FRANCE	15 FEB	106.6	39.0	1574	565		
1967 014J		14505	FRANCE	15 FEB	108.8	38.9	1773	565		

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1967 LAUNCHES (CONT.)										
1967 014K		14633	FRANCE	15 FEB	101.0	39.4	1089	526		
1967 014L		15531	FRANCE	15 FEB	100.9	39.4	1077	526		
1967 014M		18911	FRANCE	15 FEB	111.9	38.9	2050	580		
1967 014N		18928	FRANCE	15 FEB	101.2	39.4	1102	530		
1967 014P		18929	FRANCE	15 FEB	101.4	39.4	1114	530		
1967 026A	INTELSAT 2 F-3	2717	ITSO	23 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1967 027A	COSMOS 151	2720	USSR	24 MAR	94.2	56.0	491	469		
1967 034A	NNSS 30120	2754	US	14 APR	106.3	90.2	1069	1037		
1967 034B		2755	US	14 APR	106.4	90.2	1075	1043		
1967 034C		2777	US	14 APR	103.5	90.2	1031	816		
1967 034D		2778	US	14 APR	108.3	90.2	1245	1049		
1967 034E		4843	US	14 APR	106.7	90.4	1096	1047		
1967 035D		2764	US	17 APR	BARYCENTRIC ORBIT					
1967 036A	LSSA 5	2757	US	20 APR	113.5	101.9	1419	1352		
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	1482	1387		
1967 039A	COSMOS 156	2762	USSR	27 APR	89.3	81.1	247	236		
1967 039B		2763	USSR	27 APR	94.3	81.2	519	452		
1967 040A		2765	US	28 APR	CURRENT ELEMENTS NOT MAINTAINED					
1967 040B		2766	US	28 APR	CURRENT ELEMENTS NOT MAINTAINED					
1967 040C	ERS 18	2767	US	28 APR	CURRENT ELEMENTS NOT MAINTAINED					
1967 040D	ERS 20	2768	US	28 APR	CURRENT ELEMENTS NOT MAINTAINED					
1967 040E	ERS 27	2769	US	28 APR	CURRENT ELEMENTS NOT MAINTAINED					
1967 040F		2770	US	28 APR	CURRENT ELEMENTS NOT MAINTAINED					
1967 043B		2780	US	9 MAY	95.7	84.9	616	486		
1967 045A	COSMOS 158	2801	USSR	15 MAY	100.3	74.0	813	731		
1967 045B		2802	USSR	15 MAY	100.2	74.0	820	714		
1967 045C		2823	USSR	15 MAY	97.7	74.0	669	622		
1967 045D		3737	USSR	15 MAY	93.0	74.0	431	407		
1967 048A	NNSS 30130	2807	US	18 MAY	106.8	89.6	1093	1059		
1967 048B		2811	US	18 MAY	106.8	89.7	1094	1062		
1967 048C		17723	US	18 MAY	105.1	89.7	1010	983		
1967 048D		19222	US	18 MAY	105.6	89.7	1054	989		
1967 053A		2826	US	31 MAY	102.1	70.0	866	849		
1967 053B		2825	US	31 MAY	103.2	70.0	917	903		
1967 053C	GRAVITY GRADIENT 4	2828	US	31 MAY	103.2	70.0	917	902		
1967 053D	GRAVITY GRADIENT 5	2834	US	31 MAY	103.2	70.0	919	904		
1967 053E		2847	US	31 MAY	103.1	70.0	909	896		
1967 053F		2872	US	31 MAY	103.2	70.0	914	900		
1967 053G		2873	US	31 MAY	103.2	70.0	917	901		
1967 053H		2874	US	31 MAY	103.2	70.0	919	904		
1967 053J		2909	US	31 MAY	101.9	70.0	849	846		
1967 053K		19245	US	31 MAY	103.1	70.0	912	894		
1967 060A	MARINER 5	2845	US	14 JUN	HELIOCENTRIC ORBIT					
1967 060B		2846	US	14 JUN	HELIOCENTRIC ORBIT					
1967 065A	SECOR (EGRS) 9	2861	US	29 JUN	172.1	90.0	3947	3791		
1967 065B	AURORA 1	2876	US	29 JUN	172.1	90.0	3948	3791		
1967 065C		2877	US	29 JUN	172.1	90.0	3951	3788		
1967 066A	TITAN 3 C-14	2862	US	1 JUL	1309.7	1.2	33540	33010		

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1967 LAUNCHES (CONT.)										
1967 065B		2863	US	1 JUL	1310.4	1.2	33549	33030		
1967 065C		2864	US	1 JUL	1311.8	3.2	33553	33080		
1967 065D		2865	US	1 JUL	1313.7	4.3	33563	33147		
1967 065E		2866	US	1 JUL	1316.1	9.2	33599	33207		
1967 065F	[illegible]	2867	US	1 JUL	1318.9	5.2	33659	33270		
1967 065G		2868	US	1 JUL	1319.1	9.2	33653	33276		
1967 066B		2883	US	14 JUL	BARYCENTRIC ORBIT					
1967 070A	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	820		
1967 080B		2940	US	23 AUG	101.9	99.0	874	818		
1967 084B		2933	US	8 SEP	BARYCENTRIC ORBIT					
1967 092A	NIMBUS 3B149	2965	US	25 SEP	106.6	89.2	1103	1030		
1967 092B		2967	US	25 SEP	106.6	89.2	1103	1032		
1967 092C		2994	US	25 SEP	103.9	89.4	1016	866		
1967 092D		3122	US	25 SEP	108.9	89.1	1320	1031		
1967 092G		17176	US	25 SEP	104.8	89.2	1009	959		
1967 092H		20009	US	25 SEP	104.8	89.2	1011	956		
1967 094A	INTELSAT I 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	816	645		
1967 096B		2985	US	11 OCT	99.3	99.1	807	644		
1967 102B		3011	USSR	24 OCT	94.5	81.2	549	442		
1967 104B		3019	USSR	27 OCT	96.6	64.0	737	449		
1967 111A	ATS 3	3027	US	5 NOV	1436.1	12.9	35859	35715		
1967 112B		3034	US	7 NOV	BARYCENTRIC ORBIT					
1967 114A	COSMOS 176	3035	US	10 NOV	114.8	102.2	1484	1406		
1967 114B		3036	US	10 NOV	114.8	102.2	1483	1408		
1967 114C		3051	US	10 NOV	114.1	101.3	1481	1344		
1967 114D		3123	US	10 NOV	115.4	102.4	1494	1449		
1967 114E		5443	US	10 NOV	114.5	101.5	1484	1386		
1967 119A	COSMOS 178	3047	USSR	23 NOV	99.4	74.0	732	724		
1967 119B		3048	USSR	23 NOV	99.3	74.0	730	719		
1967 123A	PIONEER 8	3056	US	13 DEC	HELIOCENTRIC ORBIT					
1967 127A	COSMOS 179	3061	USSR	27 DEC	103.4	65.1	948	888		
1968 LAUNCHES										
1968 001B		3092	US	7 JAN	BARYCENTRIC ORBIT					
1968 002A	EXPLORER 36	3093	US	11 JAN	112.2	105.8	1572	1079		
1968 002B		3094	US	11 JAN	112.1	105.8	1565	1078		
1968 002C		3125	US	11 JAN	112.3	106.1	1581	1082		
1968 002D		3127	US	11 JAN	112.1	105.3	1570	1075		
1968 011A	COSMOS 233	3129	USSR	20 FEB	109.2	74.0	1199	1181		
1968 011B		3131	USSR	20 FEB	109.2	74.0	1202	1181		
1968 012A	NIMBUS 3B150	3133	US	2 MAR	106.7	90.0	1131	1018		
1968 012B		3137	US	2 MAR	106.8	90.0	1134	1019		
1968 012C		3213	US	2 MAR	104.8	90.0	1088	877		
1968 012D		3214	US	2 MAR	108.6	90.1	1309	1018		
1968 012E		19594	US	2 MAR	104.5	90.0	1048	892		

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1968 LAUNCHES (CONT.)										
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	94.1	59.4	553	400		
1968 017D		3328	US	5 MAR	97.0	59.6	674	554		
1968 019B		3151	USSR	14 MAR	94.9	81.2	554	471		
1968 023A	COSMOS 209	3158	USSR	22 MAR	103.1	65.3	938	867		
1968 026A	OV1-13	3173	US	6 APR	198.9	100.0	9218	598		
1968 026B	OV1-14	3174	US	6 APR	207.3	100.1	9860	585		
1968 026C		3177	US	6 APR	207.2	100.1	9859	582		
1968 026D		3212	US	6 APR	198.5	100.0	9183	603		
1968 027A	LUNA 14	3178	USSR	7 APR	SELENOCENTRIC ORBIT					
1968 040A	COSMOS 220	3229	USSR	7 MAY	98.4	74.0	716	649		
1968 040B		3230	USSR	7 MAY	98.2	74.0	708	640		
1968 040C		3231	USSR	7 MAY	95.1	74.1	536	508		
1968 042A		3266	US	23 MAY	101.9	99.1	887	808		
1968 042B		3271	US	23 MAY	101.8	99.0	885	806		
1968 049B		3283	USSR	12 JUN	93.7	81.2	486	421		
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	12.0	35021	33693		
1968 055A	EXPLORER 38	3307	US	4 JUL	224.3	120.9	5868	5829		
1968 055B		3315	US	4 JUL	155.8	120.7	5757	668		
1968 055C		3848	US	4 JUL	224.1	121.1	5868	5818		
1968 055D		4841	US	4 JUL	155.4	120.8	5776	618		
1968 063A		3334	US	6 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1968 066B	EXPLORER 40	3338	US	8 AUG	118.0	80.7	2502	677		
1968 066C		3341	US	8 AUG	117.9	80.7	2490	679		
1968 066D		3342	US	8 AUG	111.1	80.6	1899	658		
1968 066E		3343	US	8 AUG	109.0	80.6	1739	617		
1968 066F		3390	US	8 AUG	111.1	80.6	1890	668		
1968 066G		3391	US	8 AUG	110.9	80.7	1894	641		
1968 066H		3392	US	8 AUG	113.0	80.7	2048	683		
1968 066J		3393	US	8 AUG	111.7	80.6	1947	662		
1968 069A	ESSA 7	3345	US	16 AUG	114.9	101.4	1471	1428		
1968 069B		3346	US	16 AUG	114.8	101.4	1464	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	1478	1421		
1968 069F		3975	US	16 AUG	114.9	101.7	1482	1414		
1968 069G		4499	US	16 AUG	115.1	101.5	1481	1435		
1968 070A	COSMOS 236	3347	USSR	27 AUG	92.5	56.1	400	394		
1968 081A	OV2-5	3428	US	26 SEP	1417.9	10.6	35788	35071		
1968 081C	ERS 21	3430	US	26 SEP	CURRENT ELEMENTS NOT MAINTAINED					

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1968 LAUNCHES (CONT.)										
1968 081D	LES 6	3431	US	26 SEP	1435.2	11.0	35811	35726		
1968 081E		3432	US	26 SEP	1419.3	10.7	35835	35080		
1968 091A	COSMOS 249	3504	USSR	20 OCT	111.6	62.4	2095	505		
1968 091B - 91DP			USSR	20 OCT	SEE NOTE		7*			7*
1968 092A		3510	US	23 OCT	101.1	98.5	834	788		
1968 092B		3522	US	23 OCT	101.0	98.6	831	784		
1968 097A	COSMOS 252	3530	USSR	1 NOV	112.1	62.3	2101	547		
1968 097B - 097EJ			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	1221	1170		
1968 106B		3577	USSR	30 NOV	109.2	74.1	1215	1162		
1968 110A	OAO-A2	3597	US	7 DEC	100.1	35.0	765	756		
1968 110B		3598	US	7 DEC	99.8	35.0	788	707		
1968 112B		3605	US	12 DEC	114.3	80.4	1467	1379		
1968 112C		3617	US	12 DEC	114.0	80.2	1446	1372		
1968 112D		3618	US	12 DEC	114.7	80.5	1506	1374		
1968 112E		3840	US	12 DEC	114.4	80.6	1454	1404		
1968 114A	ESSA 8	3615	US	15 DEC	114.6	101.6	1462	1411		
1968 114B		3616	US	15 DEC	115.0	101.7	1467	1446		
1968 114C		3811	US	15 DEC	112.8	102.0	1463	1248		
1968 114D		3812	US	15 DEC	116.3	102.5	1571	1458		
1968 116A	INTELSAT 3 F-2	3623	ITSO	19 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1968 116B		3627	US	21 DEC	HELIOCENTRIC ORBIT					
1969 LAUNCHES										
1969 009A	ISIS 1	3669	CANADA	30 JAN	127.9	88.5	3482	575		
1969 009B		3670	US	30 JAN	127.1	88.5	3414	573		
1969 010B		3673	US	5 FEB	114.0	80.4	1431	1390		
1969 010C		3841	US	5 FEB	113.7	80.2	1421	1369		
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	1423		
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	1177		
1969 024B		3819	USSR	17 MAR	109.1	74.0	1194	1177		
1969 024C		6289	USSR	17 MAR	108.9	74.0	1181	1170		
1969 025C	OV1-19	3825	US	18 MAR	151.9	104.7	5628	478		
1969 025E		3827	US	18 MAR	151.0	104.7	5539	489		
1969 029A	METEOR	3835	USSR	26 MAR	96.7	81.2	616	581		
1969 030A	MARINER 7	3837	US	27 MAR	HELIOCENTRIC ORBIT					
1969 030B		3845	US	27 MAR	HELIOCENTRIC ORBIT					
1969 036A		3839	US	13 APR	CURRENT ELEMENTS NOT MAINTAINED					
1969 037A	NIMBUS 3	3890	US	14 APR	107.3	99.9	1129	1069		
1969 037B	SECOR (EGRS) 13	3891	US	14 APR	107.2	99.9	1127	1068		

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1969 LAUNCHES (CONT.)										
1969 037C		3992	US	14 APR	107.3	100.0	1132	1073		
1969 043B		3943	US	18 MAY	HELIOCENTRIC ORBIT					
1969 043C	LM/DESCENT	3943	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 045A	OVS-3/ERS-29	3953	US	23 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1969 045B	OVS-5	3951	US	23 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1969 045C	OVS-4	3952	US	23 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1969 045D		3954	US	23 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1969 045E		3955	US	23 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1969 045F		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	839	772		
1969 062B		4048	US	23 JUL	100.9	98.8	834	770		
1969 069C		4053	US	26 JUL	128.0	30.3	3806	267		
1969 067A	ATS 5	4058	US	12 AUG	1447.3	12.0	36012	35999		
1969 069B		4059	US	12 AUG	703.3	17.5	37300	2337		
1969 069C		5991	US	12 AUG	682.2	17.2	36497	2086		
1969 071A	COSMOS 292	4070	USSR	13 AUG	99.5	74.0	742	726		
1969 071B		4071	USSR	13 AUG	99.2	74.0	733	709		
1969 071C		4084	USSR	13 AUG	99.4	74.1	764	731		
1969 071D		13912	USSR	13 AUG	99.1	74.0	751	677		
1969 082B		4255	US	30 SEP	103.2	70.0	926	893		
1969 082C		4257	US	30 SEP	103.3	70.0	931	897		
1969 082D		4259	US	30 SEP	103.3	70.0	931	899		
1969 082E		4237	US	30 SEP	103.3	70.0	931	898		
1969 082F		4247	US	30 SEP	103.3	70.0	931	897		
1969 082G		4295	US	30 SEP	103.3	70.0	931	897		
1969 082H		4166	US	30 SEP	103.3	70.0	930	897		
1969 082J		4165	US	30 SEP	101.9	70.0	856	837		
1969 082K		4152	US	30 SEP	102.5	70.0	891	865		
1969 082L - 082LF			US	30 SEP	SEE NOTE	10*				10*
1969 084A	METEOR	4119	USSR	6 OCT	96.3	81.2	597	560		
1969 084B		4120	USSR	6 OCT	95.9	81.2	623	495		
1969 091A	COSMOS 324	4133	USSR	21 OCT	99.7	74.0	751	733		
1969 091B		4139	USSR	21 OCT	99.2	74.0	721	714		
1969 097A	GRS-A/AZUR	4221	FRG	8 NOV	113.7	102.3	2414	377		
1969 097B		4222	US	8 NOV	107.4	102.9	1844	367		
1969 099B		4225	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	1173	1139		
1969 103B		4253	USSR	24 NOV	108.3	74.0	1156	1140		
1970 LAUNCHES										
1970 003A	INTELSAT 3 F-5	4297	ITSO	15 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1970 003B		4298	US	15 JAN	542.0	28.1	30957	324		

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 (CONT.)										
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 C	4327	US	4 FEB	106.0	99.1	1046	1038		
1970 011A	JAPAN	4330	JAPAN	11 FEB	122.4	31.1	3241	331		
1970 012A		4331	US	11 FEB	100.9	99.0	847	754		
1970 012B		4332	US	11 FEB	101.0	98.8	851	758		
1970 021A	NATO 1	4353	NATO	20 MAR	1436.3	11.0	36005	35577		
1970 021B		4354	US	20 MAR	576.1	26.1	32631	483		
1970 021C		5275	US	20 MAR	564.9	25.2	32224	294		
1970 025A	NIMBUS 4	4362	US	8 APR	107.1	99.8	1097	1086		
1970 025B	TOPO 1	4363	US	8 APR	106.9	99.6	1085	1082		
1970 025C - 025D		"	US	8 APR	SEE NOTE	11*				11*
1970 027A		4366	US	8 APR	CURRENT ELEMENTS NOT MAINTAINED					
1970 027B		4365	US	8 APR	CURRENT ELEMENTS NOT MAINTAINED					
1970 028A	COSMOS 332	4369	USSR	11 APR	99.6	74.0	744	733		
1970 028B		4370	USSR	11 APR	99.3	74.0	739	713		
1970 028C		14814	USSR	11 APR	99.4	74.0	740	717		
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	112.3	68.4	2232	433		
1970 034B		4392	PRC	24 APR	105.0	68.4	1569	417		
1970 035A	COSMOS 336	4383	USSR	25 APR	115.4	74.0	1484	1461		
1970 035B	COSMOS 337	4384	USSR	25 APR	116.2	74.0	1551	1465		
1970 035C	COSMOS 338	4385	USSR	25 APR	115.8	74.0	1516	1465		
1970 035D	COSMOS 339	4386	USSR	25 APR	115.0	74.0	1467	1443		
1970 035E	COSMOS 340	4387	USSR	25 APR	114.6	74.0	1467	1406		
1970 035F	COSMOS 341	4388	USSR	25 APR	113.9	74.0	1467	1340		
1970 035G	COSMOS 342	4389	USSR	25 APR	113.5	74.0	1466	1308		
1970 035H	COSMOS 343	4390	USSR	25 APR	114.2	74.0	1466	1373		
1970 035J		4391	USSR	25 APR	116.6	74.0	1586	1466		
1970 037A	METEOR	4393	USSR	28 APR	96.7	81.2	630	574		
1970 037B		4394	USSR	28 APR	97.2	81.2	703	542		
1970 046A		4416	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	817		
1970 047B		4420	USSR	23 JUN	102.1	81.2	923	791		
1970 055A	INTELSAT 3 F-3	4473	ITSO	23 JUL	1408.2	12.9	36639	33836		
1970 055B		4436	US	23 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1970 062A	SKYNET 0	4493	UK	19 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1970 064A	COSMOS 355	4497	USSR	20 AUG	91.8	74.0	364	360		
1970 067A	NIMBUS 3D170	4507	US	27 AUG	106.9	90.1	1206	945		
1970 067B		4515	US	27 AUG	106.8	90.1	1210	946		
1970 067C		5036	US	27 AUG	103.3	90.1	935	890		
1970 067D		5447	US	27 AUG	109.3	90.1	1438	946		
1970 069A		4510	US	1 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1970 070A		4512	US	3 SEP	100.8	98.8	848	745		
1970 070B		4513	US	3 SEP	100.9	98.9	853	746		
1970 079A	COSMOS 367	4594	USSR	3 OCT	104.5	65.3	1016	922		
1970 083A	COSMOS 371	4578	USSR	12 OCT	99.5	74.0	736	730		

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 (CONT.)										
1970 083B		4579	USSR	12 OCT	99.3	74.0	732	714		
1970 085A	METEOR	4583	USSR	15 OCT	95.6	81.2	551	544		
1970 085B		4584	USSR	15 OCT	95.9	81.2	625	501		
1970 085C		6330	USSR	15 OCT	93.0	81.2	445	394		
1970 086A	COSMOS 372	4588	USSR	16 OCT	100.5	74.1	791	772		
1970 086B		4589	USSR	16 OCT	100.3	74.1	788	756		
1970 086C		5357	USSR	16 OCT	99.3	74.0	730	718		
1970 086D		5358	USSR	16 OCT	99.8	74.1	756	745		
1970 089A	COSMOS 374	4594	USSR	23 OCT	108.3	63.0	1713	585		
1970 089B - 089DG			USSR	23 OCT	SEE NOTE	12*				12*
1970 091A	COSMOS 375	4598	USSR	30 OCT	111.4	62.8	2068	517		
1970 091B - 091AX			USSR	30 OCT	SEE NOTE	13*				13*
1970 093A		4630	US	6 NOV	1198.1	15.5	36067	25910		
1970 093B		4632	US	6 NOV	1197.7	15.5	36089	25872		
1970 102A	COSMOS 381	4783	USSR	2 DEC	104.8	74.0	1006	961		
1970 102B		4784	USSR	2 DEC	104.7	74.0	998	958		
1970 102C		4840	USSR	2 DEC	101.4	74.0	841	811		
1970 102D		5225	USSR	2 DEC	104.2	74.0	970	941		
1970 102E		8764	USSR	2 DEC	104.3	74.0	978	943		
1970 102F		9794	USSR	2 DEC	102.0	74.0	867	841		
1970 103A	COSMOS 382	4786	USSR	2 DEC	171.0	55.9	5243	2410		
1970 103B		4789	USSR	2 DEC	158.8	51.6	5083	1588		
1970 103C		4790	USSR	2 DEC	159.1	51.6	5086	1611		
1970 103D		5316	USSR	2 DEC	147.7	55.0	3966	1785		
1970 103G		12854	USSR	2 DEC	148.6	50.8	4155	1675		
1970 106A	NOAA 1	4793	US	11 DEC	114.8	101.4	1471	1421		
1970 106B		4794	US	11 DEC	114.9	101.4	1477	1421		
1970 106C		8828	US	11 DEC	116.4	102.2	1544	1494		
1970 108A	COSMOS 385	4799	USSR	12 DEC	104.6	74.0	979	973		
1970 108B		4800	USSR	12 DEC	104.5	74.0	977	964		
1970 109B		4802	FRANCE	12 DEC	97.4	15.0	672	593		
1970 113A	COSMOS 389	4813	USSR	18 DEC	96.7	81.2	617	585		
1970 113B		4814	USSR	18 DEC	97.0	81.2	665	567		
1971 LAUNCHES										
1971 000A		4924	US	UNKN	95.6	18.0	906	192		14*
1971 003A	METEOR	4849	USSR	20 JAN	96.3	81.2	589	574		
1971 003B		4850	USSR	20 JAN	96.3	81.2	643	521		
1971 003C		18277	USSR	20 JAN	96.1	81.2	628	514		
1971 006A	INTELSAT 4 F-2	4881	ITSO	26 JAN	ELEMENTS NOT AVAILABLE					
1971 006B		4882	US	26 JAN	653.6	27.9	36499	642		
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	95.8	65.8	580	534		
1971 011A	TANSEI 1	4952	JAPAN	16 FEB	106.1	29.7	1106	987		
1971 011B		5126	JAPAN	16 FEB	104.8	29.7	995	976		
1971 012A		4953	US	17 FEB	100.4	98.6	810	748		
1971 012B		4954	US	17 FEB	100.5	98.7	811	753		

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 012C		4957	US	17 FEB	93.6	98.4	457	446		
1971 012E		4963	US	17 FEB	95.4	98.2	543	532		
1971 015A	COSMOS 397	4964	USSR	25 FEB	113.3	65.7	2187	564		
1971 015B - 015DV			USSR	25 FEB	SEE NOTE	15*				15*
1971 016A	COSMOS 398	4966	USSR	26 FEB	135.0	51.5	4477	200		
1971 020A	COSMOS 400	5050	USSR	18 MAR	104.9	65.8	1001	981		
1971 020B		5051	USSR	18 MAR	104.7	65.8	1019	945		
1971 020C		5052	USSR	18 MAR	104.9	65.8	1000	980		
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	1421	1356		
1971 024B		5106	US	1 APR	113.5	88.2	1418	1352		
1971 024C		5360	US	1 APR	113.5	88.3	1420	1357		
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	630	627		
1971 028B		5118	USSR	7 APR	97.4	81.2	690	582		
1971 028D		5724	USSR	7 APR	97.0	81.2	614	611		
1971 031A	METEOR	5142	USSR	17 APR	94.1	81.2	483	465		
1971 031B		5143	USSR	17 APR	95.8	81.2	609	502		
1971 035A	COSMOS 407	5174	USSR	23 APR	100.7	74.0	805	777		
1971 035B		5175	USSR	23 APR	100.5	74.0	806	759		
1971 035C		5300	USSR	23 APR	100.1	74.0	774	754		
1971 035D		5301	USSR	23 APR	100.4	74.0	789	763		
1971 038A	COSMOS 409	5180	USSR	28 APR	109.3	74.0	1209	1174		
1971 038B		5181	USSR	28 APR	109.0	74.0	1224	1139		
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	1314		
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	1425		
1971 041E	COSMOS 415	5214	USSR	7 MAY	115.4	74.0	1499	1448		
1971 041F	COSMOS 416	5215	USSR	7 MAY	114.4	74.0	1490	1368		
1971 041G	COSMOS 417	5216	USSR	7 MAY	114.1	74.0	1490	1340		
1971 041H	COSMOS 418	5217	USSR	7 MAY	114.8	74.0	1491	1397		
1971 041J		5218	USSR	7 MAY	116.8	74.0	1590	1485		
1971 045A	MARS 2	5234	USSR	19 MAY	AREOCENTRIC ORBIT					
1971 046A	COSMOS 422	5238	USSR	22 MAY	105.0	74.0	1004	981		
1971 046B		5239	USSR	22 MAY	104.8	74.0	995	978		
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	102.9	74.0	1423	367		
1971 052B		5232	USSR	4 JUN	103.5	74.0	1479	369		
1971 059A	METEOR	5327	USSR	16 JUL	94.8	81.2	513	503		
1971 059B		5328	USSR	16 JUL	96.0	81.2	622	509		
1971 063D	APOLLO 15 SUBSATELLITE	5377	US	26 JUL	SELENOCENTRIC ORBIT					
1971 067B	OV1-21	5397	US	7 AUG	101.7	87.6	901	780		
1971 067E		5398	US	7 AUG	101.3	87.6	875	765		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1971 LAUNCHES (CONT.)										
1971 067J		5405	US	7 AUG	99.4	87.6	770	686		
1971 067K		5395	US	7 AUG	101.3	87.6	871	764		
1971 067L		5399	US	7 AUG	99.6	87.6	776	699		
1971 067M		5400	US	7 AUG	99.5	87.6	772	695		
1971 067N		5384	US	7 AUG	101.5	87.6	891	767		
1971 069C		5426	USSR	12 AUG	100.1	49.6	855	672		
1971 071A	ESLE 1	5435	FRANCE	16 AUG	100.0	50.1	861	659		
1971 071B		5438	US	16 AUG	100.0	50.1	858	656		
1971 071C		5440	US	16 AUG	98.3	50.7	751	601		
1971 073B		5449	USSR	2 SEP	SELENOCENTRIC ORBIT					
1971 080A	SHINSEI	5435	JAPAN	28 SEP	113.1	32.1	1868	873		
1971 080B		5499	JAPAN	28 SEP	111.9	32.0	1757	871		
1971 082A	LUNA 19	5485	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 086B	COSMOS 445	5548	USSR	13 OCT	114.4	74.0	1509	1348		
1971 086C	COSMOS 446	5549	USSR	13 OCT	114.8	74.0	1510	1379		
1971 086D	COSMOS 447	5550	USSR	13 OCT	115.1	74.0	1512	1408		
1971 086E	COSMOS 448	5551	USSR	13 OCT	115.5	74.0	1514	1438		
1971 086F	COSMOS 449	5552	USSR	13 OCT	116.2	74.0	1540	1481		
1971 086G	COSMOS 450	5553	USSR	13 OCT	115.8	74.0	1527	1460		
1971 086H	COSMOS 451	5554	USSR	13 OCT	116.6	74.0	1571	1487		
1971 086J		5555	USSR	13 OCT	117.3	74.0	1621	1501		
1971 087A		5557	US	14 OCT	101.3	99.1	858	779		
1971 087B		5556	US	14 OCT	101.4	99.0	873	779		
1971 089A		5550	US	17 OCT	100.0	92.7	774	746		
1971 093A	PROSPERO	5530	UK	28 OCT	105.1	82.0	1459	535		
1971 093B		5531	UK	28 OCT	105.2	82.0	1470	535		
1971 095A		5587	US	3 NOV	1436.2	11.1	35791	35784		
1971 095B		5588	US	3 NOV	1434.5	11.0	35775	35735		
1971 095C		5589	US	3 NOV	1461.7	11.5	37142	36207		
1971 096A	EXPLORER 46	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	1210	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	965		
1971 111B		5685	USSR	15 DEC	104.6	74.0	995	960		
1971 114A	COSMOS 466	5705	USSR	17 DEC	100.5	74.0	795	771		
1971 114B		5707	USSR	17 DEC	100.4	74.0	797	759		
1971 114C		5776	USSR	17 DEC	100.3	74.0	780	761		
1971 114D		5858	USSR	17 DEC	100.2	74.0	773	759		
1971 116A	INTELSAT 4 F-3	5709	ITSO	20 DEC	1445.4	7.6	36040	35897		
1971 117A	COSMOS 469	5721	USSR	25 DEC	104.7	64.5	1012	944		
1971 119A	ORBOL 1	5729	USSR	27 DEC	110.6	74.0	2115	388		
1971 119B		5730	USSR	27 DEC	110.1	74.0	2069	390		
1971 120A	METEOR	5731	USSR	29 DEC	102.5	81.3	915	838		

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1971 LAUNCHES (CONT.)										
1971 120B		5732	USSR	29 DEC	102.1	81.3	874	840		
1971 120C		8826	USSR	29 DEC	101.4	81.2	843	809		
1971 120D		8827	USSR	29 DEC	102.0	81.3	864	844		
1971 120F		15344	USSR	29 DEC	100.8	81.3	812	782		
1972 LAUNCHES										
1972 003A	INTELSAT 4 F-4	5775	ITSO	23 JAN	1442.6	7.0	35935	35891		
1972 003B		5816	US	23 JAN	653.4	28.6	36507	622		
1972 007B		5836	USSR	14 FEB	SELENOCENTRIC ORBIT					
1972 009A	COSMOS 475	5846	USSR	25 FEB	104.7	74.0	995	962		
1972 009B		5847	USSR	25 FEB	104.4	74.0	991	946		
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	94.8	81.2	512	500		
1972 011B		5853	USSR	1 MAR	95.4	81.2	577	502		
1972 011C		20128	USSR	1 MAR	92.5	81.2	399	394		
1972 012A	PIONEER 10	5860	US	3 MAR	SOLAR SYSTEM ESCAPE TRAJECTORY					
1972 012B		5861	US	3 MAR	HELIOCENTRIC ORBIT					
1972 018A		5903	US	24 MAR	101.4	99.0	865	786		
1972 018B		5904	US	24 MAR	101.4	98.9	859	787		
1972 019A	COSMOS 480	5905	USSR	25 MAR	109.1	83.0	1196	1170		
1972 019B		5907	USSR	25 MAR	108.9	83.0	1193	1159		
1972 022A	METEOR	5917	USSR	30 MAR	102.3	81.2	880	857		
1972 022B		5918	USSR	30 MAR	102.5	81.2	919	834		
1972 023E		6073	USSR	31 MAR	166.1	52.2	7043	216		
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 487	6019	USSR	6 MAY	104.7	74.0	998	960		
1972 035B		6020	USSR	6 MAY	104.5	74.0	987	954		
1972 041A	INTELSAT 4 F-5	6052	ITSO	13 JUN	1438.3	7.9	35841	35818		
1972 041B		6058	US	13 JUN	651.3	26.5	36492	528		
1972 043A	COSMOS 494	6059	USSR	23 JUN	100.5	74.1	791	775		
1972 043B		6061	USSR	23 JUN	100.3	74.1	790	757		
1972 043C		6063	USSR	23 JUN	100.0	74.1	767	751		
1972 043D		6065	USSR	23 JUN	100.3	74.1	785	756		
1972 049A	METEOR	6079	USSR	30 JUN	102.7	81.2	896	877		
1972 049B		6080	USSR	30 JUN	102.8	81.2	928	858		
1972 057A	COSMOS 504	6117	USSR	20 JUL	113.9	74.0	1493	1320		
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	1494	1380		
1972 057D	COSMOS 507	6120	USSR	20 JUL	114.9	74.0	1495	1409		
1972 057E	COSMOS 508	6121	USSR	20 JUL	115.3	74.0	1493	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	1543	1493		
1972 057J		6125	USSR	20 JUL	117.0	74.0	1599	1491		
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	966	951		

