

PROJECT 10073 RECORD CARD

1. DATE 15 July 1963	2. LOCATION 22.02N 117.00E (FAR EAST)		12. CONCLUSIONS ☐ Was Balloon ☐ Probably Balloon ☐ Possibly Balloon ☐ Was Aircraft ☐ Probably Aircraft ☐ Possibly Aircraft ☐ Was Astronomical ☐ Probably Astronomical ☐ Possibly Astronomical ☒ Other <u>Satellite ECHO I</u> ☐ Insufficient Data for Evaluation ☐ Unknown
3. DATE-TIME GROUP Local _____ GMT 15/1206Z	4. TYPE OF OBSERVATION ☐ Ground-Visual XX BX ☐ Air-Visual ☐ Ground-Radar ☐ Air-Intercept Radar		
5. PHOTOS ☐ Yes ☒ No	6. SOURCE Military		
7. LENGTH OF OBSERVATION 6 minutes	8. NUMBER OF OBJECTS one	9. COURSE SE	
10. BRIEF SUMMARY OF SIGHTING White object size of 1st mag star traveling at high speed and high altitude observed for 6 min in flight from 60 deg elevation 165 deg azimuth to 20 deg elevation 140 deg azimuth. Believed to be Satellite.		11. COMMENTS at 1118Z ECHO crossed equator at 35.90 longitude at 1210Z ECHO would be crossing the equator heading S at 131 degE. This places the Satellite in position for observation at the reported time. Case evaluated as ECHO I.	

NAVAL MESSAGE

UNCLASSIFIED

NAVY DEPARTMENT

PRIORITY	(ACTION)	RELEASED BY	DRAFTED BY	EXT. NO.
PRIORITY	(INFO)			

AF IN : 39221 (15 Jul 63)R/joe

P. 151420Z
FM USS MARSHALLAF DIST: NIN-9, XOP-1, XOPX-4, SAFOS-3, DIA-25
DIA-CIIC-3 (45)

TO RUMALC/CLARK AFB

INFO RUECW/CNO
COMSEVENTHFLT
CTF 72
COMDESRON 7CINCPACFLT
COMNAVPHIL
CTG 72.1
COMDESFLOT 7

EFTO

EFTO

EFTO

UNCLAS EFTO

A. CINCPACFLT INST 3820.3

UNIFORM FOXTROT OSCAR

1. A. UNKNOWN
B. FIRST MAGNITUDE STAR
C. WHITE
D. NONE
E. NONE
F. TRAVELING AT HIGH SPEED AT HIGH ALTITUDE.
G. NONE
H. NONE
I. NONE
2. A. MOVEMENT RELATIVE TO STARS
B. 60 DEG BEARING 165 DEG
C. 20 DEG BEARING 140 DEG
D. APPROX COURSE 140 DEG
E. FADE
F. 6 MINUTES
3. A. GROUND VISUAL
B. BIGOCFWIR

1118Z

35.9°

20°N SE →

149.
35
114.9°

92 COG

SECNAV 00 09 09B 09D 09M 03 33 34 35 05 06 07 72 76 94 IP JCS CSA
CSAF CMC COGARD CIA NIC NAVAIDE FLAGPLOT BFR

CONTROL NO.	CIRCUIT NO.	PAGE	OF	PAGES	TIME OF RECEIPT	DATE TIME GROUP
96266/JRC/JB74	B249	1	2		2114Z 15 JUL	151420Z JUL 63

UNCLASSIFIED

NAVAL MESSAGE

UNCLASSIFIED

NAVY DEPARTMENT

PRECEDENCE	(ACTION)	RELEASED BY	DRAFTED BY	EXT. NO.
	(INFO)			

4. A. 151206Z
B. NIGHT
5. 22 DEG 02 MIN NORTH, 117 DEG 00 MIN EAST
6. A. NEGAT
B. HOPPER, H.K. CDR USN, COMMANDING OFFICER AND BUTLER, C.P.
LTJG U NR, OFFICER OF THE-POSITIVE RELIABILITY
7. A. CLEAR
B. NONE
C. UNLIMITED
D. UNLIMITED
E. ONE EIGHTM
F. NONE
- 8 UNKNOWN
9. NA
10. NONE
11. COMMANDING OFFICER-BELIEVED TO BE SAATELITE
12. NONE

