PROJECT 10073 RECORD CARD

1. DATE 12 Oct 1963	2. LOCATION 40.40N 174.30W (Pacific)	12. CONCLUSIONS ☐ Was Balloon ☐ Probably Balloon ☐ Possibly Balloon ☐ Was Aircraft ☐ Probably Aircraft ☐ Possibly Aircraft ☐ Was Astronomical ☐ Probably Astronomical ☐ Possibly Astronomical ☒ Other ECHO I . ☐ Insufficient Data for Evaluation ☐ Unknown
3. DATE-TIME GROUP Local GMT 13/0600Z	4. TYPE OF OBSERVATION ☒ Ground-Visual ☐ Ground-Radar ☐ Air-Visual ☐ Air-Intercept Radar	
5. PHOTOS ☐ Yes ☒ No	6. SOURCE Military	
7. LENGTH OF OBSERVATION 10 Minutes	8. NUMBER OF OBJECTS 1	9. COURSE W-E

10. BRIEF SUMMARY OF SIGHTING

One Satellite . Size and brightness of 1st mag star. Altitude unknown. Elev 15 deg. Covered 30 deg arc in 10 minutes.

11. COMMENTS

ECHO was heading SE at 10 deg N 180 W at time of report. Time difference within limits of possible Error (12 min) and case considered as ECHO sighting.

ATIC FORM 329 (REV 26 SEP 52)

DEPARTMENT OF THE AIR FORCE
STAFF MESSAGE BRANCH
UNCLASSIFIED MESSAGE

INCOMING

01

AF IN: 40250 (13 Oct 63) L/lcb

INFO: NIN-9, XOP-1, XOPX-4, SAF-OS-3, ARMY-2, CMC-8, JCS-35, OSD-15, NSA-7, DIA-25, DIA-CTIC-2, (112)

SMB C031

RZCHQA303ZCECD044

OO RUEAHQ

DE RUHPF B019 13/0648Z

ZNR

O 130647Z

FM COMBARPAC

TO RUKACR/COMALSEAFRON

RUKDAG/COMALAIRCOM

RUHLKM/CINCPACAF

ZEN/CINCNORAD

INFO RUECW/CNO

RUEAHQ/COFS USAF

RUHPA/CINCPAC

RUHPB/CINCPACFLT

RUHAFS/CINCUSARPAC

RUHLKMP/PACAFBASECOM HICKAM

RUECW/SECNAV

RUHPHH/COMHAWSEAFRON

RUAUAAH/HADD KUNIA

BT

UNCLAS

0572Z at 330.5T
+44 = -149.15
0600Z 180°

SE at 180° W
10° N

0572
34
0546 -

A. JANAP 146D

1. CIRVIS REPORT

2. NAVY 143188

3. ONE SATELLITE, SIZE AND BRIGHTNESS OF FIRST MAG STAR.

4. OBSERVED FROM POSITION LAT 40-40N LONG 174-30W 180 DEGREES TRUE 15 DEGREES ABOVE HORIZON DISTANCE UNKNOWN.

5. 130600Z

6. ALTITUDE UNKNOWN

7. WESWUQ

8. COVERED 30 DEGREE ARC IN 10 MINUTES.

9. NONE

BT

NOTE: ADVANCED COPIES SENT TO DIA-CIIC, XOPX, NIN, RETRANSMITTED TO CIA.

12067

DEPARTMENT OF THE AIR FORCE
STAFF MESSAGE BRANCH
UNCLASSIFIED MESSAGE

NNNNZCHQE101

01

INCOMING

AF IN : 40266 (13 Oct 63) L/gf

INFO : NIN-9, XOP-1, XOPX-4, SAF-OS-3, ARMY-2, CMC-8, JCS-35, OSD-15, NSA-7, DIA-25, DIA/CIIC-2 (112)