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1972 LAUNCHES (CONT.)										
1972 062B		6149	USSR	16 AUG	104.2	83.0	963	948		
1972 062C		6277	USSR	16 AUG	104.1	82.9	955	947		
1972 062D		7560	USSR	16 AUG	102.9	83.0	947	841		
1972 065A	COPERNICUS	6153	US	21 AUG	99.3	35.0	732	722		
1972 065B		6155	US	21 AUG	99.1	35.0	751	676		
1972 066A	COSMOS 516	6154	USSR	21 AUG	104.5	64.8	1025	919		
1972 069A	TRIAD OI-1X	6173	US	2 SEP	100.1	90.0	810	716		
1972 069B		6180	US	2 SEP	99.8	90.0	792	706		
1972 069C		6250	US	2 SEP	98.8	89.7	748	653		
1972 072A	COSMOS 520	6192	USSR	19 SEP	715.3	67.7	36479	3751		
1972 072E		6302	USSR	19 SEP	706.7	67.6	36005	3802		
1972 073A	EXPLORER 47	6197	US	23 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1972 074A	COSMOS 521	6206	USSR	29 SEP	104.9	65.8	997	983		
1972 074B		6207	USSR	29 SEP	104.7	65.8	994	969		
1972 074C		6210	USSR	29 SEP	104.9	65.8	998	981		
1972 076A		6212	US	2 OCT	98.3	98.6	683	670		
1972 076B		6217	US	2 OCT	99.0	98.5	720	702		
1972 076C		6218	US	2 OCT	99.2	98.5	732	712		
1972 076D		6221	US	2 OCT	98.0	98.6	671	659		
1972 079C		6822	US	10 OCT	114.7	95.6	1463	1417		
1972 079D		6823	US	10 OCT	114.8	95.8	1484	1403		
1972 079E		6824	US	10 OCT	114.6	95.5	1442	1432		
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	81.3	882	855		
1972 085B		6257	USSR	26 OCT	102.5	81.3	917	832		
1972 087A	COSMOS 528	6262	USSR	1 NOV	114.1	74.0	1466	1363		
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	1466	1330		
1972 087D	COSMOS 531	6266	USSR	1 NOV	114.7	74.0	1467	1419		
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	1466	1346		
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	848	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	1098		
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	1378	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	796	767		
1972 104B		6324	USSR	25 DEC	100.2	74.1	774	758		
1972 104C		6391	USSR	25 DEC	99.6	74.1	747	729		
1972 104D		6396	USSR	25 DEC	99.5	74.1	748	724		
1973 LAUNCHES										

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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	582	552		
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	923	836		
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	1442.9	6.8	35975	35863		
1973 034A	METEOR	6659	USSR	29 MAY	102.2	81.2	883	845		
1973 034B		6660	USSR	29 MAY	102.5	81.2	912	841		
1973 037A	COSMOS 564	6675	USSR	8 JUN	114.6	74.0	1478	1392		
1973 037B	COSMOS 565	6676	USSR	8 JUN	115.3	74.0	1488	1446		
1973 037C	COSMOS 566	6677	USSR	8 JUN	115.0	74.0	1480	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	1373		
1973 037F	COSMOS 569	6680	USSR	8 JUN	114.2	74.0	1479	1354		
1973 037G	COSMOS 570	6681	USSR	8 JUN	113.9	74.0	1479	1335		
1973 037H	COSMOS 571	6682	USSR	8 JUN	113.7	74.0	1478	1316		
1973 037J		6683	USSR	8 JUN	116.8	74.0	1594	1481		
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	83.0	1008	977		
1973 042B		6708	USSR	20 JUN	104.8	83.0	995	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	831	788		
1973 054B		6788	US	17 AUG	101.2	98.8	836	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	1539.3	10.9	46379	29185		
1973 058B		6797	US	23 AUG	652.8	28.1	36545	552		
1973 064A	COSMOS 585	6825	USSR	8 SEP	113.5	74.0	1402	1373		
1973 064B		6826	USSR	8 SEP	113.4	74.0	1402	1358		
1973 065A	COSMOS 586	6828	USSR	14 SEP	104.7	82.9	1002	960		
1973 065B		6829	USSR	14 SEP	104.6	82.9	993	957		
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	1412		
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	1484	1344		
1973 069E	COSMOS 592	6849	USSR	2 OCT	113.9	74.0	1482	1329		
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	1484	1378		
1973 069H	COSMOS 595	6852	USSR	2 OCT	114.7	74.0	1484	1396		

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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	102.7	28.8	1423	347		
1973 078D		6896	US	26 OCT	CURRENT ELEMENTS NOT MAINTAINED					
1973 080A	COSMOS 604	6907	USSR	29 OCT	94.9	81.2	524	505		
1973 080B		6908	USSR	29 OCT	95.1	81.2	559	491		
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	889		
1973 081C		15764	US	30 OCT	105.9	90.5	1178	891		
1973 084A	COSMOS 606	6916	USSR	2 NOV	718.2	67.7	37477	2896		
1973 084D		6939	USSR	2 NOV	706.5	67.5	37015	2782		
1973 085A	MARINER 10	6919	US	3 NOV	HELIOCENTRIC ORBIT					
1973 086A	NOAA 3	6920	US	6 NOV	116.1	102.0	1509	1498		
1973 086B - 086HF			US	6 NOV	SEE NOTE		17*			17*
1973 088D		6938	US	10 NOV	114.5	96.9	1454	1413		
1973 088E		7559	US	10 NOV	114.6	96.8	1475	1402		
1973 098A	COSMOS 614	6965	USSR	4 DEC	100.3	74.1	792	756		
1973 098B		6966	USSR	4 DEC	100.2	74.1	786	751		
1973 098C		6967	USSR	4 DEC	99.4	74.1	741	713		
1973 098D		9569	USSR	4 DEC	100.1	74.1	776	747		
1973 100A		6973	US	13 DEC	1437.2	2.8	35816	35801		
1973 100B		6974	US	13 DEC	1436.1	10.5	35796	35777		
1973 100D		6976	US	13 DEC	1515.0	11.3	38498	36136		
1973 104A	COSMOS 617	6985	USSR	19 DEC	113.9	74.0	1482	1331		
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	1422		
1973 104D	COSMOS 620	6988	USSR	19 DEC	115.4	74.0	1492	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	1483	1367		
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	1484	1348		
1973 104J		6993	USSR	19 DEC	117.0	74.0	1619	1473		
1973 107A	OREOL 2	7003	USSR	26 DEC	105.2	74.0	1618	391		
1973 107B		7004	USSR	26 DEC	104.7	74.0	1578	384		
1973 108A	COSMOS 626	7005	USSR	27 DEC	104.0	65.4	992	898		
1973 109A	COSMOS 627	7008	USSR	29 DEC	104.9	82.9	1014	965		
1973 109B		7009	USSR	29 DEC	104.6	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	1000	943		
1974 011A	METEOR	7209	USSR	5 MAR	102.0	81.2	880	823		
1974 011B		7210	USSR	5 MAR	102.0	81.2	913	794		
1974 013A	UK-X4	7213	UK	9 MAR	100.5	97.9	884	684		
1974 013B		7228	US	9 MAR	100.6	97.9	879	694		
1974 015A		7218	US	16 MAR	101.1	99.0	856	763		
1974 015B		7219	US	16 MAR	101.3	99.0	868	771		
1974 017A	COSMOS 637	7229	USSR	26 MAR	1428.9	10.9	35812	35477		
1974 017F		11567	USSR	26 MAR	1425.7	10.8	35779	35386		

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INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1974 LAUNCHES (CONT.)										
1974 020B		7244	US	10 APR	ELEMENTS NOT AVAILABLE					
1974 022A	WESTAR 1	7250	US	13 APR	1441.4	6.4	35914	35865		
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	1351		
1974 024D	COSMOS 644	7268	USSR	23 APR	113.9	74.0	1479	1333		
1974 024E	COSMOS 645	7269	USSR	23 APR	114.3	74.0	1479	1367		
1974 024F	COSMOS 646	7270	USSR	23 APR	114.7	74.0	1482	1401		
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	1606	1484		
1974 025A	METEOR	7274	USSR	24 APR	102.3	81.2	884	854		
1974 025B		7275	USSR	24 APR	102.5	81.2	916	833		
1974 026A	MOLNIYA 2-9	7276	USSR	26 APR	703.8	62.7	39491	172		
1974 026E		7373	USSR	26 APR	732.6	63.2	40682	401		
1974 028A	COSMOS 650	7281	USSR	29 APR	113.4	74.0	1398	1366		
1974 028B		7284	USSR	29 APR	113.2	74.0	1387	1362		
1974 029A	COSMOS 651	7291	USSR	15 MAY	103.4	65.0	946	891		
1974 032A	COSMOS 654	7297	USSR	17 MAY	104.4	64.9	1024	908		
1974 033A	SMS 1	7298	US	17 MAY	ELEMENTS NOT AVAILABLE					
1974 037A	LUNA 22	7315	USSR	29 MAY	SELENOCENTRIC ORBIT					
1974 039A	ATS 5	7318	US	30 MAY	1412.1	10.2	35422	35207		
1974 039C		7324	US	30 MAY	1430.5	10.4	35771	35582		
1974 044A	COSMOS 660	7337	USSR	18 JUN	105.8	83.0	1674	387		
1974 044B		7338	USSR	18 JUN	103.9	83.0	1499	389		
1974 048A	COSMOS 663	7349	USSR	27 JUN	104.7	82.9	998	963		
1974 048B		7350	USSR	27 JUN	104.6	82.9	986	961		
1974 050A	COSMOS 665	7352	USSR	29 JUN	717.2	62.8	39787	536		
1974 050C		7354	USSR	29 JUN	698.7	62.5	39253	155		
1974 052A	METEOR	7363	USSR	9 JUL	102.9	81.2	909	885		
1974 052B		7364	USSR	9 JUL	102.5	81.2	909	845		
1974 054A		7369	US	14 JUL	468.7	125.0	13762	13457		
1974 054C		8599	US	14 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1974 056A	MOLNIYA 2-10	7376	USSR	23 JUL	717.7	61.9	39693	655		
1974 056B		7382	USSR	23 JUL	732.4	62.7	40698	375		
1974 060A	MOLNIYA 1-5	7392	USSR	29 JUL	1436.7	5.1	38737	32858		
1974 063A		7411	US	9 AUG	101.3	98.7	854	787		
1974 063B		7412	US	9 AUG	101.4	98.8	859	790		
1974 066A	COSMOS 673	7417	USSR	16 AUG	94.5	81.2	503	482		
1974 066B		7418	USSR	16 AUG	95.6	81.2	579	515		
1974 066C		8424	USSR	16 AUG	91.2	81.2	337	325		
1974 069A	COSMOS 675	7424	USSR	29 AUG	113.6	74.1	1421	1361		
1974 069B		7426	USSR	29 AUG	113.5	74.1	1421	1351		
1974 071A	COSMOS 676	7433	USSR	11 SEP	100.7	74.1	804	783		
1974 071B		7434	USSR	11 SEP	100.6	74.1	802	769		
1974 071C		8756	USSR	11 SEP	100.2	74.1	772	760		
1974 071D		8829	USSR	11 SEP	100.7	74.1	805	774		
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	1507	1465		

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1974 LAUNCHES (CONT.)										
1974 072D	COSMOS 680	7438	USSR	19 SEP	115.5	74.0	1489	1465		
1974 072E	COSMOS 681	7439	USSR	19 SEP	115.3	74.0	1470	1464		
1974 072F	COSMOS 682	7440	USSR	19 SEP	115.1	74.0	1464	1450		
1974 072G	COSMOS 683	7441	USSR	19 SEP	114.8	74.0	1464	1432		
1974 072H	COSMOS 684	7442	USSR	19 SEP	114.6	74.0	1464	1413		
1974 072J		7443	USSR	19 SEP	117.7	74.0	1683	1472		
1974 075A	WESTAR 2	7466	US	10 OCT	1442.2	6.1	35925	35886		
1974 075C		7468	US	10 OCT	333.1	24.3	18842	234		
1974 079A	COSMOS 689	7476	USSR	18 OCT	105.0	82.9	1013	970		
1974 079B		7477	USSR	18 OCT	104.8	82.9	1011	960		
1974 083A	METEOR	7490	USSR	28 OCT	102.2	81.2	895	834		
1974 083B		7493	USSR	28 OCT	102.4	81.2	905	836		
1974 083C		15521	USSR	28 OCT	102.4	81.2	904	835		
1974 089A	NOAA 4	7529	US	15 NOV	114.9	101.7	1457	1442		
1974 089B	AMSAT-OSCAR 7	7530	US	15 NOV	114.8	101.7	1457	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-8	7544	ITSO	21 NOV	1443.2	5.3	35955	35895		
1974 093B		7545	US	21 NOV	653.0	25.8	36460	647		
1974 094A	SKYNET 2B	7547	UK	23 NOV	1437.7	9.2	35849	35785		
1974 094D		7550	US	23 NOV	93.6	28.2	642	256		
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	878	840		
1974 099B		7575	USSR	17 DEC	102.1	81.2	909	810		
1974 101A	SYMPHONIE-A	7578	FR/FRG	19 DEC	1440.8	9.1	35885	35870		
1974 101G		9330	US	19 DEC	660.3	12.7	37044	434		
1974 102D		7586	USSR	21 DEC	438.5	62.0	25390	92		
1974 105A	COSMOS 700	7593	USSR	26 DEC	104.6	82.9	994	958		
1974 105B		7594	USSR	26 DEC	104.5	82.9	981	959		
1975 LAUNCHES										
1975 004A	LANDSAT 2	7615	US	22 JAN	103.1	98.8	913	900		
1975 004B - 004HR			US	22 JAN	SEE NOTE	19*				19*
1975 007A	COSMOS 706	7625	USSR	30 JAN	717.6	67.8	33625	6720		
1975 007D		7629	USSR	30 JAN	718.0	67.6	34050	6317		
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	103.8	49.9	1074	798		
1975 010D		7655	FRANCE	6 FEB	103.8	49.8	1082	796		
1975 010E		7659	FRANCE	6 FEB	104.0	49.8	1096	796		
1975 011A	SMS 2	7648	US	6 FEB	1447.2	8.8	36062	35944		
1975 012A	COSMOS 708	7663	USSR	12 FEB	113.5	69.2	1407	1368		
1975 012B		7665	USSR	12 FEB	113.3	69.2	1396	1364		
1975 016A	COSMOS 711	7678	USSR	28 FEB	115.4	74.0	1490	1460		

OBJECTS IN 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 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	1393		
1975 016D	COSMOS 714	7681	USSR	28 FEB	115.2	74.0	1489	1443		
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	1488	1426		
1975 016J		7686	USSR	28 FEB	117.9	74.0	1719	1456		
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	950	912		
1975 025A	COSMOS 724	7727	USSR	7 APR	103.0	65.6	944	854		
1975 027A	GEOS 3	7734	US	9 APR	101.6	115.0	848	824		
1975 027B		7735	US	9 APR	101.3	115.0	849	795		
1975 027C		10728	US	9 APR	101.6	115.2	886	777		
1975 027E		10730	US	9 APR	103.6	115.0	1017	840		
1975 028A	COSMOS 726	7736	USSR	11 APR	104.5	83.0	989	952		
1975 028B		7737	USSR	11 APR	104.4	83.0	979	952		
1975 029D		7741	USSR	14 APR	730.0	62.3	40801	152		
1975 033A	ARIABAT	7752	INDIA	19 APR	94.5	50.7	501	482		
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	39680	668		
1975 036D		7800	USSR	29 APR	732.9	63.9	39872	1224		
1975 038A	ANIK A3	7790	CANADA	7 MAY	1439.5	5.5	35871	35836		
1975 038D		7794	US	7 MAY	437.1	24.5	25163	239		
1975 042A	INTELSAT 4 F-1	7815	ITSO	22 MAY	1450.8	5.3	36110	36035		
1975 042B		7902	US	22 MAY	653.7	25.8	36527	618		
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	1468	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	1468		
1975 045F	COSMOS 737	7826	USSR	28 MAY	115.9	74.0	1526	1468		
1975 045G	COSMOS 738	7827	USSR	28 MAY	115.7	74.0	1506	1467		
1975 045H	COSMOS 739	7828	USSR	28 MAY	114.8	74.0	1469	1421		
1975 045J		7831	USSR	28 MAY	117.9	74.0	1692	1484		
1975 049B	SRET 2	7910	FRANCE	5 JUN	737.8	62.8	40825	513		
1975 049F		8548	USSR	5 JUN	563.4	62.7	32097	339		
1975 050A	VENERA 9	7915	USSR	8 JUN	HELIOCENTRIC ORBIT					
1975 051C	SSU 1	7937	US	8 JUN	113.5	95.1	1394	1382		
1975 051D		7938	US	8 JUN	113.2	95.0	1401	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	1111	1099		
1975 052B		7946	US	12 JUN	107.2	99.7	1100	1090		
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	94.8	81.2	517	496		
1975 056B		7969	USSR	20 JUN	95.7	81.3	578	526		
1975 063A	MOLNIYA 2-13	8015	USSR	8 JUL	716.8	63.7	39611	693		
1975 063D		8018	USSR	8 JUL	732.9	63.9	39893	1206		
1975 064A	METEOR 2	8026	USSR	11 JUL	102.2	81.3	881	847		
1975 064B		8027	USSR	11 JUL	102.4	81.3	911	831		
1975 064C		8039	USSR	11 JUL	102.3	81.3	882	849		
1975 064D		8110	USSR	11 JUL	102.1	81.3	885	833		
1975 072A	COS-B	8062	ESA	9 AUG	2203.9	90.3	99002	442		
1975 072B		8063	US	9 AUG	125.8	89.2	3559	321		
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	964		
1975 075A	VIKING ORBITER 1	8106	US	20 AUG	AREOCENTRIC ORBIT					
1975 075B		8111	US	20 AUG	HELIOCENTRIC ORBIT					
1975 076A	COSMOS 756	8127	USSR	22 AUG	95.3	81.2	539	524		
1975 076B		8128	USSR	22 AUG	96.0	81.2	597	535		
1975 077A	SYMPHONIE-B	8132	FR/FRG	27 AUG	1440.5	9.6	35893	35851		
1975 077B		8133	US	27 AUG	105.1	25.3	1590	403		
1975 077C		8134	US	27 AUG	649.4	13.7	36522	402		
1975 081A	MOLNIYA 2-14	8195	USSR	9 SEP	717.7	63.4	39842	506		
1975 081D		8418	USSR	9 SEP	733.8	64.0	40231	909		
1975 082A	KIKU	8197	JAPAN	9 SEP	106.0	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 086A	COSMOS 761	8285	USSR	17 SEP	114.6	74.0	1480	1397		
1975 086B	COSMOS 762	8286	USSR	17 SEP	115.1	74.0	1483	1435		
1975 086C	COSMOS 763	8287	USSR	17 SEP	115.3	74.0	1508	1472		
1975 086D	COSMOS 764	8288	USSR	17 SEP	116.0	74.0	1524	1476		
1975 086E	COSMOS 765	8289	USSR	17 SEP	116.3	74.0	1549	1475		
1975 086F	COSMOS 766	8290	USSR	17 SEP	114.9	74.0	1483	1415		
1975 086G	COSMOS 767	8291	USSR	17 SEP	115.3	74.0	1484	1454		
1975 086H	COSMOS 768	8292	USSR	17 SEP	115.5	74.0	1489	1469		
1975 086J		8295	USSR	17 SEP	117.8	74.0	1681	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	1204	1163		
1975 089B		8326	USSR	24 SEP	109.0	83.0	1196	1160		
1975 091A	INTELSAT 4A F-1	8330	ITSO	26 SEP	1440.9	5.3	35899	35860		
1975 091B		8331	US	26 SEP	653.5	21.3	36633	500		
1975 094A	COSMOS 773	8343	USSR	30 SEP	100.6	74.1	794	777		
1975 094B		8344	USSR	30 SEP	100.4	74.1	795	760		
1975 094C		8346	USSR	30 SEP	99.3	74.0	735	713		
1975 094D		14865	USSR	30 SEP	100.4	74.0	783	774		
1975 097A	COSMOS 775	8357	USSR	8 OCT	1437.1	9.0	35846	35766		
1975 097E		8415	USSR	8 OCT	CURRENT ELEMENTS NOT MAINTAINED					
1975 097F		11676	USSR	8 OCT	1438.1	10.7	35934	35716		
1975 099A	TIP 2	8361	US	12 OCT	95.8	90.4	612	499		

OBJECTS IN 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 100A	GOES 1	8366	US	16 OCT	1436.6	9.1	35812	35780		
1975 100C		8368	US	16 OCT	181.3	23.4	8202	260		
1975 103A	COSMOS 778	8419	USSR	4 NOV	104.8	83.0	1000	967		
1975 103B		8421	USSR	4 NOV	104.6	83.0	995	959		
1975 105A	MOLNIYA 3-3	8425	USSR	14 NOV	717.5	63.6	39686	655		
1975 105B		8462	USSR	14 NOV	733.8	64.0	40066	1076		
1975 112A	COSMOS 783	8458	USSR	28 NOV	100.7	74.1	801	783		
1975 112B		8459	USSR	28 NOV	100.5	74.1	796	772		
1975 112C		8757	USSR	28 NOV	100.0	74.0	760	756		
1975 112D		14801	USSR	28 NOV	100.7	74.1	799	784		
1975 112E		18500	USSR	28 NOV	100.9	74.1	812	785		
1975 116A	COSMOS 785	8473	USSR	12 DEC	104.2	65.1	1026	886		
1975 117A	RCA SATCOM I	8476	US	13 DEC	1445.8	5.4	36063	35890		
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	569.7	62.8	32495	278		
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	384.6	46.4	21900	378		
1975 123E		8547	USSR	22 DEC	436.2	46.8	25079	266		
1975 123F		11568	USSR	22 DEC	1432.7	10.3	35799	35641		
1975 124A	METEOR	8519	USSR	25 DEC	102.2	81.3	884	838		
1975 124B		8520	USSR	25 DEC	102.3	81.3	904	829		
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	1436.8	9.7	35854	35744		
1976 005A	COSMOS 789	8591	USSR	20 JAN	104.9	83.0	1012	965		
1976 005B		8597	USSR	20 JAN	104.8	83.0	1002	963		
1976 006A	MOLNIYA 1-32	8601	USSR	22 JAN	720.2	63.6	39224	1250		
1976 006B		8701	USSR	22 JAN	695.4	63.8	38341	902		
1976 008A	COSMOS 791	8607	USSR	28 JAN	114.7	74.1	1484	1399		
1976 008B	COSMOS 792	8608	USSR	28 JAN	115.1	74.1	1488	1434		
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	1464		
1976 008F	COSMOS 796	8612	USSR	28 JAN	115.8	74.0	1513	1470		
1976 008G	COSMOS 797	8613	USSR	28 JAN	116.0	74.1	1526	1477		
1976 008H	COSMOS 798	8614	USSR	28 JAN	116.3	74.1	1552	1477		
1976 008J		8615	USSR	28 JAN	117.9	74.1	1694	1480		
1976 010A	INTELSAT 4A F-2	8620	ITSO	29 JAN	1444.6	5.5	35966	35940		
1976 010B		8621	US	29 JAN	654.2	21.9	36571	600		
1976 011A	COSMOS 800	8645	USSR	3 FEB	105.0	83.0	1010	975		
1976 011B		8646	USSR	3 FEB	104.8	83.0	991	982		
1976 014A	COSMOS 803	8688	USSR	12 FEB	95.7	65.8	584	518		
1976 017A	MARISAT 1	8697	US	19 FEB	1436.1	8.0	35803	35770		

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1976 LAUNCHES (CONT.)										
1976 017C		8702	US	19 FEB	188.4	24.4	8758	258		
1976 019A	UME	8709	JAPAN	29 FEB	105.1	69.7	1004	990		
1976 019B		8710	JAPAN	29 FEB	105.1	69.7	1008	992		
1976 021A	MOLNIYA 1-33	8741	USSR	11 MAR	717.6	62.8	39862	483		
1976 021D		9411	USSR	11 MAR	731.1	63.1	40020	986		
1976 022A	COSMOS 807	8744	USSR	12 MAR	106.1	82.9	1699	388		
1976 022B		8745	USSR	12 MAR	103.9	82.9	1508	378		
1976 023A	LES 8	8746	US	15 MAR	1436.5	20.1	35815	35772		
1976 023B	LES 9	8747	US	15 MAR	1436.1	20.1	35804	35769		
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	20.5	36970	35751		
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	1420.9	7.9	35555	35420		
1976 024A	COSMOS 808	8754	USSR	16 MAR	95.5	81.2	550	530		
1976 024B		8755	USSR	16 MAR	95.5	81.2	577	507		
1976 029A	RCA SATCOM II	8774	US	26 MAR	1460.1	5.0	36496	36014		
1976 032A	METEOR	8799	USSR	7 APR	102.1	81.3	884	831		
1976 032B		8800	USSR	7 APR	102.2	81.2	936	791		
1976 035A	NATO III-A	8808	NATO	22 APR	1436.0	7.6	35794	35775		
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	8884	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	111.9	109.6	2338	285		
1976 039C		8822	US	4 MAY	225.4	109.8	5944	5834		
1976 039D		14514	US	4 MAY	117.7	109.9	2871	287		
1976 041A	MOLNIYA 3-5	8833	USSR	12 MAY	710.7	62.1	39801	203		
1976 041B		8844	USSR	12 MAY	729.7	61.9	40688	254		
1976 042A	COMSTAR 1	8838	US	13 MAY	1442.7	5.2	35927	35902		
1976 042B		8840	US	13 MAY	648.6	21.0	36302	583		
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	1048	984		
1976 047B		8861	US	22 MAY	105.5	99.6	1048	986		
1976 047C		8867	US	22 MAY	106.4	99.2	1114	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		

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1976 LAUNCHES (CONT.)										
1976 051B		8874	USSR	2 JUN	104.8	83.0	1002	965		
1976 053A	MARISAT 2	8882	US	10 JUN	1436.0	6.8	35799	35773		
1976 053F		8910	US	10 JUN	504.5	25.5	28939	289		
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	1543	1479		
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 054L	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	1506	1472		
1976 054H	COSMOS 832	8896	USSR	15 JUN	116.0	74.0	1519	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	74.0	806	777		
1976 061B		8924	USSR	29 JUN	100.6	74.1	795	773		
1976 061C		9572	USSR	29 JUN	99.9	74.1	756	747		
1976 061D		14815	USSR	29 JUN	100.0	74.1	772	746		
1976 065C		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	372.5	24.6	21269	272		
1976 067A	COSMOS 837	9011	USSR	8 JUL	115.7	65.9	2059	910		
1976 067B - 67BU			USSR	8 JUL	SEE NOTE 20*					20*
1976 067BU		20030	USSR	8 JUL	115.4	65.8	2282	668		
1976 069A	COSMOS 841	9022	USSR	15 JUL	100.5	74.0	793	774		
1976 069B		9023	USSR	15 JUL	100.4	74.0	790	764		
1976 069C		9704	USSR	15 JUL	100.0	74.1	764	753		
1976 069D		13499	USSR	15 JUL	100.8	74.1	813	778		
1976 070A	COSMOS 842	9026	USSR	21 JUL	104.8	83.0	1005	964		
1976 070B		9044	USSR	21 JUL	104.7	83.0	989	966		
1976 073A	COMSTAR 2	9047	US	22 JUL	1436.1	5.0	35789	35786		
1976 073B		9329	US	22 JUL	646.4	21.3	36205	566		
1976 074C		9269	USSR	23 JUL	684.2	62.6	38052	633		
1976 077A	NOAA 5	9057	US	29 JUL	116.2	101.9	1519	1504		
1976 077B - 77FP			US	29 JUL	SEE NOTE 21*					21*
1976 078A	COSMOS 846	9061	USSR	29 JUL	104.6	82.9	1008	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 085B		9390	USSR	27 AUG	94.7	81.1	542	461		
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	35839	35758		
1976 093A	COSMOS 848	9443	USSR	29 SEP	100.6	74.0	799	778		
1976 093B		9444	USSR	29 SEP	100.5	74.0	793	771		

