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SPACE OPERATIONS CONTROL CENTER

SATELLITE SITUATION REPORT

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GODDARD SPACE FLIGHT CENTER

GREENBELT, MD.

SPACE OPERATIONS CONTROL CENTER
GODDARD SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

VOLUME 4 NO. 14 JULY 31, 1964

SATELLITE SITUATION REPORT

THE FOLLOWING REPORT REFLECTS DATA COMPUTED AND COMPILED BY THE GODDARD SPACE FLIGHT CENTER, NORAD, AND SMITHSONIAN ASTROPHSICAL OBSERVATORY AS OF 1200Z ON JULY 13, 1964.

OBJECTS IN ORBIT

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	NODAL PERIOD	INCLI-NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)
1958 LAUNCHES									
ALPHA 1	EXPLORER 1	004	US	1 FEB	104.6	33.18	1603	341	
BETA 1	ROCKET BODY	016	US	17 MAR	138.4	34.25	4316	653	
BETA 2	VANGUARD 1	005	US	17 MAR	134.0	34.24	3958	630	108.012 &
1959 LAUNCHES									
ALPHA 1	VANGUARD 2	011	US	17 FEB	125.4	32.87	3284	557	
ALPHA 2	ROCKET BODY	012	US	17 FEB	129.7	32.87	3660	553	
ETA 1	VANGUARD 3	020	US	18 SEP	129.8	33.34	3723	506	
MU 1	LUNIK 1	112	USSR	2 JAN	HELIOCENTRIC ORBIT				
NU 1	PIONEER 4	113	US	3 MAR	HELIOCENTRIC ORBIT				
IOTA 1	EXPLORER 7	022	US	13 OCT	101.1	50.32	1062	564	
IOTA 2	ROCKET BODY	023	US	13 OCT	100.9	50.32	1051	552	
1960 LAUNCHES									
ALPHA 1	PIONEER 5	027	US	11 MAR	HELIOCENTRIC ORBIT				
BETA 1	ROCKET BODY	028	US	1 APR	99.1	48.40	737	694	
BETA 2	TIROS 1	029	US	1 APR	99.2	48.38	742	697	
BETA 3	NONE	101	US	1 APR	97.9	48.49	704	609	
BETA 4	NONE	115	US	1 APR	99.9	48.16	799	706	
GAMMA 2	TRANSIT 1B	031	US	13 APR	93.9	51.24	580	352	
GAMMA 4	NONE	099	US	13 APR	96.7	51.27	735	470	
EPSILON 3	NONE	036	USSR	15 MAY	91.1	64.98	401	259	
ZETA 1	MIDAS 2	043	US	24 MAY	94.3	33.02	496	471	
ETA 1	TRANSIT 2A	045	US	22 JUN	101.6	66.72	1062	610	
ETA 2	GREB	046	US	22 JUN	101.6	66.71	1058	611	
ETA 3	ROCKET BODY	047	US	22 JUN	101.4	66.71	1045	606	
ETA 4		840	US	22 JUN	101.5	66.69	1050	615	
ETA 5		841	US	22 JUN	101.5	66.69	1051	610	

OBJECTS IN ORBIT

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	NODAL PERIOD	INCLI-NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)
1960 LAUNCHES (CONT'D)									
IOTA 1	ECHO I	049	US	12 AUG	114.2	47.28	1909	924	
IOTA 2	ROCKET BODY	050	US	12 AUG	118.1	47.24	1679	1508	
IOTA 3	METAL OBJECT	051	US	12 AUG	118.2	47.24	1679	1524	
IOTA 4	METAL OBJECT	052	US	12 AUG	CURRENT ELEMENTS NOT MAINTAINED				
IOTA 5	METAL OBJECT	053	US	12 AUG	118.4	47.30	1696	1524	
NU 1	COURIER 1B	058	US	4 OCT	107.0	23.28	1209	966	
NU 2	ROCKET BODY	059	US	4 OCT	106.6	28.22	1207	924	
XI 1	EXPLORER 8	060	US	3 NOV	112.3	49.95	2248	418	
XI 2	ROCKET BODY	062	US	3 NOV	111.9	50.00	2209	417	
XI 3	NONE	069	US	3 NOV	109.2	49.39	1986	396	
XI 4	NONE	105	US	3 NOV	110.6	50.48	2084	420	
PI 1	TIROS 2	063	US	23 NOV	98.2	48.52	735	613	
PI 2	ROCKET BODY	064	US	23 NOV	98.1	48.52	716	619	
PI 3	NONE	074	US	23 NOV	98.2	48.53	708	632	
PI 4	NONE	075	US	23 NOV	98.3	48.50	730	623	
1961 LAUNCHES									
ALPHA 1	SAMOS 2	070	US	31 JAN	94.7	97.40	543	469	
ALPHA 2	METAL OBJECT	079	US	31 JAN	94.6	97.41	541	464	
GAMMA 1	VENUS PROBE	080	USSR	12 FEB	HELIOCENTRIC ORBIT				
DELTA 2	ROCKET BODY	082	US	16 FEB	118.5	38.84	2592	636	
DELTA 3	NONE	085	US	16 FEB	CURRENT ELEMENTS NOT MAINTAINED				
KAPPA 1	EXPLORER 10	098	US	25 MAR	POSITION UNCERTAIN				
NU 1	EXPLORER 11	107	US	27 APR	108.0	28.78	1777	484	
OMICRON 1	TRANSIT 4A	116	US	29 JUN	103.8	66.83	1002	877	150;400
OMICRON 2	INJUN-SR-3	117	US	29 JUN	103.8	66.83	1001	879	
OMICRON 3-206**	METAL OBJECTS		US	29 JUN					
RHO 1	TIROS 3	162	US	12 JUL	100.4	47.90	823	731	

OBJECTS IN ORBIT

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	NODAL PERIOD	INCLI-NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)
1961 LAUNCHES (CONT'D)									
RHO 2	ROCKET BODY	165	US	12 JUL	100.3	47.90	813	735	
RHO 3	METAL OBJECT	166	US	12 JUL	98.8	47.94	796	610	
RHO 4	METAL OBJECT	167	US	12 JUL	102.0	47.85	930	776	
SIGMA 1	MIDAS 3	163	US	12 JUL	161.5	91.28	3522	3369	
SIGMA 3	METAL OBJECT	188	US	12 JUL	161.1	91.21	3560	3303	
SIGMA 4	METAL OBJECT	196	US	12 JUL	161.9	91.21	3579	3345	
UPSILON 1	EXPLORER 12	170	US	16 AUG	CURRENT ELEMENTS NOT MAINTAINED				
A DELTA 1	MIDAS 4	192	US	21 OCT	166.0	95.88	3730	3523	
A DELTA 3	METAL OBJECT	194	US	21 OCT	165.6	95.83	3722	3500	
A DELTA 4	METAL OBJECT	195	US	21 OCT	166.4	95.85	3780	3507	
A ETA 1	TRANSIT 4B	202	US	15 NOV	105.8	32.42	1100	958	
A ETA 2	TRAAC	205	US	15 NOV	105.8	32.41	1107	954	
A ETA 3	ROCKET BODY	204	US	15 NOV	105.6	32.43	1102	944	
1962 LAUNCHES									
ALPHA 1	RANGER 3	221	US	26 JAN	HELIOCENTRIC ORBIT				
ALPHA 2	ROCKET BODY	222	US	26 JAN	HELIOCENTRIC ORBIT				
BETA 1	TIROS 4	226	US	8 FEB	100.4	48.32	845	706	
BETA 2	ROCKET BODY	227	US	8 FEB	101.4	48.15	937	708	
BETA 3	METAL OBJECT	228	US	8 FEB	99.5	48.42	766	700	
BETA 4	METAL OBJECT	229	US	8 FEB	100.3	48.30	838	707	
ZETA 1	ORB.SOL.OBS. 1	255	US	7 MAR	96.0	32.83	598	537	
ZETA 2	ROCKET BODY	257	US	7 MAR	96.0	32.84	570	563	
KAPPA 1		271	US	9 APR	153.0	86.68	3410	2787	
KAPPA 3		273	US	9 APR	152.6	86.67	3363	2803	
KAPPA 4		274	US	9 APR	153.3	86.67	3424	2802	
MU 2	ROCKET BODY	282	US	23 APR	HELIOCENTRIC ORBIT				
OMICRON 1	ARIEL 1	285	US/UK	26 APR	100.5	53.87	1178	391	136.406
OMICRON 2	ROCKET BODY	288	US/UK	26 APR	100.4	53.86	1174	385	