SMB C033

ZCHQE101ZCEJA467
RR RUEAHQ
DE RUHLKH 3 13/0711Z
ZNR
R 130700Z
FM 326 AIR DIV KUNIA FACILITY HA
TO RUHLKM/PACAF HICKAM AFB HA
RUHPHH/COMHAWSEA FRON PEARL HARBOR HA
INFO RUEAHQ/CSAF USAF WASH DC
RUECW/CNO WASH DA
RUECW/SECNAV WASH DC
RUWGALB/CINCNORAD ENT AFB COLO
RUHPA/CONCPAC CAMP H M SMITH HA
RUHAFS/CONCUSARPAC FT AHSFTER HA
RUHPB/CONCPACFLT PEARL HARBOR HA
RUAUAZ/COMSJAPAN FUCHU AS JAPN
RUAMC/COMUSKOREA SEOUL KOREA
RUAGFL/COMUSTDC TAIPEI TAIWAN
RUCSBRB/CONCSAC OFFUTT AFB NEBR
AF GRNC
BT

INCOMING

AF IN : 40266 (13 Oct 63)

UNCLAS

1. CIRVIS REPORT-COMBARPAC

2. NAVY 143188

3. SATELLITE, SIZE AND BRIGHTNESS OF FIRST MSG STAR

4. OBSERVED FROM POSITION LAT. 40-40 N LONG 174-30W

180 DEG TRUE 15 DEG ABOVE HORIZON DISTANCE

UNKNOWN

5. 130600Z

6. ALTITUDE UNKNOWN

7. WEST TO EAST

8. COVERED 30 DEGREE ARC IN 10 MINUTES

9. NONE

BT

NOTE : Advance copy del to XOPX, NIN & DIA/CIIC.
TRANSMITTED TO CIA.

SMITHSONIAN ASTROPHYSICAL OBSERVATORY, CAMBRIDGE, MASSACHUSETTS

OCTOBER 9, 1963

SATELLITE 1960 IOTA 1, ECHO 2

These predictions are based on orbital elements revised on October 7, 1963
T_0 = October 8.0, times are in days, U.T.
Argument of perigee = 3°.1434 + 3°.866 $(t-T_0)$
Right ascension of ascending node = 143°.718 - 3°.9216 $(t-T_0)$

Inclination = 47°.2678
Eccentricity = 0.038163 + 1.01 x 10^{-5} $(t-T_0)$
Semi-major axis = 7.833549 megameters
Mean anomaly (Rev.) = 0.44278 + 12.539362 $(t-T_0)$ 2.0669 x 10^{-4} $(t-T_0)^2$

