PROJECT 10073 RECORD CARD

1. DATE

8 July 1963

2. LOCATION

13.58N 81.38W (Gulf of Mexico)

3. DATE-TIME GROUP

Local _____

GMT 09/0236Z

4. TYPE OF OBSERVATION

☒ Ground-Visual ☐ Ground-Radar

☐ Air-Visual ☐ Air-Intercept Radar

5. PHOTOS

☐ Yes

☒ No

6. SOURCE

Civilian British Ship Leith Hill

7. LENGTH OF OBSERVATION

7½ minutes

8. NUMBER OF OBJECTS

one

9. COURSE

SE

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

10. BRIEF SUMMARY OF SIGHTING

Satellite observed for 7½ minutes in flight to SE. Erratic course. Disappeared near Star Vega at altitude of 56 deg.

11. COMMENTS

Marine Data report. ECHO crossed the Equator at 0154Z heading NE at Long of 227.40. 40 minues later ECHO would be heading SE at 30 deg N and about 90 deg W. This would place ECHO in position for the reported sighting.

ATIC FORM 329 (REV 26 SEP 52)

OPTIONAL FORM NO. 10
5010-103

UNITED STATES GOVERNMENT

Memorandum

TO : J. S. Lacey, OPI
NASA, Greenbelt

Code 5511:CW
DATE: 9 October 1963

FROM : Nautical Information Branch
U.S. Naval Oceanographic Office

SUBJECT: Nautical information; forwarding of

Encl: (1) Marine Data Report from British Ship LEITH HILL dtd 8 July 1963

1. Enclosure (1) forwarded for your information.

"Forwarded as a matter pertaining
to your organizational [illegible] attention
to this matter will be appreciated.

G. BUCKWALTER

Ed Mason 11/6/63

Ed Mason
Public Information Officer
Goddard Space Flight Center

Encl.(1)

PRNC-NHO-3800/1 (Rev. 12-59) (Back)

MARINE DATA REPORT COPY COPY

Please type or print clearly

NAME OF SHIP	NATIONALITY	DATE OF REPORT
LEITH HILL	BRITISH	8 July 1963

MASTER OR COMMANDING OFFICER	OBSERVER (Name and Rank)
CAPT. D.J. MORRIS	[redacted] Officer

SHIPS MAIL ADDRESS (U. S. Agent's address for non-U. S. Ships)

% UNITED FRUIT , Julia Street Wharf, New Orleans

SHIP TYPE

☐ PASSENGER ☒ CARGO ☐ COMB. PASSENGER-CARGO ☐ TANKER ☐ OTHER (Specify)

GROSS TONS	LENGTH (Feet)	BEAM (Feet)	DEEPEST DRAFT (Feet) when loaded to marks
2977.69	343' 06½"	45' 00"	21' 05¼"

Instructions for Reporting Observer

This form is provided for the convenience of mariners in reporting items of interest to the Hydrographic Office such as wrecks, shoalings, uncharted dangers, discrepancies in published information, etc. Such reports will enable the Hydrographic Office to correct its charts and publications and promote navigational safety, thereby benefiting mariners generally. In all cases, be sure to describe items fully, and specify the date, time (G.M.T.), and position or location of the items reported. Additional information on submitting reports will be found in H. O. Pub. No. 606a.

At 0236 GMT on 9 July 1963 in Latitude 13-58N., Longitude 81-38W., course 351°True Speed 15 Knots, bound Houston from the Panama Canal A satellite was observed. The satellite was first observed at an altitude of 15°, bearing 336°, adjacent to star Dubhe. After describing what appeared to be a somewhat erratic course in a southeasterly direction, the satellite disappeared near the star Vega at an altitude of 56°, bearing 045°. The satellite was of the same brightness as the star Vega and was in sight for 7½ minutes.

Weather- partly cloudy with good visibility

wind from the ENE at 10 knots

air temp. 27°C, sea temp 29°C

bar. 1011.5 mb. rising

COPY COPY

REPORT URGENT DANGERS BY RADIO

NASA 5th Gen

PRNC-NHO-3800/1 (Rev. 12-59) (Front)

United States Navy Hydrographic Office

Washington 25, D. C.

Mariners of any nationality may receive Pilot Charts, Notices to Mariners, and Daily Memorandums, published by the U. S. Navy Hydrographic Office, free of cost in return for marine observations. Observers' blanks may be obtained at any of the Branch Hydrographic Offices established in the following cities:

Atlantic and Gulf Ports:

Boston; New York; Philadelphia; Baltimore; Norfolk; New Orleans, and Galveston.

Pacific Ports:

Wilmington; San Francisco; Seattle; Honolulu; and Yokosuka, Japan.

Panama Canal:

Rodman, C. Z.

