

PROJECT 10073 RECORD CARD

1. DATE 14 June 1963		2. LOCATION OS ECHO (Atlantic)		12. CONCLUSIONS ☐ Was Balloon ☐ Probably Balloon ☐ Possibly Balloon ☐ Was Aircraft ☐ Probably Aircraft ☐ Possibly Aircraft ☐ Was Astronomical ☐ Probably Astronomical ☐ Possibly Astronomical ☒ Other Satellite ECHO I ☐ Insufficient Data for Evaluation ☐ Unknown	
3. DATE-TIME GROUP Local _____ GMT 14/2301Z		4. TYPE OF OBSERVATION ☒ Ground-Visual ☐ Ground-Radar ☐ Air-Visual ☐ Air-Intercept Radar			
5. PHOTOS ☐ Yes ☒ No		6. SOURCE Military			
7. LENGTH OF OBSERVATION Not reported		8. NUMBER OF OBJECTS one		9. COURSE NE	
10. BRIEF SUMMARY OF SIGHTING Satellite in transit from SW to NE. 1st mag. Estimated altitude 75 deg 30 min max.				11. COMMENTS ECHO I. ECHO crossed equator at 2236Z at 74.41W and reached peak of orbit at 2304Z. This would place the Satellite in the area of the sighting.	

DEPARTMENT OF THE AIR FORCE
STAFF MESSAGE BRANCH
UNCLASSIFIED MESSAGE

AF IN : 192 (15 Jun 63) A/rIj **I N C O M I N G**

ACTION: NIN-9

INFO : XOP-1, XOPX-4, SAF-OS-3, ARMY-2, NAVY-2, CMC-8, JCS-35,
DIA-25, DIA/CIIC-2, OSD-15, NSA-7, CIA-11 (125)

SMB E 007

ZCZCHQA293ZCECA008-

OO RUEAHQ

DE RUEGUF 002

ZNR

O 142331Z

FM COMEASTAREA

TO RUCKHC/CINCLANTFLT

RUWGALB/CINCNORAD ENT AFB COLO

RUEAYQ/COFS USAF WASHDC

RUCKDT/COMASWFORLANT

RUEGUH/COMEASTSEAFRON

RCEOM/CANCOMARLANT

RCCSC/CANAIRDEF

INFO RUECJD/COMDT COGARD

P 142322Z

FM OS ECHO

TO COMEASTAREA

GR18

BT

UNCLAS. MERINT.

2301Z OBSERVED APPARENT SATELLITE TRANSIT SW TO NE. FIRST
MAGNITUDE. EST MAX HEIGHT 75 DEGREES 30 MINUTES.

BT

NOTE: Adv cy to NIN, XOPX & DIA.

JUNE 5, 1963

SATELLITE 1960 IOTA 1, NCHO I

These predictions are based on orbital elements revised on June 3, 1963
 T_0 = June 4.0, times are in days, U.T.
 Argument of perigee = $276.306 + 3.3877(t-T_0)$
 Right ascension of ascending node = $203.064 - 3.2982(t-T_0)$

Inclination = 67.2357 Eccentricity = $0.044912 + 6.22 \times 10^{-4}(t-T_0)$ Semi-major axis = 7.842655 megametersMean anomaly (Rev.) = $0.32350 + 12.498859(t-T_0) + 3.0853 \times 10^{-4}(t-T_0)^2$