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1976 LAUNCHES (CONT.)										
1976 098C		14816	USSR	29 SEP	100.7	74.0	810	776		
1976 098D		14817	USSR	29 SEP	100.0	74.1	774	742		
1976 098E		18504	USSR	29 SEP	100.3	74.1	788	752		
1976 101A	MARISAT 3	9478	US	14 OCT	1436.2	8.4	35796	35782		
1976 102A	METEOR	9481	USSR	15 OCT	102.2	81.3	885	843		
1976 102B		9482	USSR	15 OCT	102.4	81.3	914	828		
1976 103A	COSMOS 860	9486	USSR	17 OCT	104.3	64.7	1009	910		
1976 103F		19297	USSR	17 OCT	103.2	65.9	934	885		
1976 104A	COSMOS 861	9494	USSR	21 OCT	104.2	64.9	1006	910		
1976 105A	COSMOS 862	9495	USSR	22 OCT	718.8	67.1	38705	1700		
1976 105B - 105P			USSR	22 OCT	SEE NOTE		22*			22*
1976 107A	EKRAN	9503	USSR	26 OCT	1436.7	9.9	36086	35511		
1976 107F		11569	USSR	26 OCT	1419.3	9.9	35515	35398		
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	954		
1976 112A	PROGNOZ 5	9557	USSR	25 NOV	CURRENT ELEMENTS NOT MAINTAINED					
1976 116A	MOLNIYA 2-16	9574	USSR	2 DEC	717.3	62.2	39640	689		
1976 116D		9579	USSR	2 DEC	731.9	62.3	40072	977		
1976 118A	COSMOS 871	9588	USSR	7 DEC	114.6	74.0	1462	1415		
1976 118B	COSMOS 872	9589	USSR	7 DEC	114.4	74.0	1462	1397		
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	1434		
1976 118F	COSMOS 876	9593	USSR	7 DEC	116.0	74.0	1537	1461		
1976 118G	COSMOS 877	9594	USSR	7 DEC	115.0	74.0	1462	1452		
1976 118H	COSMOS 878	9595	USSR	7 DEC	115.3	74.0	1472	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	1004	954		
1976 122B		9613	USSR	15 DEC	104.6	82.9	997	952		
1976 126A	COSMOS 886	9634	USSR	27 DEC	114.8	65.8	2306	584		
1976 126B - 126CF			USSR	27 DEC	SEE NOTE		24*			24*
1976 127A	MOLNIYA 3-5	9635	USSR	28 DEC	613.0	62.3	34866	181		
1976 128A	COSMOS 887	9637	USSR	28 DEC	104.7	82.9	1010	946		
1976 128B		9638	USSR	28 DEC	104.5	82.9	995	949		
1977 LAUNCHES										
1977 002A	METEOR 2-2	9661	USSR	6 JAN	102.7	81.3	896	879		
1977 002B		9662	USSR	6 JAN	102.8	81.3	931	854		
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	1014	974		
1977 004B		9738	USSR	20 JAN	104.9	83.0	999	975		
1977 005A	NATO III-3	9785	NATO	28 JAN	1436.1	7.3	35800	35774		
1977 005B		9786	US	28 JAN	103.9	28.0	1269	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					
1977 007A		9803	US	6 FEB	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
1977 LAUNCHES (CONT.)										
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	717.8	63.8	38888	1467		
1977 010E		9850	USSR	11 FEB	731.0	64.1	38907	2097		
1977 012A	TANSEI 3	9841	JAPAN	19 FEB	134.1	65.8	3797	805		
1977 012C		9843	JAPAN	19 FEB	134.1	65.7	3795	804		
1977 012E		9981	JAPAN	19 FEB	133.5	65.2	3751	794		
1977 012F		9982	JAPAN	19 FEB	133.6	65.9	3777	781		
1977 012G		9983	JAPAN	19 FEB	134.2	65.6	3802	807		
1977 012H		12857	JAPAN	19 FEB	134.1	66.3	3795	805		
1977 012J		13133	JAPAN	19 FEB	133.3	65.8	3727	801		
1977 012L		19314	JAPAN	19 FEB	133.5	65.4	3917	633		
1977 013A	COSMOS 894	9846	USSR	21 FEB	104.8	82.9	1009	962		
1977 013B		9848	USSR	21 FEB	104.7	82.9	994	967		
1977 014A	KIKU 2	9852	JAPAN	23 FEB	1436.3	8.4	35796	35782		
1977 014B		9859	JAPAN	23 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1977 015A	COSMOS 895	9853	USSR	26 FEB	95.1	81.2	532	512		
1977 015B		9854	USSR	26 FEB	95.6	81.2	592	506		
1977 018A	PALAPA 2	9862	INDNSA	10 MAR	1436.0	10.3	35808	35759		
1977 021A	MOLNIYA 1-36	9880	USSR	24 MAR	717.7	63.7	39064	1288		
1977 021D		9927	USSR	24 MAR	732.9	64.1	39169	1926		
1977 024A	METEOR	9903	USSR	5 APR	102.3	81.3	890	845		
1977 024B		9904	USSR	5 APR	102.4	81.3	913	833		
1977 024C		9907	USSR	5 APR	103.3	82.9	934	892		
1977 027A	COSMOS 903	9911	USSR	11 APR	717.2	67.5	36680	3644		
1977 027D		9921	USSR	11 APR	723.9	67.7	37288	3368		
1977 027E		10946	USSR	11 APR	CURRENT ELEMENTS NOT MAINTAINED					
1977 029A	ESA-GEOS	9931	ESA	20 APR	734.1	27.8	38375	2782		
1977 029C		9933	US	20 APR	99.6	25.9	1269	207		
1977 032A	MOLNIYA 3-7	9941	USSR	28 APR	717.7	63.8	39031	1319		
1977 034A		10000	US	12 MAY	1489.6	8.8	36904	36749		
1977 034B		10001	US	12 MAY	1437.2	8.4	35811	35805		
1977 034C		10002	US	12 MAY	1506.9	9.0	38401	35922		
1977 036A	COSMOS 909	10010	USSR	19 MAY	117.0	65.9	2109	983		
1977 036B		10011	USSR	19 MAY	116.9	65.9	2098	981		
1977 036C		10013	USSR	19 MAY	117.0	65.9	2108	984		
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 039B		10020	USSR	25 MAY	104.5	82.9	996	949		
1977 041A	INTELSAT 4A F-4	10024	ITSO	26 MAY	1448.1	4.2	36060	35982		
1977 041B		10025	US	26 MAY	648.5	21.3	36266	612		
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	717.2	67.6	34396	5927		
1977 047D		10089	USSR	16 JUN	722.4	67.5	35065	5518		
1977 048A	GOES 2	10061	US	16 JUN	1436.1	7.5	35818	35756		

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 048B		10062	US	16 JUN	108.6	28.4	1744	575		
1977 048F		10409	US	16 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1977 053A		10091	US	23 JUN	718.1	64.6	20325	20045		
1977 053B		10960	US	23 JUN	314.4	64.4	16836	1038		
1977 054A	MOLNIYA 1-37	10092	USSR	24 JUN	717.8	63.0	39013	1339		
1977 054D		10155	USSR	24 JUN	695.4	63.5	37720	1523		
1977 055A	COSMOS 921	10095	USSR	24 JUN	97.4	75.8	669	597		
1977 055B		10096	USSR	24 JUN	97.4	75.8	672	596		
1977 057A	METEOR	10113	USSR	29 JUN	95.4	97.3	561	515		
1977 057B		10114	USSR	29 JUN	96.8	97.7	616	593		
1977 059A	COSMOS 923	10120	USSR	1 JUL	100.8	74.0	805	785		
1977 059B		10121	USSR	1 JUL	100.6	74.0	802	772		
1977 059C		14802	USSR	1 JUL	100.5	74.1	793	770		
1977 059D		14818	USSR	1 JUL	100.2	74.1	778	758		
1977 061A	COSMOS 925	10134	USSR	7 JUL	95.3	81.2	541	522		
1977 061B		10135	USSR	7 JUL	95.7	81.2	587	521		
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	1005	947		
1977 064B		10142	USSR	13 JUL	104.5	83.0	1002	939		
1977 065A	HIMAWARI	10143	JAPAN	14 JUL	1451.0	7.6	36146	36007		
1977 065B - 65GC			US	14 JUL	SEE NOTE 25*					25*
1977 068A	COSMOS 931	10150	USSR	20 JUL	717.1	67.5	35544	4778		
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	685.2	60.6	37596	1137		
1977 071A	RADUGA 3	10159	USSR	23 JUL	1436.5	9.6	35824	35764		
1977 071F		11570	USSR	23 JUL	1473.4	9.9	36568	36456		
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	1429		
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	1468	1460		
1977 079G	COSMOS 945	10291	USSR	24 AUG	115.4	74.0	1488	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	1675	1461		
1977 080A	SIRIO	10294	ITALY	25 AUG	1436.4	5.9	35897	35687		
1977 080B		10295	US	25 AUG	115.5	27.1	2083	875		
1977 082A	MOLNIYA 1-38	10315	USSR	30 AUG	682.4	62.8	38208	386		
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					
1977 087A	COSMOS 951	10352	USSR	13 SEP	104.8	83.0	1010	960		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1977 LAUNCHES (CONT.)										
1977 088B		10355	USSR	13 SEP	104.7	83.0	1005	955		
1977 088A	COSMOS 952	10358	USSR	16 SEP	104.1	64.9	995	907		
1977 091A	COSMOS 955	10362	USSR	20 SEP	96.1	81.2	571	568		
1977 091B		10363	USSR	20 SEP	96.1	81.2	608	537		
1977 092A	EKRAN	10365	USSR	20 SEP	1425.0	9.0	36765	34374		
1977 092B		11571	USSR	20 SEP	1421.9	9.3	35551	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	717.8	63.4	38370	1984		
1977 105B		10485	USSR	28 OCT	731.5	63.7	38828	2203		
1977 106A	NNSS 30110	10457	US	28 OCT	106.8	89.7	1100	1059		
1977 106B		10462	US	28 OCT	106.9	89.7	1100	1061		
1977 106C		12858	US	28 OCT	106.9	89.5	1099	1067		
1977 107A	COSMOS 962	10459	USSR	28 OCT	104.8	83.0	1004	961		
1977 107B		10461	USSR	28 OCT	104.6	82.9	1001	952		
1977 108A	METEOSAT 1	10489	ESA	23 NOV	1435.6	8.6	35825	35727		
1977 108B		10490	US	23 NOV	115.7	28.3	2484	491		
1977 108C		10950	US	23 NOV	179.7	27.1	8165	173		
1977 109A	COSMOS 963	10491	USSR	24 NOV	109.2	82.9	1206	1174		
1977 109B		10492	USSR	24 NOV	109.1	82.9	1201	1169		
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	998	964		
1977 116B		10513	USSR	13 DEC	104.5	65.8	993	950		
1977 116C		10518	USSR	13 DEC	104.6	65.8	994	961		
1977 116D		10526	USSR	13 DEC	104.8	65.8	1002	969		
1977 117A	METEOR 2-3	10514	USSR	14 DEC	102.2	81.2	877	849		
1977 117B		10515	USSR	14 DEC	102.3	81.2	900	834		
1977 117C		14950	USSR	14 DEC	102.3	81.2	899	834		
1977 118A	SAKURA	10516	JAPAN	15 DEC	1455.9	6.8	36187	36157		
1977 118B		10517	US	15 DEC	109.9	28.7	1959	485		
1977 118C		10519	US	15 DEC	110.2	29.1	1925	543		
1977 119A	COSMOS 968	10520	USSR	16 DEC	100.5	74.0	795	770		
1977 119B		10521	USSR	16 DEC	100.3	74.0	790	757		
1977 119C		10524	USSR	16 DEC	100.4	74.0	792	763		
1977 119D		10525	USSR	16 DEC	100.4	74.0	794	764		
1977 119E		18512	USSR	16 DEC	100.3	74.0	780	761		
1977 121A	COSMOS 970	10531	USSR	21 DEC	105.9	65.9	1145	926		
1977 121B - 121W			USSR	21 DEC	SEE NOTE		26*			26*
1977 121W		20032	USSR	21 DEC	108.8	65.7	1773	569		
1977 122A	COSMOS 971	10536	USSR	23 DEC	104.9	82.9	1003	973		
1977 122B		10537	USSR	23 DEC	104.7	82.9	997	965		

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 123A	COSMOS 972	10539	USSR	27 DEC	103.7	75.8	1160	710		
1977 123B		10541	USSR	27 DEC	103.7	75.8	1157	711		
1978 LAUNCHES										
1978 002A	INTELSAT 4A F-3	10557	ITSO	7 JAN	1441.4	3.6	35897	35883		
1978 002B		10722	US	17 JAN	650.4	21.3	36316	661		
1978 004A	COSMOS 975	10561	USSR	10 JAN	96.3	81.2	584	573		
1978 004B		10582	USSR	10 JAN	96.5	81.2	628	554		
1978 005A	COSMOS 976	10581	USSR	10 JAN	115.1	74.0	1461	1454		
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	1461	1417		
1978 005D	COSMOS 979	10586	USSR	10 JAN	114.9	74.0	1461	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	1493	1462		
1978 005G	COSMOS 982	10589	USSR	10 JAN	115.7	74.0	1513	1462		
1978 005H	COSMOS 983	10590	USSR	10 JAN	116.0	74.0	1535	1462		
1978 005J		10591	USSR	10 JAN	117.7	74.0	1692	1460		
1978 007A	COSMOS 985	10599	USSR	17 JAN	104.6	82.9	1015	937		
1978 007B		10600	USSR	17 JAN	104.5	82.9	1007	936		
1978 009A	MOLNIYA 3-9	10605	USSR	24 JAN	636.8	63.3	36195	85		
1978 009E		10802	USSR	24 JAN	726.5	63.9	40610	174		
1978 012A	IUE	10637	US	26 JAN	1436.6	31.8	42234	29321		
1978 012C		10723	US	26 JAN	618.1	29.7	35055	259		
1978 014A	KYOKKO	10664	JAPAN	4 FEB	134.1	65.4	3957	641		
1978 014C		12329	JAPAN	4 FEB	133.9	65.3	3932	651		
1978 014D		12330	JAPAN	4 FEB	134.1	65.4	3963	637		
1978 014E		12331	JAPAN	4 FEB	133.0	64.8	3874	626		
1978 014F		12406	JAPAN	4 FEB	133.4	65.9	3894	649		
1978 016A	FLTSATCOM 1	10669	US	9 FEB	1436.0	7.6	35791	35778		
1978 016C		12908	US	9 FEB	220.7	26.4	11187	252		
1978 018A	UME 2	10674	JAPAN	16 FEB	107.2	69.4	1220	970		
1978 018B		10675	JAPAN	16 FEB	107.1	69.4	1216	970		
1978 018C		13132	JAPAN	16 FEB	107.9	69.2	1284	974		
1978 019A	COSMOS 990	10676	USSR	17 FEB	100.5	74.0	796	769		
1978 019B		10677	USSR	17 FEB	100.3	74.0	787	762		
1978 019C		14803	USSR	17 FEB	99.9	74.1	760	747		
1978 019D		13500	USSR	17 FEB	100.5	74.1	791	768		
1978 019E		18501	USSR	17 FEB	100.5	74.1	795	768		
1978 020A		10684	US	22 FEB	718.0	63.5	20481	19882		
1978 020B		10801	US	22 FEB	268.4	63.9	14135	675		
1978 020C		18598	US	22 FEB	251.1	63.2	12883	731		
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	104.6	83.0	1004	951		
1978 022B		10693	USSR	28 FEB	104.6	83.0	989	959		
1978 024A	MOLNIYA 1-39	10696	USSR	2 MAR	717.5	62.2	39749	590		
1978 024D		10803	USSR	2 MAR	729.0	62.6	40324	583		
1978 026A	LANDSAT 3	10702	US	5 MAR	103.1	98.8	917	895		
1978 026B	AMSAT-OSCAR-8	10703	US	5 MAR	103.0	99.0	906	895		

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 026C - 026HT			US	5 MAR	SEE NOTE		27*			27*
1978 026HS		20029	USSR	5 MAR	101.4	98.6	885	765		
1978 028A	COSMOS 994	10731	USSR	15 MAR	104.9	82.9	1006	970		
1978 028B		10732	USSR	15 MAR	104.7	82.9	996	966		
1978 029B		10734	US	16 MAR	ELEMENTS NOT AVAILABLE					
1978 031A	COSMOS 996	10744	USSR	28 MAR	104.6	82.9	1005	948		
1978 031B		10745	USSR	28 MAR	104.5	82.9	997	944		
1978 034A	COSMOS 1000	10776	USSR	31 MAR	104.7	82.9	1008	954		
1978 034B		10777	USSR	31 MAR	104.6	82.9	995	954		
1978 035A	INTELSAT 4A F-6	10778	ITSO	31 MAR	1437.2	1.9	35983	35631		
1978 035B		10779	US	31 MAR	648.3	22.1	36273	596		
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	1981	574		
1978 039C		10794	US	7 APR	233.5	26.9	12097	263		
1978 042A		10820	US	1 MAY	100.9	98.6	810	796		
1978 042B		10853	US	1 MAY	98.7	98.3	700	693		
1978 042C		10854	US	1 MAY	98.9	98.3	709	702		
1978 044A	OTS-2	10855	ESA	11 MAY	1436.1	5.6	35801	35776		
1978 044B		10856	US	11 MAY	139.9	27.9	3527	1571		
1978 044C		10857	US	11 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1978 045A	COSMOS 1005	10860	USSR	12 MAY	96.0	81.2	576	558		
1978 045B		10861	USSR	12 MAY	96.6	81.2	629	563		
1978 047A		10893	US	13 MAY	718.0	64.5	20594	19771		
1978 047B		10894	US	13 MAY	286.9	64.0	15324	737		
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	1007	955		
1978 053B		10918	USSR	23 MAY	104.6	82.9	997	953		
1978 055A	MOLNIYA 1-40	10925	USSR	2 JUN	717.6	63.3	38539	1806		
1978 055E		10949	USSR	2 JUN	732.4	63.5	39228	1846		
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	1530	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	1489	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	1421		
1978 056H	COSMOS 1020	10937	USSR	7 JUN	114.8	74.0	1483	1405		
1978 056J		10938	USSR	7 JUN	117.9	74.0	1689	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	1436.0	6.3	35806	35763		
1978 062B		10954	US	16 JUN	107.7	28.4	1680	556		
1978 063A	COSMOS 1023	10961	USSR	21 JUN	100.5	74.1	791	771		
1978 063B		10962	USSR	21 JUN	100.3	74.1	787	758		
1978 063C		14804	USSR	21 JUN	99.4	74.0	741	719		
1978 063D		13497	USSR	21 JUN	100.7	74.1	806	777		

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 064A	SEASAT 1	10967	US	27 JUN	100.3	108.0	774	771		
1978 066A	COSMOS 1024	10970	USSR	28 JUN	718.3	67.8	34949	5430		
1978 066D		10998	USSR	28 JUN	720.3	67.9	35221	5258		
1978 067A	COSMOS 1025	10973	USSR	28 JUN	96.7	82.5	614	587		
1978 067B		10974	USSR	28 JUN	97.3	82.5	645	617		
1978 068A	COMSTAR 3	10975	US	29 JUN	1451.7	3.4	36163	36019		
1978 068B		10976	US	29 JUN	649.1	21.6	36300	611		
1978 071A	ESA GEOS 2	10981	ESA	14 JUL	1449.0	8.5	36069	36006		
1978 071C		10983	US	14 JUL	464.2	25.5	26683	277		
1978 072A	MOLNIYA 1-41	10984	USSR	14 JUL	688.7	62.4	38651	258		
1978 072D		11073	USSR	14 JUL	706.1	62.8	39592	185		
1978 073A	RADUGA 4	10987	USSR	18 JUL	1436.0	9.0	35828	35740		
1978 073D		11074	USSR	18 JUL	565.9	46.3	32051	520		
1978 073E		11941	USSR	18 JUL	1475.9	9.3	36644	36481		
1978 074A	COSMOS 1027	10991	USSR	27 JUL	104.6	82.9	997	957		
1978 074B		10992	USSR	27 JUL	104.6	82.9	988	959		
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	717.7	64.0	38997	1353		
1978 080D		11075	USSR	22 AUG	732.3	64.2	39212	1857		
1978 083A	COSMOS 1030	11015	USSR	6 SEP	717.6	67.7	36334	4013		
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 086A	VENERA 12	11025	USSR	14 SEP	HELIOCENTRIC ORBIT					
1978 087A	JIKI'KEN	11027	JAPAN	16 SEP	402.7	31.3	23123	246		
1978 087B		11028	JAPAN	16 SEP	375.1	31.3	21460	240		
1978 091A	COSMOS 1034	11042	USSR	4 OCT	114.9	74.0	1479	1420		
1978 091B	COSMOS 1035	11044	USSR	4 OCT	114.6	74.0	1477	1401		
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	1484	1475		
1978 091F	COSMOS 1039	11048	USSR	4 OCT	116.3	74.0	1549	1477		
1978 091G	COSMOS 1040	11049	USSR	4 OCT	116.0	74.0	1524	1478		
1978 091H	COSMOS 1041	11050	USSR	4 OCT	115.8	74.0	1506	1476		
1978 091J		11051	USSR	4 OCT	117.9	74.0	1698	1479		
1978 093A		11054	US	7 OCT	718.0	64.0	20329	20034		
1978 093B		11078	US	7 OCT	218.5	63.0	11082	196		
1978 094A	COSMOS 1043	11055	USSR	10 OCT	95.7	81.2	556	549		
1978 094B		11056	USSR	10 OCT	96.0	81.2	605	532		
1978 095A	MOLNIYA 3-10	11057	USSR	13 OCT	717.5	63.2	38977	1361		
1978 095E		11079	USSR	13 OCT	734.2	63.3	39943	1217		
1978 096A	TIROS-N	11060	US	13 OCT	101.8	98.9	851	833		
1978 096B		11061	US	13 OCT	100.8	98.8	800	796		

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INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1978 LAUNCHES (CONT.)										
1978 096C		11082	US	13 OCT	100.8	98.9	800	755		
1978 096A	NIMBUS 7	11080	US	24 OCT	104.0	99.2	956	942		
1978 096B	CAMEO	11081	US	24 OCT	104.0	99.5	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	1705	1683		
1978 100C	RADIO 2	11086	USSR	26 OCT	120.3	82.5	1703	1682		
1978 100D		11087	USSR	26 OCT	120.2	82.5	1700	1683		
1978 100D - 100AR			USSR	26 OCT	SEE NOTE		49*			49*
1978 105A	COSMOS 1048	11111	USSR	16 NOV	100.6	74.0	802	773		
1978 105B		11112	USSR	16 NOV	100.5	74.0	810	755		
1978 105C		11113	USSR	16 NOV	100.4	74.0	786	765		
1978 105D		11114	USSR	16 NOV	100.2	74.0	778	757		
1978 106A	NATO III-C	11115	NATO	19 NOV	1436.1	4.3	35804	35770		
1978 109A	COSMOS 1051	11128	USSR	5 DEC	114.6	74.0	1484	1392		
1978 109B	COSMOS 1052	11129	USSR	5 DEC	114.8	74.0	1486	1408		
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	1513	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	1483		
1978 112A		11141	US	11 DEC	717.9	63.6	20329	20033		
1978 112B		11142	US	11 DEC	270.0	63.6	14417	503		
1978 113A		11144	US	14 DEC	1435.8	6.3	35813	35746		
1978 113B		11145	US	14 DEC	1436.0	6.2	35801	35767		
1978 113D		11147	US	14 DEC	1339.2	3.9	35596	32137		
1978 116A	ANIK B1	11153	CANADA	16 DEC	1442.5	2.7	35951	35871		
1978 117A	COSMOS 1063	11155	USSR	19 DEC	96.2	81.2	576	574		
1978 117B		11156	USSR	19 DEC	96.2	81.2	617	536		
1978 118A	GORIZONT 1	11158	USSR	19 DEC	1436.6	18.3	50131	21462		
1978 118C		11926	USSR	19 DEC	1417.4	18.2	49439	21398		
1978 119A	COSMOS 1064	11161	USSR	20 DEC	90.8	82.9	347	279		
1978 121A	COSMOS 1065	11165	USSR	23 DEC	102.1	81.2	894	820		
1978 121B		11166	USSR	23 DEC	102.0	81.2	899	802		
1978 121C		19643	USSR	23 DEC	101.9	81.2	900	800		
1978 122A	COSMOS 1067	11168	USSR	26 DEC	109.0	83.0	1210	1155		
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	1012	958		
1979 003B		11239	USSR	16 JAN	104.7	82.9	1010	950		
1979 004A	MOLNIYA 3-11	11240	USSR	18 JAN	717.7	63.9	38138	2210		
1979 004D		11553	USSR	18 JAN	733.0	64.2	38617	2485		
1979 005A	METEOR 1-29	11251	USSR	25 JAN	96.8	97.6	633	572		
1979 005B		11252	USSR	25 JAN	96.0	97.5	573	556		
1979 007A	SCATHA	11256	US	30 JAN	1415.7	6.7	42316	28456		
1979 009A	AYAME 1	11261	JAPAN	6 FEB	1312.7	1.3	37319	29350		
1979 011A	COSMOS 1076	11266	USSR	12 FEB	96.4	82.5	599	576		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1979 LAUNCHES (CONT.)										
1979 011B		11267	USSR	12 FEB	97.3	82.5	643	614		
1979 012A	COSMOS 1077	11268	USSR	13 FEB	96.0	81.2	568	562		
1979 012B		11269	USSR	13 FEB	96.1	81.2	608	532		
1979 015A	EKRAN 3	11273	USSR	21 FEB	1422.4	8.9	38832	32202		
1979 015D		13900	USSR	21 FEB	1421.0	8.5	35522	35460		
1979 017A	SOLWIND	11273	US	24 FEB	94.6	97.9	512	482		
1979 017A - 017LZ			US	24 FEB	SEE NOTE		37*			37*
1979 020A	INTERCOSMOS 19	11285	USSR	27 FEB	97.8	74.0	830	477		
1979 020B		11286	USSR	27 FEB	97.9	74.0	846	474		
1979 021A	METEOR 2-4	11288	USSR	1 MAR	102.1	81.2	875	837		
1979 021B		11289	USSR	1 MAR	102.1	81.2	916	799		
1979 021C		11290	USSR	1 MAR	102.1	81.2	890	828		
1979 021D		14632	USSR	1 MAR	102.9	81.3	932	855		
1979 024A	COSMOS 1081	11296	USSR	15 MAR	114.5	74.0	1464	1401		
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	1464	1440		
1979 024D	COSMOS 1084	11299	USSR	15 MAR	115.1	74.0	1462	1460		
1979 024E	COSMOS 1085	11300	USSR	15 MAR	115.6	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	1463		
1979 024H	COSMOS 1088	11303	USSR	15 MAR	116.1	74.0	1545	1463		
1979 024J		11304	USSR	15 MAR	117.6	74.0	1688	1458		
1979 025D		11306	US	16 MAR	ELEMENTS NOT AVAILABLE					
1979 026A	COSMOS 1089	11308	USSR	21 MAR	104.7	83.0	998	965		
1979 026B		11309	USSR	21 MAR	104.6	83.0	990	963		
1979 028A	COSMOS 1091	11320	USSR	7 APR	104.8	82.9	1007	960		
1979 028B		11321	USSR	7 APR	104.7	82.9	993	963		
1979 030A	COSMOS 1092	11326	USSR	11 APR	104.7	82.9	1004	958		
1979 030B		11327	USSR	11 APR	104.6	82.9	999	955		
1979 031A	MOLNIYA 1-43	11328	USSR	12 APR	680.0	63.9	38356	120		
1979 031D		11551	USSR	12 APR	729.9	64.4	40745	206		
1979 032A	COSMOS 1093	11331	USSR	14 APR	95.9	81.2	564	556		
1979 032B		11332	USSR	14 APR	96.5	81.2	631	545		
1979 035A	RADUGA 5	11343	USSR	25 APR	1436.3	8.4	35805	35776		
1979 035E		17873	USSR	25 APR	1438.2	8.6	35953	35701		
1979 038A	FLTSATCOM 2	11353	US	4 MAY	1436.1	6.4	35835	35739		
1979 046A	COSMOS 1104	11378	USSR	31 MAY	104.7	82.9	1005	955		
1979 046B		11379	USSR	31 MAY	104.6	82.9	992	957		
1979 047A	UK 6	11382	UK	2 JUN	94.3	55.0	492	474		
1979 048A	MOLNIYA 3-12	11384	USSR	5 JUN	715.8	63.6	40057	199		
1979 048D		11554	USSR	5 JUN	200.9	64.0	9839	131		
1979 050A		11389	US	6 JUN	ELEMENTS NOT AVAILABLE					
1979 050B		11403	US	6 JUN	ELEMENTS NOT AVAILABLE					
1979 050C		11408	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	11415	US	27 JUN	100.9	98.5	810	793		
1979 057B		11419	US	27 JUN	100.1	98.4	767	761		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1979 LAUNCHES (CONT.)										
1979 057C		11634	US	27 JUN	100.0	98.4	762	757		
1979 058A	COSMOS 1109	11417	USSR	27 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1979 058D		11555	USSR	27 JUN	721.8	67.5	37506	3044		
1979 058E		12833	USSR	27 JUN	715.1	67.3	37222	3002		
1979 058F		12834	USSR	27 JUN	719.3	67.9	35883	4544		
1979 058G		12909	USSR	27 JUN	719.6	68.2	39114	1329		
1979 058H		12995	USSR	27 JUN	698.9	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	802	779		
1979 060B		11427	USSR	28 JUN	100.5	74.0	800	767		
1979 060C		14856	USSR	28 JUN	100.1	74.1	762	759		
1979 060D		15784	USSR	28 JUN	100.4	74.0	779	774		
1979 062A	GORIZONT 2	11440	USSR	5 JUL	1435.7	8.1	35784	35774		
1979 062D		14005	USSR	5 JUL	1474.4	8.3	36545	36519		
1979 067A	COSMOS 1116	11457	USSR	20 JUL	95.3	81.2	548	517		
1979 067B		11458	USSR	20 JUL	95.9	81.2	598	528		
1979 070A	MOLNIYA 1-44	11474	USSR	31 JUL	717.7	63.9	38130	2218		
1979 070B		11556	USSR	31 JUL	733.1	64.2	38792	2314		
1979 072A	WESTAR 3	11484	US	10 AUG	1436.1	1.7	35795	35778		
1979 077A	COSMOS 1124	11509	USSR	28 AUG	716.9	68.2	35896	4415		
1979 077B		11550	USSR	28 AUG	723.8	68.3	36286	4363		
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	772		
1979 078C		14805	USSR	28 AUG	100.1	74.1	766	756		
1979 078D		14806	USSR	28 AUG	100.8	74.0	802	794		
1979 078E		18650	USSR	28 AUG	100.0	74.1	763	752		
1979 084A	COSMOS 1130	11535	USSR	25 SEP	114.6	74.0	1478	1395		
1979 084B	COSMOS 1131	11539	USSR	25 SEP	114.8	74.0	1481	1408		
1979 084C	COSMOS 1132	11540	USSR	25 SEP	114.9	74.0	1480	1423		
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	1481	1452		
1979 084F	COSMOS 1135	11543	USSR	25 SEP	115.4	74.0	1490	1460		
1979 084G	COSMOS 1136	11544	USSR	25 SEP	115.6	74.0	1495	1470		
1979 084H	COSMOS 1137	11545	USSR	25 SEP	115.8	74.0	1512	1470		
1979 084J		11546	USSR	25 SEP	117.8	74.0	1681	1480		
1979 086A		11558	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	39500	32034		
1979 087C		17939	USSR	3 OCT	1433.1	8.2	35852	35603		
1979 089A	COSMOS 1140	11573	USSR	11 OCT	100.5	74.1	793	769		
1979 089B		11574	USSR	11 OCT	100.3	74.1	786	760		
1979 089C		14807	USSR	11 OCT	100.0	74.1	766	753		
1979 089D		14345	USSR	11 OCT	100.4	74.0	791	766		
1979 089E		19048	USSR	11 OCT	100.5	74.0	799	767		
1979 090A	COSMOS 1141	11585	USSR	16 OCT	104.6	82.9	996	954		
1979 090B		11586	USSR	16 OCT	104.5	82.9	989	948		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1979 LAUNCHES (CONT.)										
1979 090C		11587	USSR	16 OCT	103.2	82.9	933	887		
1979 091A	MOLNIYA 1-45	11589	USSR	20 OCT	717.5	63.9	39836	506		
1979 091D		11602	USSR	20 OCT	732.3	64.2	40478	590		
1979 093A	COSMOS 1143	11600	USSR	26 OCT	96.4	81.2	594	577		
1979 093B		11601	USSR	26 OCT	96.5	81.2	626	557		
1979 095A	METEOR 2-5	11605	USSR	31 OCT	102.4	81.2	882	863		
1979 095B		11608	USSR	31 OCT	102.5	81.2	917	834		
1979 098A		11621	US	21 NOV	1434.9	5.8	35765	35760		
1979 098B		11622	US	21 NOV	1435.0	5.3	35803	35726		
1979 098C		11623	US	21 NOV	1510.8	7.0	38522	35949		
1979 099A	COSMOS 1145	11629	USSR	27 NOV	96.1	81.2	574	565		
1979 099B		11630	USSR	27 NOV	96.4	81.2	625	542		
1979 101A	RCA SATCOM III	11635	US	7 DEC	789.0	10.0	35571	8238		
1979 104A	ARIANE VI	11645	ESA	24 DEC	178.0	17.8	8096	113		
1979 105A	GORIZONT 3	11648	USSR	28 DEC	1436.3	7.8	35803	35777		
1979 105C		11684	USSR	28 DEC	1459.2	7.9	36299	36176		
1980 LAUNCHES										
1980 002A	MOLNIYA 1-46	11662	USSR	11 JAN	717.6	64.0	39157	1189		
1980 002F		11670	USSR	11 JAN	732.7	64.4	39519	1569		
1980 003A	COSMOS 1150	11667	USSR	14 JAN	104.9	83.0	1012	962		
1980 003B		11668	USSR	14 JAN	104.7	83.0	998	963		
1980 004A	FLTSATCOM 3	11669	US	18 JAN	1436.4	5.8	35807	35775		
1980 004B		11719	US	18 JAN	124.8	26.0	3628	163		
1980 005A	COSMOS 1151	11671	USSR	23 JAN	97.0	82.5	628	600		
1980 005B		11672	USSR	23 JAN	97.3	82.5	645	617		
1980 007A	COSMOS 1153	11680	USSR	25 JAN	104.8	82.9	1014	959		
1980 007B		11681	USSR	25 JAN	104.7	82.9	1009	953		
1980 008A	COSMOS 1154	11682	USSR	30 JAN	96.5	81.2	595	589		
1980 008B		11683	USSR	30 JAN	96.7	81.2	640	556		
1980 011A		11690	US	9 FEB	718.0	64.1	20471	19892		
1980 011B		11705	US	9 FEB	289.9	63.6	15743	520		
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	1474	1413		
1980 012C	COSMOS 1158	11693	USSR	11 FEB	115.0	74.0	1475	1431		
1980 012D	COSMOS 1159	11694	USSR	11 FEB	115.2	74.0	1477	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	1516	1470		
1980 012H	COSMOS 1163	11698	USSR	11 FEB	116.1	74.0	1540	1469		
1980 012J		11699	USSR	11 FEB	117.8	74.0	1693	1466		
1980 014A	SMM	11703	US	14 FEB	91.8	28.4	366	362		
1980 016A	RADUGA 6	11708	USSR	20 FEB	1437.1	7.9	35809	35801		
1980 016D		11728	USSR	20 FEB	1475.1	8.2	36599	36493		
1980 018A	AYAME 2	11715	JAPAN	22 FEB	1486.6	1.4	36839	32785		
1980 018C		11718	JAPAN	22 FEB	369.2	24.3	21113	224		
1980 019A		11720	US	3 MAR	ELEMENTS NOT AVAILABLE					
1980 019B		11721	US	3 MAR	ELEMENTS NOT AVAILABLE					
1980 019C		11731	US	3 MAR	ELEMENTS NOT AVAILABLE					