SATELLITE 1960 IOTA 1
FOR OTHER LATITUDES

EQUATOR S-N

TIME (UT)	LONG. (W)	LAT.	TIME CORR.	SOUTH-NORTH LONG. CORR.	SOUTH-NORTH HT. (MI)	SOUTH-NORTH BEAR. (N-E)	TIME CORR.	NORTH-SOUTH LONG. CORR.	NORTH-SOUTH HT. (MI)	NORTH-SOUTH BEAR. (N-E)
OCTOBER 12, 1963										
0 31.1	254.13	47.5	25.8	-83.45	682	90.0°	25.8	-83.50	682	90.0°
2 25.9	284.16	45.0	21.1	-61.23	645	72.3	30.6	-105.68	757	107.6°
4 20.6	313.18	40.0	17.4	-45.95	625	60.7	34.5	-120.93	769	119.3°
6 15.3	342.21	35.0	14.7	-36.27	626	54.1	37.5	-130.54	852	126.0°
8 10.1	11.23	30.0	12.3	-28.88	621	49.5	40.1	-137.87	872	130.6°
10 4.8	40.26	20.0	8.0	-17.48	636	43.8	44.9	-149.12	945	136.4°
11 59.5	69.29	0.	0.	0.	707	40.0°	54.1	-166.30	1076	140.2°
13 54.3	98.31	-20.0	-8.4	17.40	824	43.7°	-51.0	147.57	1160	136.5°
15 49.0	127.34	-30.0	-13.1	28.66	899	49.4°	-45.7	136.45	1143	130.8
17 43.7	156.36	-35.0	-15.8	35.99	942	53.9°	-42.7	129.22	1187	126.2
19 38.4	185.39	-40.0	-18.9	45.58	990	60.6°	-39.2	119.72	1183	119.4
21 33.2	214.41	-45.0	-23.3	60.69	1051	72.2°	-34.6	104.68	1183	107.8°
23 27.9	243.44	-47.5	-28.9	82.87	1116	90.0°	-28.9	82.72	1116	90.0°
OCTOBER 13, 1963										
1 22.6	272.46	47.5	25.8	-83.46	670	90.0	25.8	-83.49	671	90.0
3 17.4	301.49	45.0	21.1	-61.23	636	72.3	30.6	-105.68	722	107.6°
5 12.1	330.51	40.0	17.4	-45.94	622	60.7	34.5	-120.93	772	119.3°
7 6.8	359.54	35.0	14.7	-36.26	626	54.1	37.4	-130.55	813	126.0°
9 1.5	28.56	30.0	12.3	-28.87	623	49.5	40.0	-137.88	852	130.6°
10 56.3	57.59	20.0	8.1	-17.47	643	43.8	44.8	-149.15	924	136.4°
12 51.0	86.63	0.	0.	0.	722	40.0°	53.9	-166.35	1059	140.2°
14 45.7	115.64	-20.0	-8.4	17.38	843	43.7°	-51.3	147.52	1151	136.5°
16 40.4	144.66	-30.0	-13.2	28.68	919	49.4°	-45.9	136.39	1180	130.8°
18 35.2	173.69	-35.0	-15.9	35.96	961	53.9°	-42.9	129.18	1186	126.2
20 29.9	202.71	-40.0	-19.1	45.53	1009	60.6°	-39.5	119.66	1186	119.4
22 24.6	231.74	-45.0	-23.4	60.65	1068	72.2°	-34.9	104.66	1171	107.8°
		-47.5	-29.1	82.62	1130	90.0°	-29.1	82.67	1130	90.0°
OCTOBER 14, 1963										
0 19.3	260.76	47.5	25.8	-83.44	661	90.0	25.9	-83.49	661	90.0
2 14.1	289.79	45.0	21.2	-61.22	631	72.3	30.6	-105.68	708	107.7°
4 8.8	318.81	40.0	17.5	-45.92	621	60.7	34.5	-120.93	756	119.3°
6 3.5	347.83	35.0	14.8	-36.24	621	54.1	37.4	-130.56	798	126.0°
7 58.2	16.86	30.0	12.4	-28.86	627	49.5	40.0	-137.90	834	130.6°
9 52.9	45.88	20.0	8.1	-17.46	651	43.8	44.7	-149.18	906	136.4°
11 47.7	74.90	0.	0.	0.	734	40.0°	53.8	-166.34	1037	140.2°
13 42.4	103.93	-20.0	-8.5	17.37	861	43.7°	-51.5	147.46	1141	136.5°
15 37.1	132.95	-30.0	-13.3	28.63	937	49.3°	-46.2	136.33	1175	130.8°
17 31.9	161.97	-35.0	-16.0	35.93	979	53.9°	-43.2	129.10	1185	126.2°
19 26.5	191.00	-40.0	-19.2	45.49	1026	60.6°	-39.7	119.60	1188	119.4°
21 21.3	220.02	-45.0	-23.6	60.61	1083	72.2°	-35.1	104.55	1177	107.8°
23 16.0	249.04	-47.5	-29.3	82.57	1141	90.0°	-29.3	82.62	1141	90.0°
OCTOBER 15, 1963										
1 10.7	278.07	47.5	25.9	-83.42	692	90.0	25.9	-83.47	692	90.0
3 5.4	307.09	45.0	21.2	-61.21	627	72.3	30.6	-105.67	695	107.7°
5 0.1	336.11	40.0	17.6	-45.91	620	60.7	34.5	-120.93	740	119.3°
6 54.8	5.13	35.0	14.8	-36.23	624	54.1	37.4	-130.57	778	126.0°
8 49.6	34.16	30.0	12.5	-28.84	632	49.5	39.9	-137.91	815	130.6°
10 44.3	63.18	20.0	8.1	-17.45	661	43.8°	44.6	-149.20	886	136.3°
12 39.0	92.20	0.	0.	0.	752	40.0°	53.6	-166.43	1019	140.2°
14 33.7	121.22	-20.0	-8.5	17.33	881	43.7°	-51.7	147.41	1130	136.5°
16 28.4	150.25	-30.0	-13.4	28.61	957	49.3°	-46.4	136.28	1168	130.8°
18 23.2	179.27	-35.0	-16.1	35.90	995	53.9°	-43.4	129.04	1181	126.2°
20 17.9	208.29	-40.0	-19.4	45.45	1044	60.6°	-39.9	119.54	1188	119.4°
22 12.6	237.31	-45.0	-23.8	60.56	1099	72.2°	-35.3	104.49	1182	107.8°
		-47.5	-29.5	82.51	1152	90.0°	-29.5	82.56	1152	90.0°

