| 1. DATE - TIME GROUP | 2. LOCATION |
|---|---|
| 1 August 62 1/1540Z | 31.17N 125.29E (radio) |
| 3. SOURCE<br>Military Ship | 10. CONCLUSION<br>Satellite (USSR I)<br>At 1529Z, USSR I bearing SE at 20° 167°.<br>(USSR I schedule with 31.05N 175.20E. radio |
| 4. NUMBER OF OBJECTS<br>One | |
| 5. LENGTH OF OBSERVATION<br>9 Minutes | 11. BRIEF SUMMARY AND ANALYSIS<br>Object size and brightness of first magnitude, bearing 070 degrees azimuth. Radar bearing 115 degrees azimuth. Object very high with speed unknown. |
| 6. TYPE OF OBSERVATION<br>Air-Visual | |
| 7. COURSE<br>32 | |
| 8. PHOTOS<br>☐ Yes<br>☒ No | |
| 9. PHYSICAL EVIDENCE<br>☐ Yes<br>☒ No | |

FORM
FTD SEP 63 0-329 (TDE) Previous editions of this form may be used.

INCOMING
MESSAGE

DEPARTMENT OF THE AIR FORCE
STAFF MESSAGE BRANCH

UNCLASSIFIED

AF IN: 38111 (1 Aug 64) T/bfb



INFO : NIN-7, XOP-1, XOPX 5, SAF-OS-3, ARMY-2, CMC-9, JCS-35, OSD-15, NSA-7, DIA-15, (100)

SMB B149

QB659ZCCJA761N
00 RUEAHQ
DE RUHPF B593 01/1623Z
ZNR
0 011623Z
FM COMBARFORPAC
TO RUHPHH/COMHAWSEAFRON
RUHLKM/CINCPACAF
RUAUAAH/HADD KUNIA
ZEN/CINCNORAD
INFO RUECW/CNO
RUEAHQ/CCFS USAF
RUHLHQ/CINCPAC
RUHLHL/CINCPACFLT
RUHLHS/CINCUSARPAC
RUHLKSA/PACAFBASECOM COMMAND CENTER HICKAM AFB
RUECW/SECNAV
BT
UNCLAS
U. JANAP146D

1. CIRVIS REPORT
2. 43207
3. UFO. POSSIBLE SATELLITE. SIZE AND BRIGHTNESS OF FIRST MAGNITUDE STAR
4. 31-11NN175-29W BEARING 070 DEGREES MAG. FADED BEARING 115 DEGREES MAGNETIC
5. 011540Z TO 011549ZB

PAGE TWO B593 RUHPF UNCLAS

6. VERY HIGH.

7. SOUTHEAST

8. UNKNOWN

9. NONE

BT
NOTE: ADV CY DEL TO: XOPX, DIA & NIN
NOTE: RETRANSMITTED TO CIA PER AFHQ 1392 # 909

Echo II
50°N @ 1539Z

50°N 170°E

0540Z

15.0
1.2
15.9
1539

295.76
-6.6
290°W

ECHO II AUGUST 1, 1964

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 56.1 | 77.16 | 81.5 | 26.5 | -83.38 | 674 | 90.0° | 26.5 | -83.38 | 674 | 90.0° |
| 2 | 42.9 | 104.48 | 80.0 | 24.9 | -58.25 | 672 | 57.6° | 28.1 | -115.44 | 677 | 122.4° |
| 4 | 31.6 | 131.81 | 70.0 | 21.1 | -18.81 | 667 | 26.4° | 31.9 | -147.87 | 685 | 155.6° |
| 6 | 20.4 | 159.13 | 50.0 | 16.9 | -6.46 | 665 | 21.0° | 38.1 | -160.21 | 702 | 169.0° |
| 8 | 9.2 | 186.46 | 40.0 | 11.9 | -6.17 | 667 | 8.4° | 41.2 | -162.48 | 711 | 171.7° |
| 9 | 57.9 | 213.79 | 30.0 | 8.9 | -2.68 | 671 | 6.7° | 44.2 | -163.96 | 721 | 171.1° |
| 11 | 46.7 | 241.11 | 20.0 | 6.0 | -1.61 | 677 | 5.7° | 47.3 | -165.02 | 732 | 174.6° |
| 13 | 35.4 | 268.44 | 0. | 0. | 0. | 696 | 4.9° | 51.0 | -166.58 | 755 | 175.2° |
| 15 | 24.2 | 295.76 | -20.0 | -6.0 | 1.59 | 722 | 5.8° | -49.1 | 166.55 | 777 | 179.4° |
| 17 | 13.0 | 323.09 | -30.0 | -9.1 | 2.65 | 736 | 6.7° | -46.0 | 161.51 | 747 | 173.4° |
| 19 | 1.7 | 350.42 | -40.0 | -12.1 | 4.12 | 750 | 8.3° | -42.9 | 162.06 | 796 | 171.7° |
| 20 | 50.5 | 17.74 | -50.0 | -15.3 | 6.37 | 765 | 10.9° | -39.7 | 159.82 | 803 | 169.1° |
| 22 | 39.2 | 45.07 | -70.0 | -21.6 | 18.65 | 790 | 24.3° | -33.1 | 147.56 | 809 | 155.7° |
| | | | -80.0 | -25.8 | 51.03 | 801 | 57.6° | -29.1 | 115.13 | 806 | 122.6° |
| | | | -81.5 | -27.4 | 81.07 | 804 | 90.0° | -27.4 | 81.14 | 804 | 90.0° |

