

# PROJECT 10073 RECORD CARD

1. DATE 28 April 1963		2. LOCATION 50.35N 170.10W (Pacific)		12. CONCLUSIONS <input type="checkbox"/> Was Balloon <input type="checkbox"/> Probably Balloon <input type="checkbox"/> Possibly Balloon  <input type="checkbox"/> Was Aircraft <input type="checkbox"/> Probably Aircraft <input type="checkbox"/> Possibly Aircraft  <input type="checkbox"/> Was Astronomical <input type="checkbox"/> Probably Astronomical <input type="checkbox"/> Possibly Astronomical	
3. DATE-TIME GROUP Local _____ GMT 29/1024Z		4. TYPE OF OBSERVATION <input type="checkbox"/> Ground-Visual <input type="checkbox"/> Ground-Radar <input checked="" type="checkbox"/> Air-Visual <input type="checkbox"/> Air-Intercept Radar		<input checked="" type="checkbox"/> Other <del>Satellite</del> <input type="checkbox"/> Insufficient Data for Evaluation <input type="checkbox"/> Unknown	
5. PHOTOS <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		6. SOURCE Civil Airlines			
7. LENGTH OF OBSERVATION not reported		8. NUMBER OF OBJECTS one		9. COURSE North	
10. BRIEF SUMMARY OF SIGHTING Object assumed to be satellite orbiting S to N. Appeared at 45 dgr elevation and was followed visually to the horizon. Blue and white color. Moving rapidly.				11. COMMENTS <del>ECHO data not available.</del> Object assumed satellite by rpting officials. Case carried as satellite.  ON 28 APR 1963 CARRIED AS BALLOON AT 1011Z AT 45°N 170°W. NOT IN POSITION FOR SIGHTING.	



DEPARTMENT OF THE AIR FORCE

STAFF MESSAGE BRANCH

UNCLASSIFIED MESSAGE

AF IN : 54657 (29 Apr 63) **INCOMING**

INFO : NIN-9, XOP-1, XOPX-4, SAF-OS-3, DIA-25, DIA-CIIC-2, ARMY-2,  
SMB 3053 CMC-8, JCS-35, OSD-15, CIA-11, NSA-7 (123)  
DE RUHLKH 3

ZNR

O 291105Z

FM 326 AIR DIV KUNIA FACILITY HAWAII

TO RUHLKM/PACAF HICKAM AFB HAWAII

RUHPHH/COMHAWSEAFRON PEARL HARBOR HAWAII

INFO RUEAHQ/CSAF USAF WASH DC

RUECC/CNO WASH DC

RUECW/SECNAV WSH DC

RUWGALE/CINCNORAD ENT AFB COLO

RUHPA/CINCPAC CAMP NM SMITH HA

RUHAFS/CINCUSARPAC FT SHAFTER HA

RUHPB/CINCPACFLT PEARL HARBOR HA

RUUAUAAK/COMUSJAPAN FUCHU AS JAPAN

RUAMC/COMUSKOREA SEOUL KOREA

RUAGFL/COMUSTDC TAIPEI TAIWAN

RUCSBRB/CINCSAC OFFUTT AFB NEBR

AF GRNC

BT

UNCLAS HADOC-D 0785

/C I R V I S/ BARRIER PACIFIC AIRCRAFT CALL SIGN 0874 REPORTS

SIGHTING WHAT APPEARS TO BE A SATELLITE AT POSITION

53 DEG. 35 MIN N. 170 DEG. 10 MIN W. AT TIME 1024Z.

APPEARED 45 DEG. ABOVE HORIZON AND WAU FOLLOWED

VISUALLY TO HORIZON. ORBITTING SOUTH TO NORTH. BLUE

AND WHITE COLOR. MOVING RAPIDLY. NO EVALUATION.

BT NOTE: Advance copies delivered to DIA, NIN & XOPX.



APRIL 24, 1963

## SATELLITE 1960 IOTA 1, SCMO I

These predictions are based on orbital elements revised on April 22, 1963  
 T<sub>0</sub> = April 23.0, times are in days, U.T.  
 Argument of perigee = 120°591 + 3°827 (t-T<sub>0</sub>)  
 Right ascension of ascending node = 340°869 - 3°2662 (t-T<sub>0</sub>)  
 Expected average magnitude = +1

Inclination = 47°1068  
 Eccentricity = 0.018650 + 7.05 × 10<sup>-6</sup> (t-T<sub>0</sub>)  
 Semi-major axis = 7.853536 megameters  
 Mean anomaly (Rev.) = 0.94321 + 12.672806 (t-T<sub>0</sub>) + 2.127 × 10<sup>-6</sup> (t-T<sub>0</sub>)<sup>2</sup>

