N-81815, Dec. 19, 1961

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Mr. Stoller
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SPACE OPERATIONS CONTROL CENTER
GODDARD SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GREENBELT, MARYLAND

Volume 1, No 23 SATELLITE SITUATION REPORT December 19, 1961

The following report reflects data computed and compiled by Goddard Space Flight Center, NORAD, and the Smithsonian Astrophysical Observatory as of 1200Z on December 19, 1961.

Hugh A. Turnbull
for
RALPH R. STROBLE
HEAD, Operations Branch

OBJECTS IN ORBIT

OBJECT	CODE NAME	SOURCE	LAUNCH	NODAL PERIOD	INCLI-NATION	APOGEE S. MILES	PERIGEE S. MILES	TRANSMITTING FREQ. (MC/S)
1958 ALPHA 1	EXPLORER I	US	1 FEB 58	106.0	33.19	1087	217	
1958 BETA 1	ROCKET BODY	US	17 MAR 58	138.3	34.26	2685	406	
1958 BETA 2	VANGUARD I	US	17 MAR 58	133.9	34.24	2452	404	108.022
1959 ALPHA 1	VANGUARD II	US	17 FEB 59	125.2	32.87	2072	313	
1959 ALPHA 2	ROCKET BODY	US	17 FEB 59	129.5	32.90	2252	367	
1959 ETA 1	VANGUARD III	US	18 SEP 59	129.7	33.30	2307	321	
1959 MU*	LUNIK I	USSR	2 JAN 59	450D	0.01	1.3177AU	0.9766AU	
1959 NU*	PIONEER IV	US	3 MAR 59	398D	0.127	1.1421AU	0.9871AU	
1959 IOTA 1	EXPLORER VII	US	13 OCT 59	101.1	50.31	668	344	19.9904
1959 IOTA 2	ROCKET BODY	US	13 OCT 59	100.9	50.30	656	345	
1960 ALPHA*	PIONEER V	US	11 MAR 60	311.6D	3.35	.9951AU	.8061AU	
1960 BETA 1	ROCKET BODY	US	1 APR 60	99.1	48.41	463	429	
1960 BETA 2	TIROS I	US	1 APR 60	99.1	48.39	467	429	107.997
1960 BETA 3	NONE	US	1 APR 60	97.8	48.46	445	375	
1960 BETA 4	NONE	US	1 APR 60	99.8	48.15	503	434	
1960 GAMMA 2	TRANSIT 1B	US	13 APR 60	94.7	51.28	402	229	
1960 GAMMA 4	NONE	US	13 APR 60	96.8	51.21	457	299	
1960 EPSILON 1	SPUTNIK IV	USSR	15 MAY 60	91.6	65.02	280	160	
1960 EPSILON 3	NONE	USSR	15 MAY 60	93.0	64.89	354	170	
1960 EPSILON 4	NONE	USSR	15 MAY 60	POSITION UNCERTAIN				
1960 ZETA 1	MIDAS II	US	24 MAY 60	94.2	33.01	310	299	
1960 ETA 1	TRANSIT 2A	US	22 JUN 60	101.6	66.77	649	389	162;216;
1960 ETA 2	GREB	US	22 JUN 60	101.6	66.77	657	381	
1960 ETA 3	ROCKET BODY	US	22 JUN 60	101.4	66.77	642	383	
1960 IOTA 1	ECHO I	US	12 AUG 60	116.1	47.30	1313	563	
1960 IOTA 2	ROCKET BODY	US	12 AUG 60	118.0	47.22	1049	932	
1960 IOTA 3	METAL OBJECT	US	12 AUG 60	118.2	47.20	1049	941	
1960 IOTA 4	METAL OBJECT	US	12 AUG 60	118.2	47.23	1071	922	
1960 IOTA 5	METAL OBJECT	US	12 AUG 60	118.3	47.20	1060	940	
1960 NU 1	COURIER 1B	US	4 OCT 60	106.8	28.20	777	577	107.9709
1960 NU 2	ROCKET BODY	US	4 OCT 60	106.4	28.29	757	570	
1960 XI 1	EXPLORER VIII	US	3 NOV 60	112.4	49.92	1410	258	
1960 XI 2	ROCKET BODY	US	3 NOV 60	112.2	49.98	1399	256	
1960 XI 3	NONE	US	3 NOV 60	110.9	49.39	1327	250	
1960 XI 4	NONE	US	3 NOV 60	111.7	50.52	1364	262	