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1980 LAUNCHES (CONT.)										
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 1163	11735	USSR	17 MAR	104.8	82.9	1008	957		
1980 022B		11736	USSR	17 MAR	104.6	82.9	1001	953		
1980 022C		12404	USSR	17 MAR	103.8	82.9	958	913		
1980 026A	COSMOS 1171	11750	USSR	3 APR	104.8	65.8	996	974		
1980 026B		11751	USSR	3 APR	104.6	65.8	987	968		
1980 026C		11752	USSR	3 APR	104.8	65.8	996	972		
1980 028A	COSMOS 1172	11758	USSR	12 APR	717.1	66.2	36949	3372		
1980 028E		11762	USSR	12 APR	722.1	66.7	37532	3035		
1980 030A	COSMOS 1174	11765	USSR	18 APR	104.0	66.1	1506	385		
1980 030B - 030AY			USSR	18 APR	SEE NOTE		28*			28*
1980 032A		11783	US	26 APR	717.9	63.8	20559	19803		
1980 032B		11791	US	26 APR	245.8	63.2	12972	269		
1980 034A	COSMOS 1176	11788	USSR	29 APR	103.4	64.8	957	880		
1980 034D		11971	USSR	29 APR	103.1	64.8	940	868		
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	96.4	81.2	597	576		
1980 044B		11822	USSR	4 JUN	96.8	81.3	643	570		
1980 049A	GORIZONT 4	11841	USSR	14 JUN	1460.1	7.4	36263	36244		
1980 049F		11862	USSR	14 JUN	1470.4	7.6	36582	36328		
1980 050A	COSMOS 1188	11844	USSR	14 JUN	717.1	67.4	36313	4009		
1980 050B		11847	USSR	14 JUN	722.9	67.5	36541	4066		
1980 051A	METEOR 1-30	11848	USSR	18 JUN	95.3	97.7	555	510		
1980 051B		11849	USSR	18 JUN	96.7	97.5	625	578		
1980 052C		11852	US	18 JUN	ELEMENTS NOT AVAILABLE					
1980 053A	MOLNIYA 1-47	11856	USSR	21 JUN	717.7	64.5	39867	482		
1980 053D		11861	USSR	21 JUN	733.1	64.7	40452	655		
1980 056A	COSMOS 1190	11869	USSR	1 JUL	100.6	74.0	796	781		
1980 056B		11870	USSR	1 JUL	100.5	74.0	796	771		
1980 056C		14808	USSR	1 JUL	101.1	74.0	826	795		
1980 056D		14809	USSR	1 JUL	100.9	74.0	813	791		
1980 057A	COSMOS 1191	11871	USSR	2 JUL	716.6	67.9	35783	4511		
1980 057D		11888	USSR	2 JUL	722.1	68.0	36200	4364		
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	1412		
1980 058C	COSMOS 1194	11877	USSR	9 JUL	114.9	74.0	1472	1430		
1980 058D	COSMOS 1195	11878	USSR	9 JUL	115.1	74.0	1473	1448		
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	1528	1471		
1980 058J		11883	USSR	9 JUL	117.6	74.0	1679	1468		
1980 060A	EKRAN 5	11890	USSR	14 JUL	1438.4	9.6	69711	1953		
1980 060F		14193	USSR	14 JUL	1417.3	7.6	35484	35351		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1980 LAUNCHES (CONT.)										
1980 063A	MOLNIYA 3-13	11896	USSR	18 JUL	717.7	63.8	39473	877		
1980 063B		11909	USSR	18 JUL	732.5	64.1	40185	891		
1980 069A	COSMOS 1206	11932	USSR	15 AUG	96.4	81.2	590	584		
1980 069B		11933	USSR	15 AUG	96.7	81.2	643	561		
1980 073A	METEOR 2-6	11962	USSR	9 SEP	102.2	81.2	888	836		
1980 073B		11963	USSR	9 SEP	102.2	81.2	906	823		
1980 074A	GOES 4	11964	US	9 SEP	1451.2	5.8	36220	35943		
1980 074C		11970	US	9 SEP	2254.5	2.0	67235	33916		
1980 081A	RADUGA 7	12003	USSR	5 OCT	1434.7	7.5	35776	35741		
1980 081F		12447	USSR	5 OCT	1440.7	7.6	35897	35856		
1980 085A	COSMOS 1217	12032	USSR	24 OCT	716.6	67.3	36258	4035		
1980 085D		12035	USSR	24 OCT	721.9	67.4	36927	3630		
1980 087A	FLTSATCOM 4	12046	US	31 OCT	1436.0	5.7	35809	35761		
1980 087B		12069	US	31 OCT	207.6	26.2	10214	256		
1980 089A	COSMOS 1220	12054	USSR	4 NOV	98.7	65.0	823	572		
1980 089B	089CG		USSR	4 NOV	SEE NOTE		29*			29*
1980 091A	SBS 1	12065	US	15 NOV	1436.0	1.5	35796	35775		
1980 092A	MOLNIYA 1-48	12066	USSR	16 NOV	714.0	64.4	39323	846		
1980 092D		12070	USSR	16 NOV	733.5	64.6	39910	1218		
1980 093A	COSMOS 1222	12071	USSR	21 NOV	96.7	81.2	599	597		
1980 093B		12072	USSR	21 NOV	96.7	81.2	642	557		
1980 095A	COSMOS 1223	12078	USSR	27 NOV	718.2	67.4	36181	4191		
1980 095E		12086	USSR	27 NOV	723.3	67.3	36711	3913		
1980 097A	COSMOS 1225	12087	USSR	5 DEC	104.8	82.9	1024	944		
1980 097B		12088	USSR	5 DEC	104.6	82.9	1011	941		
1980 098A	INTELSAT 5 F-2	12089	ITSO	6 DEC	1436.2	0.9	35807	35769		
1980 098B		12445	US	6 DEC	235.6	23.7	12223	293		
1980 099A	COSMOS 1226	12091	USSR	10 DEC	104.8	82.9	1007	959		
1980 099B		12092	USSR	10 DEC	104.6	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	1391		
1980 102B	COSMOS 1229	12108	USSR	23 DEC	114.6	74.0	1462	1412		
1980 102C	COSMOS 1230	12109	USSR	23 DEC	114.4	74.0	1462	1397		
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	1463	1416		
1980 102G	COSMOS 1234	12113	USSR	23 DEC	114.6	74.0	1462	1407		
1980 102H	COSMOS 1235	12114	USSR	23 DEC	114.6	74.0	1462	1411		
1980 102J		12115	USSR	23 DEC	114.9	74.0	1467	1435		
1980 103A	PROGNOZ 5	12116	USSR	25 DEC	5687.8	65.8	197364	978		
1980 104A	EKRAN 6	12120	USSR	26 DEC	1435.9	7.4	35803	35760		
1980 104C		12471	USSR	26 DEC	1420.9	7.3	35636	35342		
1981 LAUNCHES										
1981 002A	MOLNIYA 3-14	12133	USSR	9 JAN	717.8	64.0	38471	1882		
1981 002B		12134	USSR	9 JAN	732.2	64.3	39115	1947		
1981 003A	COSMOS 1238	12138	USSR	16 JAN	107.4	83.0	1815	399		
1981 003B		12139	USSR	16 JAN	106.5	83.0	1733	397		

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 006A	COSMOS 1241	12149	USSR	21 JAN	104.9	65.8	1004	977		
1981 006B		12150	USSR	21 JAN	104.6	65.8	1012	943		
1981 006C		12151	USSR	21 JAN	104.9	65.8	1001	975		
1981 008A	COSMOS 1242	12154	USSR	27 JAN	96.9	81.2	624	598		
1981 008B		12155	USSR	27 JAN	96.9	81.2	662	563		
1981 009A	MOLNIYA 1-49	12156	USSR	30 JAN	717.5	64.0	38866	1477		
1981 009D		12159	USSR	30 JAN	731.6	64.4	39577	1456		
1981 012A	KIKU 3	12295	JAPAN	11 FEB	470.0	28.6	27043	251		
1981 012C		12787	JAPAN	11 FEB	554.7	28.0	31701	270		
1981 013A	COSMOS 1244	12297	USSR	12 FEB	104.7	82.9	1006	958		
1981 013B		12298	USSR	12 FEB	104.6	82.9	1000	954		
1981 016A	COSMOS 1247	12303	USSR	19 FEB	711.0	67.9	36137	3884		
1981 016E		12311	USSR	19 FEB	703.5	67.7	35788	3862		
1981 016F		12984	USSR	19 FEB	710.5	67.8	36101	3892		
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	95.1	31.3	543	505		
1981 017B		12308	JAPAN	21 FEB	95.0	31.3	540	500		
1981 018A	COMSTAR 4	12309	US	21 FEB	1436.1	3.5	35788	35786		
1981 018B		12363	US	21 FEB	650.2	20.8	36337	627		
1981 021A	COSMOS 1249	12319	USSR	5 MAR	103.9	65.0	989	893		
1981 021C		12551	USSR	5 MAR	103.6	65.0	969	882		
1981 022A	COSMOS 1250	12320	USSR	6 MAR	114.4	74.0	1470	1387		
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	1416		
1981 022D	COSMOS 1253	12323	USSR	6 MAR	115.6	74.0	1495	1466		
1981 022E	COSMOS 1254	12324	USSR	6 MAR	114.9	74.0	1470	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	1455		
1981 022H	COSMOS 1257	12327	USSR	6 MAR	115.4	74.0	1477	1466		
1981 022J		12328	USSR	6 MAR	117.6	74.0	1693	1455		
1981 025A		12339	US	16 MAR	ELEMENTS NOT AVAILABLE					
1981 025C		12371	US	16 MAR	ELEMENTS NOT AVAILABLE					
1981 027A	RADUGA 8	12351	USSR	18 MAR	1435.0	7.3	36150	35381		
1981 027F		14194	USSR	18 MAR	1474.5	7.6	36616	36452		
1981 028B - 028BW			USSR	20 MAR	SEE NOTE		30*			30*
1981 030A	MOLNIYA 3-15	12368	USSR	24 MAR	717.9	64.8	38811	1547		
1981 030D		12383	USSR	24 MAR	732.8	65.1	39247	1843		
1981 031A	COSMOS 1261	12376	USSR	31 MAR	716.8	67.9	36632	3675		
1981 031D		12384	USSR	31 MAR	707.5	67.8	36089	3756		
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	107.3	83.0	1814	390		
1981 033B		12389	USSR	9 APR	106.0	83.0	1708	378		
1981 036E		12427	USSR	16 APR	103.0	99.0	1030	770		
1981 037A	COSMOS 1266	12409	USSR	21 APR	103.6	64.8	943	912		
1981 037D		12435	USSR	21 APR	103.4	64.8	922	911		
1981 038A		12418	US	24 APR	ELEMENTS NOT AVAILABLE					
1981 038B		12446	US	24 APR	ELEMENTS NOT AVAILABLE					

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1981 LAUNCHES (CONT.)										
1981 041A	COSMOS 1269	12442	USSR	7 MAY	100.8	74.0	802	785		
1981 041B		12443	USSR	7 MAY	100.7	74.0	791	787		
1981 041C		13498	USSR	7 MAY	100.6	74.0	797	777		
1981 041D		14346	USSR	7 MAY	100.2	74.1	780	759		
1981 043A	METEOR 2-7	12456	USSR	14 MAY	102.3	81.3	884	846		
1981 043B		12457	USSR	14 MAY	102.4	81.3	917	826		
1981 043C		15769	USSR	14 MAY	102.4	81.3	917	826		
1981 044A	NNSS 30480	12458	US	15 MAY	ELEMENTS NOT AVAILABLE					
1981 046A	COSMOS 1271	12464	USSR	19 MAY	96.9	81.2	619	601		
1981 046B		12465	USSR	19 MAY	97.1	81.2	661	581		
1981 049A	GOES 5	12472	US	22 MAY	1436.0	2.7	35805	35768		
1981 050A	INTELSAT 5 F-1	12474	ITSO	23 MAY	1436.2	1.4	35807	35771		
1981 050B		12497	US	23 MAY	230.1	23.9	11768	352		
1981 053A	COSMOS 1275	12504	USSR	4 JUN	104.7	83.0	1007	955		
1981 053B -	053MR		USSR	4 JUN	SEE NOTE		31*			31*
1981 054A	MOLNIYA 3-16	12512	USSR	9 JUN	717.8	64.0	38549	1805		
1981 054E		12519	USSR	9 JUN	733.6	64.3	39233	1898		
1981 057A	METEOSAT 2	12544	ESA	19 JUN	1436.2	2.8	35798	35779		
1981 057B	APPLE	12545	INDIA	19 JUN	1447.7	0.8	36478	35548		
1981 057C		12546	ESA	19 JUN	555.0	11.0	31730	257		
1981 057D		12562	ESA	19 JUN	345.8	10.5	19595	285		
1981 057E		14125	ESA	19 JUN	384.3	10.5	22064	196		
1981 058A	COSMOS 1278	12547	USSR	19 JUN	717.8	67.1	36203	4149		
1981 058D		12561	USSR	19 JUN	724.0	67.5	36763	3897		
1981 058E		17256	USSR	19 JUN	717.7	67.1	36198	4151		
1981 059A	NOAA 7	12553	US	23 JUN	101.8	99.1	852	833		
1981 059B		12559	US	23 JUN	101.4	99.0	827	821		
1981 059C		12560	US	23 JUN	101.4	99.0	827	821		
1981 060A	MOLNIYA 1-50	12556	USSR	24 JUN	717.7	64.8	39370	982		
1981 060D		12563	USSR	24 JUN	732.0	65.0	39809	1244		
1981 061A	EKRAN 7	12564	USSR	25 JUN	1436.9	7.1	35830	35772		
1981 061F		12851	USSR	25 JUN	1425.6	7.0	35606	35556		
1981 065A	METEOR 1-31	12585	USSR	10 JUL	97.2	97.7	646	600		
1981 065B		12586	USSR	10 JUL	97.3	97.7	644	611		
1981 065D		19236	USSR	10 JUL	95.4	97.8	549	530		
1981 069A	RADUGA 9	12618	USSR	30 JUL	1435.8	6.9	35798	35763		
1981 069F		12850	USSR	30 JUL	1474.0	7.1	36629	36419		
1981 070A	DE 1	12624	US	3 AUG	410.1	89.2	23354	464		
1981 070E		12679	US	3 AUG	411.8	89.2	23450	461		
1981 070J		14620	US	3 AUG	402.8	89.2	22889	485		
1981 070K		14621	US	3 AUG	401.6	89.3	22828	478		
1981 070L		19478	US	3 AUG	407.4	89.2	23164	487		
1981 071A	COSMOS 1285	12627	USSR	4 AUG	726.9	67.9	37163	3640		
1981 071D		12680	USSR	4 AUG	722.7	67.9	36882	3716		
1981 071E		12993	USSR	4 AUG	727.7	67.9	37144	3698		
1981 071F		13961	USSR	4 AUG	726.8	64.2	38048	2748		
1981 073A	FLTSATCOM 5	12635	US	6 AUG	1460.1	5.6	36302	36205		
1981 074A	COSMOS 1287	12636	USSR	6 AUG	115.7	74.0	1510	1462		
1981 074B	COSMOS 1288	12637	USSR	6 AUG	115.5	74.0	1490	1463		
1981 074C	COSMOS 1289	12638	USSR	6 AUG	114.7	74.0	1463	1423		

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1981 LAUNCHES (CONT.)										
1981 074D	COSMOS 1290	12639	USSR	6 AUG	114.9	74.0	1463	1439		
1981 074E	COSMOS 1291	12640	USSR	6 AUG	115.1	74.0	1463	1455		
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	1463	1407		
1981 074H	COSMOS 1294	12643	USSR	6 AUG	114.4	74.0	1462	1390		
1981 074J		12644	USSR	6 AUG	117.4	74.0	1670	1461		
1981 075A	INTERCOSMOS	12645	USSR	7 AUG	101.7	81.2	887	790		
1981 075B		12646	USSR	7 AUG	101.8	81.2	894	793		
1981 076A	GMS 2	12677	JAPAN	10 AUG	1668.8	6.5	46204	34246		
1981 076C		12810	JAPAN	10 AUG	256.2	28.6	13791	173		
1981 077A	COSMOS 1295	12681	USSR	12 AUG	104.6	82.9	1009	945		
1981 077B		12682	USSR	12 AUG	104.5	82.9	996	945		
1981 081A	COSMOS 1299	12783	USSR	24 AUG	103.9	65.1	983	906		
1981 082A	COSMOS 1300	12785	USSR	24 AUG	97.3	82.5	641	615		
1981 082B		12786	USSR	24 AUG	97.5	82.5	652	623		
1981 084A	COSMOS 1302	12791	USSR	28 AUG	100.6	74.0	801	775		
1981 084B		12792	USSR	28 AUG	100.5	74.0	792	772		
1981 084C		12793	USSR	28 AUG	100.5	74.0	786	780		
1981 084D		14810	USSR	28 AUG	101.0	74.0	821	789		
1981 087A	COSMOS 1304	12803	USSR	4 SEP	103.8	82.9	972	906		
1981 087B		12804	USSR	4 SEP	103.7	82.9	965	903		
1981 088A	COSMOS 1305	12818	USSR	11 SEP	263.7	63.4	13418	1067		
1981 088F		12827	USSR	11 SEP	262.4	63.4	13357	1038		
1981 088G		14131	USSR	11 SEP	249.4	63.2	12672	823		
1981 091A	COSMOS 1308	12835	USSR	18 SEP	104.7	82.9	1002	959		
1981 091B		12836	USSR	18 SEP	104.6	82.9	994	960		
1981 094A	OREOL 3	12848	USSR	21 SEP	107.6	82.5	1837	397		
1981 094B		12849	USSR	21 SEP	108.7	82.5	1930	400		
1981 095A	GOS 2	12855	US	24 SEP	1434.9	1.3	35792	35783		
1981 098A	COSMOS 1312	12879	USSR	30 SEP	115.9	82.6	1499	1489		
1981 098B		12880	USSR	30 SEP	115.8	82.6	1497	1486		
1981 100A	SME	12887	US	6 OCT	93.8	97.7	462	458		
1981 100B	UOSAT	12888	UK	6 OCT	90.8	97.5	315	310		
1981 100C		12889	US	6 OCT	119.0	99.9	2720	549		
1981 102A	RADUGA 10	12897	USSR	9 OCT	1436.2	6.8	36066	35509		
1981 102F		14195	USSR	9 OCT	1437.9	6.6	35874	35771		
1981 103A	COSMOS 1315	12903	USSR	13 OCT	97.1	81.2	637	602		
1981 103B		12904	USSR	13 OCT	97.3	81.2	662	596		
1981 105A	MOLNIYA 3-17	12915	USSR	17 OCT	713.6	64.5	38762	1383		
1981 105E		12920	USSR	17 OCT	733.2	64.6	39228	1885		
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	718.8	66.5	36284	4120		
1981 108D		12940	USSR	31 OCT	723.2	66.6	36805	3814		
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		
1981 110A	VENERA 14	12938	USSR	4 NOV	HELIOCENTRIC ORBIT					
1981 113A	MOLNIYA 1-51	12959	USSR	17 NOV	717.7	64.1	38736	1616		

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1981 LAUNCHES (CONT.)										
1981 113D		12986	USSR	17 NOV	698.9	64.3	37699	1717		
1981 114A	RCA SATCOM IIIR	12967	US	20 NOV	1436.1	0.0	35797	35776		
1981 115A	BHASKARA 2	12968	INDIA	20 NOV	94.1	50.7	480	466		
1981 115B		12969	USSR	20 NOV	90.4	50.6	299	291		
1981 116A	COSMOS 1320	12975	USSR	28 NOV	117.2	74.0	1632	1479		
1981 116B	COSMOS 1321	12976	USSR	28 NOV	117.2	74.0	1629	1480		
1981 116C	COSMOS 1322	12977	USSR	28 NOV	117.2	74.0	1626	1479		
1981 116D	COSMOS 1323	12978	USSR	28 NOV	117.1	74.0	1622	1480		
1981 116E	COSMOS 1324	12979	USSR	28 NOV	117.1	74.0	1617	1480		
1981 116F	COSMOS 1325	12980	USSR	28 NOV	117.0	74.0	1614	1479		
1981 116G	COSMOS 1326	12981	USSR	28 NOV	117.0	74.0	1608	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	1657	1483		
1981 117A	COSMOS 1328	12987	USSR	3 DEC	97.3	82.5	644	618		
1981 117B		12988	USSR	3 DEC	97.5	82.5	652	624		
1981 119A	INTELSAT 5 F-3	12994	ITSO	15 DEC	1436.2	0.4	35807	35770		
1981 119B		13007	US	15 DEC	236.2	23.6	12272	288		
1981 120A	RADIO 3	12997	USSR	17 DEC	118.4	83.0	1655	1562		
1981 120B	RADIO 8	12998	USSR	17 DEC	119.6	83.0	1680	1649		
1981 120C	RADIO 5	12999	USSR	17 DEC	119.4	83.0	1665	1645		
1981 120D	RADIO 4	13000	USSR	17 DEC	119.3	83.0	1664	1632		
1981 120E	RADIO 7	13001	USSR	17 DEC	119.1	83.0	1657	1621		
1981 120F	RADIO 6	13002	USSR	17 DEC	118.6	83.0	1657	1578		
1981 120G		13003	USSR	17 DEC	120.8	83.0	1776	1656		
1981 122A	MARECS A	13010	ESA	20 DEC	1436.1	3.4	35803	35771		
1981 122B	CAT 4	13011	ESA	20 DEC	577.1	10.4	32919	246		
1981 123A	MOLNIYA 1-52	13012	USSR	23 DEC	717.6	64.1	39186	1160		
1981 123D		13016	USSR	23 DEC	695.2	64.3	37957	1279		
1982 LAUNCHES										
1982 001A	COSMOS 1331	13027	USSR	7 JAN	100.5	74.0	800	761		
1982 001B		13028	USSR	7 JAN	100.5	74.0	796	764		
1982 001C		13029	USSR	7 JAN	100.5	74.0	793	771		
1982 001D		13030	USSR	7 JAN	100.1	74.0	783	744		
1982 003A	COSMOS 1333	13033	USSR	14 JAN	104.9	82.9	1012	964		
1982 003B		13034	USSR	14 JAN	104.7	82.9	1004	959		
1982 004A	RCA SATCOM IV	13035	US	16 JAN	1436.2	0.0	35803	35772		
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		13152	US	21 JAN	ELEMENTS NOT AVAILABLE					
1982 009A	EKRAN 8	13056	USSR	5 FEB	1441.1	6.6	35993	35773		
1982 009D		13059	USSR	5 FEB	538.2	48.3	29461	1614		
1982 009F		14117	USSR	5 FEB	1426.0	6.5	35762	35413		
1982 012A	COSMOS 1339	13065	USSR	17 FEB	104.7	82.9	1014	947		
1982 012B		13066	USSR	17 FEB	104.6	82.9	1008	941		
1982 013A	COSMOS 1340	13067	USSR	19 FEB	97.1	81.2	628	613		
1982 013B		13068	USSR	19 FEB	97.2	81.2	649	596		
1982 014A	WESTAR 4	13069	US	26 FEB	1436.2	0.0	35801	35773		

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1982 LAUNCHES (CONT.)										
1982 015A	MOLNIYA 1-53	13070	USSR	26 FEB	717.8	63.8	39162	1195		
1982 015D		13075	USSR	26 FEB	730.9	64.0	39601	1397		
1982 016A	COSMOS 1341	13080	USSR	3 MAR	718.5	67.7	36679	3712		
1982 016D		13090	USSR	3 MAR	708.9	67.6	36281	3633		
1982 017A	INTELSAT 5 F-4	13083	ITSO	5 MAR	1436.1	0.4	35798	35776		
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	1436.0	6.4	35919	35651		
1982 020F		13899	USSR	15 MAR	1459.9	6.5	36382	36121		
1982 023A	MOLNIYA 3-18	13107	USSR	24 MAR	718.2	64.8	38961	1411		
1982 023D		13112	USSR	24 MAR	732.3	65.1	39437	1632		
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	958	934		
1982 025B		13114	USSR	25 MAR	104.0	82.5	958	934		
1982 027A	COSMOS 1346	13120	USSR	31 MAR	97.1	81.2	637	602		
1982 027B		13121	USSR	31 MAR	97.3	81.2	660	593		
1982 029A	COSMOS 1348	13124	USSR	7 APR	718.5	65.7	36489	3899		
1982 029D		13169	USSR	7 APR	705.4	66.1	36146	3594		
1982 030A	COSMOS 1349	13127	USSR	8 APR	104.8	82.9	1008	964		
1982 030B		13128	USSR	8 APR	104.7	82.9	1001	959		
1982 031A	INSAT-1A	13129	INDIA	10 APR	1434.2	0.1	35936	35562		
1982 033A	SALYUT 7	13138	USSR	19 APR	93.1	51.6	426	426		BX*
1982 033EW		15970	USSR	19 APR	89.6	51.6	257	249		
1982 033FQ		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	88.8	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	802	788		
1982 037B		13149	USSR	28 APR	100.6	74.0	798	778		
1982 037C		14811	USSR	28 APR	101.1	74.0	831	792		
1982 039A	COSMOS 1356	13153	USSR	5 MAY	97.4	81.2	648	615		
1982 039B		13154	USSR	5 MAY	97.5	81.2	682	599		
1982 040A	COSMOS 1357	13160	USSR	6 MAY	114.6	74.0	1477	1398		
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	1478	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	1502	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	966	895		
1982 043D		13594	USSR	14 MAY	103.4	65.1	955	879		
1982 044A	COSMOS 1366	13177	USSR	17 MAY	1436.1	5.8	35840	35733		
1982 044F		14114	USSR	17 MAY	1436.1	5.9	35860	35714		
1982 045A	COSMOS 1367	13205	USSR	20 MAY	718.1	64.8	36687	3683		
1982 045D		13215	USSR	20 MAY	704.0	65.1	36328	3345		
1982 050A	MOLNIYA 1-54	13237	USSR	28 MAY	717.8	64.8	38664	1691		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1982 LAUNCHES (CONT.)										
1982 050E		13253	USSR	28 MAY	732.1	65.0	39198	1861		
1982 051A	COSMOS 1371	13241	USSR	1 JUN	100.8	74.0	806	785		
1982 051B		13242	USSR	1 JUN	100.6	74.0	807	767		
1982 051C		14398	USSR	1 JUN	100.8	74.1	798	794		
1982 051D		18502	USSR	1 JUN	100.8	74.1	799	796		
1982 051E		18509	USSR	1 JUN	100.8	74.0	808	786		
1982 051F		18510	USSR	1 JUN	100.9	74.0	814	783		
1982 051G		19102	USSR	1 JUN	100.8	74.1	808	782		
1982 052A	COSMOS 1372	13243	USSR	1 JUN	103.9	64.9	963	921		
1982 052D		13416	USSR	1 JUN	103.6	64.9	934	922		
1982 055A	COSMOS 1375	13259	USSR	6 JUN	105.0	65.8	1002	988		
1982 055B - 055BL			USSR	6 JUN	SEE NOTE		43*			43*
1982 058A	WESTAR 5	13269	US	9 JUN	1436.1	0.0	35796	35777		
1982 058B		13294	US	9 JUN	189.7	27.1	8957	156		
1982 059A	COSMOS 1378	13271	USSR	10 JUN	97.4	82.5	646	618		
1982 059B		13272	USSR	10 JUN	97.5	82.5	652	623		
1982 064A	COSMOS 1382	13295	USSR	25 JUN	718.7	67.4	36636	3764		
1982 064D		13298	USSR	25 JUN	708.4	67.5	36427	3464		
1982 066A	COSMOS 1383	13301	USSR	29 JUN	105.2	82.9	1025	983		
1982 066B		13302	USSR	29 JUN	105.1	82.9	1024	977		
1982 069A	COSMOS 1386	13353	USSR	7 JUL	104.6	83.0	1007	947		
1982 069B		13354	USSR	7 JUL	104.5	83.0	1000	942		
1982 072A	LANDSAT 4	13367	US	16 JUL	98.7	98.2	701	698		
1982 073A	COSMOS 1388	13375	USSR	21 JUL	114.5	74.0	1472	1391		
1982 073B	COSMOS 1389	13376	USSR	21 JUL	114.7	74.0	1473	1408		
1982 073C	COSMOS 1390	13377	USSR	21 JUL	114.9	74.0	1472	1425		
1982 073D	COSMOS 1391	13378	USSR	21 JUL	115.0	74.0	1473	1441		
1982 073E	COSMOS 1392	13379	USSR	21 JUL	115.2	74.0	1472	1458		
1982 073F	COSMOS 1393	13380	USSR	21 JUL	115.4	74.0	1481	1467		
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	1471		
1982 073J		13386	USSR	21 JUL	117.9	74.0	1709	1463		
1982 074A	MOLNIYA 1-55	13383	USSR	21 JUL	717.8	64.8	38877	1477		
1982 074D		13390	USSR	21 JUL	698.6	64.8	37958	1445		
1982 079A	COSMOS 1400	13402	USSR	5 AUG	97.1	81.2	630	609		
1982 079B		13403	USSR	5 AUG	97.3	81.2	669	591		
1982 082A	ANIK D-1	13431	CANADA	26 AUG	1436.0	0.0	35796	35776		
1982 083A	MOLNIYA 3-19	13432	USSR	27 AUG	717.1	64.2	39233	1085		
1982 083E		13446	USSR	27 AUG	733.1	64.4	40054	1051		
1982 087A	ETS 3	13492	JAPAN	3 SEP	107.2	44.6	1227	967		
1982 087B		13493	JAPAN	3 SEP	105.1	44.6	1009	993		
1982 087C		13510	JAPAN	3 SEP	107.2	44.6	1233	961		
1982 087D		14569	JAPAN	3 SEP	106.3	44.8	1147	964		
1982 092A	COSMOS 1408	13552	USSR	16 SEP	97.4	82.6	648	615		
1982 092B		13553	USSR	16 SEP	97.5	82.6	658	620		
1982 093A	EKRAN 9	13554	USSR	16 SEP	1389.6	6.4	37889	31855		
1982 093F		14115	USSR	16 SEP	1422.2	6.0	35530	35497		
1982 095A	COSMOS 1409	13585	USSR	22 SEP	719.1	64.5	36842	3578		
1982 095D		13591	USSR	22 SEP	707.2	65.1	36562	3271		
1982 096A	COSMOS 1410	13589	USSR	24 SEP	115.9	82.6	1500	1489		