SATELLITE 1960 IOTA 1 FOR OTHER LATITUDES											SATELLITE 1960 IOTA 1 FOR OTHER LATITUDES										
EQUATOR S-N											EQUATOR S-N										
TIME (UT)	LONG. (W)	LAT.	TIME CORR.	LONG. CORR.	HT. (MI)	BEAR. (N-E)	TIME CORR.	LONG. CORR.	HT. (MI)	BEAR. (N-E)	TIME (UT)	LONG. (W)	LAT.	TIME CORR.	LONG. CORR.	HT. (MI)	BEAR. (N-E)	TIME CORR.	LONG. CORR.	HT. (MI)	BEAR. (N-E)
APRIL 27, 1963																					
1 30.9	269.28	47.4	28.9	-82.67	850	90.0	28.9	-82.72	850	90.0	1 37.2	267.88	47.4	29.2	-82.59	865	90.0	29.2	-82.64	865	90.0
3 22.2	296.49	45.0	23.0	-60.93	873	72.5	23.0	-60.97	873	107.5	3 22.5	317.05	45.0	24.1	-60.85	895	72.5	24.1	-60.85	895	107.5
5 21.6	327.63	40.0	19.7	-45.56	894	60.8	19.7	-45.56	894	119.2	5 27.8	346.22	40.0	20.0	-45.50	921	60.8	20.0	-45.50	921	119.2
7 16.9	356.80	35.0	16.6	-35.91	910	54.1	16.6	-35.91	910	125.9	7 23.1	373.39	35.0	16.9	-35.85	940	54.1	16.9	-35.85	940	125.9
9 12.2	39.98	30.0	14.0	-26.56	924	49.5	14.0	-26.56	924	130.5	9 18.4	44.56	30.0	14.1	-26.52	956	49.5	14.1	-26.52	956	130.5
11 7.6	55.13	20.0	9.1	-17.27	950	43.7	9.1	-17.27	950	136.2	11 13.8	73.72	20.0	9.2	-17.24	982	43.7	9.2	-17.24	982	136.2
13 2.9	94.32	0.	0.	0.	991	39.9	0.	0.	991	140.0	13 9.1	102.89	0.	0.	0.	1020	39.9	0.	0.	1020	140.0
15 58.2	113.50	-20.0	-9.2	17.24	1019	43.7	-9.2	17.24	1019	136.2	15 6.4	132.06	-20.0	-9.3	17.21	1036	43.7	-9.3	17.21	1036	136.2
17 53.6	142.67	-30.0	-14.3	28.49	1025	49.4	-14.3	28.49	1025	130.5	17 59.7	161.23	-30.0	-14.4	28.46	1034	49.4	-14.4	28.46	1034	130.5
19 48.9	171.84	-35.0	-17.1	35.80	1025	54.0	-17.1	35.79	1025	125.9	19 55.0	190.40	-35.0	-17.2	35.77	1029	54.0	-17.2	35.77	1029	125.9
21 44.2	201.02	-40.0	-20.3	45.41	1022	60.8	-20.3	45.40	1022	119.2	21 50.3	219.57	-40.0	-20.4	45.38	1021	60.8	-20.4	45.38	1021	119.2
23 39.9	230.19	-45.0	-24.7	60.72	1013	72.5	-24.7	60.71	1013	107.5	23 45.6	248.74	-45.0	-24.8	60.69	1004	72.5	-24.8	60.69	1004	107.5
		-47.4	-30.0	82.39	995	90.0	-30.0	82.44	995	90.0			-47.4	-30.1	82.37	977	90.0	-30.1	82.42	977	90.0
APRIL 28, 1963																					
0 34.9	299.36	47.4	28.9	-82.65	853	90.0	29.0	-82.70	852	90.0	0 41.0	277.91	47.4	29.3	-82.56	870	90.0	29.3	-82.61	870	90.0
2 30.2	298.54	45.0	23.9	-60.91	877	72.5	24.0	-60.95	877	107.5	2 36.3	307.08	45.0	24.2	-60.83	892	72.5	24.2	-60.83	892	107.5
4 25.5	317.71	40.0	19.8	-45.54	899	60.8	19.8	-45.54	899	119.2	4 31.4	336.24	40.0	20.0	-45.48	928	60.8	20.0	-45.48	928	119.2
6 20.9	346.88	35.0	16.7	-35.89	916	54.1	16.7	-35.89	916	125.9	6 26.9	365.41	35.0	16.9	-35.84	948	54.1	16.9	-35.84	948	125.9
8 16.2	376.05	30.0	14.0	-26.55	931	49.5	14.0	-26.55	931	130.5	8 22.2	394.58	30.0	14.2	-26.50	964	49.5	14.2	-26.50	964	130.5
10 11.5	405.23	20.0	9.1	-17.26	957	43.7	9.1	-17.26	957	136.2	10 17.5	423.75	20.0	9.2	-17.23	990	43.7	9.2	-17.23	990	136.2
12 6.8	74.40	0.	0.	0.	998	39.9	0.	0.	998	140.0	12 12.8	452.92	0.	0.	0.	1026	39.9	0.	0.	1026	140.0
14 2.2	103.57	-20.0	-9.2	17.23	1024	43.7	-9.2	17.23	1024	136.2	14 8.1	482.09	-20.0	-9.3	17.21	1039	43.7	-9.3	17.21	1039	136.2
16 57.5	132.74	-30.0	-14.3	28.48	1028	49.4	-14.3	28.48	1028	130.5	16 3.4	511.25	-30.0	-14.4	28.45	1035	49.4	-14.4	28.45	1035	130.5
18 52.8	161.92	-35.0	-17.1	35.79	1027	54.0	-17.1	35.79	1027	125.9	18 58.8	540.42	-35.0	-17.2	35.76	1029	54.0	-17.2	35.76	1029	125.9
19 48.2	191.09	-40.0	-20.3	45.40	1023	60.8	-20.3	45.40	1023	119.2	19 54.1	569.59	-40.0	-20.4	45.38	1019	60.8	-20.4	45.38	1019	119.2
21 44.5	220.25	-45.0	-24.7	60.71	1012	72.5	-24.7	60.71	1012	107.5	21 49.4	598.76	-45.0	-24.8	60.69	1000	72.5	-24.8	60.69	1000	107.5
23 39.5	249.43	-47.4	-30.0	82.38	991	90.0	-30.0	82.43	991	90.0	23 44.7	627.93	-47.4	-30.1	82.36	971	90.0	-30.1	82.41	971	90.0
APRIL 29, 1963																					
1 34.1	278.81	47.4	29.0	-82.63	856	90.0	29.0	-82.68	856	90.0	1 40.0	297.09	47.4	29.4	-82.54	876	90.0	29.4	-82.59	876	90.0
3 29.5	307.98	45.0	24.0	-60.89	883	72.5	24.0	-60.93	883	107.5	3 35.3	326.26	45.0	24.3	-60.81	909	72.5	24.3	-60.81	909	107.5
5 24.8	336.95	40.0	19.8	-45.53	906	60.8	19.8	-45.53	906	119.2	5 30.6	355.43	40.0	20.1	-45.46	937	60.8	20.1	-45.46	937	119.2
7 20.1	366.12	35.0	16.8	-35.88	924	54.1	16.8	-35.88	924	125.9	7 25.9	384.60	35.0	17.0	-35.82	957	54.1	17.0	-35.82	957	125.9
9 15.4	395.29	30.0	14.0	-26.54	939	49.5	14.0	-26.54	939	130.5	9 21.2	413.76	30.0	14.2	-26.49	973	49.5	14.2	-26.49	973	130.5
11 10.6	424.46	20.0	9.1	-17.25	964	43.7	9.1	-17.25	964	136.2	11 16.5	442.93	20.0	9.3	-17.22	999	43.7	9.3	-17.22	999	136.2
13 6.1	73.64	0.	0.	0.	1008	39.9	0.	0.	1008	140.0	13 12.8	472.10	0.	0.	0.	1033	39.9	0.	0.	1033	140.0
15 1.4	102.81	-20.0	-9.3	17.22	1028	43.7	-9.3	17.22	1028	136.2	15 8.1	501.27	-20.0	-9.4	17.20	1042	43.7	-9.4	17.20	1042	136.2
17 56.7	131.98	-30.0	-14.3	28.47	1030	49.4	-14.3	28.47	1030	130.5	17 3.4	530.44	-30.0	-14.4	28.44	1035	49.4	-14.4	28.44	1035	130.5
19 52.1	161.15	-35.0	-17.1	35.78	1028	54.0	-17.1	35.78	1028	125.9	19 58.8	559.60	-35.0	-17.2	35.76	1027	54.0	-17.2	35.76	1027	125.9
21 47.4	190.32	-40.0	-20.3	45.39	1023	60.8	-20.3	45.39	1023	119.2	21 53.1	588.76	-40.0	-20.4	45.37	1016	60.8	-20.4	45.37	1016	119.2
23 42.7	219.49	-45.0	-24.7	60.70	1010	72.5	-24.7	60.70	1010	107.5	23 47.4	617.93	-45.0	-24.8	60.68	995	72.5	-24.8	60.68	995	107.5
		-47.4	-30.0	82.37	987	90.0	-30.0	82.42	987	90.0			-47.4	-30.1	82.37	964	90.0	-30.1	82.41	964	90.0
APRIL 30, 1963																					
0 38.0	266.85	47.4	29.1	-82.61	860	90.0	29.1	-82.66	860	90.0	0 43.7	285.10	47.4	29.5	-82.52	882	90.0	29.5	-82.57	882	90.0
2 33.3	297.03	45.0	24.1	-60.87	888	72.5	24.1	-60.91	888	107.5	2 39.0	314.26	45.0	24.4	-60.79	917	72.5	24.4	-60.79	917	107.5
4 28.7	327.00	40.0	19.9	-45.51	913	60.8	19.9	-45.51	913	119.2	4 34.3	343.43	40.0	20.2	-45.45	945	60.8	20.2	-45.45	945	119.2
6 24.0	356.18	35.0	16.9	-35.87	931	54.1	16.9	-35.87	931	125.9	6 29.6	372.60	35.0	17.0	-35.81	965	54.1	17.0	-35.81	965	125.9
8 19.3	385.35	30.0	14.1	-26.53	947	49.5	14.1	-26.53	947	130.5	8 24.9	401.76	30.0	14.3	-26.48	982	49.5	14.3	-26.48	982	130.5
10 14.6	414.52	20.0	9.2	-17.25	973	43.7	9.2	-17.25	973	136.2	10 20.2	430.93	20.0	9.3	-17.22	1008	43.7	9.3	-17.22	1008	136.2
12 9.9	74.69	0.	0.	0.	1013	39.9	0.	0.	1013	140.0	12 15.5	460.10	0.	0.	0.	1039	39.9	0.	0.	1039	140.0
14 5.1	103.86	-20.0	-9.3	17.22	1032	43.7	-9.3	17.22	1032	136.2	14 10.8	489.27	-20.0	-9.4	17.20	1044	43.7	-9.4	17.20	1044	136.2
16 50.4	133.03	-30.0	-14.3	28.46	1032	49.4	-14.3	28.46	1032	130.5	16 5.1	518.44	-30.0	-14.4	28.44	1034	49.4	-14.4	28.44	1034	130.5
18 45.9	162.20	-35.0	-17.1	35.77	1029	54.0	-17.1	35.													