OBJECTS IN ORBIT

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	NODAL PERIOD	INCLI-NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)
1962 LAUNCHES (CONT'D)									
A ALPHA 1	TIROS 5	309	US	19 JUN	100.5	58.11	965	597	
A ALPHA 2	ROCKET BODY	311	US	19 JUN	100.4	58.10	957	597	
A ALPHA 3	METAL OBJECT	312	US	19 JUN	101.7	58.22	1077	606	
A ALPHA 4	METAL OBJECT	313	US	19 JUN	99.1	58.00	857	575	
A EPSILON 1	TELSTAR 1	340	US	10 JUL	157.8	44.80	5645	943	
A EPSILON 2	ROCKET BODY	341	US	10 JUL	157.6	44.80	5632	942	
A OMICRON 1		369	US	23 AUG	99.5	98.69	855	620	
A OMICRON 2		370	US	23 AUG	98.2	98.65	753	599	
A OMICRON 3		378	US	23 AUG	100.8	98.71	973	622	
A OMICRON 4		388	US	23 AUG	99.5	98.69	851	623	
A RHO 1	MARINER	374	US	27 AUG	HELIOCENTRIC ORBIT				
A RHO 2	ROCKET BODY	375	US	27 AUG	HELIOCENTRIC ORBIT				
A UPSILON 1		385	US	1 SEP	90.9	82.80	377	260	
A PSI 1	TIROS 6	397	US	18 SEP	98.7	58.31	706	690	
A PSI 2	ROCKET BODY	398	US	18 SEP	98.7	58.31	702	688	
A PSI 3	METAL OBJECT	399	US	18 SEP	99.4	58.44	771	687	
A PSI 4	METAL OBJECT	400	US	18 SEP	98.0	58.21	693	636	
B ALPHA 1	ALOUETTE	424	CANADA	29 SEP	105.5	80.47	1037	999	$136.593$136.077
B ALPHA 2	ROCKET BODY	426	US	29 SEP	105.4	80.48	1031	999	
B ALPHA 3	METAL OBJECT	510	US	29 SEP	105.4	80.51	1025	1000	
B ALPHA 4	METAL OBJECT	511	US	29 SEP	105.5	80.44	1046	990	
B GAMMA 1	EXPLORER 14	432	US	2 OCT	CURRENT ELEMENTS NOT MAINTAINED				
B GAMMA 2#	ROCKET BODY	NNA	US	2 OCT	CURRENT ELEMENTS NOT MAINTAINED				
B ETA 1	RANGER 5	439	US	18 OCT	HELIOCENTRIC ORBIT				
B ETA 2	ROCKET BODY	440	US	18 OCT	HELIOCENTRIC ORBIT				
B KAPPA 1		444	US	27 OCT	132.9	71.37	4305	195	
B LAMBDA 1	EXPLORER 15	445	US	27 OCT	312.5	18.04	17431	307	

OBJECTS IN ORBIT

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	NODAL PERIOD	INCLI-NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)
1962 LAUNCHES (CONT'D)									
B LAMBDA 2#	ROCKET BODY	NNA	US	27 OCT	INSUFFICIENT OBSERVATIONS				
B MU 1	ANNA 1B	446	US	31 OCT	107.9	50.16	1178	1081	162;324
B MU 2	ROCKET BODY	447	US	31 OCT	107.6	50.15	1175	1057	
B NU 3		450	USSR	1 NOV	HELIOCENTRIC ORBIT				
B TAU 1		502	US	13 DEC	109.9	70.35	2220	228	
B TAU 2	INJUN 3	504	US	13 DEC	112.8	70.38	2476	236	
B TAU 4		508	US	13 DEC	106.5	70.34	1897	231	
B TAU 5		513	US	13 DEC	109.8	70.33	2209	226	
B TAU 6		520	US	13 DEC	112.2	70.37	2416	238	
B UPSILON 1	RELAY 1	503	US	13 DEC	185.1	47.51	7445	1314	$136.140 136.620
B UPSILON 2	ROCKET BODY	515	US	13 DEC	184.9	47.51	7425	1317	
B CHI 1	EXPLORER 16	506	US	16 DEC	104.4	52.01	1202	727	
B PSI 1	TRANSIT 5A	509	US	19 DEC	99.1	90.63	738	694	
B PSI 2		514	US	19 DEC	97.7	90.74	731	570	
B PSI 3		519	US	19 DEC	99.1	90.64	733	698	
B PSI 4		523	US	19 DEC	100.2	90.48	839	700	
1963 LAUNCHES									
1963 03A		527	US	16 JAN	94.5	81.89	526	463	
1963 04A	SYNCOM 1	553	US	14 FEB	CURRENT ELEMENTS NOT MAINTAINED				
1963 04B	ROCKET BODY	532	US	14 FEB	CURRENT ELEMENTS NOT MAINTAINED				
1963 05A		533	US	19 FEB	97.7	100.49	795	504	
1963 05B		534	US	19 FEB	97.7	100.49	794	505	
1963 05C		535	US	19 FEB	96.9	100.49	746	477	
1963 05D		536	US	19 FEB	98.3	100.50	834	528	
1963 08B		566	USSR	2 APR	BARYCENTRIC ORBIT				
1963 09A	EXPLORER 17	564	US	3 APR	95.0	57.61	783	252	
1963 13A	TELSTAR 2	573	US	7 MAY	225.3	42.75	10814	958	136.050