OBJECTS IN ORBIT (CONT'D)

OBJECT	CODE NAME	SOURCE	LAUNCH	NODAL PERIOD	INCLI-NATION	APOGEE S. MILES	PERIGEE S. MILES	TRANSMITTING FREQ. (MC/S)
1960 PI 1	TIROS II	US	23 NOV 60	98.2	48.57	461	378	
1960 PI 2	ROCKET BODY	US	23 NOV 60	98.1	48.57	455	378	
1960 PI 3	NONE	US	23 NOV 60	98.1	48.46	453	383	
1960 PI 4	NONE	US	23 NOV 60	98.3	48.51	455	389	
1961 ALPHA 1	SAMOS II	US	31 JAN 61	94.9	97.40	339	295	
1961 ALPHA 2	METAL OBJECT	US	31 JAN 61	94.9	97.40	338	295	
1961 GAMMA 1*	VENUS PROBE	USSR	12 FEB 61	300D	0.581	1.0190AU	0.7183AU	
1961 DELTA 1	EXPLORER IX	US	16 FEB 61	118.1	38.81	1521	466	
1961 DELTA 2	ROCKET BODY	US	16 FEB 61	118.4	38.77	1630	379	
1961 DELTA 3	NONE	US	16 FEB 61	118.1	38.87	1555	438	
1961 DELTA 4	NONE	US	16 FEB 61	POSITION UNCERTAIN				
1961 EPSILON 1	DISCOVERER XX	US	17 FEB 61	93.1	80.91	350	176	
1961 ZETA 1	DISCOVERER XXI	US	18 FEB 61	93.5	80.74	403	145	
1961 KAPPA 1	EXPLORER X	US	25 MAR 61	POSITION UNCERTAIN				
1961 LAMBDA 1	DISCOVERER XXIII	US	8 APR 61	92.0	82.31	292	166	
1961 LAMBDA 2	CAPSULE	US	8 APR 61	96.2	81.94	592	120	
1961 NU 1	EXPLORER XI	US	27 APR 61	107.8	28.78	1109	301	
1961 OMICRON 1	TRANSIT 4A	US	29 JUN 61	103.8	66.81	620	547	54;150;324;400
1961 OMICRON 2	INJUN-SR-3	US	29 JUN 61	103.8	66.82	619	548	136.5
1961 OMICRON 3-52**	METAL OBJECTS	US	29 JUN 61					
1961 RHO 1	TIROS III	US	12 JUL 61	100.3	47.90	510	457	108.0;108.03
1961 RHO 2	ROCKET BODY	US	12 JUL 61	100.3	47.85	502	462	
1961 RHO 3	METAL OBJECT	US	12 JUL 61	98.8	47.92	500	376	
1961 RHO 4	METAL OBJECT	US	12 JUL 61	101.9	47.89	563	498	
1961 SIGMA 1	MIDAS III	US	12 JUL 61	161.5	91.13	2197	2084	
1961 SIGMA 3	METAL OBJECT	US	12 JUL 61	161.2	91.13	2179	2085	
1961 SIGMA 4	METAL OBJECT	US	12 JUL 61	161.9	91.15	2205	2096	
1961 UPSILON 1	EXPLORER XII	US	16 AUG 61	1588.8	33.43	47663	481	
1961 ALPHA DELTA 1	MIDAS IV	US	21 OCT 61					
1961 ALPHA EPSILON 1	DISCOVERER XXXIV	US	5 NOV 61	96.6	82.52	595	140	

OBJECTS IN ORBIT (CONT'D)