## ASTRONOMY

# Mars Still Bright in April Sky

The seldom seen Mercury will be visible at the end of April low in the west at twilight, while Mars remains prominent in the southwest—By James Stokley

➤ **ALTHOUGH MARS** is rapidly receding from earth after it came nearest in early February—and is decreasing in brightness—it is still prominent in the evening skies of April.

It is in the constellation of Cancer, the crab, high in the southwest, as shown on the accompanying maps. These show the skies as they look about 10 p.m., your own kind of standard time, at the beginning of the month; an hour earlier at the middle and two hours earlier at the end.

On April 1 the brightness of Mars, as rated on the astronomer's magnitude scale, is 0.2, or about one-third as bright as it was when closest. Its distance on the first is 89,600,000 miles. By April 30 it recedes to 113,300,000 miles. Then its magnitude is 0.8, or about five-eighths as bright as on April 1.

## Mars Between Two Stars

Mars is a planet—a body like the earth, revolving around the sun. It stands, at the middle of the month, about halfway between two bright stars. These are distant suns. To the right is first magnitude Pollux, in Gemini, the twins. Alongside (shown on the northern sky map) is the other twin, represented by the star Castor. This, however, is fainter—of the second magnitude.

To the left of Mars is Leo, the lion. This contains a smaller group called the sickle, from its resemblance to that agricultural tool. At the bottom of the handle, which points downward, is first magnitude Regulus.

Continuing from Leo farther to the left and downward, you come to Virgo, the virgin. Here lies Spica, another bright star. Above, and more to the left, is Bootes, the herdsman, with Arcturus. This star is more than twice as bright as Spica.

Low in the west is Orion, the warrior, now disappearing from view after shining so brilliantly high in the south on winter evenings. However, Betelgeuse is still visible. To the left is the "dog star" Sirius, in Canis Major, the great dog. And higher, near Gemini, shines Procyon, in Canis Minor, the little dog.

To the right of Orion (shown on the northern map) is Taurus, the bull, with Aldebaran. This bright star is considerably dimmed because it is so low in the sky. Higher and farther to the right stands Auriga, the charioteer. Capella is the bright star in this group.

Although it is not shown on the maps, you will have the best opportunity of the year to see the planet Mercury at the end of April. Only occasionally does it get into a position where you can see it low in the west at twilight. This occurs on April

25. For a few days about then it will be visible after sunset, but it will be gone by the time the sky is completely dark. Jupiter now is too nearly in line with the sun to be seen easily. Venus rises about an hour ahead of the sun and you can see it low in the east at dawn. You can also see Saturn, which is considerably fainter, but rises about an hour ahead of Venus.

## Stars Clearer Outside Cities

Ordinarily these maps show only stars and planets brighter than about the fourth magnitude—which can be seen near a big city. But if you get out into the country on a clear night—far from the city's glare and haze—you see many others. The sixth magnitude, which is about a sixth as bright as fourth magnitude, is generally considered the faintest that the average human eye can see under the best conditions.

The planet Uranus is now relatively close, and a little brighter than sixth magnitude, so it is just barely visible in a very clear and dark sky. Its position is shown on our southern sky map, by an X in Leo, about half way between Regulus and a fourth-magnitude star to the left, known as rho Leonis. If you cannot find it with

the naked eye, try a pair of binoculars, which should provide enough optical aid. Even a pair of opera glasses would help. These will show a number of fainter stars, but Uranus is the brightest object between rho and Regulus. It looks somewhat greenish, and has a steadier glow than the twinkling stars.