SATELLITE 1960 IOTA 1 FOR OTHER LATITUDES								SATELLITE 1960 IOTA 1 FOR OTHER LATITUDES							
EQUATOR S-N				SOUTH-NORTH				EQUATOR S-N				SOUTH-NORTH			
TIME	LONG.	LAT.		TIME	LONG.	MT.	BEAR.	TIME	LONG.	LAT.		TIME	LONG.	MT.	BEAR.
(UT)	(W)			(UT)	(W)	(M)	(N-E)	(UT)	(W)			(UT)	(W)	(M)	(N-E)
JUNE 8, 1963															
1 39.6	90.47	47.4	29.9	-82.43	1135	90.00	29.9	-82.46	1135	90.00	29.9	-82.46	1135	90.00	29.9
3 34.1	110.79	43.0	24.2	-60.60	1109	72.30	35.6	-104.27	1147	107.70	35.6	-104.27	1147	107.70	35.6
5 28.2	140.90	40.0	19.8	-45.43	1065	60.70	40.2	-110.41	1141	110.40	40.2	-110.41	1141	110.40	40.2
7 20.3	170.02	35.0	16.5	-35.86	1031	54.00	43.5	-126.95	1128	126.10	43.5	-126.95	1128	126.10	43.5
9 10.4	207.14	30.0	13.7	-28.56	999	48.40	46.8	-136.22	1112	130.70	46.8	-136.22	1112	130.70	46.8
11 14.3	234.24	20.0	8.4	-17.32	938	43.70	51.6	-147.46	1071	136.40	51.6	-147.46	1071	136.40	51.6
13 4.0	245.37	0.0	0.0	0.0	828	40.00	58.0	-164.59	971	140.10	58.0	-164.59	971	140.10	58.0
15 4.7	244.49	-20.0	-8.4	17.41	740	43.80	-45.4	140.98	842	136.30	-45.4	140.98	842	136.30	-45.4
17 09.0	223.61	-30.0	-12.9	28.78	708	49.50	-40.7	137.44	807	130.50	-40.7	137.44	807	130.50	-40.7
19 04.9	202.73	-35.0	-15.3	34.16	696	54.10	-38.7	130.31	780	126.00	-38.7	130.31	780	126.00	-38.7
21 00.8	181.84	-40.0	-18.1	43.84	687	60.80	-35.9	126.65	752	119.20	-35.9	126.65	752	119.20	-35.9
23 05.1	99.86	-45.0	-21.6	61.19	689	72.40	-31.4	107.52	721	107.60	-31.4	107.52	721	107.60	-31.4
		-47.4	-24.4	83.26	699	90.00	-26.6	85.28	699	90.00	-26.6	85.28	699	90.00	-26.6
JUNE 9, 1963															
0 40.2	40.08	47.4	29.7	-82.56	1135	90.00	29.7	-82.59	1135	90.00	29.7	-82.59	1135	90.00	29.7
2 35.3	109.19	43.0	24.1	-60.63	1097	72.30	35.5	-104.30	1149	107.70	35.5	-104.30	1149	107.70	35.5
4 30.4	138.31	40.0	19.7	-45.45	1058	60.70	40.0	-110.44	1144	110.40	40.0	-110.44	1144	110.40	40.0
6 25.3	167.42	35.0	16.4	-35.88	1021	54.00	43.4	-126.98	1136	126.10	43.4	-126.98	1136	126.10	43.4
8 20.6	196.54	30.0	13.6	-28.58	987	49.40	44.4	-136.24	1121	130.70	44.4	-136.24	1121	130.70	44.4
10 19.7	225.66	20.0	8.7	-17.33	925	43.70	51.6	-147.42	1082	136.40	51.6	-147.42	1082	136.40	51.6
12 10.6	254.77	0.0	0.0	0.0	815	40.00	58.0	-164.60	965	140.10	58.0	-164.60	965	140.10	58.0
14 9.9	243.89	-20.0	-8.4	17.42	729	43.80	-45.4	140.99	874	136.30	-45.4	140.99	874	136.30	-45.4
16 1.0	213.00	-30.0	-12.6	28.79	700	49.50	-40.7	137.67	815	130.60	-40.7	137.67	815	130.60	-40.7
18 04.1	192.12	-35.0	-15.2	34.18	689	54.10	-38.1	130.32	789	126.00	-38.1	130.32	789	126.00	-38.1
20 01.2	171.24	-40.0	-18.1	43.84	682	60.80	-35.2	126.66	759	119.20	-35.2	126.66	759	119.20	-35.2
22 06.3	40.35	-45.0	-21.6	61.21	682	72.40	-31.3	107.54	726	107.60	-31.3	107.54	726	107.60	-31.3
23 41.3	99.47	-47.4	-24.4	83.26	697	90.00	-26.6	85.30	697	90.00	-26.6	85.30	697	90.00	-26.6
JUNE 10, 1963															
0 38.4	98.58	47.4	29.6	-82.67	1129	90.00	29.6	-82.53	1129	90.00	29.6	-82.53	1129	90.00	29.6
2 31.9	127.70	43.0	24.0	-60.74	1089	72.30	35.3	-104.34	1150	107.70	35.3	-104.34	1150	107.70	35.3
4 26.6	156.81	40.0	19.6	-45.48	1049	60.70	40.0	-110.48	1151	110.40	40.0	-110.48	1151	110.40	40.0