CONTROL NO.	CIRCUIT NO.	PAGE	OF	PAGES	TIME OF RECEIPT	DATE TIME GROUP
96256		2		2		151420Z JUL 63

UNCLASSIFIED

EQUATOR S-N				SATELLITE 1960 IOTA 1 FOR OTHER LATITUDES							
TIME (UT)	LONG. (W)	LAT.	TIME CORR.	SCUTH-NORTH CORR.	HT. (MI)	BEAR. (N-E)	TIME CORR.	NORTH-SOUTH CORR.	HT. (MI)	BEAR. (N-E)	
JULY 14, 1963											
0 47.7	232.01	47.5	26.4	-83.31	694	90.0	26.4	-83.35	694	90.0	
2 47.8	241.12	45.0	21.6	-61.07	673	72.2	31.2	-105.57	730	107.8	
4 37.8	290.22	40.0	17.9	-45.91	668	60.7	35.1	-120.80	765	119.3	
6 32.9	319.32	35.0	15.1	-36.15	672	54.0	38.0	-130.43	802	126.0	
8 27.9	348.43	30.0	12.7	-28.78	680	49.4	40.6	-137.76	833	130.6	
10 23.0	377.54	25.0	8.3	-17.41	706	43.7	45.3	-149.04	894	136.4	
12 18.0	406.64	20.0	0.	0.	787	39.9	54.3	-166.32	1009	140.2	
14 13.1	435.75	15.0	-8.6	17.32	899	43.6	-51.5	-147.47	1106	136.5	
16 8.1	464.85	10.0	-13.5	28.57	966	49.3	-46.2	-136.33	1140	130.8	
18 3.1	493.96	5.0	-16.2	35.84	1002	53.9	-43.3	-129.09	1152	126.2	
19 58.2	163.08	-5.0	-19.5	45.41	1040	60.6	-39.9	-119.58	1159	119.4	
21 53.2	192.17	-10.0	-23.9	60.50	1087	72.2	-35.3	-104.53	1155	107.9	
23 48.3	221.27	-15.0	-29.5	82.51	1131	90.0	-29.5	-82.55	1131	90.0	
JULY 15, 1963											
1 43.3	250.36	47.5	26.4	-83.30	687	90.0	26.4	-83.34	687	90.0	
3 38.4	279.46	45.0	21.7	-61.06	670	72.2	31.2	-105.56	720	107.8	
5 33.4	308.56	40.0	17.9	-45.75	669	60.7	35.1	-120.80	755	119.3	
7 28.5	337.66	35.0	15.1	-36.13	675	54.0	38.0	-130.43	787	126.0	
9 23.5	366.76	30.0	12.7	-28.76	686	49.4	40.5	-137.76	817	130.6	
11 18.6	395.86	25.0	8.3	-17.40	715	43.7	45.2	-149.05	877	136.3	
13 13.6	424.96	20.0	0.	0.	802	39.9	54.2	-166.30	973	140.2	
15 8.6	454.06	15.0	-8.7	17.31	917	43.6	-51.6	-147.43	1094	136.5	
17 3.7	483.16	10.0	-11.6	28.55	987	49.3	-46.4	-136.28	1133	130.8	
19 58.8	152.26	-5.0	-16.4	35.83	1014	53.9	-43.5	-129.04	1148	126.2	
20 53.8	181.36	-10.0	-19.6	45.37	1055	60.6	-40.1	-119.53	1157	119.4	