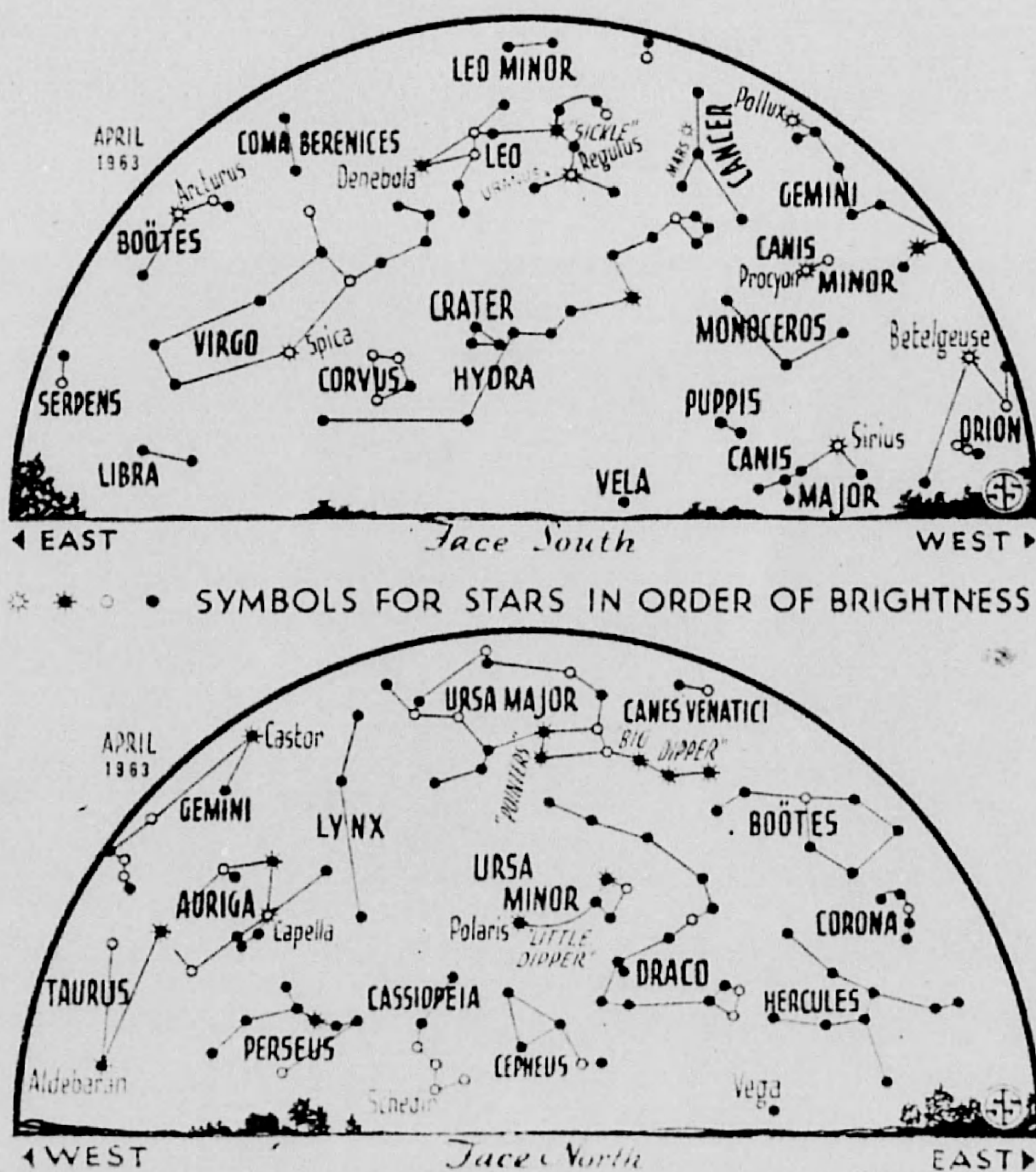
Uranus is the next planet out from the sun beyond Saturn. Its distance from the sun is 1,783 million miles; Saturn's is 886 million and earth's 93 million. It takes 84 years to orbit once around the sun, compared to 29.5 for Saturn.

The diameter of Uranus is 29,200 miles, considerably smaller than Saturn with 75,100, or Jupiter, the largest, with 88,700 miles. But it is many times bigger than earth's 7,927 miles.

## Planets Seen by Naked Eye

The planets Mercury, Venus, Mars, Jupiter and Saturn are all visible easily to the naked eye, and were known from the earliest times. Uranus was the first to be discovered with the aid of the telescope. It was found on March 13, 1781, by William Herschel—a German-born musician who settled in Bath, England, and became a famous astronomer.

With a telescope seven feet long that he had built himself and which was set up in the garden of his home, Herschel was making a systematic survey of the skies. He noticed what he recorded in his journal as a "curious either nebulous star or per-





# THE FIELDS

## BIOLOGY

### Three Chemicals Make Life Possible on Earth

► SMALL AMOUNTS of three chemical compounds in the atmosphere—ozone, water vapor and carbon dioxide—make life on earth possible.

These chemicals shield the earth from much of the sun's radiation that would otherwise destroy life. Dr. David M. Garofalo of the National Bureau of Standards, Boulder, Colo., is reporting to chapters and clubs of the Society of the Sigma Xi, a national organization for the encouragement of scientific research, on a national lecture tour.

Ozone, water vapor and carbon dioxide are responsible for the temperate climate at earth's surface because they absorb sunlight and reradiate it as infrared heat. The earth itself is actually bathed in very rarefied, hot outer edges of the sun's atmosphere.

It is flooded not only with visible light, violet and infrared radiation but is bombarded with high energy electrons and protons, gamma rays and X-rays. Dr. Garofalo reported in the first lecture of the series at the University of Nevada at Reno.

• Science News Letter, 83:185 March 23, 1963

## SPACE

### S-6 Satellite Will Probe Upper Atmosphere

► THE S-6, a satellite to probe the structure of earth's upper atmosphere, is scheduled to be launched for the first time by the National Aeronautics and Space Administration in late March.

The S-6, with eight primary detectors, will measure eight vital characteristics of the earth's atmosphere: atmospheric pressures, densities, temperatures, composition of neutral particles, electron temperature and densities, ion temperatures and densities.

The 400-pound satellite will be launched by a NASA-Douglas Thor Delta booster from the Atlantic Missile Range at Cape Canaveral, Fla. The S-6 is scheduled to have an apogee of 555 miles and a perigee of 155 miles, making a 58-degree angle with earth's equator.

The S-6 is the first satellite to be made of stainless steel. It will have a 35-inch diameter.

The satellite has unusual features for returning its data to earth. Minitrack ground stations can command the package to relay data from any one, or any combination, of the experiments.

Dr. Homer E. Newell, NASA's director of space sciences, states that there is much information yet to be gained from probing temperature variations in the upper

atmosphere. With increasing temperature, the height of the atmosphere also increases, raising the atmospheric density at the higher altitudes.

This thickening of the earth's atmosphere increases the atmospheric drag on artificial satellites, both decreasing their lifetime in orbit and markedly affecting their velocity below about 620 miles. These effects would be felt by any object falling through these regions, like manned spacecraft, reentry vehicles and winged vehicles.

An active life of 90 to 100 days is

happens a comet." It never occurred to him that it might be a planet. But, as he and other astronomers continued to observe it and calculated its orbit they finally realized that it really was a new major member of the solar system.

Then came the question of a name for the planet. Herschel wished to honor the king, George III, who had given him a pension. So he proposed "Georgium Sidus," or "George's star." This name was used for a time in England, but continental astronomers had other ideas. Some wanted to name it "Herschel." But they finally accepted the suggestion of J. E. Bode, a German astronomer, that it be called Uranus. This was the name, according to mythology, of Saturn's father, so it fitted in with the other planets.

When the movements of Uranus through the sky had been determined, the astronomers figured backwards, to see where it had been previously. This showed that a number of observers had actually seen it before 1781, but had thought it to be a star. Thus, several astronomers could have won the fame that came to Herschel, if they had only checked their observations more carefully.

### Celestial Time Table for April

#### APRIL EST

2	Midnight	Moon passes Mars
8	7:57 p.m.	Full moon
9	10:00 p.m.	Moon farthest, distance 252,500 miles
16	9:53 p.m.	Moon in last quarter
18	6:00 p.m.	Moon passes Saturn
21	4:00 a.m.	Moon passes Venus
23	2:00 p.m.	Moon nearest, distance 221,800 miles
	3:29 p.m.	New moon
24	10:00 p.m.	Moon passes Mercury
25	9:00 p.m.	Mercury farthest east of sun
28	Noon	Venus passes Jupiter
30	10:08 a.m.	Moon in first quarter
	9:00 p.m.	Moon passes Mars

Subtract one hour for CST, two hours for MST, and three hours for PST.