Shipmasters and officers are also invited to consult charts and nautical publications, and compare navigational instruments at any of the above named Branch Offices, which are open daily except Saturdays and Sundays.

Copies of this and other blanks will be furnished upon request to the Hydrographic Office or its Branch Offices.

Please mail completed sheets directly to the U. S. Navy Hydrographic Office, Washington 25, D. C. A franked envelope is supplied for this purpose. If more convenient, completed forms may be deposited with the nearest Branch Hydrographic Office, or United States Consul.

THE HYDROGRAPHER

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SMITHSONIAN ASTROPHYSICAL OBSERVATORY, CAMBRIDGE, MASSACHUSETTS

JULY 3, 1963

SATELLITE 1960 IOTA 1, ECHO I

These predictions are based on orbital elements revised on July 1, 1963
T_o = July 2.0, times are in days, U.T.
Argument of perigee = 16°.472 + 3°.867 $(t-T_o)$
Right ascension of ascending node = 110°.669 - 3°.30358 $(t-T_o)$

Inclination = 47°.27622
Eccentricity = 0.049970 + 3.50 x 10^{-5} $(t-T_o)$
Semi-major axis = 7.840594 megameters
Mean anomaly (Rev.) = 0.36578 + 12.503795 $(t-T_o)$ + 9.233 x 10^{-5} $(t-T_o)^2$

SATELLITE 1960 IOTA 1
FOR OTHER LATITUDES

EQUATOR S-N TIME (UT)	LONG. (W)	LAT.	SOUTH-NORTH TIME CORR.	LONG. CORR.	HT. (MI)	BEAR. (N-E)	NORTH-SOUTH TIME CORR.	LONG. CORR.	HT. (MI)	BEAR. (N-E)
				JULY 6, 1963						
1 1.8	201.28	47.5	26.3	-83.32	777	90.0*	26.3	-83.36	777	90.0*
2 56.9	230.37	45.0	21.4	-61.12	727	72.2	31.3	-105.53	837	107.8*
4 51.9	259.46	40.0	17.6	-45.87	697	60.7	35.4	-120.71	890	119.4*
6 47.0	288.55	35.0	14.8	-36.22	680	54.0	38.5	-130.30	929	126.1*
8 42.1	317.70	30.0	12.4	-28.85	671	49.5	41.2	-137.60	964	130.7*
10 37.1	346.81	20.0	8.0	-17.47	666	43.8	46.2	-148.81	1023	136.4
12 32.2	15.92	0.	0.	0.	698	40.0	55.6	-165.93	1111	140.3
14 27.3	45.04	-20.0	-8.2	17.42	778	43.7	-49.8	147.88	1153	136.5
16 22.3	74.14	-30.0	-12.9	28.72	836	49.4*	-44.5	136.75	1151	130.8
18 17.4	103.25	-35.0	-15.5	36.05	871	53.9*	-41.6	129.51	1142	126.2
20 12.5	132.38	-40.0	-18.5	45.65	913	60.6*	-38.2	120.00	1125	119.4
22 7.5	161.47	-45.0	-22.7	60.79	969	72.2*	-33.7	104.93	1092	107.8*
		-47.5	-28.1	82.86	1036	90.0*	-28.2	82.90	1036	90.0*
				JULY 7, 1963						
0 2.6	190.58	47.5	26.3	-83.32	764	90.0*	26.3	-83.37	765	90.0*
1 57.7	219.69	45.0	21.4	-61.12	717	72.2	31.3	-105.55	823	107.8*