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 096B		13590	USSR	24 SEP	115.8	82.6	1498	1487		
1982 097A	INTELSAT 5F 5	13595	ITSO	28 SEP	1436.0	0.0	35810	35761		
1982 097B		13599	US	28 SEP	160.9	24.5	6629	212		
1982 099A	COSMOS 1412	13600	USSR	2 OCT	103.9	64.8	985	901		
1982 099E		13653	USSR	2 OCT	103.6	64.8	959	896		
1982 100A	COSMOS 1413	13603	USSR	12 OCT	673.3	64.7	19074	19062		
1982 100D	COSMOS 1414	13606	USSR	12 OCT	675.7	64.7	19201	19057		
1982 100E	COSMOS 1415	13607	USSR	12 OCT	673.5	64.7	19074	19071		
1982 100F		13608	USSR	12 OCT	314.9	52.2	17610	288		
1982 100G		13609	USSR	12 OCT	322.8	52.1	18029	388		
1982 100H		13610	USSR	12 OCT	672.9	64.7	19126	18989		
1982 102A	COSMOS 1417	13617	USSR	19 OCT	104.7	83.0	1008	955		
1982 102B		13618	USSR	19 OCT	104.6	83.0	998	954		
1982 103A	GORIZONT 6	13624	USSR	20 OCT	1435.0	5.6	35764	35763		
1982 103E		13630	USSR	20 OCT	1435.3	5.6	35834	35708		
1982 105A	RCA SATCOM-V	13631	US	28 OCT	1436.2	0.1	35793	35782		
1982 106A		13636	US	30 OCT	1436.0	4.0	35801	35767		
1982 106B		13637	US	30 OCT	1436.1	0.1	35810	35761		
1982 106D		13643	US	30 OCT	1449.0	4.1	36221	35858		
1982 109A	COSMOS 1420	13648	USSR	11 NOV	100.7	74.0	805	773		
1982 109B		13649	USSR	11 NOV	100.5	74.0	799	769		
1982 109C		14227	USSR	11 NOV	98.5	74.0	696	678		
1982 109D		15528	USSR	11 NOV	100.7	74.0	803	781		
1982 110B	SBS 3	13651	US	11 NOV	1436.0	2.3	35796	35776		35*
1982 110C	ANIK C-3	13652	CANADA	12 NOV	1436.0	0.0	35795	35777		35*
1982 110D		13658	US	11 NOV	647.0	23.3	36415	385		
1982 110E		13666	US	11 NOV	646.3	23.0	36372	393		
1982 113A	RADUGA 11	13669	USSR	26 NOV	1473.8	5.0	36687	36357		
1982 113F		13954	USSR	26 NOV	1475.9	5.2	36645	36477		
1982 115B - 115AJ			USSR	8 DEC	SEE NOTE		32*			32*
1982 116A	METEOR 2-9	13718	USSR	14 DEC	101.8	81.2	886	804		
1982 116B		13719	USSR	14 DEC	101.9	81.3	899	797		
1982 116C		13720	USSR	14 DEC	101.8	81.2	886	803		
1982 116D		17755	USSR	14 DEC	101.9	81.3	898	797		
1982 118A		13736	US	21 DEC	101.1	98.7	817	806		
1982 118B		13737	US	21 DEC	99.8	98.6	755	746		
1982 118C		13738	US	21 DEC	100.4	98.6	778	773		
1982 118D		13773	US	21 DEC	99.7	98.6	749	738		
1982 118E		13774	US	21 DEC	99.9	98.6	758	747		
1982 121A	COSMOS 1427	13750	USSR	29 DEC	89.9	65.8	283	259		
1983 LAUNCHES										
1983 001A	COSMOS 1428	13757	USSR	12 JAN	104.6	82.9	1000	951		
1983 001B		13758	USSR	12 JAN	104.5	82.9	990	952		
1983 001C		14568	USSR	12 JAN	104.0	82.9	969	925		
1983 002A	COSMOS 1429	13761	USSR	19 JAN	115.8	74.0	1517	1464		
1983 002B	COSMOS 1430	13762	USSR	19 JAN	115.6	74.0	1497	1464		
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		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1983 LAUNCHES (CONT.)										
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	114.6	74.0	1466	1412		
1983 002H	COSMOS 1436	13768	USSR	19 JAN	114.5	74.0	1465	1396		
1983 002J		13769	USSR	19 JAN	117.9	74.0	1693	1477		
1983 003A	COSMOS 1437	13770	USSR	20 JAN	97.2	81.2	638	611		
1983 003B		13771	USSR	20 JAN	97.3	81.2	664	592		
1983 004A	IRAS	13777	US	26 JAN	102.9	99.0	904	886		
1983 004B		13778	US	26 JAN	102.3	100.1	885	853		
1983 004C		13783	US	26 JAN	102.9	99.0	904	886		
1983 006A	CS-2A	13782	JAPAN	4 FEB	1436.0	2.1	35789	35781		
1983 006B		13786	JAPAN	4 FEB	206.1	28.6	10100	255		
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	97.0	81.1	619	612		
1983 010B		13819	USSR	16 FEB	97.1	81.1	665	577		
1983 015A	MOLNIYA 3-20	13875	USSR	11 MAR	718.6	63.7	38927	1466		
1983 015E		13882	USSR	11 MAR	731.9	63.7	39388	1660		
1983 016A	EKRAN 10	13878	USSR	12 MAR	1515.4	6.4	37497	37151		
1983 016F		14086	USSR	12 MAR	1424.4	6.0	35606	35507		
1983 019A	MOLNIYA 1-56	13890	USSR	16 MAR	720.5	63.7	38635	1855		
1983 019D		13897	USSR	16 MAR	732.6	63.8	39033	2051		
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	1011	953		
1983 021B		13917	USSR	24 MAR	104.6	82.9	998	956		
1983 022A	NOAA 8	13923	US	28 MAR	101.1	98.5	823	799		
1983 022B		13924	US	28 MAR	99.9	98.6	760	746		
1983 022C		14477	US	28 MAR	99.7	98.7	751	740		
1983 023A	COSMOS 1448	13949	USSR	30 MAR	104.7	83.0	1002	956		
1983 023B		13950	USSR	30 MAR	104.6	82.9	1005	947		
1983 025A	MOLNIYA 1-57	13964	USSR	2 APR	717.8	64.0	39403	950		
1983 025D		13967	USSR	2 APR	699.2	64.3	38272	1163		
1983 026B	TDRS 1	13969	US	4 APR	1436.2	3.9	35810	35764		
1983 026C		13970	US	4 APR	1089.7	2.3	35128	22269		
1983 026D		13971	US	4 APR	575.9	25.9	32862	240		
1983 027A	COSMOS 1450	13972	USSR	6 APR	92.6	65.8	419	382		
1983 028A	RADUGA 12	13974	USSR	8 APR	1435.9	4.8	35797	35766		
1983 028F		13983	USSR	8 APR	1439.1	4.8	35964	35727		
1983 030A	RCA SATCOM VI	13984	US	11 APR	1436.1	0.0	35794	35777		
1983 030B		13985	US	11 APR	122.5	25.4	3286	301		
1983 031A	COSMOS 1452	13991	USSR	12 APR	100.7	74.0	804	778		
1983 031B		13992	USSR	12 APR	100.6	74.1	789	783		
1983 031D		14812	USSR	12 APR	101.1	74.1	827	796		
1983 033A	ROHINI 3	14002	INDIA	17 APR	93.7	46.6	559	348		

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 037A	COSMOS 1455	14032	USSR	23 APR	97.4	82.5	647	620		
1983 037B		14033	USSR	23 APR	97.5	82.5	655	626		
1983 038A	COSMOS 1456	14034	USSR	25 APR	719.0	66.8	37039	3376		
1983 038E		14041	USSR	25 APR	707.3	66.7	36544	3290		
1983 038H		14297	USSR	25 APR	718.8	66.9	37025	3378		
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	1.5	35790	35783		
1983 041B		14051	US	28 APR	117.4	25.4	2717	406		
1983 041C		14069	US	28 APR	1703.3	1.2	54325	27405		
1983 041D		14196	US	28 APR	333.5	23.8	18927	175		
1983 042A	COSMOS 1459	14057	USSR	6 MAY	104.6	83.0	1013	941		
1983 042B		14059	USSR	6 MAY	104.5	83.0	1004	939		
1983 044A	COSMOS 1461	14064	USSR	7 MAY	99.1	65.0	860	573		
1983 044B - 044FQ			USSR	7 MAY	SEE NOTE		36#			36#
1983 044FN		19668	USSR	7 MAY	97.6	64.9	1149	142		
1983 046A	COSMOS 1463	14075	USSR	19 MAY	99.5	82.9	1176	293		
1983 046B		14076	USSR	19 MAY	90.9	82.9	405	228		
1983 047A	INTELSAT 5 F-6	14077	ITSO	19 MAY	1436.2	0.0	35802	35774		
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	2524	755		
1983 053A	VENERA 15	14104	USSR	2 JUN	HELIOCENTRIC ORBIT					
1983 054A	VENERA 16	14107	USSR	7 JUN	HELIOCENTRIC ORBIT					
1983 055A		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		14130	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	0.2	35830	35741		
1983 058B	OSCAR 10	14129	FRG	16 JUN	699.5	25.9	35475	3975		
1983 058C		14130	ESA	16 JUN	428.3	8.6	24637	250		
1983 058E		17302	ESA	16 JAN	226.1	6.3	11675	154		
1983 058F		17331	ESA	16 JUN	380.7	7.3	21765	275		
1983 059B	ANIK C2	14133	CANADA	18 JUN	1436.0	0.0	35794	35779		35#
1983 059C	PALAPA B1	14134	INDNSA	18 JUN	1436.2	0.0	35791	35784		35#
1983 059D		14135	US	18 JUN	621.8	22.8	35178	331		
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	654	619		
1983 061B		14148	USSR	22 JUN	97.6	82.5	660	623		
1983 063A		14154	US	27 JUN	100.8	82.0	827	764		
1983 063B		14155	US	27 JUN	100.8	82.0	826	762		
1983 063C		14222	US	27 JUN	100.1	82.4	783	743		
1983 063D		14223	US	27 JUN	101.1	81.6	862	761		
1983 065A	GALAXY 1	14158	US	28 JUN	1436.0	0.0	35792	35780		
1983 065C		14168	US	28 JUN	399.6	23.2	22985	200		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1983 LAUNCHES (CONT.)										
1983 066A	GORIZONT 7	14160	USSR	30 JUN	1464.2	4.4	36377	36293		
1983 066E		14167	USSR	30 JUN	280.6	46.5	15437	201		
1983 066F		15141	USSR	30 JUN	1475.2	4.6	36595	36501		
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	1426		
1983 069D	COSMOS 1476	14174	USSR	6 JUL	114.9	74.0	1461	1443		
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	1479	1461		
1983 069G	COSMOS 1479	14177	USSR	6 JUL	115.5	74.0	1497	1461		
1983 069H	COSMOS 1480	14178	USSR	6 JUL	115.8	74.0	1517	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	36916	2921		
1983 070D		14191	USSR	8 JUL	707.9	67.6	36883	2984		
1983 070E		14192	USSR	8 JUL	708.8	67.7	37038	2870		
1983 072A		14189	US	14 JUL	718.0	63.3	20550	19813		
1983 072B		14190	US	14 JUL	371.8	63.6	20532	965		
1983 073A	MOLNIYA 1-58	14199	USSR	19 JUL	624.6	64.0	34683	971		
1983 073D		14206	USSR	19 JUL	130.8	63.8	4183	129		
1983 075A	COSMOS 1484	14207	USSR	24 JUL	96.8	97.7	639	576		
1983 075B		14208	USSR	24 JUL	97.2	97.7	654	596		
1983 075C		14209	USSR	24 JUL	96.9	97.7	647	576		
1983 075D		14229	USSR	24 JUL	97.5	97.7	670	608		
1983 075E		14631	USSR	24 JUL	96.9	97.6	631	588		
1983 075F		14928	USSR	24 JUL	97.2	97.7	653	597		
1983 077A	TELSTAR 3A	14234	US	28 JUL	1436.2	0.0	35797	35778		
1983 077C		14235	US	28 JUL	373.4	22.9	21402	195		
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	100.6	74.1	799	778		
1983 079B		14241	USSR	3 AUG	100.6	74.1	797	774		
1983 079C		14344	USSR	3 AUG	101.0	74.1	823	790		
1983 079D		14813	USSR	3 AUG	101.1	74.0	829	795		
1983 079E		15756	USSR	3 AUG	100.4	74.1	788	764		
1983 081A	CS-2B	14248	JAPAN	5 AUG	1436.0	1.4	35788	35781		
1983 081C		14287	JAPAN	5 AUG	291.4	28.5	16168	194		
1983 084A	COSMOS 1490	14258	USSR	10 AUG	675.7	64.8	19171	19087		
1983 084B	COSMOS 1491	14259	USSR	10 AUG	668.4	64.7	19084	18805		
1983 084C	COSMOS 1492	14260	USSR	10 AUG	676.8	64.8	19159	19154		
1983 084F		14264	USSR	10 AUG	676.3	64.8	19158	19128		
1983 084G		14277	USSR	10 AUG	332.2	52.0	18638	384		
1983 084H		14278	USSR	10 AUG	331.2	52.0	18603	354		
1983 088A	RADUGA 13	14307	USSR	25 AUG	1466.8	4.2	36452	36319		
1983 088F		14333	USSR	25 AUG	1475.2	4.5	36616	36481		
1983 089B	INSAT 1B	14318	INDIA	31 AUG	1436.1	0.1	35815	35759		
1983 089C		14524	US	31 AUG	602.7	24.2	34194	321		
1983 090A	MOLNIYA 3-21	14313	USSR	30 AUG	716.9	64.4	39478	832		
1983 090D		14319	USSR	30 AUG	731.3	64.4	40237	781		
1983 091C - 091AC			USSR	31 AUG	SEE NOTE	33*				33*

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 094A	RCA SATCOM VII	14328	US	8 SEP	1436.2	0.0	35794	35781		
1983 094B		14329	US	8 SEP	121.3	25.5	3185	290		
1983 098A	GALAXY 2	14365	US	22 SEP	1436.2	0.0	35805	35771		
1983 099A	COSMOS 1500	14372	USSR	28 SEP	97.4	82.5	649	620		
1983 099B		14373	USSR	28 SEP	97.5	82.5	656	625		
1983 100A	EKRAN 11	14377	USSR	30 SEP	1437.0	5.1	35866	35741		
1983 100F		14394	USSR	30 SEP	1425.1	5.1	35664	35479		
1983 103A	COSMOS 1503	14401	USSR	12 OCT	100.8	74.0	804	784		
1983 103B		14402	USSR	12 OCT	100.6	74.1	807	767		
1983 105A	INTELSAT 5 F-7	14421	ITSO	19 OCT	1436.0	0.0	35802	35769		
1983 108A	COSMOS 1506	14450	USSR	26 OCT	104.7	82.9	1010	946		
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	883	745		
1983 109B		14453	USSR	28 OCT	101.2	81.2	896	737		
1983 109C		14454	USSR	28 OCT	101.1	81.2	884	741		
1983 111A	COSMOS 1508	14483	USSR	11 NOV	108.2	82.9	1886	395		
1983 111B		14484	USSR	11 NOV	107.3	82.9	1827	373		
1983 113A		14506	US	18 NOV	101.2	98.5	825	806		
1983 113B		14553	US	18 NOV	100.1	98.6	768	755		
1983 113C		14554	US	18 NOV	100.1	98.6	770	758		
1983 113D		14609	US	18 NOV	100.2	98.6	777	761		
1983 113E		14610	US	18 NOV	100.6	98.6	792	777		
1983 114A	MOLNIYA 1-59	14516	USSR	23 NOV	717.3	64.2	39615	714		
1983 114B		14520	USSR	23 NOV	699.2	64.3	38595	839		
1983 115A	COSMOS 1510	14521	USSR	24 NOV	116.0	73.6	1521	1479		
1983 115B		14522	USSR	24 NOV	115.9	73.6	1518	1478		
1983 118A	GORIZONT 8	14532	USSR	30 NOV	1465.4	3.9	36474	36241		
1983 118F		14548	USSR	30 NOV	1436.0	3.3	35968	35602		
1983 120A	COSMOS 1513	14546	USSR	8 DEC	104.8	82.9	1014	956		
1983 120B		14547	USSR	8 DEC	104.6	82.9	1012	939		
1983 122A	COSMOS 1515	14551	USSR	15 DEC	97.4	82.5	649	622		
1983 122B		14552	USSR	15 DEC	97.5	82.5	654	628		
1983 123A	MOLNIYA 3-22	14570	USSR	21 DEC	717.8	64.9	38513	1842		
1983 123D		14582	USSR	21 DEC	732.4	65.0	39163	1910		
1983 126A	COSMOS 1518	14587	USSR	28 DEC	714.1	67.0	37216	2956		
1983 126D		14596	USSR	28 DEC	705.5	66.9	36814	2930		
1983 127A	COSMOS 1519	14590	USSR	29 DEC	675.7	65.9	19189	19069		
1983 127B	COSMOS 1520	14591	USSR	29 DEC	675.7	65.9	19145	19113		
1983 127C	COSMOS 1521	14592	USSR	29 DEC	673.4	65.9	19144	18997		
1983 127F		14595	USSR	29 DEC	673.1	65.9	19149	18976		
1983 127G		14607	USSR	29 DEC	334.7	52.1	18873	310		
1983 127H		14608	USSR	29 DEC	336.8	52.0	18984	330		
1984 LAUNCHES										
1984 001A	COSMOS 1522	14611	USSR	5 JAN	115.4	74.0	1490	1460		
1984 001B	COSMOS 1522	14612	USSR	5 JAN	114.4	74.0	1459	1394		
1984 001C	COSMOS 1524	14613	USSR	5 JAN	114.6	74.0	1459	1410		
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	1441		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1984 LAUNCHES (CONT.)										
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	115.6	74.0	1509	1460		
1984 001J		14619	USSR	5 JAN	117.5	74.0	1679	1460		
1984 003A	COSMOS 1531	14624	USSR	11 JAN	105.0	82.9	1006	978		
1984 003B		14625	USSR	11 JAN	104.8	82.9	1002	969		
1984 005A	BS-2A	14659	JAPAN	23 JAN	1453.8	1.2	36160	36103		
1984 007A	COSMOS 1534	14668	USSR	26 JAN	93.0	65.8	428	410		
1984 008A	PRC 14	14673	PRC	29 JAN	163.2	36.1	6546	481		
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	1003	953		
1984 011E		14693	US	6 FEB	97.8	28.2	1035	276		
1984 011F		14694	US	3 FEB	99.2	27.7	1133	304		
1984 011U		14824	US	6 FEB	93.0	27.4	574	271		
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	97.4	82.5	651	619		
1984 013B		14700	USSR	8 FEB	97.6	82.5	658	624		
1984 016A	RADUGA 14	14725	USSR	15 FEB	1436.2	3.8	35813	35764		
1984 016F		17874	USSR	15 FEB	1435.4	4.0	35929	35615		
1984 019A	COSMOS 1538	14759	USSR	21 FEB	100.7	74.0	804	774		
1984 019B		14760	USSR	21 FEB	100.6	74.0	807	766		
1984 019C		15785	USSR	21 FEB	100.6	74.0	794	776		
1984 019D		18519	USSR	21 FEB	100.6	74.1	796	774		
1984 021A	LANDSAT 5	14780	US	1 MAR	98.7	98.1	700	698		
1984 021B	UOSAT 2	14781	UK	1 MAR	98.3	98.0	685	667		
1984 021C		14782	US	1 MAR	95.5	100.0	616	463		
1984 022A	COSMOS 1540	14783	USSR	2 MAR	1436.1	4.6	35819	35751		
1984 022E		14789	USSR	2 MAR	635.7	47.4	35994	232		
1984 022F		14948	USSR	2 MAR	1441.8	4.7	36002	35794		
1984 023A	INTELSAT 5 F-8	14786	ITSO	5 MAR	1436.2	0.0	35807	35771		
1984 023B		14787	ESA	5 MAR	554.3	11.0	31648	298		
1984 024A	COSMOS 1541	14790	USSR	6 MAR	717.7	63.6	37555	2795		
1984 024D		14796	USSR	6 MAR	709.8	63.9	37099	2860		
1984 027A	COSMOS 1544	14819	USSR	15 MAR	97.4	82.5	650	618		
1984 027B		14820	USSR	15 MAR	97.5	82.5	656	624		
1984 028A	EKRAN 12	14821	USSR	16 MAR	1499.1	5.4	37069	36953		
1984 028D		14828	USSR	16 MAR	624.7	46.6	35418	238		
1984 028F		15139	USSR	16 MAR	1419.8	5.2	35547	35384		
1984 029A	MOLNIYA 1-60	14825	USSR	16 MAR	716.8	64.9	38387	1916		
1984 029D		14830	USSR	16 MAR	730.9	65.0	39030	1971		
1984 031A	COSMOS 1546	14867	USSR	29 MAR	1436.2	3.9	35884	35691		

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 031D		14887	USSR	29 MAR	566.9	45.3	32280	345		
1984 031F		14951	USSR	29 MAR	1448.4	3.9	36084	35970		
1984 033A	COSMOS 1547	14884	USSR	4 APR	718.2	67.5	37814	2563		
1984 033D		14894	USSR	4 APR	706.6	67.4	37315	2486		
1984 034B	LDEF	14898	US	6 APR	92.3	28.5	388	386		354
1984 035A	PRC 15	14899	PRC	8 APR	1436.8	2.3	35830	35772		
1984 035D		14900	PRC	8 APR	627.9	31.1	35384	436		
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	1460.1	3.7	36320	36188		
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	971		
1984 043B		14966	USSR	11 MAY	104.8	83.0	998	972		
1984 046A	COSMOS 1553	14973	USSR	17 MAY	104.7	82.9	1005	958		
1984 046B		14974	USSR	17 MAY	104.6	82.9	996	955		
1984 047A	COSMOS 1554	14977	USSR	19 MAY	675.7	65.9	19167	19091		
1984 047B	COSMOS 1555	14978	USSR	19 MAY	675.7	65.9	19154	19105		
1984 047C	COSMOS 1556	14979	USSR	19 MAY	676.3	65.9	19158	19131		
1984 047F		14984	USSR	19 MAY	675.5	65.9	19168	19080		
1984 047G		15053	USSR	19 MAY	338.1	52.0	19023	371		
1984 047H		15054	USSR	19 MAY	330.5	51.9	18608	302		
1984 049A	SPACENET 1	14985	US	23 MAY	1436.1	0.0	35787	35786		
1984 052A	COSMOS 1559	14998	USSR	28 MAY	115.7	74.0	1508	1467		
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	1473	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	717.3	66.0	37641	2691		
1984 055D		15030	USSR	6 JUN	706.9	66.2	37092	2725		
1984 056A	COSMOS 1570	15031	USSR	8 JUN	100.8	74.1	805	785		
1984 056B		15032	USSR	8 JUN	100.7	74.1	803	776		
1984 056C		15033	USSR	8 JUN	101.1	74.1	824	797		
1984 056D		15757	USSR	8 JUN	99.3	74.0	731	719		
1984 059A		15039	US	13 JUN	718.0	63.0	20222	20141		
1984 059B		15040	US	13 JUN	367.5	62.4	20687	544		
1984 062A	COSMOS 1574	15055	USSR	21 JUN	104.8	83.0	1004	965		
1984 062B		15056	USSR	21 JUN	104.7	83.0	996	962		
1984 063A	RADUGA 15	15057	USSR	22 JUN	1436.6	3.7	35825	35769		
1984 063E		15076	USSR	22 JUN	446.7	46.9	25708	251		
1984 063F		15693	USSR	22 JUN	1394.2	3.5	35033	34890		
1984 065C		15071	US	25 JUN	ELEMENTS NOT AVAILABLE					
1984 067A	COSMOS 1577	15077	USSR	27 JUN	104.7	83.0	1007	955		
1984 067B		15078	USSR	27 JUN	104.6	83.0	993	958		
1984 068A	COSMOS 1578	15080	USSR	28 JUN	100.7	50.7	1292	287		
1984 068B		15081	USSR	28 JUN	95.7	50.7	836	267		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1984 LAUNCHES (CONT.)										
1984 069A	COSMOS 1579	15085	USSR	29 JUN	103.9	65.0	988	898		
1984 069D		15330	USSR	29 JUN	103.6	65.0	965	891		
1984 069E		19453	USSR	29 JUN	103.2	65.8	982	839		
1984 071A	COSMOS 1581	15096	USSR	3 JUL	721.1	67.2	37688	2831		
1984 071D		15098	USSR	3 JUL	705.6	67.3	37205	2546		
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	954	939		
1984 073A	GORIZONT 10	15144	USSR	1 AUG	1436.3	3.4	35796	35784		
1984 073F		15181	USSR	1 AUG	1435.9	3.3	35885	35680		
1984 079A	COSMOS 1586	15147	USSR	2 AUG	718.8	64.2	37778	2628		
1984 079D		15156	USSR	2 AUG	705.7	64.4	37144	2613		
1984 080A	GMS 3	15152	JAPAN	2 AUG	1436.1	1.1	35792	35780		
1984 080C		15157	JAPAN	2 AUG	342.8	28.8	19488	202		
1984 081A	ECS 2	15158	ESA	4 AUG	1436.1	0.1	35793	35780		
1984 081B	TELECOM 1A	15159	FRANCE	4 AUG	1436.1	0.0	35794	35780		
1984 081C		15165	ESA	4 AUG	277.9	6.9	15284	169		
1984 081D		15166	ESA	4 AUG	599.4	6.8	33705	634		
1984 083B - 083AX			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	716.4	63.9	39649	637		
1984 085D		15188	USSR	10 AUG	730.9	64.0	40292	708		
1984 088A	CCE	15199	US	16 AUG	939.5	5.0	49744	1048		
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	4060	547		
1984 088E		15205	US	16 AUG	133.5	28.8	3990	554		
1984 088F		15206	US	16 AUG	924.1	28.7	49597	502		
1984 088G		19008	US	16 AUG	132.8	28.7	3934	553		
1984 088H		19599	US	16 AUG	133.5	28.7	3994	553		
1984 089A	MOLNIYA 1-62	15214	USSR	24 AUG	717.6	63.8	38174	2173		
1984 089D		15223	USSR	24 AUG	739.0	63.8	38981	2413		
1984 090A	EKRAN 13	15219	USSR	24 AUG	1499.7	4.5	37084	36960		
1984 090F		17875	USSR	24 AUG	1422.1	4.3	35591	35432		
1984 091A		15226	US	28 AUG	ELEMENTS NOT AVAILABLE					
1984 091B		15227	US	28 AUG	ELEMENTS NOT AVAILABLE					
1984 093B	SBS 4	15235	US	31 AUG	1436.0	0.0	35795	35774		35*
1984 093C	SYNCOM IV-2	15236	US	31 AUG	1436.1	1.3	35810	35763		35*
1984 093D	TELSTAR 3C	15237	US	1 SEP	1436.1	0.1	35792	35782		35*
1984 093E		15244	US	31 AUG	270.5	27.1	14651	300		
1984 093F		15245	US	31 AUG	614.1	23.0	34802	306		
1984 093G		15246	US	1 SEP	656.4	25.3	36935	343		
1984 095A	COSMOS 1593	15259	USSR	4 SEP	675.7	64.8	19174	19084		
1984 095B		15260	USSR	4 SEP	677.2	64.7	19191	19141		
1984 095C		15261	USSR	4 SEP	675.7	64.7	19174	19084		
1984 095F		15264	USSR	4 SEP	675.9	64.7	19174	19093		
1984 095G		15265	USSR	4 SEP	334.9	52.1	18896	298		
1984 095H		15266	USSR	4 SEP	336.9	52.0	19012	306		
1984 096A	COSMOS 1596	15267	USSR	7 SEP	718.4	66.1	37456	2928		
1984 096D		15270	USSR	7 SEP	703.2	66.4	36951	2678		

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INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1984 LAUNCHES (CONT.)										
1984 097A		15271	US	8 SEP	718.0	63.5	20411	19952		
1984 097B		15272	US	8 SEP	369.2	63.3	20559	780		
1984 100A	COSMOS 1598	15292	USSR	13 SEP	104.9	82.9	1013	965		
1984 100B		15293	USSR	13 SEP	104.8	82.9	1001	966		
1984 101A	GALAXY 3	15308	US	21 SEP	1436.1	0.1	35799	35775		
1984 104A	COSMOS 1601	15326	USSR	27 SEP	91.3	65.8	353	323		
1984 104B - 104AF			USSR	27 SEP	SEE NOTE	38*				38*
1984 105A	COSMOS 1602	15331	USSR	28 SEP	97.5	82.5	656	619		
1984 105B		15332	USSR	28 SEP	97.6	82.5	660	623		
1984 106A	COSMOS 1603	15333	USSR	28 SEP	101.9	71.0	866	833		
1984 106C		15335	USSR	28 SEP	101.5	66.6	842	819		
1984 106F		15338	USSR	28 SEP	101.8	66.6	843	839		
1984 106G		17358	USSR	28 SEP	101.9	71.0	855	842		
1984 107A	COSMOS 1604	15350	USSR	4 OCT	716.7	65.1	37148	3154		
1984 107B		15355	USSR	4 OCT	708.1	65.2	36865	3010		
1984 108B	ERBS	15354	US	5 OCT	96.6	56.9	601	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	1003	951		
1984 110A		15362	US	12 OCT	108.9	90.0	1198	1150		
1984 111A	COSMOS 1606	15369	USSR	18 OCT	97.4	82.5	652	617		
1984 111B		15370	USSR	18 OCT	97.5	82.5	657	621		
1984 112A	COSMOS 1607	15378	USSR	31 OCT	104.1	65.0	971	931		
1984 112C		15503	USSR	31 OCT	103.8	65.0	945	928		
1984 113B	ANIK D2	15383	CANADA	9 NOV	1436.1	0.0	35854	35779		35*
1984 113C	SYNCOM IV-1	15384	US	10 NOV	1436.1	1.0	35943	35631		35*
1984 113D		15387	US	9 NOV	629.3	25.3	35478	416		
1984 113E		15390	US	10 NOV	271.5	27.1	14716	307		
1984 114A	SPACENET 2	15385	US	10 NOV	1436.2	0.0	35796	35781		
1984 114B	MARECS B2	15386	ESA	10 NOV	1436.1	3.0	35802	35775		
1984 114C		15388	ESA	10 NOV	622.5	7.1	35205	337		
1984 115A	NATO III-D	15391	NATO	14 NOV	1436.2	1.6	35803	35773		
1984 115B		15392	US	14 NOV	115.9	21.5	2318	675		
1984 115C		15402	US	14 NOV	643.5	23.2	36238	384		
1984 118A	COSMOS 1610	15398	USSR	15 NOV	104.8	82.9	1010	963		
1984 118B		15399	USSR	15 NOV	104.7	82.9	1003	956		
1984 122A		15423	US	4 DEC	ELEMENTS NOT AVAILABLE					
1984 123A	NOAA 9	15427	US	12 DEC	101.9	99.2	859	838		
1984 123B		15440	US	12 DEC	101.1	99.0	812	805		
1984 123C		15441	US	12 DEC	100.9	99.0	806	797		
1984 124A	MOLNIYA 1-63	15429	USSR	14 DEC	718.3	63.2	38241	2139		
1984 124H		15439	USSR	14 DEC	733.4	63.3	38752	2370		
1984 125A	VEGA 1	15432	USSR	15 DEC	HELIOCENTRIC ORBIT					
1984 125D		15447	USSR	15 DEC	HELIOCENTRIC ORBIT					
1984 127A	COSMOS 1613	15446	USSR	20 DEC	92.2	65.8	402	360		
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										