OBJECT	CODE NAME	SOURCE	LAUNCH	NODAL PERIOD	INCLI-NATION	APOGEE S. MILES	PERIGEE S. MILES	TRANSMITTING FREQ. (MC/S)
1961 ALPHA ETA 1	TRANSIT IV-B	US	15 NOV 61	105.6	32.43	694	586	136.8;54;324;150;400
1961 ALPHA ETA 2	TRAAC	US	15 NOV 61	105.6	32.43	701	581	136.65;54;324
1961 ALPHA ETA 3	ROCKET BODY	US	15 NOV 61	105.5	32.41	686	588	
1961 ALPHA KAPPA 1	DISCOVERER XXXVI	US	12 DEC 61	91.7	81.21	297	146	20.005;40.01
1961 ALPHA KAPPA 2	OSCAR	US	12 DEC 61	91.6	81.21	289	146	145
1961 ALPHA KAPPA 3	METAL OBJECT	US	12 DEC 61	89.4	81.21	157	146	

*APHELION, PERIHELION IN ASTRONOMICAL UNITS, INCLINATION TO ECLIPTIC.
**FIFTY METAL OBJECTS HAVE BEEN IDENTIFIED IN THE PLANE OF THE 1961 OMICRON 1 AND 1961 OMICRON 2 ORBITS.

DECAYED OBJECTS

OBJECT	CODE NAME	SOURCE	LAUNCH	DECAY
1957 ALPHA 1	ROCKET BODY	USSR	4 OCT 57	1 DEC 57
1957 ALPHA 2	SPUTNIK I	USSR	4 OCT 57	EARLY JAN 58
1957 BETA 1	SPUTNIK II	USSR	3 NOV 57	14 APR 58
1958 GAMMA 1	EXPLORER III	US	26 MAR 58	28 JUN 58
1958 DELTA 1	ROCKET BODY	USSR	15 MAY 58	3 DEC 58
1958 DELTA 2	SPUTNIK III	USSR	15 MAY 58	6 APR 60
1958 EPSILON	EXPLORER IV	US	26 JUL 58	23 OCT 59
1958 ZETA 1	ATLAS	US	18 DEC 58	21 JAN 59
1958 ETA 1	PIONEER I	US	11 OCT 58	12 OCT 58
1958 THETA 1	PIONEER III	US	6 DEC 58	7 DEC 58
1959 BETA 1	DISCOVERER I	US	28 FEB 59	EARLY MAR 59
1959 GAMMA 1	DISCOVERER II	US	13 APR 59	26 APR 59
1959 DELTA 1	EXPLORER VI	US	7 AUG 59	PRESUMED PRIOR JUL 61
1959 DELTA 2	ROCKET BODY	US	7 AUG 59	PRESUMED PRIOR JUL 61
1959 EPSILON 1	DISCOVERER V	US	13 AUG 59	28 SEP 59
1959 EPSILON 2	CAPSULE	US	13 AUG 59	11 FEB 61
1959 ZETA 1	DISCOVERER VI	US	19 AUG 59	20 OCT 59
1959 THETA 1	LUNIK III	USSR	4 OCT 59	APR 60
1959 KAPPA 1	DISCOVERER VII	US	7 NOV 59	26 NOV 59
1959 LAMBDA 1	DISCOVERER VIII	US	20 NOV 59	8 MAR 60
1959 XI 1	LUNIK II	USSR	12 SEP 59	13 SEP 59*****
1960 GAMMA 1	ROCKET BODY	US	13 APR 60	18 AUG 60
1960 GAMMA 3	METAL OBJECT	US	13 APR 60	JUL 60
1960 DELTA 1	DISCOVERER XI	US	15 APR 60	26 APR 60
1960 EPSILON 2	ROCKET BODY	USSR	15 MAY 60	17 JUL 60
1960 EPSILON 5	NONE	USSR	15 MAY 60	SEP-OCT 60
1960 EPSILON 6	NONE	USSR	15 MAY 60	SEP-OCT 60
1960 EPSILON 7	NONE	USSR	15 MAY 60	24 SEP 60
1960 EPSILON 8	NONE	USSR	15 MAY 60	SEP-OCT 60
1960 EPSILON 9	NONE	USSR	15 MAY 60	SEP-OCT 60
1960 ZETA 2	METAL OBJECT	US	24 MAY 60	5 DEC 60
1960 THETA 1	DISCOVERER XIII	US	10 AUG 60	14 NOV 60
1960 THETA 1	CAPSULE	US	10 AUG 60	11 AUG 60**
1960 KAPPA 1	DISCOVERER XIV	US	18 AUG 60	16 SEP 60
1960 KAPPA 1	CAPSULE	US	18 AUG 60	19 AUG 60**
1960 LAMBDA 1	SPUTNIK V	USSR	19 AUG 60	20 AUG 60*
1960 LAMBDA 2	ROCKET BODY	USSR	19 AUG 60	23 SEP 60
1960 MU 1	DISCOVERER XV	US	13 SEP 60	18 OCT 60
1960 MU 1	CAPSULE	US	13 SEP 60	15 SEP 60***