3 52.7	248.79	40.0	17.6	-45.87	690	60.7	35.3	-120.74	874	119.4*
5 47.8	277.88	35.0	14.8	-36.21	676	54.0	38.4	-130.33	914	126.1*
7 42.9	307.03	30.0	12.4	-28.84	669	49.5	41.1	-137.63	948	130.7*
9 37.9	336.14	20.0	8.1	-17.47	668	43.8	46.0	-148.85	1009	136.4
11 33.0	5.24	0.	0.	0.	704	40.0	55.4	-165.98	1102	140.3
13 28.1	34.34	-20.0	-8.2	17.41	784	43.7	-50.1	147.84	1151	136.5
15 23.1	63.44	-30.0	-12.9	28.71	841	49.4*	-44.8	136.70	1154	130.8
17 18.2	92.55	-35.0	-15.5	36.04	882	53.9*	-41.8	129.46	1147	126.2
19 13.2	121.64	-40.0	-18.6	45.62	929	60.6*	-38.4	119.95	1133	119.4
21 8.3	150.73	-45.0	-22.8	60.76	985	72.2*	-33.9	104.88	1103	107.8
23 3.4	179.88	-47.5	-28.3	82.82	1050	90.0*	-28.3	82.86	1050	90.0*
				JULY 8, 1963						
0 58.4	208.95	47.5	26.3	-83.32	752	90.0*	26.3	-83.38	752	90.0*
2 53.5	238.10	45.0	21.4	-61.12	708	72.2	31.2	-105.56	807	107.8*
4 48.6	267.21	40.0	17.6	-45.87	684	60.7	35.2	-120.76	857	119.4*
6 43.6	296.32	35.0	14.8	-36.21	672	54.0	38.3	-130.35	896	126.1*
8 38.7	325.43	30.0	12.4	-28.84	667	49.5	41.0	-137.66	931	130.7*
10 33.7	354.53	20.0	8.1	-17.46	670	43.8	45.9	-148.89	993	136.4*
12 28.8	23.64	0.	0.	0.	716	40.0	55.2	-166.03	1090	140.3
14 23.9	52.75	-20.0	-8.3	17.40	806	43.7	-50.3	147.77	1148	136.5
16 18.9	81.86	-30.0	-13.0	28.69	867	49.4*	-45.0	136.64	1156	130.8
18 14.0	110.97	-35.0	-15.6	36.01	904	53.9*	-42.0	129.40	1152	126.2
20 9.1	140.08	-40.0	-18.7	45.59	948	60.6*	-38.6	119.89	1140	119.4
22 4.1	169.18	-45.0	-23.0	60.73	1001	72.2*	-34.1	104.83	1114	107.9
23 59.2	198.29	-47.5	-28.5	82.77	1064	90.0*	-28.5	82.82	1064	90.0*
				JULY 9, 1963						
1 54.2	227.40	47.5	26.2	-83.34	740	90.0*	26.3	-83.38	740	90.0*
3 49.3	256.51	45.0	21.4	-61.12	699	72.2	31.2	-105.57	792	107.8*
5 44.4	285.62	40.0	17.7	-45.86	678	60.7	35.2	-120.77	841	119.3*
7 39.4	314.73	35.0	14.9	-36.20	670	54.0	38.2	-130.37	879	126.1*
9 34.5	343.83	30.0	12.5	-28.83	667	49.5	40.9	-137.68	914	130.7*
11 29.5	12.94	20.0	8.1	-17.45	674	43.8	45.7	-148.92	976	136.4*
13 24.6	42.05	0.	0.	0.	724	40.0	55.0	-166.08	1078	140.2
15 19.7	71.15	-20.0	-8.4	17.39	821	43.7*	-50.5	147.71	1144	136.5
17 14.7	100.26	-30.0	-13.1	28.67	884	49.4*	-45.2	136.58	1156	130.8
19 9.8	129.37	-35.0	-15.7	35.99	921	53.9*	-42.3	129.34	1155	126.2
21 4.8	158.48	-40.0	-18.8	45.56	962	60.6*	-38.9	119.84	1147	119.4
23 59.9	187.59	-45.0	-23.1	60.69	1011	72.2*	-34.3	104.78	1124	107.9
		-47.5	-28.7	82.73	1078	90.0*	-28.7	82.77	1078	90.0*