SATELLITE 1960 IOTA 1
FOR OTHER LATITUDES

EQUATOR S-N

TIME (UT)	LONG. (W)	LAT.	TIME CORR.	SOUTH-NORTH LONG. CORR.	SOUTH-NORTH HT. (MI)	SOUTH-NORTH BEAR. (N-E)	TIME CORR.	NORTH-SOUTH LONG. CORR.	NORTH-SOUTH HT. (MI)	NORTH-SOUTH BEAR. (N-E)
OCTOBER 16, 1963										
0 7.9	266.59	47.5	25.9	-83.41	644	90.0	26.0	-83.46	644	90.0
2 2.0	295.36	45.0	21.3	-61.19	624	72.3	30.7	-105.68	683	107.7°
4 56.7	324.38	40.0	17.6	-45.69	621	60.7	34.5	-120.93	721	119.3°
5 51.4	353.40	35.0	14.9	-36.21	627	54.1	37.4	-130.57	762	126.0°
7 46.2	22.42	30.0	12.5	-28.83	635	49.5°	39.9	-137.91	798	130.6°
9 40.9	51.44	20.0	8.2	-17.44	670	43.8°	44.6	-149.21	867	136.3°
11 35.6	80.46	0.	0.	0.	756	40.0°	53.5	-166.46	1001	140.2°
13 30.3	109.48	-20.0	-8.6	17.35	899	43.6°	-51.9	147.37	1118	136.5°
15 25.0	138.51	-30.0	-13.5	28.58	975	49.3°	-46.6	136.23	1161	130.8°
17 19.7	167.53	-35.0	-16.3	35.87	1016	53.9°	-43.6	128.99	1177	126.2°
19 14.4	196.55	-40.0	-19.5	45.42	1068	60.6°	-40.2	119.49	1187	119.4°
21 9.1	225.57	-45.0	-23.9	60.52	1112	72.2°	-35.5	104.46	1186	107.8°
23 3.8	254.59	-47.5	-29.7	82.47	1161	90.0°	-29.7	82.51	1161	90.0°
OCTOBER 17, 1963										
0 58.6	283.61	47.5	26.0	-83.39	657	90.0	26.0	-83.44	657	90.0
2 53.3	312.63	45.0	21.4	-61.17	622	72.3	30.7	-105.65	672	107.7°
4 48.0	341.65	40.0	17.7	-45.67	623	60.7	34.5	-120.92	711	119.3°
6 42.7	10.67	35.0	15.0	-36.19	632	54.0°	37.4	-130.57	746	126.0°
8 37.4	39.69	30.0	12.6	-28.81	645	49.5°	39.9	-137.92	780	130.6°
10 32.1	68.71	20.0	8.2	-17.43	682	43.8°	44.5	-149.22	848	136.3°
12 26.8	97.73	0.	0.	0.	785	39.9°	53.4	-166.49	982	140.2°
14 21.5	126.75	-20.0	-8.7	17.32	919	43.6°	-52.1	147.32	1104	136.5°
16 16.2	155.77	-30.0	-13.6	28.55	994	49.3°	-46.8	136.17	1152	130.8°
18 10.9	184.79	-35.0	-16.4	35.84	1034	53.9°	-43.8	128.94	1170	126.2°
20 5.6	213.81	-40.0	-19.6	45.38	1077	60.6°	-40.4	119.44	1184	119.4°