OBJECTS IN ORBIT

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	NODAL PERIOD	INCLI-NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)
1963 LAUNCHES (CONT'D)									
1963 13B	ROCKET BODY	575	US	7 MAY	225.1	42.75	10774	981	
1963 14A		574	US	9 MAY	166.4	87.31	3731	3560	
1963 14B		579	US	9 MAY	166.4	87.24	3802	3490	
1963 14C		608	US	9 MAY	166.4	87.37	3649	3642	
1963 14D		589	US	9 MAY	CURRENT ELEMENTS NOT MAINTAINED				
1963 14E		602	US	9 MAY	166.1	87.31	3644	3618	
1963 14F		628	US	9 MAY	166.8	87.36	3701	3621	
1963 14G		629	US	9 MAY	166.4	87.36	3654	3636	
1963 14H		702	US	9 MAY	166.4	87.28	3648	3642	
1963 17A		580	USSR	22 MAY	92.7	48.95	562	249	
1963 17C		582	USSR	22 MAY	94.0	49.17	612	324	
1963 22A		594	US	16 JUN	99.7	90.01	760	731	150;400
1963 22B		603	US	16 JUN	99.7	90.01	766	725	
1963 22C		610	US	16 JUN	101.2	90.21	898	737	
1963 22D		611	US	16 JUN	98.1	89.82	775	568	
1963 24A	TIROS 7	604	US	19 JUN	97.4	58.24	648	624	136.234 136.923
1963 24B	ROCKET BODY	605	US	19 JUN	97.4	58.23	647	617	
1963 24C	METAL OBJECT	606	US	19 JUN	97.9	58.38	682	633	
1963 24D	METAL OBJECT	607	US	19 JUN	96.9	58.10	644	576	
1963 25B		614	US	27 JUN	132.3	82.13	4112	339	
1963 26A	RESEARCH SATELLITE FOR GEOPHYSICS	612	US	28 JUN	102.1	49.76	1295	418	
1963 27A		613	US	29 JUN	94.7	82.32	525	485	
1963 27B		615	US	29 JUN	93.0	82.30	426	416	
1963 30A		622	US	19 JUL	167.8	88.42	3770	3635	
1963 30B		635	US	19 JUL	167.8	88.40	3736	3669	
1963 30C		630	US	19 JUL	167.5	88.40	3711	3665	
1963 30D		624	US	19 JUL	167.9	88.35	4167	3241	
1963 30E		631	US	19 JUL	168.3	88.47	3772	3667	

OBJECTS IN ORBIT

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	NODAL PERIOD	INCLI-NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)
1963 LAUNCHES (CONT'D)									
1963 31A	SYNCOM 2	634	US	26 JUL	1438.1	32.54	35863	35788	$136.980; $136.468$1814.069; $1815.794$1820.177
1963 31B	ROCKET BODY	625	US	26 JUL	CURRENT ELEMENTS NOT MAINTAINED				
1963 38A		669	US	28 SEP	107.1	89.90	1117	1070	
1963 38B		670	US	28 SEP	107.4	89.90	1137	1075	
1963 38C		671	US	28 SEP	107.3	89.91	1134	1076	136.652
1963 38D		672	US	28 SEP	107.3	89.92	1145	1064	
1963 38E		745	US	28 SEP	107.1	89.93	1119	1067	
1963 39A		674	US	17 OCT	6486.0	38.19	116417	101242	
1963 39B		675	US	17 OCT	2319.4	35.90	102372	953	
1963 39C		692	US	17 OCT	6513.9	37.21	116181	102137	
1963 42B		682	US	29 OCT	92.3	89.98	493	286	
1963 43A	POLYOT	683	USSR	1 NOV	102.4	58.93	1406	336	
1963 43B		684	USSR	1 NOV	101.1	58.61	1295	328	
1963 43C		685	USSR	1 NOV	99.1	58.96	1135	296	
1963 43D		686	USSR	1 NOV	101.0	59.84	1276	339	
1963 46A	EXPLORER 18	693	US	27 NOV	5599.5	35.29	194077	2073	136.112
1963 47A	CENTAUR 2	694	US	27 NOV	107.8	30.36	1785	464	
1963 47B		696	US	27 NOV	107.3	30.07	1620	576	
1963 47C		697	US	27 NOV	107.5	30.06	1637	581	
1963 47D		698	US	27 NOV	108.0	29.91	1655	613	
1963 47E		699	US	27 NOV	108.6	30.43	1744	581	
1963 47F		700	US	27 NOV	108.7	30.47	1748	578	
1963 47G		701	US	27 NOV	107.8	30.00	1641	609	
1963 47H		739	US	27 NOV	107.7	30.40	1667	570	
1963 49A		703	US	5 DEC	106.8	89.96	1095	1064	
1963 49B		704	US	5 DEC	107.1	89.95	1121	1069	150;400

OBJECTS IN ORBIT

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	NODAL PERIOD	INCLI-NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)
1963 LAUNCHES (CONT'D)									
1963 49C		705	US	5 DEC	107.1	89.96	1126	1063	54;162;324;648
1963 49D		706	US	5 DEC	107.1	89.96	1128	1056	
1963 49E		715	US	5 DEC	107.1	89.98	1120	1068	
1963 49F		753	US	5 DEC	107.1	89.97	1144	1045	
1963 53A	EXPLORER 19	714	US	19 DEC	115.6	78.60	2364	602	
1963 53B		721	US	19 DEC	115.8	78.61	2393	591	
1963 53C		722	US	19 DEC	115.8	78.63	2449	537	
1963 53D		723	US	19 DEC	115.9	78.61	2402	593	
1963 53E		724	US	19 DEC	115.9	78.62	2392	607	
1963 53F		725	US	19 DEC	115.9	78.62	2399	592	
1963 53G		726	US	19 DEC	115.8	78.58	2393	594	
1963 53H		732	US	19 DEC	115.8	78.60	2391	597	
1963 54A	TIROS 8	716	US	21 DEC	99.4	58.50	753	703	136.233 136.923
1963 54B		717	US	21 DEC	99.3	58.51	749	702	
1963 54C		720	US	21 DEC	101.1	58.49	921	698	
1963 54D		736	US	21 DEC	97.7	58.51	712	584	
1963 55B		719	US	21 DEC	90.7	64.53	328	291	
1964 LAUNCHES									
1964 1A		727	US	11 JAN	103.4	69.92	934	911	
1964 1B	GGSE	728	US	11 JAN	103.4	69.92	933	913	
1964 1C	EGRS	729	US	11 JAN	103.4	69.91	933	911	136.803
1964 1D	SOLAR RADIATION	730	US	11 JAN	103.5	69.92	934	912	136.886
1964 1E		731	US	11 JAN	103.5	69.92	933	913	
1964 2A		733	US	19 JAN	101.3	99.06	852	789	
1964 2B		734	US	19 JAN	101.3	99.05	838	802	
1964 2C		735	US	19 JAN	101.3	99.06	833	811	
1964 3A	RELAY 2	737	US	21 JAN	194.7	46.34	7416	2084	136.142$136.620