• Science News Letter, 83:186 March 23, 1963

near certain ethoxyquin, which alfalfa contain a yellow pigment known as xanthophyll, and cause darker egg yolks, with the amount of darkening depending on the amount of the material fed. Ethoxyquin had the same effect and in the same way, with larger amounts giving darker yolks. The chemical is an antioxidant added to rations to stabilize the vitamins in the feed.

A dark yolk is desirable for some uses.

• Science News Letter, 83:185 March 23, 1963

## TECHNOLOGY

### Tiny Electron Light Shines Without Heat

► THE FIREFLY is having competition. Man now can get a tiny, cool, green light from a crystal with no burning filament or ignited mercury vapor.

This is how it works: A piece of phosphor material is coated with an aluminum oxide film, and attached to a gold film electrode. This is mounted on a slide and hooked up to a small battery.

Result: Glow little crystal, glimmer, glimmer . . .

The process is called injection electroluminescence by thin films, according to physicists at the Ford Motor Company. The scientists were trying to prove some theories about the movement of electrons in materials when they came up with the cool, ready light.

The man-made devices to get light from electron movement are still so very complex, they defy analysis, explained Dr. John Lambe of the Ford laboratories. Many different chemical elements and crystal structures are used. Most common method is to apply a high voltage electrical current directly to a complex chemical compound that has been found by trial and error to emit light.

Man, with all his knowledge and research tools, cannot explain or even reproduce that tiny bit of light that winks on a summer night, without wires, filaments, batteries or vapor.

• Science News Letter, 83:185 March 23, 1963

## MEDICINE

### Deadly Food Poisoning Affects Spinal Region

► THE MOST DEADLY kind of food poisoning, botulism, can cause trouble to the central nervous system like that resulting from lockjaw, or tetanus.

This is indicated by studies of a 61-year-old man severely poisoned after eating home-canned mushrooms. He was hospitalized 48 hours later in Peter Bent Brigham Hospital, Boston.

There, Dr. H. Richard Tyler of Harvard Medical School tested the patient's nerve response by electrical charges applied to elbow and wrist.

Dr. Tyler found the so-called "H" reflex, not usually present in normal persons. This reflex is found mainly in patients with brain and spinal injuries as well as those with tetanus.

Previous knowledge of botulism poisoning came from laboratory animals. Dr. Tyler reported in Science, 139:847, 1963. The poison is believed to act on nerve endings, blocking the nerve impulse before it reaches the muscle.

Botulism and tetanus are caused by poisons released by similar bacteria, *Clostridium botulinum* and *Clostridium tetani*, which may explain why they have similar actions on the nervous system.

• Science News Letter, 83:185 March 23, 1963



No Case (Information Only)

1 April 1963  
Petaluma, California

Source: Saucer News (Sep 63/Vol 10, No 3)

story, which we would give a lot more space to, except that the April 1st dateline (April Fool's Day) tends to invalidate it: A farmer milking his cows in Chileno Valley, near Petaluma, California, saw a flying saucer land and stampede the cattle. A group of humanoids from the saucer got out and placed a calf aboard their craft before taking off. According to the local sheriff, there was physical evidence to confirm the story, but he also noted that the farmer in question is well known for his practical jokes....

7-3765-14



4 April 1963  
Akron, Ohio

LOCAL SIGHTINGS:

W. AKRON--Thurs, April 4, 1963....Garman Rd & Portage Path Area. At approximately 8 PM, the witness stepped into her backyard facing N. As she scanned the sky, she saw a large red light over a school in the area. She didn't remember ever seeing a red light there before. It remained stationary and steady the three minutes she watched it. She then started around the east side of the house to get her binoculars (7x50) when her attention was drawn to a "very orange" light in the SE at about 25° elev. She noticed that the object would periodically diminish to a pin point of light, and then slowly, steadily regain its original brilliance.

After observing several such fluctuations, she entered the house-and came out minutes later with the 7x50 binocs. The object would almost disappear even in the binoculars-and she observed that the center had the most intense coloring; the outer circular area was 'soft' on the edges but definite, and the color was the "orangest-orange".

After watching the strange object or light for a few minutes, she decided to have a look at the light over the school. It was no longer visible. She returned to the orange light and continued watching for a few more minutes. It was still visible when she went indoors. Later, she checked to see if it or the red light could be seen-neither was visible. On succeeding nights she was unable to find either object in the sky where she had previously seen them. Overall duration 15-20 minutes. No sound.....Reported by

~~████████████████████~~



Source: Flying Saucer Review (Jul-Aug 63)

### Blackburn UFO

The Blackburn Evening Telegraph on April 5 started its account of a UFO with a question mark: "What was the mysterious flying object which flashed across East Lancashire's sky late last night?"

Mr. Tom Leaver, of Norfolk Street, Mill Hill, Blackburn, saw it from his backyard at about 10.30. Mr. Leaver said: "I had been watching television, and went out to get some coal. Then I saw this object—it was shining like silver, shaped like an arrow-head, and was travelling very fast."

"Mr. Leaver, who was facing south, saw the object through a break in the clouds. He watched it for about a minute as it travelled from west to east, passing just below the moon. He could not estimate the height. I thought it might be an old satellite, still going round," said Mr. Leaver.

A spokesman at the Ministry of Defence and Civil Aviation Air Traffic Control Centre at Barton Hall, near Preston, was unable to identify the object and was eager to know if anyone else had seen it. A report will be sent to the Air Ministry.

"So far, Blackburn Police have received no reports of the object."

Although the Blackburn police received no reports one of the Evening Telegraph readers wrote in to confirm the experience. Mr. F. Read's account is as follows:

"I was very interested to read the account in the Telegraph of a mysterious flying object flashing across the sky. On Wednesday evening (April 3) I left my house at 9.25 p.m. and, as I walked along Westgate, I looked up at the moon and was at once attracted by a silver-like object flying at great speed just below the moon and travelling in a west to east direction. I watched it for several minutes until it disappeared. The time I saw it was 9.50 p.m."



No Case (Information Only)

5 April 1963  
Cuyahoga Falls, Ohio

CUYAHOGA FALLS, OHIO.....April 5, 1963  
10:15 PM, Second St-Arcadia.....A high school student was just preparing for bed, when looking out the window facing east, he saw a yellowish-orange light over a house about a block away. He said that the light could be compared to that of a very bright star in size. It would dim until it went out; then after a few seconds the object became visible again and slowly increased in intensity until it achieved its original brilliance.

He couldn't determine whether the object just diminished in its light intensity or became invisible due to having become too distant to see. This process was repeated rhythmically for a period of about 10 minutes. At the times when the light reappeared it seemed to have altered its position. His overall impression was that the light was appearing at the corners of an invisible square but on a horizontal plane. It finally diminished never to return. Not seen since



No Case (Information Only)

5 April 1963  
Southern California

*SOURCE: JAPA - SEP 63*

Case 71, Southern California, April 5, 1963. A strange ball of fire was reported by hundreds of persons. It did not act like a meteor, as it stopped and started again several times. First seeming to disappear about 9p.m., it reappeared at roughly 9:15 p.m. It later "disintegrated over a nearby hill." (NICAP Reporter.)