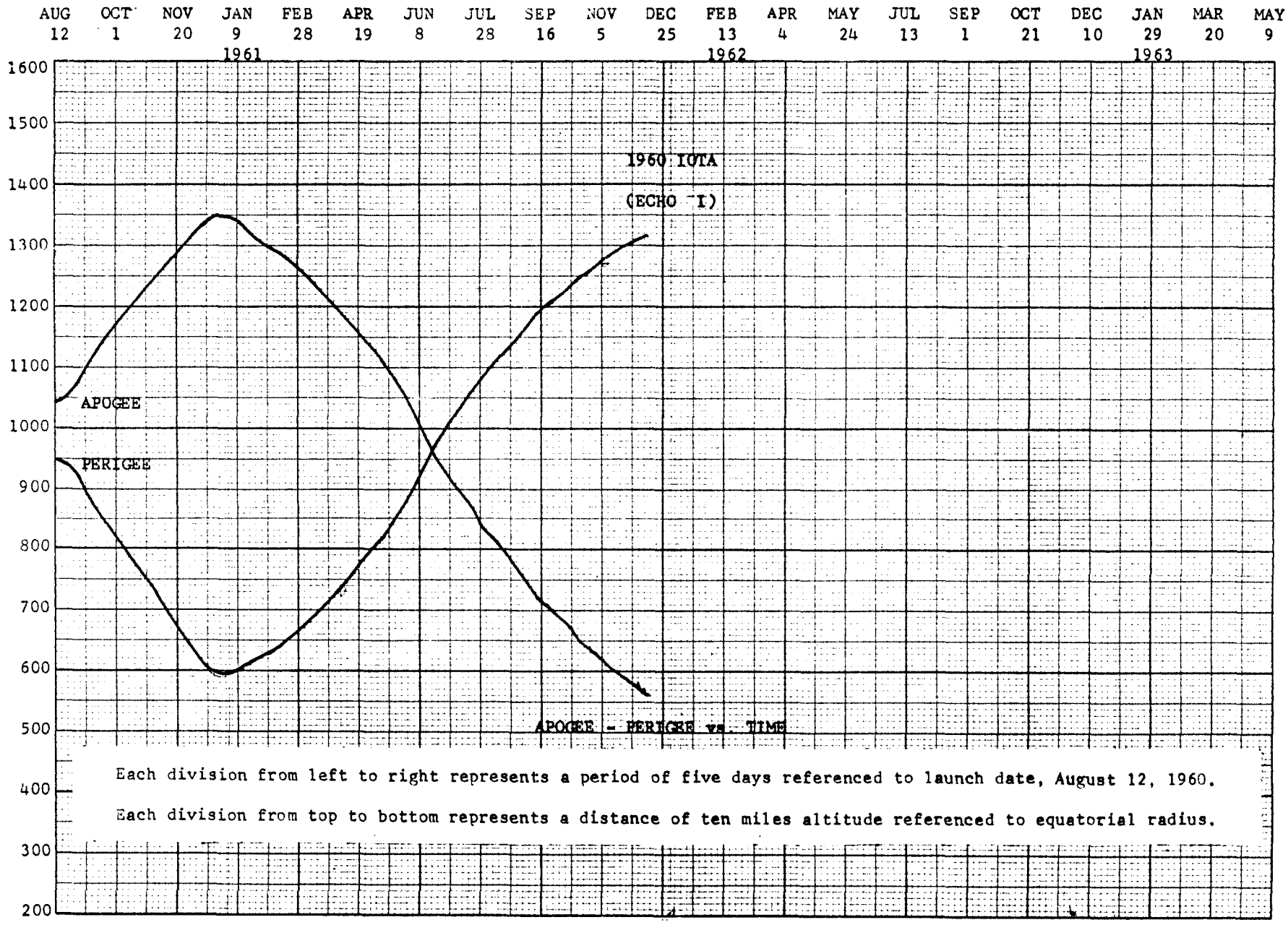
DECAYED OBJECTS (CONT'D)