ECHO I

15.51
49.9
15.387

30°N

302.20
-135.90
166.30 W

@ 1538Z ECHO I HEADING SE AT 30°N 167° W
ECHO I SCHEDULE WITH 30°N 167.3W (BRIEFING) CASE ZONE DTG

| | |
|---|---|
| 1. DATE - TIME GROUP<br>2 August 62 2/0305Z | 2. LOCATION<br>Miamisburg, Ohio |
| 3. SOURCE<br>Civilian | 10. CONCLUSION<br>SATELLITE (ECHO I)<br>SCO I AND II schedule not available for this time. By description and directive evaluated as a satellite. |
| 4. NUMBER OF OBJECTS<br>One | |
| 5. LENGTH OF OBSERVATION<br>10 Minutes | 11. BRIEF SUMMARY AND ANALYSIS OF FLIGHT.<br>Observation<br>Objectbrightness varied from very bright to dull but was sharply outlined. No sound was heard. Looked like a bright star, but a little larger than a star. Object was higher than any aircraft. ~~Object~~ appeared to be a satellite.<br>[illegible] EAST COAST<br>ECHO I AT 45°N 70°W (ATLANTIC)<br>ECHO II IN SOUTHERN HEMISPHERE |
| 6. TYPE OF OBSERVATION<br>Ground-Visual | |
| 7. COURSE<br>S to N | |
| 8. PHOTOS<br>☐ Yes<br>☒ No | |
| 9. PHYSICAL EVIDENCE<br>☐ Yes<br>☒ No | |

FORM
FTD SEP 63 0-329 (TDE) Previous editions of this form may be used.

HEADQUARTERS
FOREIGN TECHNOLOGY DIVISION
AIR FORCE SYSTEMS COMMAND
UNITED STATES AIR FORCE
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

REPLY TO ATTN OF: TDX

SUBJECT: DUTY OFFICER REPORT

3 August 1964

TO: TDEW,

Capt T R Strickland's report, 0715 1 Aug to 0715 2 Aug: 2045 (local) recieved UFO report from Lt Hubo Fletcher Cattichfin.

2nd Lt A H Marias' report, 0715 2 Aug to 0715 3 Aug: Received one UFO report - delivered to Sgt Moody upon his routine arrival Monday morning.

JOHN C. McNEILL
Major, USAF
Administrative Officer

ECG I AUGUST 3, 1964

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.0 | 101.63 | 47.5 | 31.2 | -82.07 | 1191 | 90.0° | 31.2 | -82.12 | 1191 | 90.0° |
| 2 | 58.1 | 130.48 | 45.0 | 25.4 | -80.10 | 1193 | 72.1° | 37.1 | -104.10 | 1160 | 107.9° |
| 4 | 52.1 | 159.34 | 40.0 | 20.7 | -45.07 | 1174 | 60.5° | 41.7 | -119.14 | 1118 | 119.5° |
| 6 | 46.2 | 188.20 | 35.0 | 17.3 | -35.58 | 1148 | 53.8° | 45.0 | -128.66 | 1077 | 126.1° |
| 8 | 40.2 | 217.05 | 30.0 | 14.4 | -28.34 | 1119 | 49.2° | 47.9 | -135.92 | 1038 | 130.7° |
| 10 | 34.3 | 245.91 | 20.0 | 9.2 | -17.18 | 1055 | 43.5° | 52.9 | -147.12 | 959 | 136.9° |
| 12 | 28.3 | 274.76 | 0. | 0. | 0. | 912 | 39.8° | 61.6 | -164.40 | 810 | 140.1° |
| 14 | 22.4 | 303.62 | -20.0 | -8.6 | 17.31 | 769 | 43.7° | -44.2 | 149.31 | 682 | 136.3° |
| 16 | 16.4 | 332.48 | -30.0 | -13.1 | 28.65 | 701 | 49.4° | -39.9 | 137.93 | 631 | 130.5° |
| 18 | 10.4 | 1.33 | -35.0 | -15.6 | 36.02 | 669 | 54.0° | -37.5 | 130.55 | 610 | 126.0° |
| 20 | 4.5 | 30.19 | -40.0 | -18.3 | 45.68 | 638 | 60.7° | -34.8 | 120.88 | 592 | 119.3° |
| 21 | 58.5 | 59.04 | -45.0 | -22.0 | 60.94 | 605 | 72.2° | -31.2 | 105.60 | 579 | 107.8° |
| 23 | 52.6 | 87.90 | -47.5 | -26.6 | 83.25 | 582 | 90.0° | -26.6 | 83.29 | 582 | 90.0° |