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INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
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	1412	1410		
1985 003B	COSMOS 1618	15470	USSR	15 JAN	114.0	82.6	1412	1403		
1985 003C	COSMOS 1619	15471	USSR	15 JAN	113.7	82.6	1412	1380		
1985 003D	COSMOS 1620	15472	USSR	15 JAN	113.8	82.6	1412	1386		
1985 003E	COSMOS 1621	15473	USSR	15 JAN	113.8	82.6	1412	1391		
1985 003F	COSMOS 1622	15474	USSR	15 JAN	113.9	82.6	1412	1396		
1985 003G		15475	USSR	15 JAN	114.7	82.6	1469	1411		
1985 004A	MOLNIYA 3-23	15476	USSR	16 JAN	717.6	64.9	39280	1065		
1985 004B		15481	USSR	16 JAN	731.7	65.1	39994	1042		
1985 006A	COSMOS 1624	15482	USSR	17 JAN	100.7	74.0	802	781		
1985 006B		15483	USSR	17 JAN	100.6	74.0	800	771		
1985 006C		15490	USSR	17 JAN	100.7	74.0	795	790		
1985 006D		15491	USSR	17 JAN	101.1	74.1	825	795		
1985 007A	GORIZONT 11	15484	USSR	18 JAN	1436.2	2.9	35804	35773		
1985 007D		15487	USSR	18 JAN	1397.8	2.8	35091	34973		
1985 007F		15489	USSR	18 JAN	474.2	47.1	27227	303		
1985 009A	COSMOS 1626	15494	USSR	24 JAN	97.4	82.5	651	615		
1985 009B		15495	USSR	24 JAN	97.5	82.5	656	621		
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	1015	954		
1985 011B		15506	USSR	1 FEB	104.7	82.9	1005	954		
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	0.0	35803	35772		
1985 015B	SBTS 1	15561	BRAZIL	8 FEB	1436.2	0.1	35795	35783		
1985 015C		15562	ESA	8 FEB	614.1	7.3	34786	319		
1985 016A	COSMOS 1629	15574	USSR	21 FEB	1434.5	3.1	35772	35739		
1985 016F		15581	USSR	21 FEB	1448.6	3.1	36127	35936		
1985 018A	COSMOS 1631	15584	USSR	27 FEB	93.2	65.8	444	419		
1985 018B		15585	USSR	27 FEB	88.5	65.8	209	194		
1985 020A	COSMOS 1633	15592	USSR	5 MAR	97.4	82.5	644	622		
1985 021A	GEOSAT	15595	US	13 MAR	100.5	108.0	787	781		
1985 021B		15596	US	13 MAR	100.5	108.0	809	750		
1985 021C		15613	US	13 MAR	98.8	108.5	743	662		
1985 021D		15614	US	13 MAR	99.9	108.2	770	735		
1985 021E		15615	US	13 MAR	100.7	107.8	837	750		
1985 021F		15616	US	13 MAR	101.2	107.5	896	732		
1985 022A	COSMOS 1634	15597	USSR	14 MAR	104.7	82.9	1008	956		
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	1493	1472		
1985 023C	COSMOS 1637	15619	USSR	21 MAR	115.4	74.1	1486	1462		
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	1477	1439		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1985 LAUNCHES (CONT.)										
1985 023F	COSMOS 1640	15622	USSR	21 MAR	114.9	74.1	1477	1425		
1985 023G	COSMOS 1641	15623	USSR	21 MAR	114.8	74.1	1478	1410		
1985 023H	COSMOS 1642	15624	USSR	21 MAR	114.6	74.1	1476	1397		
1985 023J		15625	USSR	21 MAR	118.0	74.0	1709	1474		
1985 024A	EKRAN 14	15626	USSR	22 MAR	1479.4	0.8	43161	30098		
1985 024D		15630	USSR	22 MAR	1422.5	3.8	35577	35463		
1985 025A	INTELSAT VF10	15629	ITSO	22 MAR	1436.2	0.0	35805	35772		
1985 025B		15631	US	22 MAR	484.2	23.2	27874	222		
1985 027J		15650	USSR	3 APR	89.7	70.3	272	249		
1985 028B	ANIK C1	15642	CANADA	13 APR	1436.1	0.0	35796	35776		35*
1985 028C	SYNCOM IV-3	15643	US	12 APR	1436.1	0.9	35809	35765		35*
1985 028D		15644	US	13 APR	609.9	23.3	34554	333		
1985 028E		16229	US	12 APR	283.8	26.9	15506	346		
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	1436.1	0.0	35791	35783		
1985 035B	TELECOM 1B	15678	FRANCE	8 MAY	1435.4	1.6	35794	35752		
1985 035C		15679	ESA	8 MAY	561.1	6.8	32071	242		
1985 035D		15680	ESA	8 MAY	304.7	6.7	16653	591		
1985 037A	COSMOS 1650	15697	USSR	17 MAY	675.7	64.8	19177	19081		
1985 037B	COSMOS 1651	15698	USSR	17 MAY	675.6	64.8	19143	19111		
1985 037C	COSMOS 1652	15699	USSR	17 MAY	675.8	64.8	19150	19114		
1985 037F		15702	USSR	17 MAY	675.0	64.7	19199	19024		
1985 037G		15714	USSR	17 MAY	339.5	52.0	19131	352		
1985 037H		15715	USSR	17 MAY	337.5	52.1	19039	316		
1985 040A	MOLNIYA 3-24	15738	USSR	29 MAY	718.0	63.1	38580	1782		
1985 040D		15741	USSR	29 MAY	732.2	63.2	39059	2005		
1985 041A	COSMOS 1655	15751	USSR	30 MAY	105.0	82.9	1013	974		
1985 041B		15752	USSR	30 MAY	104.9	83.0	1009	970		
1985 042A	COSMOS 1656	15755	USSR	30 MAY	101.5	71.1	857	802		
1985 042D		15772	USSR	30 MAY	101.5	71.1	857	801		
1985 042E		15773	USSR	30 MAY	101.2	66.6	843	787		
1985 042F		15774	USSR	30 MAY	101.3	66.6	841	799		
1985 042G		18764	USSR	30 MAY	100.3	66.6	854	692		
1985 042H		18765	USSR	30 MAY	101.7	66.6	849	830		
1985 042J		18766	USSR	30 MAY	103.1	66.6	966	847		
1985 042K		18767	USSR	30 MAY	104.7	66.6	1115	847		
1985 042L		18819	USSR	30 MAY	102.8	66.6	934	843		
1985 045A	COSMOS 1658	15808	USSR	11 JUN	717.9	65.3	38416	1944		
1985 045D		15811	USSR	11 JUN	709.3	65.7	37880	2054		
1985 047A	COSMOS 1660	15821	USSR	14 JUN	116.0	73.6	1523	1480		
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	35778		35*
1985 048C	ARABSAT 1B	15825	SA	18 JUN	1436.1	0.1	35833	35740		35*
1985 048D	TELSTAR 3D	15826	US	19 JUN	1436.1	0.0	35790	35784		35*
1985 048F		15832	US	17 JUN	632.0	25.7	35609	427		
1985 048G		15836	US	18 JUN	625.0	27.1	35266	404		
1985 048H		15837	US	18 JUN	657.7	25.8	36957	392		
1985 049A	COSMOS 1661	15827	USSR	18 JUN	718.4	64.8	37677	2706		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1985 LAUNCHES (CONT.)										
1985 049D		15830	USSR	18 JUN	724.8	65.4	38034	2663		
1985 050A	COSMOS 1662	15833	USSR	19 JUN	91.0	65.8	327	314		CD*
1985 055A	INTELSAT VA F11	15873	ITSO	30 JUN	1436.2	0.0	35801	35776		
1985 055B		15874	US	30 JUN	578.5	22.9	32938	301		
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	593.3	7.5	33735	283		
1985 056E		17332	ESA	2 JUL	519.5	7.7	29502	553		
1985 058A	COSMOS 1666	15889	USSR	8 JUL	97.4	82.5	651	621		
1985 058B		15890	USSR	8 JUL	97.6	82.5	657	625		
1985 058C		19241	USSR	8 JUL	97.4	82.5	648	616		
1985 059C		15920	USSR	10 JUL	90.1	82.4	344	217		
1985 061A	MOLNIYA 3-25	15909	USSR	17 JUL	717.7	63.6	39573	777		
1985 061D		15916	USSR	17 JUL	737.9	63.5	40521	820		
1985 064A	COSMOS 1670	15930	USSR	1 AUG	104.1	64.9	1001	900		
1985 066A	NNSS 30300	15935	US	3 AUG	107.9	89.9	1256	1002		
1985 066B	NNSS 30240	15936	US	3 AUG	107.9	89.9	1257	1001		
1985 066C		15938	US	3 AUG	107.9	89.9	1257	1001		
1985 066D		15950	US	3 AUG	107.4	89.9	1233	982		
1985 066E		15951	US	3 AUG	107.5	89.9	1238	985		
1985 066F		16020	US	3 AUG	107.6	90.3	1223	1007		
1985 066G		17164	US	3 AUG	108.2	89.4	1300	989		
1985 069A	COSMOS 1674	15944	USSR	8 AUG	97.4	82.5	650	617		
1985 069B		15945	USSR	8 AUG	97.5	82.5	655	624		
1985 070A	RADUGA 10	15946	USSR	8 AUG	1434.9	2.4	35767	35757		
1985 070F		15963	USSR	8 AUG	1472.4	2.7	36549	36437		
1985 071A	COSMOS 1675	15952	USSR	12 AUG	717.0	67.3	38399	1915		
1985 071D		15955	USSR	12 AUG	708.3	67.1	38002	1881		
1985 073A	PLANET A	15967	JAPAN	18 AUG	HELIOCENTRIC ORBIT					
1985 073C		15969	JAPAN	18 AUG	HELIOCENTRIC ORBIT					
1985 074A	MOLNIYA 1-64	15977	USSR	22 AUG	717.7	64.5	39602	747		
1985 074D		15983	USSR	22 AUG	732.3	64.6	40303	766		
1985 075A	COSMOS 1677	15986	USSR	23 AUG	103.9	64.7	993	890		
1985 076B	AUSSAT 1	15993	AUSTRL	27 AUG	1436.2	0.0	35794	35780		35*
1985 076C	ASC 1	15994	US	27 AUG	1436.1	0.1	35795	35778		35*
1985 076D	SYNCOM IV-4	15995	US	29 AUG	1439.3	0.4	36384	35315		35*
1985 076E		15996	US	27 AUG	637.5	25.8	35859	455		
1985 076F		16001	US	29 AUG	282.4	27.4	15396	367		
1985 076G		16007	US	29 AUG	634.5	26.5	35699	466		
1985 077K		16389	USSR	29 AUG	104.8	71.0	1129	842		
1985 077K		18608	USSR	29 AUG	100.7	74.1	802	780		
1985 077L		16390	USSR	29 AUG	105.1	71.0	1159	841		
1985 077M		16391	USSR	29 AUG	104.8	71.0	1130	838		
1985 077N		16392	USSR	29 AUG	105.0	71.0	1145	839		
1985 079A	COSMOS 1680	16011	USSR	4 SEP	100.7	74.0	803	779		
1985 079B		16012	USSR	4 SEP	100.6	74.1	797	773		
1985 079C		17754	USSR	4 SEP	101.1	74.0	824	792		
1985 082B - 082Z			USSR	19 SEP	SEE NOTE	45*				45*
1985 084A	COSMOS 1684	16064	USSR	24 SEP	718.1	62.5	38153	2219		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1985 LAUNCHES (CONT.)										
1985 084D		16070	USSR	24 SEP	705.9	63.3	37504	2263		
1985 086A	COSMOS 1686	16095	USSR	27 SEP	93.1	51.6	427	425		
1985 087A	INTELSAT VA F-12	16101	ITSU	29 SEP	1436.2	0.0	35802	35775		
1985 087B		16102	US	29 SEP	560.5	23.3	32013	267		
1985 088A	COSMOS 1687	16103	USSR	30 SEP	717.7	64.1	37385	2965		
1985 088D		16106	USSR	30 SEP	703.6	64.3	36978	2673		
1985 090A	COSMOS 1689	16110	USSR	3 OCT	96.5	97.8	627	552		
1985 090B		16111	USSR	3 OCT	96.9	97.8	654	569		
1985 091A	MOLNIYA 3-26	16112	USSR	3 OCT	717.8	64.6	38566	1791		
1985 091D		16125	USSR	3 OCT	734.0	64.8	39280	1869		
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	63.8	20503	19860		
1985 093B		16137	US	9 OCT	368.2	63.7	20380	899		
1985 094A	COSMOS 1690	16138	USSR	9 OCT	113.7	82.6	1413	1379		
1985 094B	COSMOS 1691	16139	USSR	9 OCT	114.0	82.6	1412	1410		
1985 094C	COSMOS 1692	16140	USSR	9 OCT	113.8	82.6	1413	1386		
1985 094D	COSMOS 1693	16141	USSR	9 OCT	113.8	82.6	1413	1391		
1985 094E	COSMOS 1694	16142	USSR	9 OCT	113.9	82.6	1413	1396		
1985 094F	COSMOS 1695	16143	USSR	9 OCT	114.0	82.6	1413	1403		
1985 094G		16144	USSR	9 OCT	114.7	82.6	1467	1414		
1985 094H		16264	USSR	9 OCT	108.6	82.5	1506	815		
1985 094J		16265	USSR	9 OCT	103.6	82.5	1039	817		
1985 094K		16266	USSR	9 OCT	114.0	82.6	1431	1393		
1985 094L		16267	USSR	9 OCT	113.4	82.6	1465	1299		
1985 094M		16268	USSR	9 OCT	115.0	82.7	1519	1391		
1985 094N		16269	USSR	9 OCT	114.1	82.6	1423	1403		
1985 094P		16270	USSR	9 OCT	113.8	82.7	1602	1194		
1985 094Q		16271	USSR	9 OCT	114.0	82.6	1414	1403		
1985 094R		16272	USSR	9 OCT	113.5	82.6	1423	1351		
1985 094S		17168	USSR	9 OCT	113.6	82.6	1449	1335		
1985 094U		18777	USSR	9 OCT	114.0	82.6	1412	1410		
1985 097A	COSMOS 1697	16181	USSR	22 OCT	101.9	71.0	851	846		
1985 097B		16182	USSR	22 OCT	101.7	71.0	847	835		
1985 098A	COSMOS 1698	16183	USSR	22 OCT	718.5	63.3	37732	2658		
1985 098D		16186	USSR	22 OCT	707.9	63.5	37229	2636		
1985 099A	MOLNIYA 1-65	16187	USSR	23 OCT	717.4	64.7	38563	1770		
1985 099E		16197	USSR	23 OCT	698.0	64.6	37613	1760		
1985 100A	METEOR 3	16191	USSR	24 OCT	109.3	82.5	1209	1178		
1985 100B		16194	USSR	24 OCT	110.2	82.6	1245	1223		
1985 102A	COSMOS 1700	16199	USSR	25 OCT	1436.1	2.3	35813	35758		
1985 102D		16214	USSR	25 OCT	1431.2	2.2	35789	35593		
1985 103A	MOLNIYA 1-66	16220	USSR	28 OCT	717.7	63.5	39797	552		
1985 103D		16223	USSR	28 OCT	701.1	63.6	38776	751		
1985 105A	COSMOS 1701	16235	USSR	9 NOV	717.7	67.0	38553	1798		
1985 105D		16243	USSR	9 NOV	706.2	67.2	38014	1768		
1985 107A	RADUGA 17	16250	USSR	15 NOV	1436.1	2.4	35805	35766		
1985 107F		16339	USSR	15 NOV	1477.0	2.4	36683	36485		

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1985 LAUNCHES (CONT.)										
1985 108A	COSMOS 1703	16262	USSR	22 NOV	97.5	82.5	653	620		
1985 108B		16263	USSR	22 NOV	97.6	82.5	658	625		
1985 109B	MORELOS 8	16274	MEXICO	27 NOV	1436.2	0.0	35797	35778		35*
1985 109C	AUSSAT 2	16275	AUSTRL	27 NOV	1436.2	0.0	35796	35779		35*
1985 109D	SATCOM KU2	16276	US	28 NOV	1436.2	0.1	35797	35779		35*
1985 109F		16293	US	27 NOV	646.9	25.4	36480	317		
1985 109G		16294	US	27 NOV	643.3	25.8	36285	326		
1985 109H		16295	US	28 NOV	623.5	26.3	35269	327		
1985 110A	COSMOS 1704	16291	USSR	28 NOV	104.8	82.9	1006	961		
1985 110B		16292	USSR	28 NOV	104.6	82.9	996	955		
1985 113A	COSMOS 1707	16326	USSR	12 DEC	97.5	82.5	654	620		
1985 113B		16327	USSR	12 DEC	97.5	82.5	658	624		
1985 116A	COSMOS 1709	16368	USSR	19 DEC	104.8	82.9	1010	958		
1985 116B		16369	USSR	19 DEC	104.6	82.9	1003	952		
1985 117A	MOLNIYA 3-27	16393	USSR	24 DEC	717.9	63.1	38149	2210		
1985 117F		16402	USSR	24 DEC	732.6	63.1	38782	2300		
1985 118A	COSMOS 1710	16396	USSR	24 DEC	675.7	65.7	19147	19111		
1985 118B	COSMOS 1711	16397	USSR	24 DEC	675.7	65.7	19151	19107		
1985 118C	COSMOS 1712	16398	USSR	24 DEC	676.3	65.7	19154	19133		
1985 118F		16404	USSR	24 DEC	675.5	65.7	19130	19119		
1985 118K		16445	USSR	24 DEC	340.4	65.3	18852	689		
1985 118L		16446	USSR	24 DEC	340.4	65.3	18870	669		
1985 119A	METEOR 2-13	16408	USSR	26 DEC	104.0	82.5	957	934		
1985 119B		16409	USSR	26 DEC	104.0	82.5	956	935		
1985 121D		16437	USSR	28 DEC	95.2	71.0	643	410		
1985 121E		16438	USSR	28 DEC	94.6	71.0	610	386		
1985 121F		16439	USSR	28 DEC	94.4	71.0	597	378		
1985 121G		16440	USSR	28 DEC	92.0	71.0	421	321		
1986 LAUNCHES										
1986 002A	COSMOS 1716	16449	USSR	9 JAN	115.5	74.0	1490	1461		
1986 002B	COSMOS 1717	16450	USSR	9 JAN	115.8	74.0	1511	1473		
1986 002C	COSMOS 1718	16451	USSR	9 JAN	115.6	74.0	1494	1473		
1986 002D	COSMOS 1719	16452	USSR	9 JAN	115.3	74.0	1482	1452		
1986 002E	COSMOS 1720	16453	USSR	9 JAN	115.1	74.0	1482	1438		
1986 002F	COSMOS 1721	16454	USSR	9 JAN	115.0	74.0	1482	1424		
1986 002G	COSMOS 1722	16455	USSR	9 JAN	114.8	74.0	1482	1410		
1986 002H	COSMOS 1723	16456	USSR	9 JAN	114.6	74.0	1480	1397		
1986 002J		16457	USSR	9 JAN	117.9	74.0	1694	1479		
1986 003B	SATCOM KU1	16482	US	12 JAN	1436.1	0.1	35789	35785		
1986 003C		16483	US	12 JAN	624.9	27.5	35317	349		
1986 005A	COSMOS 1725	16493	USSR	17 JAN	104.8	82.9	1001	966		
1986 005B		16494	USSR	17 JAN	104.6	82.9	992	962		
1986 006A	COSMOS 1726	16495	USSR	17 JAN	97.4	82.5	646	620		
1986 006B		16496	USSR	17 JAN	97.5	82.5	655	623		
1986 007A	RADUGA 18	16497	USSR	17 JAN	1436.3	2.3	35800	35781		
1986 007E		16501	USSR	17 JAN	647.7	47.0	36585	252		
1986 007F		16870	USSR	17 JAN	1472.4	2.3	36643	36345		
1986 008A	COSMOS 1727	16510	USSR	23 JAN	104.8	82.9	1014	956		

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 008B		16511	USSR	23 JAN	104.7	82.9	1004	956		
1986 010A	PRC 18	16526	PRC	1 FEB	1435.9	1.1	35785	35778		
1986 010B		16528	PRC	1 FEB	629.9	30.6	35368	557		
1986 011A	COSMOS 1729	16527	USSR	1 FEB	718.3	62.9	38711	1667		
1986 011F		16533	USSR	1 FEB	705.7	63.3	38031	1726		
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	1519	1477		
1986 016A	GS-2B	16597	JAPAN	12 FEB	1436.2	0.0	35810	35765		
1986 016C		16600	JAPAN	12 FEB	513.2	28.1	29490	218		
1986 017A	MIR	16609	USSR	19 FEB	92.5	51.6	407	387		
1986 017B - 017BT			USSR	19 FEB	SEE NOTE	51*				51*
1986 018A	COSMOS 1733	16611	USSR	19 FEB	97.4	82.5	648	620		
1986 018B		16612	USSR	19 FEB	97.5	82.5	652	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	13547	794		
1986 019C - 019VL			ESA	22 FEB	SEE NOTE	42*				42*
1986 022C		16663	USSR	13 MAR	89.5	51.6	253	244		
1986 024A	COSMOS 1736	16647	USSR	21 MAR	104.4	65.0	1010	922		
1986 024B - 024AF			USSR	21 MAR	SEE NOTE	40*				40*
1986 026A	GSTAR 2	16649	US	28 MAR	1436.2	0.0	35793	35782		
1986 026B	SBTS 2	16650	BRAZIL	28 MAR	1436.2	0.0	35842	35734		
1986 026C		16657	ESA	28 MAR	654.8	6.2	36765	436		
1986 026E		17253	ESA	28 MAR	537.6	7.9	30733	309		
1986 026F		17254	ESA	28 MAR	519.1	8.7	29587	448		
1986 027A	COSMOS 1738	16667	USSR	4 APR	1436.3	2.0	35837	35741		
1986 027F		16676	USSR	4 APR	1474.1	2.1	36696	36356		
1986 030A	COSMOS 1741	16681	USSR	18 APR	100.7	74.0	806	777		
1986 030B		16682	USSR	18 APR	100.6	74.0	798	774		
1986 030C		17842	USSR	18 APR	101.1	74.0	826	796		
1986 030D		17843	USSR	18 APR	101.1	74.0	824	797		
1986 030E		18274	USSR	18 APR	100.7	74.1	822	756		
1986 030F		18526	USSR	18 APR	100.7	74.0	794	789		
1986 030G		18681	USSR	18 APR	101.1	74.0	828	796		
1986 030H		19235	USSR	18 APR	104.1	74.0	956	945		
1986 031A	MOLNIYA 3-28	16683	USSR	18 APR	717.6	64.8	39152	1192		
1986 031B		16686	USSR	18 APR	733.5	64.9	39961	1165		
1986 034A	COSMOS 1743	16719	USSR	15 MAY	97.4	82.6	652	619		
1986 034B		16720	USSR	15 MAY	97.5	82.6	657	624		
1986 037A	COSMOS 1745	16727	USSR	23 MAY	104.8	83.0	1009	960		
1986 037B		16728	USSR	23 MAY	104.7	83.0	1000	956		
1986 038A	EKRAN 15	16729	USSR	24 MAY	1491.6	2.9	36932	36798		
1986 038D		16732	USSR	24 MAY	1420.6	2.7	35579	35384		

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 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	1467	1451		
1986 042B	COSMOS 1749	16759	USSR	6 JUN	114.4	74.0	1467	1392		
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	1504	1465		
1986 042E	COSMOS 1752	16762	USSR	6 JUN	115.4	74.0	1485	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	114.8	74.0	1467	1422		
1986 042J		16766	USSR	6 JUN	117.7	74.0	1682	1469		
1986 044A	GORIZONT 12	16769	USSR	10 JUN	1436.2	1.7	35829	35748		
1986 044D		16789	USSR	10 JUN	197.2	47.1	9542	149		
1986 044F		16797	USSR	10 JUN	1474.4	1.8	36578	36487		
1986 046A	COSMOS 1758	16791	USSR	12 JUN	97.5	82.5	657	621		
1986 046B		16792	USSR	12 JUN	97.6	82.5	660	623		
1986 047A	COSMOS 1759	16798	USSR	18 JUN	104.7	82.9	1000	964		
1986 047B		16799	USSR	18 JUN	104.6	82.9	1026	925		
1986 049A	MOLNIYA 3-29	16802	USSR	19 JUN	718.4	64.6	39945	437		
1986 049D		16805	USSR	19 JUN	733.5	64.7	40708	416		
1986 050A	COSMOS 1761	16849	USSR	5 JUL	717.5	63.1	37825	2519		
1986 050D		16854	USSR	5 JUL	710.1	63.5	37458	2514		
1986 052A	COSMOS 1763	16860	USSR	16 JUL	100.4	74.0	800	753		
1986 052B		16864	USSR	16 JUL	100.4	74.0	799	752		
1986 052C		16865	USSR	16 JUL	100.2	74.0	792	743		
1986 052D		16866	USSR	16 JUL	100.2	74.0	790	741		
1986 052E		16867	USSR	16 JUL	100.2	74.0	792	746		
1986 055A	COSMOS 1766	16881	USSR	28 JUL	97.5	82.5	656	622		
1986 055B		16882	USSR	28 JUL	97.6	82.5	660	625		
1986 057A	MOLNIYA 1-67	16885	USSR	30 JUL	718.0	64.7	39703	663		
1986 057D		16889	USSR	30 JUL	731.7	64.9	40406	631		
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	995	915		
1986 062C		17035	USSR	20 AUG	103.9	65.0	968	913		
1986 065A	COSMOS 1774	16922	USSR	28 AUG	716.8	64.7	38945	1362		
1986 065D		16925	USSR	28 AUG	707.0	65.1	38317	1502		
1986 067A	COSMOS 1776	16928	USSR	3 SEP	91.7	74.0	366	349		
1986 067B		16929	USSR	3 SEP	89.7	74.0	265	252		
1986 067B - AF			USSR	3 SEP	SEE NOTE		50*			50*
1986 068A	MOLNIYA 1-68	16934	USSR	5 SEP	717.7	64.6	39071	1280		
1986 068D		16939	USSR	5 SEP	731.3	64.7	39750	1268		
1986 070A	COSMOS 1777	16952	USSR	10 SEP	100.7	74.0	807	773		
1986 070B		16953	USSR	10 SEP	100.5	74.0	789	774		
1986 071A	COSMOS 1778	16961	USSR	16 SEP	675.7	64.8	19141	19117		
1986 071B	COSMOS 1779	16962	USSR	16 SEP	675.7	64.8	19142	19117		
1986 071C	COSMOS 1780	16963	USSR	16 SEP	675.7	64.8	19152	19106		
1986 071F		16968	USSR	16 SEP	675.1	64.8	19167	19058		

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INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1986 LAUNCHES (CONT.)										
1986 071G		16984	USSR	16 SEP	339.9	64.8	19071	439		
1986 071H		16985	USSR	16 SEP	339.9	64.9	19087	421		
1986 073A	NOAA 10	16969	US	17 SEP	101.1	98.6	820	802		
1986 073B		16982	US	17 SEP	100.5	98.7	785	776		
1986 073C		16983	US	17 SEP	100.2	98.7	775	755		
1986 074A	COSMOS 1782	16986	USSR	30 SEP	97.5	82.5	653	625		
1986 074B		16987	USSR	30 SEP	97.6	82.5	655	628		
1986 075A	COSMOS 1783	16993	USSR	3 OCT	358.0	63.2	19747	898		
1986 075D		16996	USSR	3 OCT	357.0	63.2	19695	886		
1986 078A	COSMOS 1785	17031	USSR	15 OCT	717.7	66.4	38863	1488		
1986 078D		17037	USSR	15 OCT	707.7	67.0	38367	1486		
1986 079A	MOLNIYA 3-30	17038	USSR	20 OCT	717.6	64.8	39651	696		
1986 079D		17041	USSR	20 OCT	699.0	64.7	38685	738		
1986 082A	RADUGA 19	17046	USSR	25 OCT	1435.9	1.5	35791	35775		
1986 082D		17052	USSR	25 OCT	637.1	45.9	36043	252		
1986 082E		17053	USSR	25 OCT	220.1	46.6	11229	163		
1986 082F		17065	USSR	25 OCT	1475.5	1.4	36682	36424		
1986 083A	COSMOS 1788	17050	USSR	27 OCT	93.3	65.8	450	425		
1986 083B		17051	USSR	27 OCT	91.9	65.8	371	361		
1986 086A	COSMOS 1791	17066	USSR	13 NOV	104.7	82.9	1009	950		
1986 086B		17067	USSR	13 NOV	104.6	82.9	998	950		
1986 086C		18552	USSR	13 NOV	104.3	82.9	986	934		
1986 088A	POLAR BEAR	17070	US	14 NOV	104.8	89.5	1015	958		
1986 088B		17071	US	14 NOV	104.8	89.5	1013	958		
1986 088C		18426	US	14 NOV	105.2	89.1	1053	950		
1986 088D		18525	US	14 NOV	104.3	89.9	968	958		
1986 089A	MOLNIYA 1-69	17078	USSR	15 NOV	717.8	63.2	38378	1975		
1986 089D		17081	USSR	15 NOV	735.8	63.2	39108	2130		
1986 090A	GORIZONT 13	17083	USSR	18 NOV	1436.1	1.3	35793	35778		
1986 090D		17125	USSR	18 NOV	1435.1	1.3	35817	35717		
1986 090F		17149	USSR	18 NOV	632.9	47.3	35812	268		
1986 091A	COSMOS 1793	17134	USSR	20 NOV	717.9	64.2	38267	2090		
1986 091D		17147	USSR	20 NOV	705.9	64.7	37781	1982		
1986 092A	COSMOS 1794	17138	USSR	21 NOV	115.6	74.0	1497	1465		
1986 092B	COSMOS 1795	17139	USSR	21 NOV	115.4	74.0	1479	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	1441		
1986 092E	COSMOS 1798	17142	USSR	21 NOV	114.9	74.0	1471	1426		
1986 092F	COSMOS 1799	17143	USSR	21 NOV	114.7	74.0	1470	1411		
1986 092G	COSMOS 1800	17144	USSR	21 NOV	114.5	74.0	1471	1396		
1986 092H	COSMOS 1801	17145	USSR	21 NOV	114.4	74.0	1469	1383		
1986 092J		17146	USSR	21 NOV	117.6	74.0	1675	1473		
1986 093A	COSMOS 1802	17159	USSR	24 NOV	104.9	82.9	1020	959		
1986 093B		17160	USSR	24 NOV	104.8	82.9	1016	953		
1986 094A	COSMOS 1803	17177	USSR	2 DEC	115.9	82.6	1500	1494		
1986 094B		17178	USSR	2 DEC	115.9	82.6	1496	1494		
1986 096A		17181	US	5 DEC	1436.1	2.8	35851	35723		
1986 097A	COSMOS 1805	17191	USSR	10 DEC	97.4	82.5	650	621		
1986 097B		17192	USSR	10 DEC	97.5	82.5	655	625		
1986 098A	COSMOS 1806	17213	USSR	12 DEC	717.4	62.7	38613	1723		

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 098D		17216	USSR	12 DEC	705.8	63.1	38084	1679		
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	994	957		
1986 101A	COSMOS 1809	17241	USSR	18 DEC	104.1	82.5	962	941		
1986 101B		17242	USSR	18 DEC	104.1	82.5	961	940		
1986 101C		17268	USSR	18 DEC	103.9	82.6	964	919		
1986 101D		17269	USSR	18 DEC	104.3	82.6	976	948		
1986 101E		17270	USSR	18 DEC	104.1	82.4	957	951		
1986 101F		17271	USSR	18 DEC	103.7	82.4	952	910		
1986 101G		17272	USSR	18 DEC	103.6	82.5	941	919		
1986 101H		17273	USSR	18 DEC	103.6	82.5	938	915		
1986 101J		17274	USSR	18 DEC	104.4	82.5	990	939		
1986 101K		17844	USSR	18 DEC	103.6	82.5	944	913		
1986 101L		18680	USSR	18 DEC	103.6	82.5	944	917		
1986 103A	MOLNIYA 1-70	17264	USSR	26 DEC	717.7	63.0	38818	1533		
1986 103B		17267	USSR	26 DEC	698.8	62.9	38070	1344		
1987 LAUNCHES										
1987 001A	METEOR 2-15	17290	USSR	5 JAN	104.0	82.5	956	938		
1987 001B		17291	USSR	5 JAN	104.0	82.5	954	939		
1987 003A	COSMOS 1812	17295	USSR	14 JAN	97.5	82.5	652	624		
1987 003B		17296	USSR	14 JAN	97.6	82.5	655	627		
1987 004C - 004HC			USSR	15 JAN	SEE NOTE		46*			46*
1987 006A	COSMOS 1814	17303	USSR	21 JAN	100.6	74.0	804	767		
1987 006B		17304	USSR	21 JAN	100.5	74.1	798	763		
1987 006C		18257	USSR	21 JAN	100.6	74.0	793	782		
1987 008A	MOLNIYA 3-31	17328	USSR	22 JAN	717.8	63.1	38494	1859		
1987 008B		17333	USSR	22 JAN	730.7	63.1	39050	1939		
1987 009A	COSMOS 1816	17359	USSR	29 JAN	104.8	82.9	1010	959		
1987 009B		17360	USSR	29 JAN	104.6	82.9	1007	947		
1987 011A	COSMOS 1818	17369	USSR	1 FEB	100.7	65.0	800	781		
1987 011C		17399	USSR	1 FEB	98.9	65.0	720	693		
1987 011D		17400	USSR	1 FEB	98.7	65.0	709	683		
1987 012A	ASTRO C	17430	JAPAN	5 FEB	95.7	31.1	617	489		
1987 012B		17481	JAPAN	5 FEB	96.4	31.1	670	503		
1987 012D		18238	JAPAN	5 FEB	92.4	31.1	421	366		
1987 012H		18523	JAPAN	5 FEB	92.2	31.0	407	359		
1987 012K		18927	JAPAN	5 FEB	96.0	30.8	630	500		
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	1014	958		
1987 017B		17526	USSR	18 FEB	104.6	82.9	1009	946		
1987 018A	MOS-1	17527	JAPAN	19 FEB	103.2	99.1	909	908		
1987 018B		17528	JAPAN	19 FEB	100.1	97.5	891	630		
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 020B - DN			USSR	20 FEB	SEE NOTE		48*			48*
1987 022A	GOES 7	17561	US	26 FEB	1436.2	0.0	35808	35768		