22 0.3	242.83	-45.0	-24.1	60.47	1126	72.2°	-35.7	104.39	1185	107.8°
23 55.1	271.85	-47.5	-29.9	82.41	1170	90.0°	-29.9	82.46	1170	90.0°
OCTOBER 18, 1963										
1 49.8	300.87	47.5	26.1	-83.37	631	90.0	26.1	-83.42	632	90.0
3 44.5	329.89	45.0	21.5	-61.15	621	72.3	30.8	-105.65	661	107.7
5 39.2	358.91	40.0	17.8	-45.85	626	60.7°	34.6	-120.91	687	119.3°
7 33.9	27.93	35.0	15.1	-36.17	638	54.0°	37.4	-130.56	730	126.0°
9 28.6	56.95	30.0	12.7	-28.79	654	49.5°	39.9	-137.91	762	130.6°
11 23.3	85.97	20.0	8.3	-17.41	694	43.8°	44.3	-149.23	826	136.3°
13 18.0	114.99	0.	0.	0.	803	39.9°	53.3	-166.52	962	140.2°
15 12.7	144.01	-20.0	-8.7	17.30	939	43.6°	-52.2	147.28	1089	136.5°
17 7.4	173.03	-30.0	-13.7	28.53	1013	49.3°	-47.0	136.13	1141	130.8°
19 2.1	202.05	-35.0	-16.5	35.80	1052	53.9°	-44.0	128.89	1163	126.2°
20 56.8	231.06	-40.0	-19.8	45.34	1095	60.6°	-40.6	119.38	1180	119.4°
22 51.5	260.08	-45.0	-24.3	60.43	1139	72.2°	-35.9	104.33	1189	107.8°
		-47.5	-30.1	82.36	1177	90.0°	-30.1	82.41	1177	90.0°
OCTOBER 19, 1963										
0 46.2	289.10	47.5	26.2	-83.35	627	90.0	26.2	-83.40	627	90.0
2 40.9	318.12	45.0	21.6	-61.13	621	72.3	30.9	-105.61	652	107.7
4 35.6	347.14	40.0	17.9	-45.83	630	60.7°	34.6	-120.89	685	119.3°
6 30.3	16.16	35.0	15.1	-36.15	645	54.0°	37.4	-130.55	716	126.0°
8 25.0	45.17	30.0	12.7	-28.77	663	49.5°	39.9	-137.91	747	130.6°
10 19.7	74.19	20.0	8.3	-17.40	707	43.8°	44.3	-149.23	811	136.3°
12 14.4	103.21	0.	0.	0.	820	39.9°	53.2	-166.53	944	140.2°
14 9.1	132.23	-20.0	-8.8	17.28	957	43.6°	-52.3	147.25	1074	136.4°
16 3.8	161.25	-30.0	-13.8	28.50	1033	49.3°	-47.1	136.09	1130	130.7°
17 58.5	190.26	-35.0	-16.6	35.77	1068	53.9°	-44.2	128.84	1154	126.2°
19 53.2	219.28	-40.0	-19.9	45.31	1107	60.6°	-40.8	119.34	1175	119.4°
21 47.9	248.30	-45.0	-24.5	60.39	1149	72.2°	-36.1	104.28	1188	107.8°
23 42.6	277.32	-47.5	-30.3	82.32	1182	90.0°	-30.3	82.37	1182	90.0°