AUGUST 3, 1964 ECG II

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1.3 | 87.42 | 81.6 | 26.6 | -83.29 | 694 | 90.0° | 26.6 | -83.36 | 694 | 90.0° |
| 1 | 50.1 | 94.75 | 80.0 | 25.0 | -50.87 | 691 | 57.2° | 28.2 | -115.77 | 698 | 122.8° |
| 3 | 38.8 | 122.07 | 70.0 | 21.2 | -18.70 | 683 | 24.2° | 32.0 | -147.94 | 707 | 155.8° |
| 5 | 27.6 | 149.40 | 50.0 | 14.9 | -6.42 | 675 | 10.9° | 38.3 | -160.20 | 723 | 169.1° |
| 7 | 16.3 | 176.72 | 40.0 | 11.9 | -4.15 | 673 | 8.3° | 41.4 | -162.45 | 731 | 171.7° |
| 9 | 5.1 | 204.05 | 30.0 | 8.9 | -2.67 | 674 | 6.7° | 44.5 | -163.92 | 739 | 173.4° |
| 10 | 53.8 | 231.37 | 20.0 | 5.9 | -1.60 | 676 | 5.6° | 47.6 | -164.98 | 747 | 174.4° |
| 12 | 42.6 | 258.70 | 0. | 0. | 0. | 687 | 4.9° | 53.7 | -166.51 | 763 | 175.2° |
| 14 | 31.4 | 286.02 | -20.0 | -6.0 | 1.59 | 706 | 5.6° | -48.8 | 164.64 | 778 | 174.4° |
| 16 | 20.1 | 313.34 | -30.0 | -9.0 | 2.64 | 718 | 6.6° | -46.7 | 163.61 | 784 | 173.4° |
| 18 | 8.9 | 340.67 | -40.0 | -12.1 | 4.11 | 730 | 8.3° | -42.6 | 162.17 | 789 | 171.7° |
| 19 | 57.6 | 7.99 | -50.0 | -15.2 | 6.36 | 743 | 10.9° | -39.4 | 159.93 | 792 | 169.1° |
| 21 | 46.4 | 35.32 | -70.0 | -21.6 | 18.59 | 767 | 24.2° | -32.9 | 147.73 | 791 | 155.8° |
| 23 | 35.1 | 62.64 | -80.0 | -25.5 | 50.73 | 779 | 57.2° | -28.9 | 115.60 | 786 | 122.8° |
| | | | -81.6 | -27.2 | 83.12 | 783 | 90.0° | -27.2 | 83.20 | 783 | 90.0° |

## U.S. AIR FORCE TECHNICAL INFORMATION

This questionnaire has been prepared so that you can give the U.S. Air Force as much information as possible concerning the unidentified aerial phenomenon that you have observed. Please try to answer as many questions as you possibly can. The information that you give will be used for research purposes. Your name will *not* be used in connection with any statements, conclusions, or publications without your permission. We request this personal information so that if it is deemed necessary, we may contact you for further details.

1. When did you see the object?

2 (Day) Aug (Month) 61 (Year)

2. Time of day: 10 (Hour) 25 (Minutes)

(Circle One): A.M. or (P.M.)