22 48.8	210.46	-15.0	-26.0	67.46	1099	72.2	-35.5	-104.48	1158	107.9	
24 43.8	239.56	-20.0	-32.2	87.55	1150	90.0	-29.7	-82.50	1139	90.0	
JULY 16, 1963											
0 43.0	235.63	47.5	26.5	-83.28	682	90.0	26.5	-83.32	682	90.0	
2 38.0	264.73	45.0	21.7	-61.05	665	72.2	31.3	-105.55	711	107.8	
4 33.0	293.83	40.0	17.9	-45.74	661	60.7	35.1	-120.79	744	119.3	
6 28.0	322.93	35.0	15.1	-36.12	668	54.0	38.0	-130.42	774	126.0	
8 23.0	352.03	30.0	12.7	-28.75	692	49.4	40.5	-137.75	803	130.6	
10 18.0	381.13	25.0	8.3	-17.39	725	43.7	45.2	-149.06	861	136.3	
12 13.0	410.23	20.0	0.	0.	816	39.9	54.1	-166.32	977	140.2	
14 8.0	439.33	15.0	-8.7	17.29	933	43.6	-51.8	-147.40	1083	136.5	
16 3.0	468.43	10.0	-13.7	28.52	998	49.3	-46.6	-136.24	1125	130.8	
18 58.0	157.53	-5.0	-16.5	35.80	1032	53.9	-43.6	-129.00	1142	126.2	
19 53.0	186.63	-10.0	-19.7	45.34	1068	60.6	-40.2	-119.49	1155	119.4	
21 48.0	215.73	-15.0	-24.2	67.43	1110	72.2	-35.7	-104.44	1160	107.9	
23 43.0	244.83	-20.0	-29.9	87.42	1166	90.0	-29.9	-82.46	1146	90.0	
JULY 17, 1963											
1 39.5	257.98	47.5	26.5	-83.26	677	90.0	26.6	-83.30	677	90.0	
3 34.5	287.08	45.0	21.8	-61.02	665	72.2	31.3	-105.54	702	107.8	
5 29.5	316.19	40.0	18.1	-45.76	674	60.7	35.1	-120.78	732	119.3	
7 24.5	345.29	35.0	15.3	-36.10	685	54.0	38.0	-130.42	760	126.0	
9 19.5	374.39	30.0	12.8	-28.73	695	49.4	40.6	-137.76	788	130.6	
11 14.5	403.49	25.0	8.4	-17.38	736	43.7	45.2	-149.06	845	136.3	
13 9.5	432.59	20.0	0.	0.	832	39.9	54.0	-166.34	960	140.2	
15 4.5	461.69	15.0	-8.8	17.28	950	43.6	-51.9	-147.36	1070	136.5	
17 59.5	150.79	-5.0	-13.8	28.50	1014	49.3	-46.7	-136.20	1116	130.7	
19 54.5	179.89	-10.0	-16.6	35.77	1047	53.9	-43.8	-128.96	1135	126.2	
20 49.5	208.99	-15.0	-19.8	45.31	1082	60.6	-40.4	-119.45	1151	119.4	
22 44.5	238.09	-20.0	-24.3	67.39	1120	72.2	-35.8	-104.40	1160	107.9	
24 39.5	267.19	-25.0	-30.0	87.38	1171	90.0	-30.0	-82.42	1151	90.0	