SATELLITE 1960 IOTA 1
FOR OTHER LATITUDES

EQUATOR S-N TIME (UT)	LONG. (W)	LAT.	SOUTH-NORTH TIME CORR.	LONG. CORR.	HT. (MI)	BEAR. (N-E)	NORTH-SOUTH TIME CORR.	LONG. CORR.	HT. (MI)	BEAR. (N-E)
				JULY 10, 1963						
0 55.0	216.69	47.5	26.2	-83.34	725	90.0	26.3	-83.38	729	90.0
2 50.0	245.80	45.0	21.4	-61.12	692	72.2	31.2	-105.58	779	107.8*
4 45.1	274.91	40.0	17.7	-45.86	675	60.7	35.1	-120.78	826	119.3*
6 40.1	304.02	35.0	14.9	-36.20	668	54.0	38.1	-130.39	864	126.1*
8 35.2	333.12	30.0	12.5	-28.82	667	49.5	40.8	-137.71	898	130.6*
10 30.3	-2.23	20.0	8.1	-17.45	678	43.8	45.6	-148.95	960	136.4*
12 25.3	31.34	0.	0.	0.	736	40.0	54.8	-166.12	1066	140.2
14 20.4	60.44	-20.0	-8.4	17.38	835	43.7*	-50.7	147.66	1138	136.5
16 15.4	89.55	-30.0	-13.1	28.66	900	49.4*	-45.4	136.53	1155	130.8
18 10.5	118.66	-35.0	-15.8	35.96	937	53.9*	-42.5	129.29	1157	126.2
20 5.5	147.77	-40.0	-19.0	45.53	979	60.6*	-39.1	119.79	1151	119.4
22 0.6	176.87	-45.0	-23.3	60.65	1032	72.2*	-34.5	104.73	1132	107.9
23 55.7	205.98	-47.5	-28.8	82.69	1090	90.0*	-28.8	82.73	1090	90.0*
				JULY 11, 1963						
1 50.7	235.09	47.5	26.3	-83.33	715	90.0	26.3	-83.38	719	90.0
3 45.8	264.19	45.0	21.5	-61.11	686	72.2	31.2	-105.58	765	107.8*
5 40.8	293.30	40.0	17.7	-45.85	671	60.7	35.1	-120.79	810	119.3*
7 35.9	322.41	35.0	14.9	-36.19	667	54.0	38.1	-130.41	847	126.0*
9 30.9	351.51	30.0	12.5	-28.81	665	49.5	40.7	-137.72	881	130.6*
11 26.0	20.62	20.0	8.2	-17.44	684	43.8	45.5	-148.98	943	136.4*
13 21.1	49.73	0.	0.	0.	745	40.0	54.7	-166.17	1052	140.2
15 16.1	78.83	-20.0	-8.5	17.36	852	43.7*	-50.9	147.61	1132	136.5
17 11.2	107.94	-30.0	-13.2	28.63	917	49.3*	-45.6	136.47	1153	130.8
19 6.2	137.05	-35.0	-15.9	35.93	954	53.9*	-42.7	129.24	1157	126.2
21 1.3	166.15	-40.0	-19.1	45.50	995	60.6*	-39.3	119.73	1155	119.4
22 56.3	195.26	-45.0	-23.4	60.62	1047	72.2*	-34.7	104.68	1140	107.9
		-47.5	-29.0	82.64	1102	90.0*	-29.0	82.68	1102	90.0*
				JULY 12, 1963						
0 51.4	224.37	47.5	26.3	-83.33	710	90.0	26.3	-83.37	710	90.0
2 46.4	253.47	45.0	21.5	-61.10	681	72.2	31.1	-105.58	753	107.8*
4 41.5	282.58	40.0	17.8	-45.84	665	60.7	35.1	-120.80	796	119.3*
6 36.6	311.69	35.0	15.0	-36.17	668	54.0	38.0	-130.42	832	126.0*
8 31.6	340.79	30.0	12.6	-28.80	672	49.5	40.6	-137.74	865	130.6*
10 26.7	9.90	20.0	8.2	-17.43	690	43.8	45.4	-149.00	927	136.4*
12 21.7	39.00	0.	0.	0.	760	40.0	54.5	-166.20	1039	140.2
14 16.8	68.11	-20.0	-8.5	17.35	867	43.7*	-51.1	147.56	1124	136.5
16 11.8	97.22	-30.0	-13.3	28.61	933	49.3*	-45.8	136.42	1150	130.8
18 6.9	126.32	-35.0	-16.0	35.91	965	53.9*	-42.9	129.19	1157	126.2
20 1.9	155.43	-40.0	-19.2	45.47	1010	60.6*	-39.5	119.68	1157	119.4
21 57.0	184.53	-45.0	-23.6	60.58	1061	72.2*	-34.9	104.63	1146	107.9
23 52.0	213.64	-47.5	-29.2	82.60	1117	90.0*	-29.2	82.64	1112	90.0*
				JULY 13, 1963						
1 47.1	242.75	47.5	26.3	-83.32	701	90.0	26.3	-83.36	701	90.0
3 42.1	271.85	45.0	21.6	-61.09	676	72.2	31.2	-105.58	741	107.8*
5 37.2	300.96	40.0	17.8	-45.82	668	60.7	35.1	-120.80	782	119.3*
7 32.2	330.06	35.0	15.0	-36.16	669	54.0	38.0	-130.42	816	126.0*
9 27.3	359.17	30.0	12.6	-28.79	675	49.5	40.6	-137.75	849	130.6*
11 22.3	28.27	20.0	8.2	-17.42	698	43.7	45.4	-149.02	910	136.4*
13 17.4	57.38	0.	0.	0.	774	39.9	54.4	-166.24	1023	140.2
15 12.4	86.49	-20.0	-8.6	17.34	884	43.6*	-51.3	147.52	1115	136.5
17 7.5	115.59	-30.0	-13.4	28.59	950	49.3*	-46.0	136.37	1145	130.8
19 2.6	144.70	-35.0*	-16.1	35.88	988	53.9*	-43.1	129.14	1155	126.2
20 57.6	173.80	-40.0	-19.3	45.44	1028	60.6*	-39.7	119.63	1155	119.4
22 52.7	202.91	-45.0	-23.7	60.54	1075	72.2*	-35.1	104.58	1151	107.9
		-47.5	-29.4	82.55	1123	90.0	-29.4	82.59	1123	90.0