OBJECTS IN ORBIT

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	NODAL PERIOD	INCLI-NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)
1964 LAUNCHES (CONT'D)									
1964 03B		738	US	21 JAN	194.8	46.47	7377	2128	
1964 04A	ECHO 2	740	US	25 JAN	108.7	81.50	1303	1033	136.022; 136.170
1964 04B		741	US	25 JAN	108.9	81.51	1310	1045	
1964 04C		742	US	25 JAN	108.8	81.48	1309	1040	
1964 04D		743	US	25 JAN	108.8	81.54	1310	1038	
1964 04E		749	US	25 JAN	99.2	81.60	1140	299	
1964 05A	SATURN 5	744	US	29 JAN	94.1	31.43	687	260	
1964 06A	ELEKTRON 1	746	USSR	30 JAN	169.3	60.86	7120	400	
1964 06B	ELEKTRON 2	748	USSR	30 JAN	1356.4	59.92	67798	626	
1964 06C		750	USSR	30 JAN	168.2	60.83	7038	393	
1964 06D		751	USSR	30 JAN	1384.1	60.01	68880	646	
1964 10A	COSMOS 25	757	USSR	27 FEB	91.2	49.03	414	253	
1964 11A		759	US	28 FEB	94.6	82.07	511	494	
1964 11B		760	US	28 FEB	94.3	82.06	490	480	
1964 11C		761	US	28 FEB	94.4	82.09	498	480	
1964 13A	COSMOS 26	766	USSR	18 MAR	90.0	48.97	307	243	
1964 15A	ARIEL 2	771	US/UK	27 MAR	101.1	51.70	1327	291	136.558
1964 15B		775	US/UK	27 MAR	100.9	51.65	1314	286	
1964 16D		785	USSR	2 APR	HELIOCENTRIC ORBIT				
1964 19B	POLYOT 2	784	USSR	12 APR	92.2	58.06	461	306	
1964 26A		801	US	4 JUN	103.1	90.49	949	862	
1964 26B		805	US	4 JUN	103.9	90.19	984	903	
1964 26C		806	US	4 JUN	102.3	90.81	951	789	
1964 26D		809	US	4 JUN	103.1	90.48	948	862	
1964 28A	COSMOS 31	803	USSR	6 JUN	91.2	48.97	435	219	
1964 28B		804	USSR	6 JUN	90.3	48.97	358	208	
1964 30A		811	US	13 JUN	91.6	114.99	360	348	

OBJECTS IN ORBIT

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	NODAL PERIOD	INCLI-NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)
1964 LAUNCHES (CONT'D)									
1964 30B		820	US	13 JUN	90.9	114.97	310	308	
1964 31A		812	US	18 JUN	101.6	99.82	842	826	
1964 31B		813	US	18 JUN	101.6	99.83	841	830	
1964 31C		815	US	18 JUN	101.6	99.83	841	827	
1964 35A		824	US	2 JUL	94.9	82.09	531	498	
1964 36B		826	US	6 JUL	91.3	92.99	393	290	
1964 37A		828	US	10 JUL	89.7	84.98	346	173	
1964 38A	ELECTRON 3	829	USSR	10 JUL	168.2	60.81	7027	402	
1964 38B	ELECTRON 4	830	USSR	10 JUL	1313.8	60.77	66269	447	
1964 38C		831	USSR	10 JUL	168.6	60.82	7061	403	
1964 38D		832	USSR	10 JUL	1341.3	60.97	67375	448	
1964 39B		834	USSR	15 JUL	88.3	51.26	196	184	
1964 40A		836	US	17 JUL	CURRENT ELEMENTS NOT MAINTAINED				
1964 40B		837	US	17 JUL	CURRENT ELEMENTS NOT MAINTAINED				
1964 40C		838	US	17 JUL	2366.2	36.73	104665	217	136.770
1964 41B		843	US	28 JUL	BARYCENTRIC ORBIT				
1964 42A	COSMOS 36	844	USSR	30 JUL	92.0	49.01	488	253	
1964 42B		845	USSR	30 JUL	91.9	49.03	485	253	

* APHELION PERIHELION IN ASTRONOMICAL UNITS, INCLINATION TO ECLIPTIC.

** TWO HUNDRED AND FOUR METAL 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 LISTS.

$ TRANSMITTING ON COMMAND ONLY.

& TRANSMITTING WHEN IN SUNLIGHT ONLY.

NO CATALOGUE NUMBER ASSIGNED.

DECAYED OBJECTS

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	DECAY
1957 LAUNCHES					
ALPHA 1	ROCKET BODY	001	USSR	4 OCT	1 DEC 57
ALPHA 2	SPUTNIK 1	002	USSR	4 OCT	EARLY JAN 58
BETA 1	SPUTNIK 2	003	USSR	3 NOV	14 APR 58
1958 LAUNCHES					
GAMMA 1	EXPLORER 3	006	US	26 MAR	28 JUN 58
DELTA 1	ROCKET BODY	007	USSR	15 MAY	3 DEC 58
DELTA 2	SPUTNIK 3	008	USSR	15 MAY	6 APT 60
EPSILON 1	EXPLORER 4	009	US	26 JUL	23 OCT 59
ZETA 1	SCORE	010	US	18 DEC	21 JAN 59
ETA 1	PIONEER 1	110	US	11 OCT	12 OCT 58
THETA 1	PIONEER 3	111	US	6 DEC	7 DEC 58
1959 LAUNCHES					
BETA 1	DISCOVERER 1	013	US	28 FEB	EARLY MAR 59
GAMMA 1	DISCOVERER 2	014	US	13 APR	26 APR 59
DELTA 1	EXPLORER 6	015	US	7 AUG	PRESUMED PRIOR JUL 61
DELTA 2	ROCKET BODY	017	US	7 AUG	PRESUMED PRIOR JUL 61
EPSILON 1	DISCOVERER 5	018	US	13 AUG	28 SEP 59
EPSILON 2	CAPSULE	026	US	13 AUG	11 FEB 61
ZETA 1	DISCOVERER 6	019	US	19 AUG	20 OCT 59
THETA 1	LUNIK 3	021	USSR	4 OCT	MAR 60
KAPPA 1	DISCOVERER 7	024	US	7 NOV	26 NOV 59
LAMBDA 1	DISCOVERER 8	025	US	20 NOV	8 MAR 60
XI 1	LUNIK 2	114	USSR	12 SEP	13 SEP 59*****

DECAYED OBJECTS (CONT'D)

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	DECAY
1960 LAUNCHES					
GAMMA 1	ROCKET BODY	030	US	13 APR	18 AUG 60
GAMMA 3	METAL OBJECT	033	US	13 APR	JUL 60
DELTA 1	DISCOVERER 11	032	US	15 APR	26 APR 60
EPSILON 1	SPUTNIK 4	034	USSR	15 MAY	5 SEP 62
EPSILON 2	ROCKET BODY	035	USSR	15 MAY	17 JUL 60
EPSILON 4	NONE	037	USSR	15 MAY	PRIOR JUL 61
EPSILON 5	NONE	038	USSR	15 MAY	SEP-OCT 60
EPSILON 6	NONE	039	USSR	15 MAY	24 SEP 60
EPSILON 7	NONE	040	USSR	15 MAY	24 SEP 60
EPSILON 8	NONE	041	USSR	15 MAY	SEP-OCT 60
EPSILON 9	NONE	042	USSR	15 MAY	SEP-OCT 60
ZETA 2	METAL OBJECT	044	US	24 MAY	5 DEC 60
THETA 1	DISCOVERER 13	048	US	10 AUG	14 NOV 60
THETA 1#	CAPSULE	NNA	US	10 AUG	11 AUG 60**
KAPPA 1	DISCOVERER 14	054	US	18 AUG	16 SEP 60
KAPPA 1#	CAPSULE	NNA	US	18 AUG	19 AUG 60**
LAMBDA 1	SPUTNIK 5	055	USSR	19 AUG	20 AUG 60*
LAMBDA 2	ROCKET BODY	056	USSR	19 AUG	23 SEP 60
MU 1	DISCOVERER 15	057	US	13 SEP	18 OCT 60
MU 1#	CAPSULE	NNA	US	13 SEP	15 SEP 60***
OMICRON 1	DISCOVERER 17	061	US	12 NOV	29 DEC 60
OMICRON 1#	CAPSULE	NNA	US	12 NOV	14 NOV 60
RHO 1	SPUTNIK 6	065	USSR	1 DEC	2 DEC 60
RHO 2	ROCKET BODY	066	USSR	1 DEC	2 DEC 60
SIGMA 1#	CAPSULE	NNA	US	7 DEC	10 DEC 60**
SIGMA 1	DISCOVERER 18	067	US	7 DEC	2 APR 61
TAU 1	DISCOVERER 19	068	US	20 DEC	23 JAN 61