6 April 1963  
San Diego, California

GLOBAL SIGHTINGS

SAN DIEGO, CALIF....The San Diego Union—(April 6, 1963) newspaper carried a story entitled: "Flash in the Sky a Satellite?" Several hundred persons in San Diego, and many more from all over the Southwestern states as far east as El Paso, Texas saw a bright flash and lights in the sky. Port Arguello (UPI) reported similar sightings. Many from San Diego saw a red streak heading over water (Pac. Ocean) at high speed. Then whatever it was began to tumble and the color changed from red to a weird blue. Vandenberg AFB stated that it had made a routine launch of a satellite, but would not give details as to time, etc. The time in San Diego was sometime after 7:00 PM.

What would account for the change of color of the streaking red to weird blue? Long before satellite launches, this color-change characteristic was known to UFO researchers.



No Case (Information Only)

7 April 1968  
Copenhagen, Denmark

*SOURCE: IAPP - SEP 63*

Case 72, Copenhagen, Denmark, April 7, 1963. A circular UFO, "the size of a little pea," changed color from glass-like to yellow-white, then climbed vertically, and changed color again to red. (UFO Nyt.)



NO CASE (INFO ONLY)

### Newcastle upon Tyne flying tyre

8 Apr 1963  
Newcastle, England

The following account appeared in the Newcastle upon Tyne Journal, issue of April 9. "A large tyre-shaped object was reported to have been seen moving across the sky between Rothbury and Whittingham yesterday. Mr. Peter Finlay, a 36-year-old engineer, of Farndale Avenue, Stakeford, was driving his van when he saw the object through his windscreen.

"I stopped the van at once, thinking it was a trick of the windscreen," he said last night. "Then I saw that it was moving across the sky, somewhere between 400 and 800 feet up.

"I reckon it was about two or three miles away. It was black and looked just like a wagon tyre," he said.

"I was really sweating by this time," said Mr. Finlay. "I am usually sceptical of these things but this really frightened me. It moved off in a north-westerly direction. There was a bright orange flash as it went off at a tangent. It moved off very fast and left a trail."

"Mr. Finlay said that two or three minutes later a jet plane passed over. Mr. Finlay rang the R.A.F. at Boulmer to tell them of his experience and to ask them if they had seen anything. Last night the duty officer at the station said: 'I am afraid I cannot comment on this matter.'



## **Falling Spheres Found**

In early April 1963, newspapers were printing the news of a mysterious metal sphere found by Mr. J. McLure on station property near Broken Hill, New South Wales in Australia on 8 April. It was shipped to Broken Hill for examination by scientists there. It could not be cut or broken into by the use of a file or hack saw. Metallurgists at the Zinc Corporation said it had been subjected to great heat, was 14 inches in diameter, weighed 12 pounds and was spherical and hollow. McLure, who found the object said that no one had been in the area of the sheep station where the object was found, for about 50 years.

After the initial news release from Broken Hill which contained the foregoing information, the object was shipped to the Weapons Research Establishment in Salisbury for examination. Mr. R. Pitman-Hooper, the Zinc Corporation's manager, refused to make any real comment on reports that the Corporation's metallurgists at Broken Hill had determined via X-ray spectographic examination that the object contained beryllium, titanium, and magnesium and had only this to say: "All I can say at this stage is that our scientists have had a look at the object, that any tests they may have made so far are inconclusive and that the sphere has been placed in the charge of a senior Army officer." The Director of the Broken Hill division of the U. of New South Wales, Mr. T. K. Hogan, said that university scientists had made a visual inspection of the object and that what they saw would not be "inconsistent with the report that it contained beryllium, titanium and magnesium." He said further that the metals were certainly of modern origin and were also non-magnetic. He also commented on an unusual "submerged arc weld" around the surface of the sphere which was a "most beautifully executed job." He disputed the idea that the object was some sort of tank or cistern float, and said it had the remains of two lugs still attached to it. Hogan also said that the object was definitely hollow and that they would have "dearly liked to open it." He theorized that the object probably had originally been protected by some sort of heat shield which protected it from the intense heat which melted the lugs.

On the 30th of April, a dispatch out of Canberra said that the sphere had "definitely been identified as part of a space vehicle." It went on to explain that Mr. Allen Fairhall, Australian Supply Minister, told the House of Representatives that the sphere was identified as

part of a space vehicle, and that Australia was "communicating with the overseas Governments from whose spacecraft it might have come." The dispatch also said that the sphere carried the faint outline of a hammer and sickle, the Soviet emblem. Fairhall said the sphere had not been opened as it might contain "something of scientific interest." "It's a million-to-one chance that a piece of orbiting hardware should survive the temperature of re-entry and be recovered in one piece," he said. Various other newspapers carried the news that scientists (unnamed) had determined that the object was a pressure vessel from a space vehicle, designed to withstand great pressure.

Apparently no more information was released concerning the mystery sphere, but a small article in the Omaha World-Herald (Nebraska, U.S.A.) for 2 October 1963, carried the information that the first sphere had not been identified when the second one was found in October about 35 miles from the location of the first one.

The press release divulged the fact that despite inquiries abroad, the Australian government had not located the origin of the first sphere. The second sphere was described as 16 inches in diameter and weighing 18 pounds. It was also said to be a "stainless steel ball" on which a valve had been turned into a fused mass, apparently as a result of intense heat.

It is interesting to note that to this date no definite news concerning the metallic makeup of that first sphere has been released, nor has there been any further description or clarification of the physical properties of the second. This brings to mind another mysterious object which was found in South Africa in early 1962. This object was identified as a spherical titanium pressure tank from the fuel tank of an Atlas rocket. There was no doubt that this object, at least according to press reports, belonged to a U.S. space vehicle. The question now arises concerning the reason that the Australian spheres have not been identified. The most recent releases state unequivocally that the sphere has been disowned by Russia and the U.S. Then whence?



No Case (Information Only)

13 April 1963  
Hollister, California

SOURCE: IAPA - SEP 63

Case 73, Hollister, Calif., April 13, 1963. Glowing fireballs were seen over this town for the third straight night. One was described as "a big red ball, trailing smoke behind it." (NICAP Reporter.)



No Case (Information Only)

16 April 1963  
El Cajon, California

*SOURCE: IAPA - SEP 63*

Case 74, El Cajon, Calif., April 16, 1963 | Jack Bartlett sighting three UFOs in a triangular formation travel from 270 degrees to 290 degrees in 1 1/2 minutes. (LS\*)



19 Apr 1963

Tasmania, Southern Australia

SOURCE: SAKER REVIEW - SEP & OCT 63

## TASMANIA

### Mystery object returns

The *Lamington Examiner*, of Tasmania, reported in its April 19 issue: "A strange revolving object with flashing brilliant red and green lights, was watched through binoculars for more than an hour last night in the Lower Midlands.