6 21.1	185.93	35.0	16.3	-35.91	1008	54.00	43.3	-126.01	1143	126.10	43.3	-126.01	1143	126.10	43.3
8 16.8	215.04	30.0	13.5	-28.60	974	49.40	46.2	-136.27	1130	130.70	46.2	-136.27	1130	130.70	46.2
10 11.9	244.16	20.0	8.7	-17.34	910	43.70	51.5	-147.45	1094	136.40	51.5	-147.45	1094	136.40	51.5
12 7.0	273.27	0.0	0.0	0.0	800	40.00	58.0	-164.61	999	140.20	58.0	-164.61	999	140.20	58.0
14 2.1	302.38	-20.0	-8.3	17.43	718	43.80	-45.4	140.99	887	136.30	-45.4	140.99	887	136.30	-45.4
16 07.2	331.50	-30.0	-12.7	28.81	691	49.50	-40.7	137.68	829	130.60	-40.7	137.68	829	130.60	-40.7
18 02.3	360.61	-35.0	-15.2	34.19	682	54.10	-38.1	130.33	799	126.00	-38.1	130.33	799	126.00	-38.1
20 07.3	29.79	-40.0	-18.0	43.88	678	60.80	-35.2	126.67	768	119.20	-35.2	126.67	768	119.20	-35.2
22 42.4	98.44	-45.0	-21.7	61.23	680	72.40	-31.3	107.56	732	107.60	-31.3	107.56	732	107.60	-31.3
		-47.4	-24.4	83.28	693	90.00	-26.6	85.32	693	90.00	-26.6	85.32	693	90.00	-26.6
JUNE 11, 1963															
0 37.5	87.94	47.4	29.5	-82.32	1125	90.00	29.5	-82.36	1129	90.00	29.5	-82.36	1129	90.00	29.5
2 32.6	117.07	43.0	23.9	-60.89	1081	72.30	35.2	-104.37	1130	107.70	35.2	-104.37	1130	107.70	35.2
4 27.7	146.19	40.0	19.4	-45.51	1035	60.70	40.0	-110.51	1131	110.40	40.0	-110.51	1131	110.40	40.0
6 22.4	175.30	35.0	16.2	-35.93	990	54.00	43.0	-126.04	1118	126.10	43.0	-126.04	1118	126.10	43.0
8 17.8	204.41	30.0	13.3	-28.62	951	49.40	46.1	-136.30	1105	130.70	46.1	-136.30	1105	130.70	46.1
10 12.9	233.52	20.0	8.6	-17.35	890	43.70	51.4	-147.43	1083	136.40	51.4	-147.43	1083	136.40	51.4
12 8.0	262.64	0.0	0.0	0.0	784	40.00	58.0	-164.62	1013	140.20	58.0	-164.62	1013	140.20	58.0
14 3.1	291.75	-20.0	-8.1	17.44	705	43.80	-45.4	140.99	900	136.30	-45.4	140.99	900	136.30	-45.4
16 08.2	320.86	-30.0	-12.7	28.82	684	49.50	-40.6	137.69	840	130.60	-40.6	137.69	840	130.60	-40.6
18 03.3	349.98	-35.0	-15.1	34.21	677	54.10	-38.0	130.34	809	126.00	-38.0	130.34	809	126.00	-38.0
20 08.3	19.09	-40.0	-17.9	43.90	674	60.80	-35.1	126.69	778	119.20	-35.1	126.69	778	119.20	-35.1
22 43.4	48.20	-45.0	-21.7	61.25	680	72.40	-31.2	107.58	738	107.60	-31.2	107.58	738	107.60	-31.2
23 38.5	77.31	-47.4	-24.4	83.30	701	90.00	-26.4	85.34	701	90.00	-26.4	85.34	701	90.00	-26.4
JUNE 12, 1963															
1 39.6	106.43	47.4	29.3	-82.36	1119	90.00	29.3	-82.36	1119	90.00	29.3	-82.36	1119	90.00	29.3
3 34.7	135.54	43.0	23.7	-60.73	1071	72.30	35.0	-104.41	1073	107.70	35.0	-104.41	1073	107.70	35.0
5 29.7	164.65	40.0	19.3	-45.54	1023	60.70	40.0	-110.54	1073	110.40	40.0	-110.54	1073	110.40	40.0
7 24.8	193.76	35.0	16.1	-35.95	983	54.00	43.0	-126.07	1063	126.10	43.0	-126.07	1063	126.10	43.0
9 19.9	222.88	30.0	13.4	-28.64	940	49.40	46.0	-136.34	1053	130.70	46.0	-136.34	1053	130.70	46.0
11 15.0	251.99	20.0	8.6	-17.37	881	43.70	51.2	-147.50	1043	136.40	51.2	-147.50	1043	136.40	51.2
13 10.1	281.10	0.0	0.0	0.0	772	40.00	60.7	-164.65	1028	140.20	60.7	-164.65	1028	140.20	60.7
15 05.1	310.21	-20.0	-8.2	17.45	698	43.80	-45.4	140.98	915	136.30	-45.4	140.98	915	136.30	-45.4
17 00.2	339.32	-30.0	-12.6	28.84	677	49.50	-40.6	137.69	853	130.60	-40.6	137.69	853	130.60	-40.6
19 05.3	368.44	-35.0													