DECAYED OBJECTS (CONT'D)

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	DECAY
1961 LAUNCHES					
BETA 1	SPUTNIK 7	071	USSR	4 FEB	26 FEB 61
BETA 2	ROCKET BODY	072	USSR	4 FEB	12-13 FEB 61
BETA 3	NONE	073	USSR	4 FEB	17 MAR 61
GAMMA 2	ROCKET BODY	076	USSR	12 FEB	18 FEB 61
GAMMA 3	SPUTNIK 8	077	USSR	12 FEB	25 FEB 61
GAMMA 4	NONE	078	USSR	12 FEB	13-18 FEB 61
DELTA 1	EXPLORER 9	081	US	16 FEB	9 APR 64
DELTA 4	NONE	086	US	16 FEB	PRIOR JUL 61
EPSILON 1	DISCOVERER 20	083	US	17 FEB	28 JUL 62
EPSILON 2	NONE	088	US	17 FEB	30 MAR-2 APR 61
EPSILON 3	NONE	089	US	17 FEB	20 APR 61
EPSILON 4	NONE	090	US	17 FEB	31 OCT 61
ZETA 1	DISCOVERER 21	084	US	18 FEB	20 APR 62
ETA 1	TRANSIT 3B & LOFTI	087	US	22 FEB	30 MAR 61
THETA 1	SPUTNIK 9	091	USSR	9 MAR	9 MAR 61*
THETA 2	NONE	092	USSR	9 MAR	10 MAR 61
THETA 3	NONE	093	USSR	9 MAR	10 MAR 61
THETA 4	NONE	094	USSR	9 MAR	10 MAR 61
IOTA 1	SPUTNIK 10	095	USSR	25 MAR	25 MAR 61
IOTA 2	ROCKET BODY	096	USSR	25 MAR	26 MAR 61
IOTA 3	NONE	097	USSR	25 MAR	26 MAR 61
LAMBDA 1	DISCOVERER 23	100	US	8 APR	16 APR 62
LAMBDA 2	CAPSULE	102	US	8 APR	23 MAY 62
LAMBDA 3	NONE	106	US	8 APR	10 SEP 61
MU 1	VOSTOK 1	103	USSR	12 APR	12 APR 61****
MU 2	ROCKET BODY	104	USSR	12 SPR	16 APR 61
XI 1#	CAPSULE	NNA	US	16 JUN	18 JUN 61**
XI 1	DISCOVERER 25	108	US	16 JUN	12 JUL 61
XI 2	NONE	109	US	16 JUN	19 JUN 61

DECAYED OBJECTS (CONT'D)

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	DECAY
1961 LAUNCHES (CONT'D)					
OMICRON 25	METAL OBJECT	140	US	29 JUN	30 SEP 62
OMICRON 28	METAL OBJECT	143	US	29 JUN	16 JUN 62
OMICRON 46	METAL OBJECT	171	US	29 JUN	29 JAN 62
PI 1	DISCOVERER 26	160	US	7 JUL	5 DEC 61
PI 1#	CAPSULE	NNA	US	8 JUL	9 JUL 61**
SIGMA 2	METAL OBJECT	164	US	12 JUL	24 JUL 61
TAU 1	VOSTOK 2	168	USSR	6 AUG	7 AUG 61****
TAU 2	ROCKET BODY	169	USSR	6 AUG	9 AUG 61
PHI 1	RANGER 1	173	US	23 AUG	30 AUG 61
PHI 2	ROCKET BODY	174	US	23 AUG	3 SEP 61
CHI 1	EXPLORER 13	180	US	25 AUG	28 AUG 61
PSI 1	DISCOVERER 29	181	US	30 AUG	10 SEP 61
PSI 1#	CAPSULE	NNA	US	30 AUG	4 SEP 61
OMEGA 1	DISCOVERER 30	182	US	12 SEP	11 DEC 61
OMEGA 1#	CAPSULE	NNA	US	12 SEP	15 SEP 61**
OMEGA 2	METAL OBJECT	185	US	12 SEP	18 SEP 61
OMEGA 3	METAL OBJECT	187	US	12 SEP	28 SEP 61
A-ALPHA 1	MA-4	183	US	13 SEP	13 SEP 61**
A-ALPHA 2	ROCKET BODY	184	US	13 SEP	13 SEP 61
A-BETA 1	DISCOVERER 31	186	US	17 SEP	26 OCT 61
A-GAMMA 1	DISCOVERER 32	189	US	13 OCT	13 NOV 61
A-GAMMA 1	CAPSULE	NNA	US	13 OCT	14 OCT 61**
A-GAMMA 2	METAL OBJECT	190	US	13 OCT	25 OCT 61**
A-GAMMA 3	METAL OBJECT	191	US	13 OCT	16 OCT 61
A-DELTA 2		193	US	21 OCT	5 DEC 61
A-EPSILON 1	DISCOVERER 34	197	US	5 NOV	7 DEC 62
A-EPSILON 2	METAL OBJECT	198	US	5 NOV	30 NOV 61
A-EPSILON 3	METAL OBJECT	199	US	5 NOV	9 DEC 61

DECAYED OBJECTS (CONT'D)

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	DECAY
1961 LAUNCHES (CONT'D)					
A-EPSILON 4	METAL OBJECT	200	US	5 NOV	10 DEC 61
A-EPSILON 5	METAL OBJECT	203	US	5 NOV	12 DEC 61
A-ZETA 1	DISCOVERER 35	201	US	15 NOV	3 DEC 61
A-ZETA 1#	CAPSULE	NNA	US	15 NOV	16 NOV 61**
A-ZETA 2	METAL OBJECT	207	US	15 NOV	23 NOV 61
A-THETA 1	RANGER 2	206	US	18 NOV	20 NOV 61
A-IOTA 1	MA-5	208	US	29 NOV	29 NOV 61 **
A-IOTA 2	ROCKET BODY	209	US	29 NOV	30 NOV 61
A-KAPPA 1	DISCOVERER 36	213	US	12 DEC	8 MAR 62
A-KAPPA 1#	CAPSULE	NNA	US	12 DEC	16 DEC 61 **
A-KAPPA 2	OSCAR 1	214	US	12 DEC	31 JAN 62
A-KAPPA 3	METAL OBJECT	215	US	12 DEC	19 DEC 61
A-LAMBDA 1		217	US	22 DEC	14 AUG 62
A-LAMBDA 2		218	US	22 DEC	31 DEC 61
A-LAMBDA 3		219	US	22 DEC	9 JAN 62
1962 LAUNCHES					
GAMMA 1	FRIENDSHIP 7	240	US	20 FEB	20 FEB 62******
GAMMA 2	ROCKET BODY	241	US	20 FEB	21 FEB 62
DELTA 1		242	US	21 FEB	4 MAR 62
EPSILON 1	DISCOVERER 38	247	US	27 FEB	21 MAR 62
EPSILON 1#	CAPSULE	NNA	US	27 FEB	3 MAR 62 **
EPSILON 2	ROCKET BODY	248	US	27 FEB	3 MAR 62
EPSILON 3	METAL OBJECT	249	US	27 FEB	3 MAR 62
EPSILON 4	METAL OBJECT	251	US	27 FEB	7 MAR 62
ETA 1		256	US	7 MAR	7 JUN 63
ETA 2		258	US	7 MAR	31 MAR 62