"Mr. and Mrs. D. T. J. Wiggins, who manage the post office at Woodsdale, and four members of their family watched the object through binoculars at intervals until it disappeared.

"Mrs. Wiggins said it appeared low on the north-eastern horizon and, to the naked eye, resembled a bright star. However, through binoculars it appeared to be revolving and was flashing brilliant red and green lights. It was rising and falling sharply, and moving from right to left.

"After hovering in almost the same position, the object appeared to move on a settled course and began to rise as it travelled out of sight in a northerly direction."

The following day, April 20, the *Lamington Examiner* had further news: "A strange object in the eastern sky reported on Thursday night, was sighted again last night by several families in the area.

"Mrs. D. J. Wiggins, who helps to manage the post office at Woodsdale, said she sighted the object about 7 p.m. yesterday, high in the eastern sky.

"It was very much higher in the sky than on Thursday night and binoculars had to be used to get a clear view of it. The object was still behaving in an erratic manner, rising and falling and moving sideways and in circles. It was still flashing very brilliant colours of red and green as it moved high into space," she said.

"The object appeared to be rising steadily all the time it was visible last night.

"It was almost invisible by 10.30 p.m.

"Mrs. Wiggins said that the object mystified a number of people who sighted it."



No Case (Information Only)

19 April 1963  
Ripon, Wisconsin

Source: Saucer News (Sep 63) Vol 10, No 3)

Four college students saw a group of bright luminous circular objects, traveling at tremendous speeds over a drive-in theatre near Ripon, Wisconsin, last April 19th. Some of the UFO's were silver in color, and others were a bright orange. They made several maneuvers, including a 90-degree turn which would have been impossible for normal aircraft. A detective sent to the theatre to investigate the incident also saw the saucers himself, according to the students...



Information Only  
Source: *USA Bulletin*, January, 1964

### **Lights At Fond Du Lac, Wis.**

During the week preceding 19 April 1963 strange lights were seen maneuvering in the skies above Fond Du Lac. On Wednesday night, patrons at a drive-in theater saw about 20 objects. These objects were sometimes white or crimson in color, moved rapidly and now and then in formation from horizon to horizon. The direction of travel was mostly east to west. It was also noted that they made sharp turns.

A spokesman for the Federal Aviation Agency in Milwaukee stated that the objects could have been airplanes refueling at high altitudes which would explain the lack of sound. The Agency had received similar reports a week earlier and had determined that in this case they were airplanes, and most likely B58 supersonic bombers which renewed operations over Wisconsin on 1 April. But the sharp turns?

(Editor's Note: It seems odd that an exact identification was not made, for surely the FAA would have known what type of planes were, where and when. This one sounds like another "possible" identification).



No Case (Information Only)

22 April 1963  
New Zealand

*SOURCE: IAPA - SEP 63*

Case 75, Rotorua, New Zealand, April 22, 1963: Alwyn Green, 19, heard a "real weird swish, a whooshing noise," looked up, and saw a round black sphere coming towards him. He said it stopped for a moment, then took off with another loud swish. Two others heard the noise but they did not see the sphere. (NICAP Reporter)



## The New Jersey Fireball of April 23, 1962

ON THE EVENING of Monday, April 23rd, at 8:05 p.m. Eastern standard time, an exceptionally brilliant fireball was seen over New Jersey and from parts of New York and Pennsylvania (page 323 last month). The writer learned of this through letters from H. C. Courten of the Grumman Astronomical Society, Bethpage, Long Island, and Reinhard Eck of Maywood, New Jersey. These letters arrived on the 25th, and the next day the *Philadelphia Inquirer* published my request for reports.

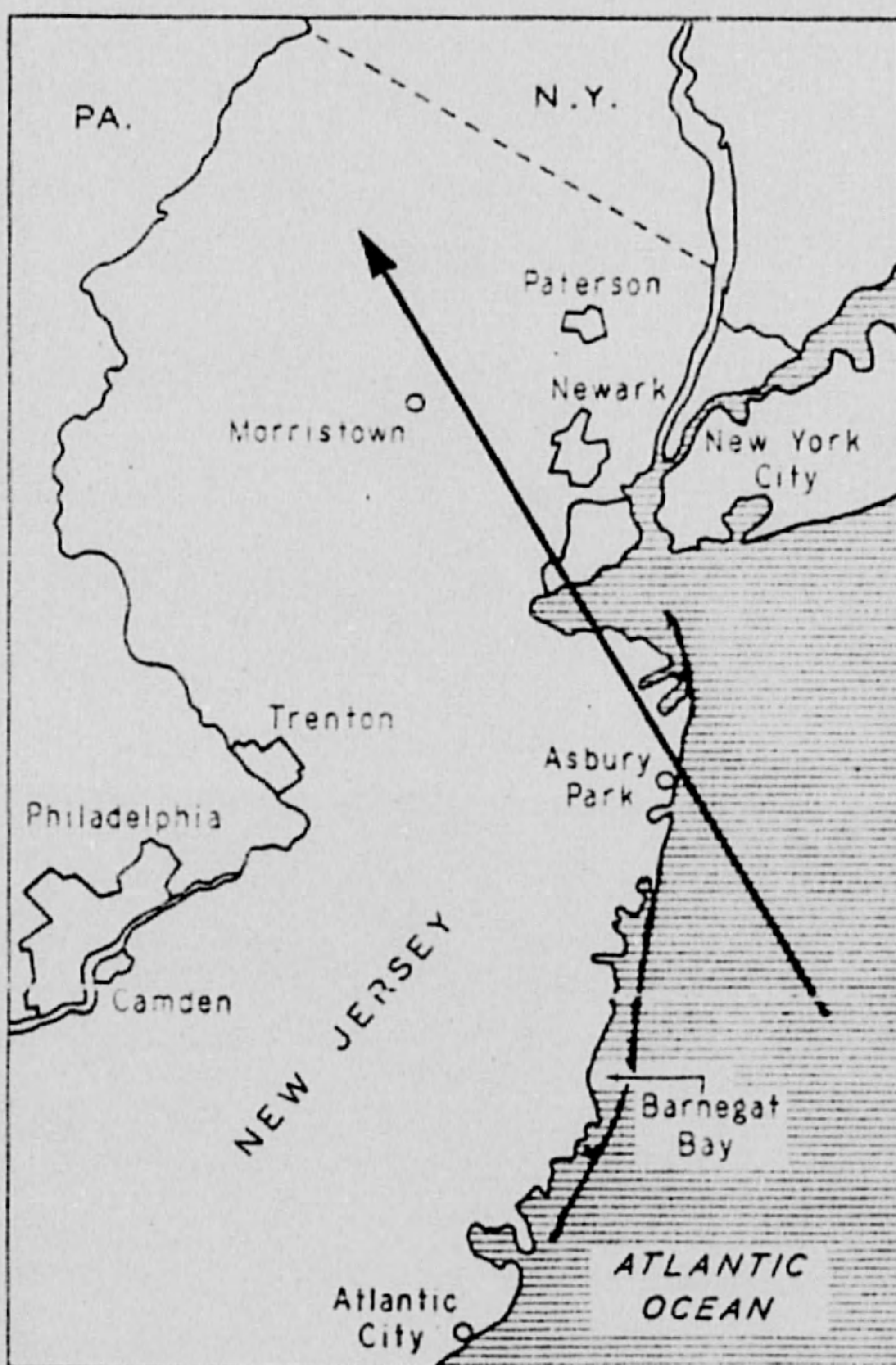
Altogether, about 80 persons wrote or telephoned, and my solution is based upon those reports that had usable data. At first it seemed that the solution would turn out to be unusually accurate, but this was not the case. The positions on the earth's surface of the subbeginning and subend points could be found quite well, but the various estimates of angular altitudes are discordant. No allowable shifting of the subpoints aided. The estimates from the Philadelphia area, where most reports originated, are considerably lower than the results for observers near the end point, yet these latter observers used stars for approximate reference.