EQUATOR S-N				SATELLITE 1960 IOTA 1 FOR OTHER LATITUDES							
TIME (UT)	LONG. (W)	LAT.	TIME CORR.	SCUTH-NORTH CORR.	HT. (MI)	BEAR. (N-E)	TIME CORR.	NORTH-SOUTH CORR.	HT. (MI)	BEAR. (N-E)	
JULY 18, 1963											
0 40.0	247.22	47.5	26.6	-83.24	673	90.0	26.6	-83.28	673	90.0	
2 35.0	276.32	45.0	21.9	-61.00	669	72.2	31.4	-105.52	694	107.8	
4 30.1	305.42	40.0	18.2	-45.74	676	60.7	35.2	-120.77	722	119.3	
6 25.1	334.53	35.0	15.4	-36.08	691	54.0	38.1	-130.41	748	126.0	
8 20.2	363.63	30.0	12.9	-28.71	707	49.4	40.6	-137.75	775	130.6	
10 15.2	392.73	25.0	8.5	-17.37	747	43.7	45.2	-149.06	830	136.3	
12 10.2	421.84	20.0	0.	0.	847	39.9	53.9	-166.35	944	140.2	
14 5.3	450.94	15.0	-8.9	17.26	966	43.6	-52.0	-147.34	1057	136.4	
16 0.3	480.04	10.0	-13.8	28.48	1029	49.3	-46.9	-136.17	1107	130.7	
17 55.4	149.14	-5.0	-16.7	35.75	1061	53.9	-43.9	-128.92	1128	126.2	
19 50.4	178.25	-10.0	-20.0	45.28	1094	60.6	-40.6	-119.41	1147	119.4	
21 45.4	207.35	-15.0	-24.4	66.35	1129	72.1	-36.0	-104.36	1160	107.9	
23 40.5	236.45	-20.0	-30.2	82.34	1156	90.0	-30.2	-82.38	1156	90.0	
JULY 19, 1963											
1 35.5	265.55	47.5	26.7	-83.22	670	90.0	26.7	-83.26	670	90.0	
3 30.5	294.66	45.0	22.0	-60.98	671	72.2	31.5	-105.50	687	107.8	
5 25.6	323.76	40.0	18.2	-45.71	683	60.7	35.3	-120.75	712	119.3	
7 20.6	352.86	35.0	15.4	-36.06	699	54.0	38.1	-130.39	736	126.0	
9 15.7	381.96	30.0	13.0	-28.70	717	49.4	40.6	-137.74	761	130.6	
11 10.7	411.06	25.0	8.5	-17.35	760	43.7	45.2	-149.06	814	136.3	
13 5.7	440.17	20.0	0.	0.	863	39.9	53.9	-166.37	927	140.2	
15 0.8	469.27	15.0	-8.9	17.25	982	43.6	-52.1	-147.31	1043	136.4	
16 55.8	138.37	-5.0	-13.9	28.45	1044	49.3	-47.0	-136.13	1095	130.7	
18 50.8	167.47	-10.0	-16.8	35.72	1075	53.9	-44.1	-128.88	1119	126.2	
20 45.9	196.57	-15.0	-20.1	45.25	1105	60.6	-40.7	-119.37	1140	119.4	
22 40.9	225.68	-20.0	-24.6	66.32	1137	72.1	-36.2	-104.31	1158	107.9	
24 35.9	254.78	-25.0	-30.4	82.30	1159	90.0	-30.4	-82.34	1159	90.0	
JULY 20, 1963											
0 36.0	254.78	47.5	26.8	-83.19	669	90.0	26.8	-83.24	669	90.0	
2 31.0	283.88	45.0	22.1	-60.95	673	72.2	31.6	-105.47	681	107.8	
4 26.0	312.98	40.0	18.3	-45.69	689	60.7	35.4	-120.73	703	119.3	
6 21.1	342.08	35.0	15.5	-36.04	707	54.0	38.2	-130.37	725	126.0	
8 16.1	371.18	30.0	13.1	-28.68	727	49.4	40.7	-137.73	749	130.6	
10 11.1	400.28	25.0	8.6	-17.34	772	43.7	45.2	-149.05	799	136.3	
12 6.2	429.38	20.0	0.	0.	879	39.9	53.9	-166.37	911	140.2	
14 1.2	458.48	15.0	-9.0	17.23	998	43.6	-52.2	-147.29	1029	136.4	
16 56.2	127.59	-5.0	-14.0	28.43	1057	49.3	-47.1	-136.11	1084	130.7	
18 51.3	156.69	-10.0	-16.9	35.69	1087	53.9	-44.2	-128.85	1110	126.2	
19 46.3	185.79	-15.0	-20.2	45.22	1115	60.6	-40.8	-119.34	1133	119.4	
21 41.3	214.89	-20.0	-24.7	66.28	1144	72.1	-36.3	-104.28	1154	107.9	
23 36.4	244.00	-25.0	-30.5	82.26	1161	90.0	-30.5	-82.31	1161	90.0	

MODIFIED ORBITAL ELEMENTS FOR EARTH SATELLITE 1960 IOTA 1

REFERENCE TIME 1963 Y 7 M 6 D 1 H 11.12 M UT
 INCLINATION 47.28 DEG.
 ASCENDING NODE (LONG.) 203.62 DEG. WEST
 PRIME SWEEP INTERVAL ONE DAY -16.95 MIN.
 ARGUMENT OF PERIGEE 32.13 DEG.
 RATE OF CHANGE 0.30925 DEG. PER PERIOD
 ANOMALISTIC PERIOD 115.158 MIN.
 RATE OF CHANGE -0.00014 MIN. PER PERIOD
 ECCENTRICITY 0.05011
 RADIUS OF PERIGEE 4627.5 MILES
 RADIUS OF APCGEE 5115.7 MILES
 RATE OF CHANGE -0.10 MILES PER DAY
 ASCENDING NODE (R.A.) 97.29 DEG.
 RATE OF CHANGE -3.30358 DEG. PER DAY
 LATITUDE OF PERIGEE 23.00 DEG.
 READ-IN EXPECTED