OBJECT	CODE NAME	SOURCE	LAUNCH	DECAY
1960 OMICRON 1	DISCOVERER XVII	US	12 NOV 60	29 DEC 60
1960 OMICRON 1	CAPSULE	US	12 NOV 60	14 NOV 60**
1960 RHO 1	SPUTNIK VI	USSR	1 DEC 60	2 DEC 60
1960 RHO 2	ROCKET BODY	USSR	1 DEC 60	2 DEC 60
1960 SIGMA 1	CAPSULE	US	7 DEC 60	10 DEC 60**
1960 SIGMA 1	DISCOVERER XVIII	US	7 DEC 60	2 APR 61
1960 TAU 1	DISCOVERER XIX	US	20 DEC 60	23 JAN 61
1961 BETA 1	SPUTNIK VII	USSR	4 FEB 61	26 FEB 61
1961 BETA 2	ROCKET BODY	USSR	4 FEB 61	12-13 FEB 61
1961 BETA 3	NONE	USSR	4 FEB 61	17 MAR 61
1961 GAMMA 2	ROCKET BODY	USSR	12 FEB 61	18 FEB 61
1961 GAMMA 3	SPUTNIK VIII	USSR	12 FEB 61	25 FEB 61
1961 GAMMA 4	NONE	USSR	12 FEB 61	13-18 FEB 61
1961 EPSILON 2	NONE	US	17 FEB 61	30 MAR-2 APR 61
1961 EPSILON 3	NONE	US	17 FEB 61	20 APR 61
1961 EPSILON 4	NONE	US	17 FEB 61	31 OCT 61
1961 ETA 1	TRANSIT 3B & LOFTI	US	22 FEB 61	30 MAR 61
1961 THETA 1	SPUTNIK IX	USSR	9 MAR 61	9 MAR 61*
1961 THETA 2	NONE	USSR	9 MAR 61	10 MAR 61
1961 THETA 3	NONE	USSR	9 MAR 61	10 MAR 61
1961 IOTA 1	SPUTNIK X	USSR	25 MAR 61	25 MAR 61*
1961 IOTA 2	ROCKET BODY	USSR	25 MAR 61	26 MAR 61
1961 IOTA 3	NONE	USSR	25 MAR 61	26 MAR 61
1961 LAMBDA 3	NONE	US	8 APR 61	10 SEP 61
1961 MU 1	VOSTOK	USSR	12 APR 61	12 APR 61****
1961 MU 2	ROCKET BODY	USSR	12 APR 61	16 APR 61
1961 XI 1	CAPSULE	US	16 JUN 61	18 JUN 61**
1961 XI 1	DISCOVERER XXV	US	16 JUN 61	12 JUL 61
1961 PI 1	DISCOVERER XXVI	US	7 JUL 61	5 DEC 61
1961 PI 1	CAPSULE	US	8 JUL 61	9 JUL 61**
1961 SIGMA 2	METAL OBJECT	US	12 JUL 61	24 JUL 61
1961 TAU 1	VOSTOK II	USSR	6 AUG 61	7 AUG 61****
1961 TAU 2	ROCKET BODY	USSR	6 AUG 61	9 AUG 61
1961 PHI 1	RANGER 1	US	23 AUG 61	30 AUG 61
1961 PHI 2	ROCKET BODY	US	23 AUG 61	3 SEP 61
1961 CHI 1	EXPLORER XIII	US	25 AUG 61	28 AUG 61