After much study, arithmetic averages were taken for both the beginning height H1 and the end height H2, as best approximating the truth. A drawing of the path was made to scale; the heights of two intermediate points were computed and they roughly confirmed the path; the average of 15 estimates of the downward slope of the meteor's track checked quite well. Therefore, despite the large accidental errors in H1 and H2, it is probable that the derived path is about correct.

Catalogued as AMS 2370, this fireball reached its end point at 10<sup>h</sup> 12<sup>m</sup> 56<sup>s</sup> sidereal time April 23, 1962. It first be-

came visible over the Atlantic Ocean east of Barnegat Bay at longitude 73° 44' west, latitude 39° 51' north, and ended above northern New Jersey at 74° 36' west, 41° 04' north. On the basis of 19 observations, the beginning height H1 was 116 ± 37 kilometers; and the ending height H2 was 56 ± 15 kilometers, from 15 reports. The probable true path was 165 kilometers long, and its projected length at ground level 153 kilometers.

Some observers called the meteor "slow," and the numerical estimates of duration are more in accord than usual. From 22 reports, I compute the duration as 4.82 ± 1.67 seconds, making the meteor's observed velocity in the atmosphere 35 kilometers per second. The body did



not explode, and its height of disappearance (about 35 miles) was considerably higher than usual. Unfortunately, no reports have been received from ships or airplanes; even one good observation from such a source would help greatly.

Allowing for curvature of the earth, the meteor seemed to come from a radiant point at an azimuth of 332° (28° east of south) and an altitude of 17° 32' (after correction by -4° 44' for zenith attraction). This position corresponds to right ascension 183°, declination -26°, or 194° and -23° in celestial longitude and latitude, which are based on the ecliptic. Assuming for the sake of computation that the orbit was parabolic, I find its inclination to the ecliptic to be 13°, the longitude of the ascending node 213°, the perihelion distance 0.8 astronomical unit, and the longitude of perihelion 8°.

The fireball's great brilliance was generally remarked, a few observers noticing the meteor first by the shadows it cast. Brightness estimates range from that of Venus to the full moon's, the average being quarter moon (magnitude -10). It seems fairly certain the fireball's light decreased radically for the last few degrees of its path, and some observers doubtless failed to see the less bright portion and therefore the true end point.

Many said the object showed a disk, and 36 gave the color. From their impressions, we conclude that the body was bluish-white with a short orange tail. One person reported a 30-second train; nobody else mentioned such an appendage.

I wish to thank the *Philadelphia Inquirer* and all of those who reported this event to the American Meteor Society. Without such aid, no fireball's path could be calculated.

CHARLES P. OLIVIER  
521 N. Wynnewood Ave.  
Narberth, Pa.



No Case (Information Only)

24 April 1963  
Northern, California

SOURCE: IAPA - SEP 63

Case 76, Northern California, April 24, 1963. Bright flashes, glowing objects, fireballs, and blobs of green fire were seen in this area from 7:45 p.m. to about 11:00 p.m. The phenomena might be associated with the Lyrids, a meteor shower which periodically occurs at this time of year. (NICAP Reporter).



1 - 31 MAY 1963 SIGHTINGS

<u>DATE</u>	<u>LOCATION</u>	<u>OBSERVER</u>	<u>EVALUATION</u>
1	Silver Grove, Kentucky	[REDACTED]	Other (UNRELIABLE REPORT)
3	29.57N 140 03W (Pacific)	Military	BALLOON
4	Ocean City, Maryland	[REDACTED]	AIRCRAFT
5	Arlington Heights, Illinois	[REDACTED]	BALLOON
6	Whiteman AFB, Missouri	Military	BALLOON
8	North Vernon, Indiana	Civilian (PHYSICAL SPECIMEN)	Other (ASD TEST VEHICLE W/PARACHUTE)
8	58.15N 169.20W (Pacific)	Military	AIRCRAFT
11	Northfield, Illinois	[REDACTED]	AIRCRAFT
15	Louisiana-Mississippi Area	Multiple	Other (ROCKET LAUNCH)
15	Beaufort, South Carolina	[REDACTED]	AIRCRAFT
15	Evanston, Illinois	[REDACTED]	AIRCRAFT
17	46.13N 173.53W (Pacific)	Military	Other (FLARE)
17	46.15N 171.15W (Pacific)	Military	Astro (METEOR)
18	New Plymouth, New Zealand	[REDACTED]	UNIDENTIFIED
21	40.02N 10.16E (Atlantic)	Military	Other (MISSILE/ROCKET)
22	Parkersburg, West Virginia	[REDACTED]	Astro (METEOR)
22	Pequannock, New Jersey	[REDACTED]	UNIDENTIFIED
22	43.20N 172.50W (Pacific)	Military	Astro (METEOR)
24	Haleiwa, Oahu, Hawaii	Military	INSUFFICIENT DATA
26	Gulf of Mexico	Military	INSUFFICIENT DATA
28	Philadelphia, Pennsylvania	Civilian	Other (CONTRAILS)
29	30.50N 169.00W (Pacific)	Military	INSUFFICIENT DATA
31	44N 49W (Atlantic)	Military	Other (ELECTRONIC INTER-FERENCE FROM WITHIN AIRCRAFT)

ADDITIONAL REPORTED SIGHTINGS (NOT CASES)

<u>DATE</u>	<u>LOCATION</u>	<u>SOURCE</u>	<u>EVALUATION</u>
May	Universe	Science News Ltr	
May	Samoset, Florida	[REDACTED] (Ltr)	
May	Boskloof, South Africa	[REDACTED]	
5-6	Northern Hemisphere	Sky & TX	
6	Westlake, Ohio	IAPA	
7	Liverpool, England	IAPA, FSR	
7	New Orleans, Louisiana	IAPA	
9	Mt. Zion, Wisconsin	IAPA	
10	Eagle Bend, Minnesota	APRO	
10	Belfast, Maine	FSR	
13	Northern Ireland	FSIC, FSR	
17	Miami, Florida	IAPA	
18	Cuyahoga Falls, Ohio	FSIC	
20	South Australia	FSR, Saucer News	
21	Bebington, England	FSR	
27	Australia	FSR	
29	Canberra, Australia	FSIC, FSR	