DECAYED OBJECTS (CONT'D)

OBJECTS	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	DECAY
1962 LAUNCHES (CONT'D)					
ETA 3		259	US	7 MAR	3 NOV 62
THETA 1	COSMOS 1	266	USSR	16 MAR	25 MAY 62
THETA 2	ROCKET BODY	267	USSR	16 MAR	18 JUN 62
IOTA 1	COSMOS 2	269	USSR	6 APR	19-20 AUG 63
IOTA 2	ROCKET BODY	270	USSR	6 APR	6 OCT 62
KAPPA 2		272	US	9 APR	4 MAY 62
LAMBDA 1		276	US	18 APR	28 MAY 62
LAMBDA 2		277	US	18 APR	20 APR 62
LAMBDA 3		278	US	18 APR	21 APR 62
LAMBDA 4		279	US	18 APR	21 APR 62
MU 1	RANGER 4	280	US	23 APR	26 APR 62*****
NU 1	COSMOS 3	281	USSR	24 APR	17 OCT 62
NU 2	ROCKET BODY	283	USSR	24 APR	5 AUG 62
XI 1	COSMOS 4	287	USSR	26 APR	29 APR 62
XI 2	ROCKET BODY	284	USSR	26 APR	17 JUN 62
XI 3	METAL OBJECT	289	USSR	26 APR	3 MAY 62
PI 1		286	US	26 APR	28 APR 62
RHO 1		290	US	29 APR	26 MAY 62
RHO 2		291	US	29 APR	1 MAY 62
SIGMA 1		292	US	15 MAY	26 NOV 63
SIGMA 2		293	US	15 MAY	3 JUL 62
SIGMA 3		294	US	15 MAY	13 JUL 62
TAU 1	AURORA 7	295	US	24 MAY	24 MAY 62******
TAU 2	ROCKET BODY	296	US	24 MAY	25 MAY 62
UPSILON 1	COSMOS 5	297	USSR	28 MAY	2 MAY 63
UPSILON 2	ROCKET BODY	298	USSR	28 MAY	15 DEC 62
PHI 1		302	US	30 MAY	11 JUN 62
PHI 2		303	US	30 MAY	2 JUN 62

DECAYED OBJECTS (CONT'D)

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	DECAY
1962 LAUNCHES (CONT'D)					
CHI 1		304	US	2 JUN	28 JUN 62
CHI 2	OSCAR 2	305	US	2 JUN	21 JUN 62
CHI 3		306	US	2 JUN	6 JUN 62
PSI 1		307	US	17 JUN	18 JUN 62
OMEGA 1		308	US	18 JUN	29-30 OCT 63
OMEGA 2		310	US	18 JUN	12 JUL 62
OMEGA 3		314	US	18 JUN	14 JUL 62
A-BETA 1		315	US	23 JUN	7 JUL 62
A-GAMMA 1		316	US	28 JUN	14 SEP 62
A-DELTA 1	COSMOS 6	338	USSR	30 JUN	8 AUG 62
A-DELTA 2	ROCKET BODY	339	USSR	30 JUN	8 SEP 62
A-ZETA 1		342	US	18 JUL	25 JUL 62
A-ZETA 2		343	US	18 JUL	27 JUL 62
A-ETA 1		344	US	21 JUL	14 AUG 62
A-THETA 1		345	US	28 JUL	24 AUG 62
A-IOTA 1	COSMOS 7	346	USSR	28 JUL	1 AUG 62
A-IOTA 2	ROCKET BODY	347	USSR	28 JUL	21 AUG 62
A-IOTA 3	METAL OBJECT	348	USSR	28 JUL	31 JUL 62
A-IOTA 4	METAL OBJECT	349	USSR	28 JUL	30 JUL 62
A-KAPPA 1		360	US	2 AUG	26 AUG 62
A-KAPPA 2		362	US	2 AUG	8 AUG 62
A-LAMBDA 1		361	US	5 AUG	6 AUG 62
A-MU 1	VOSTOK 3	363	USSR	11 AUG	15 AUG 62****
A-MU 2	ROCKET BODY	364	USSR	11 AUG	14 AUG 62
A-NU 1	VOSTOK 4	365	USSR	12 AUG	15 AUG 62****
A-NU 2	ROCKET BODY	366	USSR	12 AUG	14 AUG 62
A-XI 1	COSMOS 8	367	USSR	18 AUG	17 AUG 63

DECAYED OBJECTS (CONT'D)

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	DECAY
1962 LAUNCHES (CONT'D)					
A-XI 2	ROCKET BODY	368	USSR	18 AUG	19 DEC 62
A-PI 1		371	USSR	25 AUG	28 AUG 62
A-PI 2		372	USSR	25 AUG	2 SEP 62
A-PI 3		373	USSR	25 AUG	31 AUG 62
A-PI 4		379	USSR	25 AUG	5 SEP 62
A-PI 5		380	USSR	25 AUG	30 AUG 62
A-PI 6		376	USSR	25 AUG	6 SEP 62
A-PI 7		386	USSR	25 AUG	8 SEP 62
A-PI 8		387	USSR	25 AUG	5 SEP 62
A-SIGMA 1		377	US	29 AUG	10 SEP 62
A-TAU 1		381	USSR	1 SEP	6 SEP 62
A-TAU 2		382	USSR	1 SEP	3 SEP 62
A-TAU 3		383	USSR	1 SEP	3 SEP-1 OCT 62
A-TAU 4		384	USSR	1 SEP	21 SEP 62
A-PHI 1		389	USSR	12 SEP	14 SEP 62
A-PHI 2		390	USSR	12 SEP	12 SEP 62
A-PHI 3		391	USSR	12 SEP	17 SEP 62
A-PHI 4		392	USSR	12 SEP	13 SEP 62
A-PHI 5		393	USSR	12 SEP	13 SEP 62
A-PHI 6		394	USSR	12 SEP	16 SEP 62
A-PHI 7		395	USSR	12 SEP	15 SEP 62
A-CHI 1		396	US	17 SEP	16 NOV 62
A-OMEGA 1		422	USSR	27 SEP	1 OCT 62
A-OMEGA 2		423	USSR	27 SEP	22 DEC 62
A-OMEGA 3		425	USSR	27 SEP	6 OCT 62
A-OMEGA 4		428	USSR	27 SEP	8 OCT 62
A-OMEGA 5		429	USSR	27 SEP	4 OCT 62
A-OMEGA 6		430	USSR	27 SEP	8 OCT 62