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INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1987 LAUNCHES (CONT.)										
1987 022B		17562	US	26 FEB	115.2	21.7	2678	247		
1987 022C		17563	US	26 FEB	689.1	18.1	38651	278		
1987 024A	COSMOS 1825	17566	USSR	3 MAR	97.4	82.5	652	619		
1987 024B		17567	USSR	3 MAR	97.5	82.5	656	623		
1987 026A	COSMOS 1827	17582	USSR	13 MAR	113.8	82.6	1409	1393		
1987 026B	COSMOS 1828	17583	USSR	13 MAR	113.7	82.6	1409	1382		
1987 026C	COSMOS 1829	17584	USSR	13 MAR	114.0	82.6	1411	1409		
1987 026D	COSMOS 1830	17585	USSR	13 MAR	113.9	82.6	1409	1404		
1987 026E	COSMOS 1831	17586	USSR	13 MAR	113.8	82.6	1409	1388		
1987 026F	COSMOS 1832	17587	USSR	13 MAR	113.9	82.6	1409	1398		
1987 026G		17588	USSR	13 MAR	114.6	82.6	1467	1409		
1987 027A	COSMOS 1833	17589	USSR	18 MAR	101.9	70.9	851	847		
1987 027B		17590	USSR	18 MAR	101.7	71.0	844	835		
1987 027C		18416	USSR	18 MAR	104.8	71.0	1125	841		
1987 027D		18417	USSR	18 MAR	105.0	71.0	1149	839		
1987 027E		18527	USSR	18 MAR	104.9	71.0	1139	840		
1987 027F		18550	USSR	18 MAR	104.7	71.0	1117	838		
1987 028A	RADUGA 20	17611	USSR	19 MAR	1436.2	1.5	35797	35779		
1987 028D		17705	USSR	19 MAR	1441.8	1.5	36011	35784		
1987 028E		17709	USSR	19 MAR	635.6	47.4	35901	318		
1987 029A	PALAPA B-2P	17706	INDNSA	20 MAR	1436.2	0.0	35793	35784		
1987 029C		17708	INDNSA	20 MAR	175.5	24.2	7877	136		
1987 030A	KVANT 1	17845	USSR	31 MAR	1436.7	51.6	35839	35758		
1987 036A	COSMOS 1838	17902	USSR	24 APR	287.7	64.9	15923	191		
1987 036B	COSMOS 1839	17903	USSR	24 APR	289.5	64.9	16048	188		
1987 036C	COSMOS 1840	17904	USSR	24 APR	296.7	64.9	16514	198		
1987 036G		17910	USSR	24 APR	284.2	65.0	15703	178		
1987 036H		17913	USSR	24 APR	176.2	64.7	7858	210		
1987 038A	COSMOS 1842	17911	USSR	27 APR	97.5	82.5	655	624		
1987 038B		17912	USSR	27 APR	97.6	82.5	657	627		
1987 040A	GORIZONT 14	17969	USSR	11 MAY	1436.2	3.1	35811	35764		
1987 040D		17972	USSR	11 MAY	1397.9	3.1	35088	34981		
1987 040E		18111	USSR	11 MAY	542.7	46.9	31187	132		
1987 040F		18112	USSR	11 MAY	602.5	47.0	34362	138		
1987 041A	COSMOS 1844	17973	USSR	13 MAY	101.9	71.0	853	844		
1987 041B		17974	USSR	13 MAY	101.7	71.0	849	827		
1987 041C		18410	USSR	13 MAY	105.0	71.0	1151	840		
1987 041D		18411	USSR	13 MAY	104.8	71.0	1132	842		
1987 041E		18412	USSR	13 MAY	104.8	71.0	1136	838		
1987 041F		18476	USSR	13 MAY	105.1	71.0	1158	840		
1987 041G		18687	USSR	13 MAY	101.1	71.0	813	808		
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	65.6	39002	1348		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1987 LAUNCHES (CONT.)										
1987 049B		18086	USSR	4 JUN	706.2	65.9	38476	1306		
1987 049A	COSMOS 1850	18095	USSR	9 JUN	100.7	74.0	802	779		
1987 049B		18096	USSR	9 JUN	100.6	74.0	798	772		
1987 050A	COSMOS 1851	18103	USSR	12 JUN	717.8	63.0	39157	1199		
1987 050B		18106	USSR	12 JUN	707.4	63.2	38614	1226		
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	1470		
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	1399		
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	987	906		
1987 052B		18241	USSR	18 JUL	103.7	65.0	966	897		
1987 053A		18123	US	20 JUN	101.8	98.8	855	833		
1987 053B		18127	US	20 JUN	101.4	98.8	833	812		
1987 053C		18128	US	20 JUN	101.1	98.8	819	805		
1987 054A	COSMOS 1861	18129	USSR	23 JUN	104.9	82.9	999	979		
1987 054B		18130	USSR	23 JUN	104.7	82.9	991	966		
1987 054C		18131	USSR	23 JUN	105.1	82.9	1022	973		
1987 055A	COSMOS 1862	18152	USSR	1 JUL	97.5	82.5	657	620		
1987 057A	COSMOS 1864	18160	USSR	6 JUL	104.7	82.9	1004	955		
1987 057B		18161	USSR	6 JUL	104.6	82.9	993	956		
1987 060A	COSMOS 1867	18187	USSR	10 JUL	100.7	65.0	804	779		
1987 060C		18191	USSR	10 JUL	98.1	65.0	677	654		
1987 060D		18524	USSR	10 JUL	98.7	65.0	708	682		
1987 062A	COSMOS 1869	18214	USSR	16 JUL	97.5	82.5	656	621		
1987 062B		18215	USSR	16 JUL	97.6	82.5	660	625		
1987 065C		19033	USSR	1 AUG	115.6	102.0	1501	1462		
1987 068A	METEOR 2-16	18312	USSR	18 AUG	104.0	82.6	956	940		
1987 068B		18313	USSR	18 AUG	104.0	82.6	954	940		
1987 073A	ETS-V	18316	JAPAN	27 AUG	1437.1	0.2	36147	35464		
1987 073A	EKRAN 16	18326	USSR	4 SEP	1492.5	1.5	36903	36864		
1987 073D		18331	USSR	4 SEP	1420.4	1.5	35570	35387		
1987 073E		18332	USSR	4 SEP	487.4	47.1	27953	323		
1987 074A	COSMOS 1875	18334	USSR	7 SEP	113.7	82.6	1409	1382		
1987 074B	COSMOS 1876	18335	USSR	7 SEP	114.0	82.6	1411	1408		
1987 074C	COSMOS 1877	18336	USSR	7 SEP	113.9	82.6	1408	1405		
1987 074D	COSMOS 1878	18337	USSR	7 SEP	113.9	82.6	1409	1398		
1987 074E	COSMOS 1879	18338	USSR	7 SEP	113.8	82.6	1408	1393		
1987 074F	COSMOS 1880	18339	USSR	7 SEP	113.8	82.6	1408	1389		
1987 074G		18340	USSR	7 SEP	114.6	82.6	1469	1408		
1987 078A	AUSSAT K3	18350	AUSTRL	16 SEP	1436.1	0.0	35792	35782		
1987 078B	ECS 4	18351	ESA	16 SEP	1436.1	0.0	35801	35771		
1987 078C		18352	ESA	16 SEP	448.2	7.2	25825	220		
1987 079A	COSMOS 1883	18355	USSR	16 SEP	675.7	65.4	19150	19108		
1987 079B	COSMOS 1884	18356	USSR	16 SEP	675.7	65.4	19151	19107		
1987 079C	COSMOS 1885	18357	USSR	16 SEP	675.7	64.9	19167	19090		

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1987 LAUNCHES (CONT.)										
1987 079F		18360	USSR	16 SEP	674.7	65.4	19137	19071		
1987 079G		18374	USSR	16 SEP	339.7	65.1	18942	557		
1987 079H		18375	USSR	16 SEP	339.7	64.9	18958	538		
1987 080A		18361	US	16 SEP	107.2	90.3	1178	1014		
1987 080B		18362	US	16 SEP	107.2	90.3	1181	1013		
1987 080C		18363	US	16 SEP	107.2	90.3	1180	1015		
1987 080E		18365	US	16 SEP	107.1	90.3	1171	1012		
1987 080F		18530	US	16 SEP	106.5	90.4	1127	997		
1987 080G		18561	US	16 SEP	107.1	90.3	1169	1016		
1987 080H		18562	US	16 SEP	107.9	90.2	1266	989		
1987 084A	COSMOS 1888	18384	USSR	1 OCT	1436.2	0.5	35796	35780		
1987 084E		18388	USSR	1 OCT	129.5	46.7	4108	89		
1987 087A	COSMOS 1891	18402	USSR	14 OCT	104.8	82.9	1024	949		
1987 087B		18403	USSR	14 OCT	104.7	82.9	1024	935		
1987 088A	COSMOS 1892	18421	USSR	20 OCT	97.5	82.5	654	620		
1987 088B		18422	USSR	20 OCT	97.6	82.5	659	624		
1987 090A		18441	US	26 OCT	ELEMENTS NOT AVAILABLE					
1987 091A	COSMOS 1894	18443	USSR	28 OCT	1436.3	0.6	35797	35781		
1987 091D		18446	USSR	28 OCT	1437.9	0.6	35898	35743		
1987 091F		18448	USSR	28 OCT	599.4	46.8	34204	135		
1987 095A	TVSAT 1	18570	FRG	21 NOV	1452.6	0.7	36161	36055		
1987 096A	COSMOS 1897	18575	USSR	26 NOV	1436.0	0.3	35816	35752		
1987 096D		18578	USSR	26 NOV	1431.8	0.3	35790	35615		
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	805	774		
1987 098B		18586	USSR	1 DEC	100.5	74.0	800	768		
1987 098C		18697	USSR	1 DEC	100.8	74.0	799	788		
1987 098D		18698	USSR	1 DEC	101.1	74.0	824	795		
1987 100A	RADUGA 21	18631	USSR	10 DEC	1436.0	0.5	35789	35780		
1987 100D		18634	USSR	10 DEC	1392.7	0.5	34985	34878		
1987 100E		18635	USSR	10 DEC	385.0	46.9	22092	214		
1987 100F		18636	USSR	10 DEC	376.5	45.0	21658	129		
1987 101A	COSMOS 1900	18665	USSR	12 DEC	99.3	66.1	746	703		
1987 105A	COSMOS 1903	18701	USSR	21 DEC	717.8	63.7	39396	959		
1987 105D		18704	USSR	21 DEC	705.1	64.0	38773	954		
1987 106A	COSMOS 1904	18709	USSR	23 DEC	104.8	82.9	1004	965		
1987 106B		18710	USSR	23 DEC	104.7	82.9	997	961		
1987 109A	EKRAN 17	18715	USSR	27 DEC	1436.1	0.1	35805	35776		
1987 109D		18718	USSR	27 DEC	1428.2	0.0	35880	35382		
1987 109E		18719	USSR	27 DEC	502.2	47.1	28781	317		
1988 LAUNCHES										
1988 001A	COSMOS 1908	18748	USSR	6 JAN	97.5	82.5	654	624		
1988 001B		18749	USSR	6 JAN	97.6	82.5	656	626		
1988 002A	COSMOS 1909	18788	USSR	15 JAN	114.0	82.6	1410	1409		
1988 002B	COSMOS 1910	18789	USSR	15 JAN	113.9	82.6	1409	1403		
1988 002C	COSMOS 1911	18790	USSR	15 JAN	113.9	82.6	1410	1396		
1988 002D	COSMOS 1912	18791	USSR	15 JAN	113.8	82.6	1409	1392		

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INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1988 LAUNCHES (CONT.)										
1988 002E	COSMOS 1913	18792	USSR	15 JAN	113.8	82.6	1409	1387		
1988 002F	COSMOS 1914	18793	USSR	15 JAN	113.7	82.6	1409	1381		
1988 002G		18794	USSR	15 JAN	114.6	82.6	1468	1409		
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	100.6	98.7	791	785		
1988 006C		18846	US	3 FEB	100.5	98.7	786	782		
1988 006D		18955	US	3 FEB	100.7	98.7	793	788		
1988 006F		18984	US	3 FEB	100.8	98.7	802	794		
1988 012A	CS-3A	18877	JAPAN	19 FEB	1436.2	0.0	35793	35784		
1988 012C		18879	JAPAN	19 FEB	539.8	27.6	30939	227		
1988 013A	COSMOS 1922	18881	USSR	26 FEB	717.5	62.7	38817	1524		
1988 013C		18883	USSR	26 FEB	705.8	63.0	38261	1501		
1988 014A	PRC 22	18922	PRC	7 MAR	1436.3	0.1	35795	35784		
1988 015H		18991	USSR	10 MAR	90.7	72.9	376	241		
1988 016A	COSMOS 1924	18937	USSR	11 MAR	115.7	74.0	1512	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	1460	1442		
1988 016F	COSMOS 1929	18942	USSR	11 MAR	114.7	74.0	1459	1426		
1988 016G	COSMOS 1930	18943	USSR	11 MAR	114.6	74.0	1459	1412		
1988 016H	COSMOS 1931	18944	USSR	11 MAR	114.4	74.0	1459	1395		
1988 016J		18945	USSR	11 MAR	117.6	74.0	1685	1462		
1988 016K		19451	USSR	11 MAR	117.6	74.0	1684	1459		
1988 017A	MOLNIYA 1-71	18946	USSR	11 MAR	717.7	63.2	39003	1348		
1988 017D		18949	USSR	11 MAR	695.6	62.9	38769	485		
1988 018A	SPACENET 3R	18951	US	11 MAR	1436.2	0.0	35791	35785		
1988 018B	TELECOM 1C	18952	FRANCE	11 MAR	1435.9	0.1	35849	35714		
1988 018C		18953	ESA	11 MAR	604.6	6.8	34267	344		
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	652	624		
1988 020B		18959	USSR	15 MAR	97.5	82.5	654	626		
1988 021A	IRS-1A	18960	INDIA	17 MAR	103.1	99.0	913	894		
1988 021B		18961	USSR	17 MAR	102.8	99.0	921	861		
1988 022A	MOLNIYA 1-72	18980	USSR	17 MAR	717.8	64.2	39773	582		
1988 022D		18983	USSR	17 MAR	731.7	64.2	40463	577		
1988 023A	COSMOS 1934	18985	USSR	22 MAR	104.6	83.0	1007	947		
1988 023B		18986	USSR	22 MAR	104.5	83.0	995	948		
1988 028A	GORIZONT 15	19017	USSR	31 MAR	1436.1	0.3	35802	35771		
1988 028D		19020	USSR	31 MAR	1472.7	0.3	36597	36403		
1988 028E		19036	USSR	31 MAR	640.4	46.4	36344	122		
1988 028F		19037	USSR	31 MAR	621.6	46.4	35148	346		
1988 029A	COSMOS 1937	19038	USSR	5 APR	100.5	74.0	803	765		
1988 029B		19039	USSR	5 APR	100.5	74.0	800	760		
1988 032A	COSMOS 1939	19045	USSR	20 APR	97.2	97.9	644	603		
1988 032B		19046	USSR	20 APR	97.5	97.9	678	600		
1988 033A		19070	US	26 APR	108.5	90.3	1305	1012		

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1988 LAUNCHES (CONT.)										
1988 033B		19071	US	26 APR	108.5	90.3	1303	1012		
1988 033C		19072	US	26 APR	108.5	90.3	1303	1015		
1988 033D		19077	US	26 APR	108.4	90.3	1291	1010		
1988 033E		19078	US	26 APR	107.7	90.6	1240	996		
1988 033F		19140	US	26 APR	108.4	90.3	1289	1012		
1988 033G		19181	US	26 APR	109.2	90.2	1384	993		
1988 034A	COSMOS 1940	19073	USSR	26 APR	1430.4	0.1	35774	35576		
1988 034D		19076	USSR	26 APR	1438.5	0.1	35943	35722		
1988 034E		19082	USSR	26 APR	639.3	48.6	36022	387		
1988 034F		19083	USSR	26 APR	649.6	47.3	36714	223		
1988 036A	EKRAN 18	19090	USSR	6 MAY	1435.9	0.9	35791	35773		
1988 036D		19093	USSR	6 MAY	608.3	46.3	34696	109		
1988 036E		19094	USSR	6 MAY	1424.1	0.9	35655	35445		
1988 036F		19095	USSR	6 MAY	102.7	45.8	1574	193		
1988 039A	COSMOS 1943	19119	USSR	15 MAY	101.9	71.0	857	836		
1988 039B		19120	USSR	15 MAY	101.6	71.0	850	814		
1988 039C		19125	USSR	15 MAY	104.6	71.0	1112	841		
1988 039D		19126	USSR	15 MAY	104.7	71.0	1121	842		
1988 039E		19127	USSR	15 MAY	105.1	71.0	1157	844		
1988 039F		19128	USSR	15 MAY	105.1	71.0	1154	844		
1988 040A	INTELSAT 5A F-13	19121	ITSO	17 MAY	1436.1	0.0	35793	35782		
1988 040B		19122	US	17 MAY	636.3	7.1	35780	473		
1988 043A	COSMOS 1946	19163	USSR	21 MAY	675.7	64.9	19147	19111		
1988 043B	COSMOS 1947	19164	USSR	21 MAY	675.7	64.9	19139	19119		
1988 043C	COSMOS 1948	19165	USSR	21 MAY	675.7	64.9	19139	19119		
1988 043F		19168	USSR	21 MAY	674.5	65.0	19156	19039		
1988 043G		19169	USSR	21 MAY	339.9	65.3	18937	574		
1988 043H		19170	USSR	21 MAY	340.0	65.2	18933	582		
1988 044A	MOLNIYA 3-32	19189	USSR	26 MAY	717.7	64.0	39754	595		
1988 044B		19190	USSR	26 MAY	733.0	64.0	40528	574		
1988 045A	COSMOS 1949	19193	USSR	28 MAY	92.7	66.0	415	402		
1988 046A	COSMOS 1950	19195	USSR	30 MAY	116.0	73.6	1520	1482		
1988 046B		19196	USSR	30 MAY	116.0	73.6	1515	1482		
1988 048C		19386	USSR	7 JUN	89.4	51.6	253	239		
1988 050A	COSMOS 1953	19210	USSR	14 JUN	97.5	82.5	659	621		
1988 050B		19211	USSR	14 JUN	97.6	82.5	660	623		
1988 051A	METEOSAT	19215	ESA	15 JUN	1436.2	0.1	35799	35776		
1988 051B	OSCAR 13	19216	US	15 JUN	686.7	57.2	36962	1847		
1988 051C	PAS-1	19217	US	15 JUN	1436.2	0.1	35797	35779		
1988 051D		19218	ESA	15 JUN	560.6	10.4	32072	215		
1988 051E		19219	ESA	15 JUN	628.6	10.5	35615	242		
1988 051F		19220	ESA	15 JUN	590.3	10.4	33585	278		
1988 051G		19857	ESA	15 JUN	634.1	7.2	35484	656		
1988 051H		19951	ESA	15 JUN	633.5	7.9	35283	826		
1988 052A		19223	US	16 JUN	108.9	90.0	1198	1150		
1988 053A	COSMOS 1954	19256	USSR	21 JUN	100.6	74.1	801	776		
1988 053B		19257	USSR	21 JUN	100.5	74.1	800	766		
1988 053C		19260	USSR	21 JUN	100.8	74.1	803	790		
1988 053D		19261	USSR	21 JUN	100.8	74.1	808	787		
1988 055F		19285	USSR	23 JUN	90.3	82.4	302	272		

OBJECTS IN ORBIT

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1988 LAUNCHES (CONT.)										
1988 055G		19286	USSR	23 JUN	91.4	82.4	393	291		
1988 056A	OKEAN 1	19274	USSR	5 JUL	97.5	82.5	656	624		
1988 056B		19275	USSR	5 JUL	97.6	82.5	659	627		
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	0.0	35815	35761		
1988 063B	ECS 5	19331	ESA	21 JUL	1436.2	0.1	35939	35636		
1988 063C		19332	ESA	21 JUL	570.4	7.3	32554	254		
1988 063E		20127	INDIA	21 JUL	636.2	7.9	35837	413		
1988 064A	METEOR 3-2	19336	USSR	26 JUL	109.3	82.5	1206	1181		
1988 064B		19337	USSR	26 JUL	109.3	82.5	1204	1182		
1988 065A	COSMOS 1960	19338	USSR	28 JUL	92.9	65.8	418	412		
1988 065B		19339	USSR	28 JUL	92.2	65.8	384	378		
1988 066A	COSMOS 1961	19344	USSR	1 AUG	1436.1	0.4	35806	35767		
1988 066D		19347	USSR	1 AUG	1459.7	0.4	36391	36101		
1988 066E		19348	USSR	1 AUG	477.0	46.6	27494	194		
1988 069A	MOLNIYA 1-73	19377	USSR	12 AUG	717.6	63.8	39952	394		
1988 069D		19360	USSR	12 AUG	734.2	63.8	40852	310		
1988 071A	GORIZONT 16	19397	USSR	18 AUG	1436.2	0.4	35817	35758		
1988 071D		19400	USSR	18 AUG	1432.4	0.4	35793	35635		
1988 071E		19401	USSR	18 AUG	600.1	46.7	34244	131		
1988 071F		19402	USSR	18 AUG	396.5	46.7	22833	166		
1988 074A		19419	US	25 AUG	107.4	89.9	1179	1030		
1988 074B		19420	US	25 AUG	107.3	89.9	1176	1031		
1988 074C		19421	US	25 AUG	107.4	89.9	1179	1032		
1988 074D		19515	US	25 AUG	107.3	89.9	1177	1027		
1988 074E		19516	US	25 AUG	107.3	90.0	1170	1028		
1988 074F		19559	US	25 AUG	107.3	89.4	1174	1026		
1988 074G		19577	US	25 AUG	107.3	90.5	1171	1031		
1988 076A	COSMOS 1966	19445	USSR	30 AUG	717.7	63.6	39211	1141		
1988 076D		19448	USSR	30 AUG	705.6	63.7	38635	1116		
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	897	877		
1988 080B		19468	PRC	6 SEP	102.7	99.2	941	832		
1988 081A	GSTAR 3	19483	US	8 SEP	1436.2	1.9	35799	35776		
1988 081B	SBS 5	19484	US	8 SEP	1436.1	0.0	35789	35783		
1988 081C		19485	ESA	8 SEP	567.6	7.5	32390	269		
1988 081D		19487	ESA	8 SEP	145.5	7.4	5495	78		
1988 085A	COSMOS 1970	19501	USSR	16 SEP	675.7	65.1	19161	19096		
1988 085B	COSMOS 1971	19502	USSR	16 SEP	675.7	65.1	19159	19099		
1988 085C	COSMOS 1972	19503	USSR	16 SEP	675.7	65.1	19147	19111		
1988 085E		19505	USSR	16 SEP	674.9	65.1	19125	19091		

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INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1988 LAUNCHES (CONT.)										
1988 085F		19535	USSR	16 SEP	339.6	65.2	19037	455		
1988 085G		19537	USSR	16 SEP	339.6	64.9	19057	437		
1988 086A	CS-3B	19508	JAPAN	16 SEP	1436.2	0.0	35789	35788		
1988 086C		19558	JAPAN	16 SEP	629.3	27.9	35800	95		
1988 088J		19591	USSR	22 SEP	91.7	72.9	380	335		
1988 089A	NOAA 11	19531	US	24 SEP	102.0	99.0	860	844		
1988 089B		19532	US	24 SEP	101.4	98.9	829	822		
1988 089C		19534	US	24 SEP	101.2	98.9	823	810		
1988 090A	MOLNIYA 3-33	19541	USSR	29 SEP	717.5	63.7	39894	448		
1988 090D		19544	USSR	29 SEP	698.5	63.7	38934	464		
1988 091B	TDRS 3	19548	US	29 SEP	1436.1	0.0	35802	35771		35*
1988 091C		19549	US	29 SEP	624.2	26.5	35328	302		
1988 091D		19550	US	29 SEP	1433.7	3.1	40963	30517		
1988 092A	COSMOS 1974	19554	USSR	3 OCT	717.4	62.8	39505	832		
1988 092D		19557	USSR	3 OCT	705.5	63.0	38918	828		
1988 093A	COSMOS 1975	19573	USSR	11 OCT	97.5	82.5	657	621		
1988 093B		19574	USSR	11 OCT	97.6	82.5	659	623		
1988 095A	RADUGA 22	19596	USSR	20 OCT	1435.9	0.6	35802	35763		
1988 095E		19600	USSR	20 OCT	602.6	46.6	34363	144		
1988 095F		19601	USSR	20 OCT	545.2	46.6	31321	138		
1988 095F		19777	USSR	20 OCT	1470.4	0.7	36485	36424		
1988 096A	COSMOS 1977	19608	USSR	25 OCT	717.5	62.9	39276	1064		
1988 096D		19611	USSR	25 OCT	704.9	63.0	38667	1052		
1988 098A	TDF-1	19621	FRANCE	28 OCT	1436.1	0.0	35802	35773		
1988 098B		19622	FRANCE	28 OCT	612.3	4.0	34740	273		
1988 098C		20132	FRANCE	26 OCT	562.2	3.9	32166	203		
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	854	842		
1988 102B		19650	USSR	23 NOV	101.8	71.0	851	833		
1988 102C		19656	USSR	23 NOV	105.2	71.0	1164	842		
1988 102D		19657	USSR	23 NOV	105.2	71.0	1163	840		
1988 102E		19658	USSR	23 NOV	105.0	71.0	1142	841		
1988 102F		19659	USSR	23 NOV	104.8	71.0	1126	841		
1988 102G		19811	USSR	23 NOV	105.0	71.0	1142	842		
1988 102H		19813	USSR	23 NOV	105.2	71.0	1163	840		
1988 106B		19671	US	2 DEC	ELEMENTS NOT AVAILABLE					
1988 108A	EKRAN 19	19683	USSR	8 DEC	1436.1	0.7	35798	35774		
1988 108D		19686	USSR	8 DEC	1418.5	0.7	35511	35372		
1988 108E		19691	USSR	8 DEC	504.4	46.6	29093	129		
1988 108F		19699	USSR	10 DEC	572.2	46.7	32759	146		
1988 109A	SKYNET 4B	19687	UK	11 DEC	1436.1	2.3	35797	35777		
1988 109B	ASTRA 1A	19688	LUXBRG	11 DEC	1436.0	0.0	35921	35649		
1988 109C		19689	ESA	11 DEC	643.3	6.6	36170	444		
1988 109D		19690	ESA	11 DEC	552.2	6.7	31623	209		
1988 111A	PRC 26	19710	PRC	22 DEC	1436.0	0.1	35789	35780		
1988 112A	MOLNIYA 3-34	19713	USSR	22 DEC	717.7	62.8	39453	898		
1988 112D		19716	USSR	22 DEC	696.1	62.8	38389	891		
1988 113A	COSMOS 1985	19720	USSR	23 DEC	94.8	73.6	513	501		

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1988 LAUNCHES (CONT.)										
1988 113H		19764	USSR	23 DEC	95.0	73.5	522	511		
1988 113M		19943	USSR	23 DEC	93.2	73.5	449	416		
1988 113U		20181	USSR	23 DEC	93.7	73.5	468	440		
1988 113V		20182	USSR	23 DEC	93.7	73.5	472	439		
1988 113W		20183	USSR	23 DEC	93.8	73.5	476	443		
1988 113X		20184	USSR	23 DEC	93.4	73.5	459	425		
1988 115A	MOLNIYA 1-74	19730	USSR	28 DEC	717.7	63.1	39820	531		
1988 115D		19733	USSR	28 DEC	696.9	63.2	38787	533		
1989 LAUNCHES										
1989 001A	COSMOS 1987	19749	USSR	10 JAN	675.7	64.9	19145	19113		
1989 001B	COSMOS 1988	19750	USSR	10 JAN	675.7	64.9	19144	19113		
1989 001C	COSMOS 1989	19751	USSR	10 JAN	675.5	64.9	19149	19100		
1989 001E		19753	USSR	10 JAN	675.5	64.9	19153	19096		
1989 001F		19754	USSR	10 JAN	674.7	64.9	19145	19062		
1989 001G		19755	USSR	10 JAN	339.8	64.9	19008	494		
1989 001H		19856	USSR	10 JAN	339.8	65.0	18984	516		
1989 004A	GORIZONT 17	19765	USSR	26 JAN	1436.1	0.9	35789	35785		
1989 004D		19768	USSR	26 JAN	638.3	46.5	36068	291		
1989 004E		19771	USSR	26 JAN	625.2	46.6	35531	154		
1989 004F		19776	USSR	26 JAN	1469.5	0.9	36544	36332		
1989 005A	COSMOS 1992	19769	USSR	26 JAN	100.6	74.0	803	769		
1989 005B		19770	USSR	26 JAN	100.4	74.0	783	774		
1989 005C		19831	USSR	26 JAN	100.8	74.1	808	780		
1989 005D		19945	USSR	26 JAN	101.0	74.1	826	783		
1989 006A	INTELSAT 5A F-15	19772	ITSO	27 JAN	1436.1	0.0	35804	35770		
1989 006B		19773	ESA	27 JAN	638.6	8.0	35835	536		
1989 009A	COSMOS 1994	19785	USSR	10 FEB	113.9	82.6	1412	1394		
1989 009B	COSMOS 1995	19786	USSR	10 FEB	114.1	82.6	1413	1411		
1989 009C	COSMOS 1996	19787	USSR	10 FEB	114.0	82.6	1413	1405		
1989 009D	COSMOS 1997	19788	USSR	10 FEB	113.9	82.6	1414	1398		
1989 009E	COSMOS 1998	19789	USSR	10 FEB	113.8	82.6	1413	1388		
1989 009F	COSMOS 1999	19790	USSR	10 FEB	113.7	82.6	1414	1382		
1989 009G		19791	USSR	10 FEB	114.7	82.6	1470	1413		
1989 011A	COSMOS 2001	19796	USSR	14 FEB	717.6	62.9	39316	1028		
1989 011D		19799	USSR	14 FEB	705.8	62.9	38763	997		
1989 012A	COSMOS 2002	19800	USSR	14 FEB	96.4	65.8	1006	167		
1989 013A		19802	US	14 FEB	718.0	55.1	20352	20012		
1989 013C		19804	US	14 FEB	142.5	37.4	5182	135		
1989 014A	MOLNIYA 1-75	19807	USSR	15 FEB	717.7	63.1	39711	636		
1989 014D		19810	USSR	15 FEB	694.4	63.1	38571	624		
1989 016A	EXOS-D	19822	JAPAN	21 FEB	207.1	75.1	10166	264		
1989 016C		19824	JAPAN	21 FEB	204.5	75.1	9976	263		
1989 016K		19952	JAPAN	21 FEB	189.3	75.2	8845	242		
1989 016L		19962	JAPAN	21 FEB	197.4	75.7	9441	261		
1989 016M		19963	JAPAN	21 FEB	203.1	75.2	9866	266		
1989 016P		20034	JAPAN	21 FEB	202.9	74.5	9855	266		
1989 017A	COSMOS 2004	19826	USSR	22 FEB	105.0	83.0	1015	969		
1989 018A	METEOR 2-18	19851	USSR	28 FEB	104.0	82.5	957	937		