DECAYED OBJECTS (CONT'D)

OBJECT	CODE NAME	SOURCE	LAUNCH	DECAY
1961 PSI 1	DISCOVERER XXIX	US	30 AUG 61	10 SEP 61
1961 PSI 1	CAPSULE -	US	30 AUG 61	4 SEP 61**
1961 OMEGA 1	DISCOVERER XXX	US	12 SEP 61	11 DEC 61
1961 OMEGA 1	CAPSULE	US	12 SEP 61	15 SEP 61**
1961 OMEGA 2	METAL OBJECT	US	12 SEP 61	18 SEP 61
1961 OMEGA 3	METAL OBJECT	US	12 SEP 61	28 SEP 61
1961 ALPHA ALPHA 1	MA-4	US	13 SEP 61	13 SEP 61**
1961 ALPHA ALPHA 2	ROCKET BODY	US	13 SEP 61	13 SEP 61
1961 ALPHA BETA 1	DISCOVERER XXXI	US	17 SEP 61	26 OCT 61
1961 ALPHA GAMMA 1	DISCOVERER XXXII	US	13 OCT 61	13 NOV 61
1961 ALPHA GAMMA 1	CAPSULE	US	13 OCT 61	14 OCT 61**
1961 ALPHA GAMMA 2	METAL OBJECT	US	13 OCT 61	25 OCT 61
1961 ALPHA GAMMA 3	METAL OBJECT	US	13 OCT 61	16 OCT 61
1961 ALPHA DELTA 2	NOSE FAIRING	US	21 OCT 61	5 DEC 61
1961 ALPHA EPSILON 2	METAL OBJECT	US	5 NOV 61	30 NOV 61
1961 ALPHA EPSILON 3	METAL OBJECT	US	5 NOV 61	9 DEC 61
1961 ALPHA EPSILON 4	METAL OBJECT	US	5 NOV 61	10 DEC 61
1961 ALPHA EPSILON 5	METAL OBJECT	US	5 NOV 61	12 DEC 61
1961 ALPHA ZETA 1	DISCOVERER XXXV	US	15 NOV 61	3 DEC 61
1961 ALPHA ZETA 1	CAPSULE	US	15 NOV 61	16 NOV 61**
1961 ALPHA ZETA 2	METAL OBJECT	US	15 NOV 61	23 NOV 61
1961 ALPHA THETA 1	RANGER 2	US	18 NOV 61	20 NOV 61
1961 ALPHA IOTA 1	MA-5	US	29 NOV 61	29 NOV 61**
1961 ALPHA IOTA 2	ROCKET BODY	US	29 NOV 61	30 NOV 61
1961 ALPHA KAPPA 1	CAPSULE	US	12 DEC 61	16 DEC 61**

* 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 A MANNED SPACE VEHICLE
***** HIT MOON


AUG 12
OCT 1
NOV 20
JAN 9
1961
FEB 28
APR 19
JUN 8
JUL 28
SEP 16
NOV 5
DEC 25
FEB 13
1962
APR 4
MAY 24
JUL 13
SEP 1
OCT 21
DEC 10
JAN 29
1963
MAR 20
MAY 9
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
1960 IOTA
(ECHO I)
APOGEE
PERIGEE
APOGEE - PERIGEE vs. TIME
Each division from left to right represents a period of five days referenced to launch date, August 12, 1960.
Each division from top to bottom represents a distance of ten miles altitude referenced to equatorial radius.