DECAYED OBJECTS (CONT'D)

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	DECAY
1962 LAUNCHES (CONT'D)					
A-OMEGA 7		431	USSR	27 SEP	3 OCT 62
A-OMEGA 8		435	USSR	27 SEP	6 OCT 62
B-BETA 1		427	US	29 SEP	14 OCT 62
B-DELTA 1	SIGMA 7	433	US	3 OCT	3 OCT 62******
B-DELTA 2	ROCKET BODY	434	US	3 OCT	4 OCT 62
B-EPSILON 1		436	US	9 OCT	16 NOV 62
B-ZETA 1		437	USSR	17 OCT	21 OCT 62
B-ZETA 2		438	USSR	17 OCT	5 NOV 62
B-THETA 1		441	USSR	20 OCT	18 MAY 64
B-THETA 2		442	USSR	20 OCT	5 JUN 63
B-IOTA 1		443	USSR	24 OCT	29 OCT 62
B-IOTA 2		456	USSR	24 OCT	22 DEC 62
B-IOTA 3		457	USSR	24 OCT	26 FEB 63
B-IOTA 4		458	USSR	24 OCT	29 NOV 62
B-IOTA 5		459	USSR	24 OCT	24 DEC 62
B-IOTA 6		460	USSR	24 OCT	8 DEC 62
B-IOTA 7		482	USSR	24 OCT	10 DEC 62
B-IOTA 8		483	USSR	24 OCT	2 JAN 63
B-IOTA 9		484	USSR	24 OCT	4 DEC 62
B-IOTA 10		485	USSR	24 OCT	10 DEC 62
B-IOTA 11		486	USSR	24 OCT	30 NOV 62
B-IOTA 12		487	USSR	24 OCT	1 DEC 62
B-IOTA 13		491	USSR	24 OCT	25 DEC 62
B-IOTA 14		492	USSR	24 OCT	15 DEC 62
B-IOTA 15		493	USSR	24 OCT	21 DEC 62
B-IOTA 16		494	USSR	24 OCT	17 DEC 62
B-IOTA 17		495	USSR	24 OCT	26 DEC 62
B-IOTA 18		496	USSR	24 OCT	23 DEC 62
B-IOTA 19		497	USSR	24 OCT	26 DEC 62

DECAYED OBJECTS (CONT'D)

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	DECAY
1962 LAUNCHES (CONT'D)					
B-IOTA 20		498	USSR	24 OCT	10 DEC 62
B-IOTA 21		499	USSR	24 OCT	9 DEC 62
B-IOTA 22		500	USSR	24 OCT	28 DEC 62
B-IOTA 23		501	USSR	24 OCT	26 DEC 62
B-IOTA 24		512	USSR	24 OCT	31 DEC 62
B-NU 1		448	USSR	1 NOV	2-3 NOV 62
B-NU 2		449	USSR	1 NOV	3 NOV 62
B-XI 1		451	USSR	4 NOV	5 NOV 62
B-XI 2		452	USSR	4 NOV	8 NOV 62
B-XI 3		454	USSR	4 NOV	19 JAN 63
B-XI 4		488	USSR	4 NOV	25 DEC 62
B-XI 5		489	USSR	4 NOV	27 DEC 62
B-OMICRON 1		453	US	5 NOV	3 NOV 62
B-PI 1		455	US	11 NOV	12 NOV 62
B-RHO 1		481	US	24 NOV	13 DEC 62
B-SIGMA 1		490	US	4 DEC	8 DEC 62
B-TAU 3		507	US	13 DEC	1 JUL 63
B-PHI 1		505	US	14 DEC	8 JAN 63
B-OMEGA 1		517	USSR	22 DEC	30 DEC 62
B-OMEGA 2		518	USSR	22 DEC	22 JAN 63
1963 LAUNCHES					
1963 1A		521	USSR	4 JAN	5 JAN 63
1963 1B		522	USSR	4 JAN	11 JAN 63
1963 1C		524	USSR	4 JAN	11 JAN 63

DECAYED OBJECTS (CONT'D)

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	DECAY
1963 LAUNCHES (CONT'D)					
1963 2A		525	US	7 JAN	24 JAN 63
1963 2B		526	US	7 JAN	16 JAN 63
1963 3B		528	US	16 JAN	8 NOV 63
1963 3C		529	US	16 JAN	31 DEC 63
1963 6A		554	USSR	21 MAR	29 MAR 63
1963 6B		555	USSR	21 MAR	9 APR 63
1963 7A		562	US	1 APR	26 APR 63
1963 8A		563	USSR	2 APR	3 APR 63
1963 9B	ROCKET BODY	565	US	3 APR	24 NOV 63
1963 10A		567	USSR	13 APR	29 AUG 63
1963 10B		568	USSR	13 APR	6 JUL 63
1963 11A		569	USSR	22 APR	27 APR 63
1963 11B		570	USSR	22 APR	1 MAY 63
1963 12A		571	USSR	28 APR	8 MAY 63
1963 12B		572	USSR	28 APR	20 MAY 63
1963 15A	FAITH 7	576	US	15 MAY	16 MAY 63******
1963 15B	ROCKET BODY	577	US	15 MAY	16 MAY 63
1963 16A		578	US	18 MAY	27 MAY 63
1963 17B		581	USSR	22 MAY	26 AUG 63
1963 17D		583	USSR	22 MAY	30 AUG 63
1963 17E		584	USSR	22 MAY	25 JUL 63
1963 17F		585	USSR	22 MAY	30 SEP 63
1963 17G		588	USSR	22 MAY	2 APR 64
1963 18A		586	USSR	24 MAY	2 JUN 63
1963 18B		587	USSR	24 MAY	8 JUN 63
1963 19A		590	US	12 JUN	12 JUN 63
1963 20A	VOSTOK 5	591	USSR	14 JUN	19 JUN 63****

DECAYED OBJECTS (CONT'D)

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	DECAY
1963 LAUNCHES (CONT'D)					
1963 20B		592	USSR	14 JUN	16 JUN 63
1963 21A		593	US	15 JUN	7 AUG 63
1963 21B	LOFTI 2A	601	US	15 JUN	18 JUL 63
1963 21C	SOLAR RADIATION	599	US	15 JUN	1 AUG 63
1963 21D		600	US	15 JUN	30 JUL 63
1963 21E		598	US	15 JUN	27 JUL 63
1963 21F		597	US	15 JUN	5 JUL 63
1963 21G		617	US	15 JUN	3 JUL 63
1963 23A	VOSTOK 6	595	USSR	16 JUN	19 JUN 63 ****
1963 23B		596	USSR	16 JUN	18 JUN 63
1963 25A		609	US	27 JUN	26 JUL 63
1963 27C		616	US	29 JUN	10 JUL 63
1963 28A		618	US	12 JUL	18 JUL 63
1963 28B		619	US	12 JUL	13 JUL 63
1963 28C		620	US	12 JUL	16 JUL 63
1963 29A		621	US	18 JUL	13 AUG 63
1963 29B		623	US	18 JUL	29 JUL 63
1963 32A		626	US	31 JUL	11 AUG 63
1963 32B		627	US	31 JUL	10 AUG 63
1963 33A		632	USSR	6 AUG	30 MAR 64
1963 33B		633	USSR	6 AUG	8-9 DEC 63
1963 34A		636	US	24 AUG	12 SEP 63
1963 34B		642	US	24 AUG	8 SEP 63
1963 35A		637	US	29 AUG	7 NOV 63
1963 35B		638	US	29 AUG	23-29 SEP 63
1963 35C		639	US	29 AUG	2 SEP 63
1963 35D		640	US	29 AUG	1 SEP 63
1963 36A		641	US	6 SEP	13 SEP 63
1963 36B		663	US	6 SEP	13-14 SEP 63
1963 36C		664	US	6 SEP	10 SEP 63