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1989 LAUNCHES (CONT.)										
1989 018B		19852	USSR	28 FEB	104.0	82.5	961	935		
1989 020A	JCSAT-1	19874	JAPAN	6 MAR	1436.2	0.1	35793	35782		
1989 020B	MOP-1	19876	ESA	6 MAR	1436.0	0.8	35798	35770		
1989 020C		19877	ESA	6 MAR	602.8	6.7	34333	183		
1989 020D		19878	ESA	6 MAR	589.4	6.7	33588	229		
1989 021B	TDRS-D	19883	US	13 MAR	1436.1	0.2	36793	34786		
1989 021C		19884	US	13 MAR	605.7	26.2	34448	224		
1989 021D		19913	US	13 MAR	1431.1	2.5	35770	35608		
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	115.1	74.0	1470	1454		
1989 025F	COSMOS 2013	19907	USSR	24 MAR	115.3	74.0	1478	1462		
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	1467		
1989 025J		19910	USSR	24 MAR	117.7	74.0	1684	1471		
1989 026A		19911	US	24 MAR	94.5	47.7	502	486		
1989 027A	TELE-X	19919	SWEDEN	2 APR	1436.1	0.1	35898	35675		
1989 027B		19920	ESA	2 APR	630.5	3.2	35795	163		
1989 028A	COSMOS 2016	19921	USSR	4 APR	104.7	83.0	1012	952		
1989 028B		19922	USSR	4 APR	104.6	83.0	1002	949		
1989 030A	RADUGA 23	19928	USSR	14 APR	1436.2	1.0	35799	35779		
1989 030D		19931	USSR	14 APR	1470.5	1.0	36536	36380		
1989 030E		19932	USSR	14 APR	635.3	46.7	36044	161		
1989 030F		19933	USSR	14 APR	597.5	46.8	34087	154		
1989 033B	MAGELLAN	19969	US	4 MAY	TRANS-VENUS TRAJECTORY					
1989 033C		19970	US	4 MAY	447.1	27.8	25680	302		
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 038H		20079	USSR	25 MAY	ELEMENTS NOT AVAILABLE					
1989 039A	COSMOS 2022	20024	USSR	31 MAY	675.7	64.9	19138	19119		
1989 039B	COSMOS 2023	20025	USSR	31 MAY	675.7	65.4	19152	19106		
1989 039C	COSMOS 2024	20026	USSR	31 MAY	675.4	64.9	19144	19098		
1989 039E		20028	USSR	31 MAY	674.0	65.1	19112	19059		
1989 039F		20044	USSR	31 MAY	675.4	64.9	19140	19101		
1989 039G		20081	USSR	31 MAY	340.1	64.9	19084	435		
1989 039H		20082	USSR	31 MAY	340.0	65.0	19087	433		
1989 041A	SUPERBIRD A	20040	JAPAN	5 JUN	1436.2	0.0	35799	35776		
1989 041B		20041	FRG	5 JUN	1436.1	0.0	35804	35769		
1989 041C		20042	ESA	5 JUN	617.4	7.1	35044	233		
1989 041D		20043	ESA	5 JUN	577.1	7.2	32951	213		
1989 042A	COSMOS 2026	20045	USSR	7 JUN	104.7	82.9	1007	949		
1989 042B		20046	USSR	7 JUN	104.6	82.9	999	947		
1989 043A	MOLNIYA 3-35	20052	USSR	8 JUN	717.6	63.0	39810	535		
1989 043D		20055	USSR	8 JUN	734.7	63.0	40662	524		
1989 044A		20061	US	10 JUN	717.9	54.6	20401	19961		
1989 044C		20063	US	10 JUN	331.0	37.6	18769	176		

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1989 LAUNCHES (CONT.)										
1989 045A	COSMOS 2027	20064	USSR	14 JUN	94.4	65.8	509	464		
1989 045B		20065	USSR	14 JUN	94.2	65.8	503	453		
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 048A	RADUGA 1-1	20083	USSR	21 JUN	1436.3	1.2	35822	35760		
1989 048D		20086	USSR	21 JUN	1471.1	1.2	36570	36365		
1989 048E		20093	USSR	21 JUN	643.2	46.8	36411	199		
1989 048F		20094	USSR	21 JUN	646.9	46.9	36539	255		
1989 050A	NADEZHDA	20103	USSR	4 JUL	104.8	83.0	1012	955		
1989 050B		20104	USSR	4 JUL	104.7	83.0	1002	956		
1989 051D		20140	USSR	5 JUL	90.6	82.4	310	293		
1989 052A	GORIZONT 18	20107	USSR	5 JUL	1436.1	1.3	35807	35774		
1989 052D		20110	USSR	5 JUL	1397.3	1.3	35141	34904		
1989 052E		20115	USSR	5 JUL	615.2	46.9	34948	215		
1989 052F		20116	USSR	5 JUL	618.1	47.0	35047	270		
1989 053A	OLYMPUS	20122	ESA	12 JUL	1436.2	0.0	35799	35776		
1989 053B		20123	ESA	12 JUL	616.4	6.5	34984	243		
1989 053C		20229	ESA	12 JUN	642.9	6.5	36144	447		
1989 055C		20160	USSR	18 JUL	88.3	82.6	198	184		
1989 058A	COSMOS 2033	20147	USSR	24 JUL	92.7	65.0	415	402		
1989 059A	COSMOS 2034	20149	USSR	25 JUL	104.9	82.9	1011	964		
1989 059B		20150	USSR	25 JUL	104.7	82.9	1004	957		
1989 061B		20167	US	8 AUG	ELEMENTS NOT AVAILABLE					
1989 061C		20172	US	8 AUG	ELEMENTS NOT AVAILABLE					
1989 062A	TV-SAT 2	20168	FRG	8 AUG	1436.2	0.0	35806	35769		
1989 062B	HIPPARCOS	20169	ESA	8 AUG	639.8	6.8	35892	540		
1989 062C		20170	ESA	8 AUG	637.1	7.4	35897	397		
1989 062D		20171	ESA	8 AUG	604.8	7.2	34373	248		
1989 064A		20185	US	18 AUG	717.9	55.0	20249	20113		
1989 064C		20187	US	18 AUG	322.2	37.7	18247	131		
1989 066A	PROGRESS/M	20191	USSR	23 AUG	92.5	51.6	408	386		
1989 067A	BSB-R1	20193	UK	27 AUG	1436.2	0.1	35798	35777		
1989 067B		20194	US	27 AUG	89.4	26.7	271	215		
1989 067C		20195	US	27 AUG	645.0	23.3	36465	236		
1989 068A	COSMOS 2037	20196	USSR	28 AUG	116.0	73.6	1523	1481		
1989 068B		20197	USSR	28 AUG	116.0	73.6	1521	1481		
1989 069A		20202	US	4 SEP	ELEMENTS NOT AVAILABLE					
1989 069B		20203	US	4 SEP	ELEMENTS NOT AVAILABLE					
1989 069D		20205	US	4 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1989 070A	GMS-4	20217	JAPAN	5 SEP	1436.2	1.6	35854	35720		
1989 070B		20230	JAPAN	5 SEP	667.7	28.6	37640	215		
1989 071A	SOYUZ TM-8	20218	USSR	5 SEP	92.5	51.6	407	387		
1989 072A		20220	US	6 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1989 074A	COSMOS 2038	20232	USSR	14 SEP	113.8	82.6	1408	1390		
1989 074B	COSMOS 2039	20233	USSR	14 SEP	113.7	82.6	1408	1384		
1989 074C	COSMOS 2040	20234	USSR	14 SEP	114.0	82.6	1414	1407		
1989 074D	COSMOS 2041	20235	USSR	14 SEP	113.8	82.6	1408	1394		
1989 074E	COSMOS 2042	20236	USSR	14 SEP	113.9	82.6	1408	1400		

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1989 LAUNCHES (CONT.)										
1989 074F	COSMOS 2043	20237	USSR	14 SEP	113.9	82.6	1409	1405		
1989 074G		20238	USSR	14 SEP	114.7	82.6	1471	1408		
1989 077A		20253	US	25 SEP	1436.5	5.0	35802	35787		
1989 077B		20254	US	25 SEP	599.5	28.5	34172	175		
1989 078A	MOLNIYA 1-76	20255	USSR	27 SEP	717.4	62.8	39700	637		
1989 078B		20256	USSR	27 SEP	90.4	62.8	400	190		
1989 078C		20257	USSR	27 SEP	90.2	62.8	389	181		
1989 078D		20258	USSR	27 SEP	698.4	62.8	38770	625		
1989 079A	COSMOS 2046	20259	USSR	27 SEP	92.8	65.0	415	402		
1989 080A	INTER-COSMOS 24	20261	USSR	28 SEP	115.8	82.6	2488	498		
1989 080C		20262	USSR	28 SEP	115.8	82.6	2487	497		
1989 081A	GORIZANT 19	20263	USSR	28 SEP	1435.9	1.4	35793	35773		
1989 081D		20266	USSR	28 SEP	1431.3	1.4	35830	35555		
1989 081E		20270	USSR	28 SEP	632.6	47.4	35802	261		
1989 081F		20271	USSR	28 SEP	634.0	47.4	35793	342		

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 047E		20112	USSR	16 JUL	INITIAL ELEMENTS NOT AVAILABLE				
1989 047F		20113	USSR	16 JUL	INITIAL ELEMENTS NOT AVAILABLE				
1989 047G		20114	USSR	16 JUN	INITIAL ELEMENTS NOT AVAILABLE				
1989 049D		20118	USSR	28 JUN	INITIAL ELEMENTS NOT AVAILABLE				
1989 049F		20120	USSR	28 JUN	INITIAL ELEMENTS NOT AVAILABLE				
1989 049G		20121	USSR	27 JUN	INITIAL ELEMENTS NOT AVAILABLE				
1989 051A	COSMOS 2029	20105	USSR	5 JUL	88.7	82.3	270	218	
1989 051B		20106	USSR	5 JUL	87.7	82.3	203	162	
1989 051H		20144	USSR	5 JUL	INITIAL ELEMENTS NOT AVAILABLE				
1989 052B		20108	USSR	5 JUL	88.4	51.6	200	193	
1989 052C		20109	USSR	5 JUL	87.6	51.6	148	137	
1989 054A	COSMOS 2030	20124	USSR	12 JUL	89.6	67.1	375	265	
1989 054B		20125	USSR	12 JUL	89.4	67.1	344	278	
1989 055B		20135	USSR	18 JUL	88.5	82.5	240	214	
1989 055E		20162	USSR	18 JUL	INITIAL ELEMENTS NOT AVAILABLE				
1989 055F		20163	USSR	18 JUL	INITIAL ELEMENTS NOT AVAILABLE				
1989 055G		20165	USSR	18 JUL	INITIAL ELEMENTS NOT AVAILABLE				
1989 055H		20166	USSR	18 JUL	INITIAL ELEMENTS NOT AVAILABLE				
1989 056B		20137	USSR	18 JUL	88.8	50.6	273	232	
1989 056C		20138	USSR	18 JUL	INITIAL ELEMENTS NOT AVAILABLE				
1989 056D		20206	USSR	18 JUL	INITIAL ELEMENTS NOT AVAILABLE				
1989 056E		20207	USSR	18 JUL	INITIAL ELEMENTS NOT AVAILABLE				
1989 056F		20208	USSR	18 JUL	INITIAL ELEMENTS NOT AVAILABLE				
1989 056G		20209	USSR	18 JUL	INITIAL ELEMENTS NOT AVAILABLE				
1989 056J		20210	USSR	18 JUL	INITIAL ELEMENTS NOT AVAILABLE				
1989 056K		20212	USSR	18 JUL	INITIAL ELEMENTS NOT AVAILABLE				
1989 056L		20213	USSR	18 JUL	INITIAL ELEMENTS NOT AVAILABLE				
1989 057B		20146	USSR	20 JUL	88.7	82.3	265	212	
1989 057D		20157	USSR	20 JUL	INITIAL ELEMENTS NOT AVAILABLE				
1989 057E		20158	USSR	20 JUL	INITIAL ELEMENTS NOT AVAILABLE				
1989 057F		20159	USSR	20 JUL	INITIAL ELEMENTS NOT AVAILABLE				
1989 058B		20148	USSR	20 JUL	84.8	64.9	32	23	
1989 060A	COSMOS 2035	20151	USSR	2 AUG	81.4	82.5	262	241	
1989 060B		20152	USSR	2 AUG	81.4	82.5	210	166	
1989 060C		20177	USSR	2 AUG	INITIAL ELEMENTS NOT AVAILABLE				
1989 060D		20178	USSR	2 AUG	INITIAL ELEMENTS NOT AVAILABLE				
1989 060E		20179	USSR	2 AUG	INITIAL ELEMENTS NOT AVAILABLE				
1989 060F		20180	USSR	2 AUG	INITIAL ELEMENTS NOT AVAILABLE				
1989 061A	STS-28	20164	US	8 AUG	90.4	57.0	316	311	
1989 063B		20176	USSR	15 AUG	80.7	82.2	64	16	
1989 063C		20231	USSR	16 AUG	INITIAL ELEMENTS NOT AVAILABLE				
1989 063D		20239	USSR	16 AUG	INITIAL ELEMENTS NOT AVAILABLE				
1989 063E		20240	USSR	16 AUG	INITIAL ELEMENTS NOT AVAILABLE				
1989 063F		20241	USSR	16 AUG	INITIAL ELEMENTS NOT AVAILABLE				
1989 065B		20189	USSR	22 AUG	85.6	62.7	92	84	
1989 065D		20214	USSR	24 AUG	INITIAL ELEMENTS NOT AVAILABLE				
1989 065E		20215	USSR	24 AUG	INITIAL ELEMENTS NOT AVAILABLE				
1989 065F		20216	USSR	24 AUG	INITIAL ELEMENTS NOT AVAILABLE				
1989 066B		20192	USSR	23 AUG	84.8	51.6	33	24	
1989 069C		20204	US	4 SEP	96.8	28.6	1088	149	
1989 071B		20219	USSR	5 SEP	INITIAL ELEMENTS NOT AVAILABLE				

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 072B		20221	US	6 SEP	INITIAL ELEMENTS NOT AVAILABLE				
1989 073A	RESURS F-5	20222	USSR	6 SEP	86.6	82.3	260	190	
1989 073B		20223	USSR	6 SEP	88.0	82.3	221	168	
1989 073D		20249	USSR	22 SEP	INITIAL ELEMENTS NOT AVAILABLE				
1989 073E		20250	USSR	22 SEP	INITIAL ELEMENTS NOT AVAILABLE				
1989 073F		20251	USSR	22 SEP	INITIAL ELEMENTS NOT AVAILABLE				
1989 073G		20252	USSR	22 SEP	INITIAL ELEMENTS NOT AVAILABLE				
1989 075A	COSMOS 2044	20242	USSR	15 SEP	89.3	82.3	294	217	
1989 075B		20243	USSR	15 SEP	INITIAL ELEMENTS NOT AVAILABLE				
1989 075D		20268	USSR	15 SEP	INITIAL ELEMENTS NOT AVAILABLE				
1989 075E		20269	USSR	15 SEP	INITIAL ELEMENTS NOT AVAILABLE				
1989 076B		20245	USSR	22 SEP	89.5	69.9	316	213	
1989 076C		20246	USSR	22 SEP	INITIAL ELEMENTS NOT AVAILABLE				
1989 076D		20247	USSR	22 SEP	INITIAL ELEMENTS NOT AVAILABLE				
1989 081B		20264	USSR	28 SEP	87.7	51.6	182	161	
1989 081C		20265	USSR	28 SEP	86.4	51.6	75	38	

OBJECTS DECAYED WITHIN THE REPORTING PERIOD

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1963 031B		625	US	26 JUL	9 JUL 89	
1963 047J		1994	US	27 NOV	30 JUL 89	
1965 007A	OSO 2	987	US	3 FEB	9 AUG 89	
1965 039B		1385	US	25 MAY	8 JUL 89	
1965 082Z		1662	US	15 OCT	31 AUG 89	
1965 082DQ		1825	US	15 OCT	3 JUL 89	
1965 082KM		2699	US	15 OCT	3 JUL 89	
1965 082UK		14842	US	15 OCT	11 SEP 89	
1966 005K		14226	US	28 JAN	15 JUL 89	
1966 038B		2169	USSR	11 MAY	12 JUL 89	
1967 018B		2696	USSR	28 FEB	1 SEP 89	
1968 091D		3507	USSR	20 OCT	9 AUG 89	
1968 091CH		6751	USSR	20 OCT	27 SEP 89	
1968 091DP		20015	USSR	26 OCT	24 JUL 89	
1968 097E		3552	USSR	1 NOV	6 JUL 89	
1968 097DB		5789	USSR	1 NOV	21 SEP 89	
1969 082AK		4167	US	30 SEP	4 SEP 89	
1969 082FJ		4465	US	30 SEP	18 SEP 89	
1969 082KE		5965	US	30 SEP	12 JUL 89	
1969 082KN		15549	US	30 SEP	31 AUG 89	
1969 082KY		17724	US	30 SEP	3 JUL 89	
1969 082KZ		18256	US	30 SEP	7 SEP 89	
1970 025PR		18811	US	8 APR	14 AUG 89	
1971 012D		4958	US	17 FEB	20 SEP 89	
1971 015AA		5101	USSR	25 FEB	24 AUG 89	
1971 015BU		5530	USSR	25 FEB	11 AUG 89	
1971 015CU		15343	USSR	25 FEB	17 SEP 89	
1972 058U		7848	US	23 JUL	20 JUL 89	
1972 058EL		8318	US	23 JUL	10 JUL 89	
1972 058JA		13933	US	23 JUL	24 SEP 89	
1972 058JJ		14878	US	23 JUL	16 AUG 89	
1974 089FB		18901	US	15 NOV	11 JUL 89	
1975 004Q		8692	US	22 JAN	28 AUG 89	
1975 004FH		9545	US	22 JAN	21 SEP 89	
1975 004HG		14882	US	22 JAN	2 JUL 89	
1976 085A	COSMOS 851	9389	USSR	27 AUG	5 AUG 89	
1977 065CX		10270	US	14 JUL	11 SEP 89	
1978 026AW		12205	US	5 MAR	21 JUL 89	
1978 026BL		12219	US	5 MAR	10 AUG 89	
1978 026CN		12245	US	5 MAR	15 JUL 89	
1978 026DR		12272	US	5 MAR	7 AUG 89	
1978 026DW		12277	US	5 MAR	17 AUG 89	
1978 026GZ		17767	US	5 MAR	12 AUG 89	
1978 026HL		19237	US	5 MAR	15 JUL 89	
1979 017BZ		16310	US	24 FEB	25 AUG 89	
1979 017CB		16312	US	24 FEB	24 AUG 89	
1979 017DT		16413	US	24 FEB	11 AUG 89	
1979 017EW		16472	US	24 FEB	2 AUG 89	
1979 017LM		18612	US	24 FEB	5 AUG 89	
1980 030G		11775	USSR	18 APR	10 AUG 89	
1980 037A	COSMOS 1179	11796	USSR	14 MAY	18 JUL 89	

OBJECTS DECAYED WITHIN THE REPORTING PERIOD

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1980 069N		13318	USSR	4 NOV	5 SEP 89	
1980 069AZ		13358	USSR	4 NOV	6 JUL 89	
1980 069SS		14449	USSR	4 NOV	3 JUL 89	
1980 069BY		17655	USSR	4 NOV	12 AUG 89	
1981 028BJ		13781	USSR	24 MAR	4 AUG 89	
1981 053CF		12738	USSR	4 JUN	12 SEP 89	
1981 053HV		14359	USSR	4 JUN	7 JUL 89	
1981 053HZ		14363	USSR	4 JUN	20 AUG 89	
1981 053MU		18638	USSR	4 JUN	11 SEP 89	
1982 014B		13136	US	26 FEB	31 AUG 89	
1982 026A	COSMOS 1345	13118	USSR	31 MAR	27 SEP 89	
1982 026B		13119	USSR	31 MAR	10 AUG 89	
1983 044AD		15710	USSR	7 MAY	5 AUG 89	
1983 044CH		17017	USSR	7 MAY	3 AUG 89	
1983 044CX		17734	USSR	7 MAY	13 SEP 89	
1983 044DJ		17745	USSR	7 MAY	30 AUG 89	
1983 044DP		17750	USSR	7 MAY	4 JUL 89	
1983 044DZ		18243	USSR	7 MAY	7 SEP 89	
1983 044EA		18244	USSR	7 MAY	13 SEP 89	
1983 044EG		18378	USSR	7 MAY	2 JUL 89	
1983 044EX		18797	USSR	7 MAY	11 AUG 89	
1984 015A	OHZORA	14722	JAPAN	14 FEB	19 JUL 89	
1984 104B		15329	USSR	27 SEP	9 SEP 89	
1986 019CC		17230	ESA	22 FEB	6 SEP 89	
1986 019CJ		17236	ESA	22 FEB	20 AUG 89	
1986 019DD		17321	ESA	22 FEB	1 AUG 89	
1986 019DK		17338	ESA	22 FEB	27 SEP 89	
1986 019FU		17433	ESA	22 FEB	20 AUG 89	
1986 019GM		17450	ESA	22 FEB	18 AUG 89	
1986 019HP		17476	ESA	22 FEB	26 AUG 89	
1986 019HQ		17477	ESA	22 FEB	13 JUL 89	
1986 019HS		17479	ESA	22 FEB	16 JUL 89	
1986 019HT		17539	ESA	22 FEB	20 JUL 89	
1986 019JA		17546	ESA	22 FEB	21 JUL 89	
1986 019JG		17552	ESA	22 FEB	7 SEP 89	
1986 019JS		17591	ESA	22 FEB	7 AUG 89	
1986 019LB		17685	ESA	22 FEB	13 AUG 89	
1986 019LM		17695	ESA	22 FEB	5 SEP 89	
1986 019LY		17809	ESA	22 FEB	27 AUG 89	
1986 019MK		17944	ESA	22 FEB	11 SEP 89	
1986 019MZ		17958	ESA	22 FEB	27 AUG 89	
1986 019NA		17959	ESA	22 FEB	24 AUG 89	
1986 019NB		17960	ESA	22 FEB	21 AUG 89	
1986 019NE		17978	ESA	22 FEB	9 SEP 89	
1986 019NU		17992	ESA	22 FEB	3 JUL 89	
1986 019PQ		18147	ESA	22 FEB	14 AUG 89	
1986 019PU		18151	ESA	22 FEB	19 SEP 89	
1986 019QM		18180	ESA	22 FEB	24 JUL 89	
1986 019QN		18181	ESA	22 FEB	22 JUL 89	
1986 019SB		18293	ESA	22 FEB	15 AUG 89	
1986 019SD		18295	ESA	22 FEB	9 SEP 89	

OBJECTS DECAYED WITHIN THE REPORTING PERIOD

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1986 019TW		18778	ESA	22 FEB	19 SEP 89	
1986 019UF		18905	ESA	22 FEB	4 SEP 89	
1986 019UL		19050	ESA	24 FEB	26 AUG 89	
1986 019VA		19513	ESA	22 FEB	11 SEP 89	
1986 019VE		19834	USSR	22 FEB	23 AUG 89	
1986 019VH		19892	ESA	22 FEB	22 JUL 89	
1986 019VJ		19966	ESA	22 FEB	6 JUL 89	
1987 012E		18407	JAPAN	5 FEB	11 AUG 89	
1987 020N		18735	USSR	20 FEB	29 JUL 89	
1987 020CJ		19815	USSR	20 FEB	6 AUG 89	
1987 020CM		19837	USSR	20 FEB	11 JUL 89	
1987 020CQ		19854	USSR	20 FEB	23 JUL 89	
1987 020CR		19861	USSR	20 FEB	26 SEP 89	
1987 020CS		19888	USSR	20 FEB	2 AUG 89	
1987 020CU		19955	USSR	20 FEB	17 JUL 89	
1987 020CZ		20019	USSR	20 FEB	8 SEP 89	
1987 064A	COSMOS 1870	18225	USSR	25 JUL	29 JUL 89	
1987 096E		18579	USSR	26 NOV	12 JUL 89	
1988 014B		18923	PRC	7 MAR	20 JUL 89	
1988 063D		19335	ESA	21 JUL	12 JUL 89	
1988 065C		20190	USSR	22 AUG	23 AUG 89	
1988 113R		20097	USSR	23 DEC	26 AUG 89	
1988 113S		20098	USSR	23 DEC	25 AUG 89	
1989 012B		19801	USSR	14 FEB	27 JUL 89	
1989 022H		19916	USSR	16 MAR	25 AUG 89	
1989 024A	COSMOS 2007	19900	USSR	23 MAR	22 SEP 89	
1989 036A	COSMOS 2020	19986	USSR	17 MAY	15 JUL 89	
1989 037A	COSMOS 2021	20000	USSR	24 MAY	6 JUL 89	
1989 038C		20056	USSR	25 MAY	23 JUL 89	
1989 038D		20060	USSR	25 MAY	24 JUL 89	
1989 040H		20072	USSR	1 JUN	1 JUL 89	
1989 043B		20053	USSR	8 JUN	5 JUL 89	
1989 043C		20054	USSR	8 JUN	8 JUL 89	
1989 043E		20057	USSR	8 JUN	6 JUL 89	
1989 044B		20062	US	10 JUN	12 JUL 89	
1989 047A	COSMOS 2028	20073	USSR	16 JUN	6 JUL 89	
1989 047D		20111	USSR	16 JUN	13 JUL 89	
1989 047E		20112	USSR	16 JUL	6 JUL 89	
1989 047F		20113	USSR	16 JUL	7 JUL 89	
1989 047G		20114	USSR	16 JUN	10 JUL 89	
1989 049A		20095	USSR	27 JUN	11 JUL 89	
1989 049C		20117	USSR	28 JUN	14 JUL 89	
1989 049D		20118	USSR	28 JUN	15 JUL 89	
1989 049E		20119	USSR	25 JUL	5 AUG 89	
1989 049F		20120	USSR	28 JUN	18 JUL 89	
1989 049G		20121	USSR	27 JUN	14 JUL 89	
1989 051A	COSMOS 2029	20105	USSR	5 JUL	19 JUL 89	
1989 051B		20106	USSR	5 JUL	7 JUL 89	
1989 051C		20139	USSR	5 JUL	15 AUG 89	
1989 051E		20141	USSR	5 JUL	7 AUG 89	
1989 051F		20142	USSR	5 JUL	18 AUG 89	

OBJECTS DECAYED WITHIN THE REPORTING PERIOD

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1989 051G		20143	USSR	5 JUL	8 AUG 89	
1989 051H		20144	USSR	5 JUL	23 JUL 89	
1989 052B		20108	USSR	5 JUL	7 JUL 89	
1989 052C		20109	USSR	5 JUL	6 JUL 89	
1989 054A	COSMOS 2030	20124	USSR	12 JUL	29 JUL 89	
1989 054B		20125	USSR	12 JUL	16 JUL 89	
1989 055A	RESURS-F3	20134	USSR	18 JUL	8 AUG 89	
1989 055B		20135	USSR	18 JUL	20 JUL 89	
1989 055D		20161	USSR	18 JUL	19 SEP 89	
1989 055F		20163	USSR	18 JUL	27 AUG 89	
1989 055G		20165	USSR	18 JUL	13 AUG 89	
1989 055H		20166	USSR	18 JUL	12 AUG 89	
1989 056A	COSMOS 2031	20136	USSR	18 JUL	15 SEP 89	
1989 056B		20137	USSR	18 JUL	21 JUL 89	
1989 056C		20138	USSR	18 JUL	19 JUL 89	
1989 056E		20207	USSR	18 JUL	4 SEP 89	
1989 056F		20208	USSR	18 JUL	4 SEP 89	
1989 056G		20209	USSR	18 JUL	4 SEP 89	
1989 056J		20210	USSR	18 JUL	4 SEP 89	
1989 056K		20212	USSR	18 JUL	4 SEP 89	
1989 056L		20213	USSR	18 JUL	3 SEP 89	
1989 057A	COSMOS 2032	20145	USSR	20 JUL	3 AUG 89	
1989 057B		20146	USSR	20 JUL	22 JUL 89	
1989 057C		20156	USSR	20 JUL	10 AUG 89	
1989 057D		20157	USSR	20 JUL	4 AUG 89	
1989 057E		20158	USSR	20 JUL	6 AUG 89	
1989 058B		20148	USSR	20 JUL	24 JUL 89	
1989 060A	COSMOS 2035	20151	USSR	2 AUG	16 AUG 89	
1989 060B		20152	USSR	2 AUG	4 AUG 89	
1989 060C		20177	USSR	2 AUG	18 AUG 89	
1989 060D		20178	USSR	2 AUG	17 AUG 89	
1989 060E		20179	USSR	2 AUG	17 AUG 89	
1989 060F		20180	USSR	2 AUG	22 AUG 89	
1989 061A	STS-28	20164	US	8 AUG	13 AUG 89	
1989 063A	RESURS-F4	20175	USSR	15 AUG	14 SEP 89	
1989 063B		20176	USSR	15 AUG	16 AUG 89	
1989 063C		20231	USSR	16 AUG	15 SEP 89	
1989 063D		20239	USSR	16 AUG	16 SEP 89	
1989 063E		20240	USSR	16 AUG	19 SEP 89	
1989 063F		20241	USSR	16 AUG	16 SEP 89	
1989 064B		20186	US	18 AUG	9 SEP 89	
1989 065A	COSMOS 2036	20188	USSR	22 AUG	5 SEP 89	
1989 065B		20189	USSR	22 AUG	29 AUG 89	
1989 065E		20215	USSR	24 AUG	5 SEP 89	
1989 065F		20216	USSR	24 AUG	5 SEP 89	
1989 069C		20204	US	4 SEP	24 SEP 89	
1989 071B		20219	USSR	5 SEP	5 SEP 89	
1989 072B		20221	US	6 SEP	6 SEP 89	
1989 073B		20223	USSR	6 SEP	8 SEP 89	
1989 073C		20248	USSR	22 SEP	12 OCT 89	
1989 073D		20249	USSR	22 SEP	26 SEP 89	

OBJECTS DECAYED WITHIN THE REPORTING PERIOD

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1989 073E		20250	USSR	22 SEP	28 SEP 89	
1989 073F		20251	USSR	22 SEP	25 SEP 89	
1989 073G		20252	USSR	22 SEP	24 SEP 89	
1989 075A	COSMOS 2044	20242	USSR	15 SEP	29 SEP 89	
1989 075B		20243	USSR	15 SEP	18 SEP 89	
1989 075C		20267	USSR	15 SEP	1 OCT 89	
1989 075D		20268	USSR	15 SEP	30 SEP 89	
1989 075E		20269	USSR	15 SEP	29 SEP 89	
1989 076A	COSMOS 2045	20244	USSR	22 SEP	2 OCT 89	
1989 076B		20245	USSR	22 SEP	28 SEP 89	
1989 076C		20246	USSR	22 SEP	23 SEP 89	
1989 076D		20247	USSR	22 SEP	23 SEP 89	
1989 076E		20274	USSR	22 SEP	4 OCT 89	
1989 076F		20275	USSR	22 SEP	5 OCT 89	
1989 076G		20276	USSR	22 SEP	9 OCT 89	
1989 076H		20277	USSR	22 SEP	4 OCT 89	
1989 076J		20278	USSR	22 SEP	4 OCT 89	
1989 079B		20260	USSR	27 SEP	28 SEP 89	
1989 081B		20264	USSR	28 SEP	30 SEP 89	
1989 081C		20265	USSR	28 SEP	29 SEP 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* 138 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* 148 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* 69 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1981 026A. 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* 159 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* 46 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* 51 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* 493 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* 59 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* 104 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* 39 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* 30 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1986 067B. 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 017B. 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* 28 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