DECAYED OBJECTS (CONT'D)

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	DECAY
1963 LAUNCHES (CONT'D)					
1963 36D		665	US	6 SEP	8 SEP 63
1963 36E		666	US	6 SEP	10-11 SEP 63
1963 36F		667	US	6 SEP	10 SEP 63
1963 37A		668	US	24 SEP	12 OCT 63
1963 40A		673	USSR	18 OCT	28-29 OCT 63
1963 40B	COSMOS 20	676	USSR	18 OCT	30-31 OCT 63
1963 41A		677	US	25 OCT	29 OCT 63
1963 41B		678	US	25 OCT	28-29 OCT 63
1963 41C		679	US	25 OCT	28-29 OCT 63
1963 41D		680	US	25 OCT	28-29 OCT 63
1963 42A		681	US	29 OCT	21 JAN 64
1963 42C		691	US	29 OCT	27 NOV 63
1963 44A	COSMOS 21	687	USSR	11 NOV	14 NOV 63
1963 44B		688	USSR	11 NOV	12 NOV 63
1963 45A	COSMOS 22	689	USSR	16 NOV	22 NOV 63
1963 45B		690	USSR	16 NOV	3 DEC 63
1963 48A		695	US	27 NOV	15 DEC 63
1963 50A	COSMOS 23	707	USSR	13 DEC	27 MAR 64
1963 50B		708	USSR	13 DEC	6 MAR 64
1963 50C		709	USSR	13 DEC	3 JAN 64
1963 50D		710	USSR	13 DEC	1 JAN 64
1963 51A		711	US	18 DEC	20 DEC 63
1963 52A	COSMOS 24	712	USSR	19 DEC	28 DEC 63
1963 52B		713	USSR	19 DEC	25 JAN 64
1963 55A		718	US	21 DEC	8 JAN 64
1964 LAUNCHES					
1964 7A	RANGER 6	747	US	30 JAN	2 FEB 64*****
1964 8A		752	US	15 FEB	9 MAR 64
1964 8B		755	US	15 FEB	21 FEB 64
1964 9A		754	US	25 FEB	1 MAR 64
1964 [illegible]E		756	US	25 FEB	26 FEB 64

DECAYED OBJECTS (CONT'D)

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	DECAY
1964 LAUNCHES (CONT'D)					
1964 10B		758	USSR	27 FEB	18 JUN 64
1964 10C		762	USSR	27 FEB	4 MAR 64
1964 10D		763	USSR	27 FEB	23 APR 64
1964 12A		764	US	11 MAR	16 MAR 64
1964 12B		765	US	11 MAR	12 MAR 64
1964 13B		767	USSR	18 MAR	17 MAY 64
1964 13C		768	USSR	18 MAR	20-22 APR 64
1964 13D		769	USSR	18 MAR	24-25 MAR 64
1964 14A	COSMOS 27	770	USSR	27 MAR	28 MAR 64
1964 14B		772	USSR	27 MAR	29 MAR 64
1964 14C		773	USSR	27 MAR	30-31 MAR 64
1964 14D		774	USSR	27 MAR	3-4 APR 64
1964 16A		776	USSR	2 APR	3 APR 64
1964 16B		777	USSR	2 APR	2 APR 64
1964 16C		778	USSR	2 APR	5 APR 64
1964 17A	COSMOS 28	779	USSR	4 APR	12 APR 64
1964 17B		780	USSR	4 APR	3 MAY 64
1964 17C		781	USSR	4 APR	6-7 APR 64
1964 18A	GEMINI 1	782	US	8 APR	12 APR 64
1964 19A		783	USSR	12 APR	30 APR-1 MAY 64
1964 20A		786	US	23 APR	28-29 APR 64
1964 20B		787	US	23 APR	26 APR 64
1964 20C		788	US	23 APR	25 APR 64
1964 20D		789	US	23 APR	25 APR 64
1964 20E		790	US	23 APR	25 APR 64
1964 21A	COSMOS 29	791	USSR	25 APR	2 MAY 64
1964 21B		792	USSR	25 APR	11 MAY 64
1964 21C		793	USSR	25 APR	26-27 APR 64
1964 21D		794	USSR	25 APR	27-28 APR 64
1964 21E		795	USSR	25 APR	27 APR 64

DECAYED OBJECTS (CONT'D)

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	DECAY
1964 LAUNCHES (CONT'D)					
1964 22A		796	US	27 APR	26 MAY 64
1964 23A	COSMOS 30	797	USSR	18 MAY	26 MAY 64
1964 23B		798	USSR	18 MAY	7 JUN 64
1964 24A		799	US	19 MAY	22 MAY 64
1964 25A	SATURN 6	800	US	28 MAY	1 JUN 64
1964 27A		802	US	4 JUN	18 JUN 64
1964 29A	COSMOS 32	807	USSR	10 JUN	18 JUN 64
1964 29B		808	USSR	10 JUN	14 JUL 64
1964 29C		810	USSR	10 JUN	12 JUN 64
1964 32A		814	US	19 JUN	16 JUL 64
1964 32B		821	US	19 JUN	2 JUL 64
1964 33A	COSMOS 33	816	USSR	23 JUN	1 JUL 64
1964 33B		817	USSR	23 JUN	10 JUL 64
1964 33C		818	USSR	23 JUN	24 JUN 64
1964 33D		819	USSR	23 JUN	24 JUN 64
1964 34A	COSMOS 34	822	USSR	1 JUL	9 JUL 64
1964 34B		823	USSR	1 JUL	15 JUL 64
1964 36A		825	US	6 JUL	8 JUL 64
1964 36C		827	US	6 JUL	19 JUL 64
1964 39A	COSMOS 35	833	USSR	15 JUL	23 JUL 64
1964 39C		835	USSR	15 JUL	31 JUL 64
1964 39D		839	USSR	15 JUL	25 JUL 64
1964 41A	RANGER 7	842	US	28 JUL	31 JUL 64 *****

*	USSR ANNOUNCED SUCCESSFUL RE-ENTRY AND RECOVERY
**	SUCCESSFUL RE-ENTRY AND RECOVERY
***	SUCCESSFUL RE-ENTRY, BUT NOT RECOVERY
****	USSR ANNOUNCED SUCCESSFUL RE-ENTRY AND RECOVERY OF MANNED SPACE VEHICLE
*****	HIT MOON
******	US SUCCESSFULLY ORBITED AND RECOVERED A MANNED SPACE VEHICLE