3. Time Zone:

(Circle One): (a. Eastern) b. Central c. Mountain d. Pacific e. Other _____

(Circle One): a. Daylight Saving (b. Standard)

4. Where were you when you saw the object?

[redacted] (Nearest Postal Address) Lt (City or Town) Miamisburg (State or County) Ohio

5. How long was object in sight? (Total Duration) _____ (Hours) 10 (Minutes) _____ (Seconds)

a. Certain
(b.) Fairly certain
c. Not very sure
d. Just a guess

5.1 How was time in sight determined? Darkness

5.2 Was object in sight continuously? Yes ✓ No _____

6. What was the condition of the sky?

| DAY | NIGHT |
|---|---|
| a. Bright | (a.) Bright |
| b. Cloudy | b. Cloudy |

7. IF you saw the object during DAYLIGHT, where was the SUN located as you looked at the object?

(Circle One): a. In front of you b. In back of you c. To your right d. To your left e. Overhead f. Don't remember N/A

FORM
FTD OCT 62 164 This form supersedes FTD 164, Jul 61, which is obsolete.

8. IF you saw the object at NIGHT, what did you notice concerning the STARS and MOON?

8.1 STARS *(Circle One)*:

a. None
b. A few
(c.) Many
d. Don't remember

8.2 MOON *(Circle One)*:

a. Bright moonlight
b. Dull moonlight
(c.) No moonlight -- pitch dark
(d.) Don't remember

9. What were the weather conditions at the time you saw the object?

CLOUDS *(Circle One)*:

(a.) Clear sky
b. Hazy
c. Scattered clouds
d. Thick or heavy clouds

WEATHER *(Circle One)*:

(a.) Dry
b. Fog, mist, or light rain
c. Moderate or heavy rain
d. Snow
e. Don't remember

10. The object appeared: *(Circle One)*:

a. Solid
b. Transparent
c. Vapor
(d.) As a light
e. Don't remember

11. If it appeared as a light, was it brighter than the brightest stars? *(Circle One)*:

(a.) Brighter
b. Dimmer
c. About the same
d. Don't know

11.1 Compare brightness to some common object:

brightness varied from very bright to dull

12. The edges of the object were:

*(Circle One)*: a. Fuzzy or blurred
(b.) Like a bright star
(c.) Sharply outlined
d. Don't remember

e. Other _____

13. Did the object:

*(Circle One for each question)*

a. Appear to stand still at any time? Yes (No) Don't know
b. Suddenly speed up and rush away at any time? (Yes) No Don't know
c. Break up into parts or explode? Yes (No) Don't know
d. Give off smoke? Yes (No) Don't know
e. Change brightness? (Yes) No Don't know
f. Change shape? Yes (No) Don't know
g. Flash or flicker? (Yes) No Don't know
h. Disappear and reappear? Yes (No) Don't know

14. Did the object disappear while you were watching it? If so, how?

no

15. Did the object move behind something at any time, particularly a cloud?

(Circle One): Yes (No) Don't Know. IF you answered YES, then tell what it moved behind: _____

16. Did the object move in front of something at any time, particularly a cloud?

(Circle One): Yes (No) Don't Know. IF you answered YES, then tell what in front of: _____

17. Tell in a few words the following things about the object:

a. Sound none

b. Color like bright star

18. We wish to know the angular size. Hold a match stick at arm's length in line with a known object and note how much of the object is covered by the head of the match. If you had performed this experiment at the time of the sighting, how much of the object would have been covered by the match head?

little bigger than star

19. Draw a picture that will show the shape of the object or objects. Label and include in your sketch any details of the object that you saw such as wings, protrusions, etc., and especially exhaust trails or vapor trails. Place an arrow beside the drawing to show the direction the object was moving.

N/A

20. Do you think you can estimate the speed of the object?

(Circle One) Yes (No)

IF you answered YES, then what speed would you estimate? _____

21. Do you think you can estimate how far away from you the object was?

(Circle One) (Yes) No

IF you answered YES, then how far away would you say it was? Very close airplane

22. Where were you located when you saw the object? (Circle One):

a. Inside a building
b. In a car
(c.) Outdoors
d. In an airplane (type)
e. At sea
f. Other _____

23. Were you (Circle One)

a. In the business section of a city?
(b.) In the residential section of a city?
c. In open countryside?
d. Near an airfield?
e. Flying over a city?
f. Flying over open country?
g. Other _____

24. IF you were MOVING IN AN AUTOMOBILE or other vehicle at the time, then complete the following questions:

24.1 What direction were you moving? (Circle One)

a. North
b. Northeast
c. East
d. Southeast
e. South
f. Southwest
g. West
h. Northwest

24.2 How fast were you moving? _____ miles per hour.

24.3 Did you stop at any time while you were looking at the object? N/A

(Circle One) Yes No

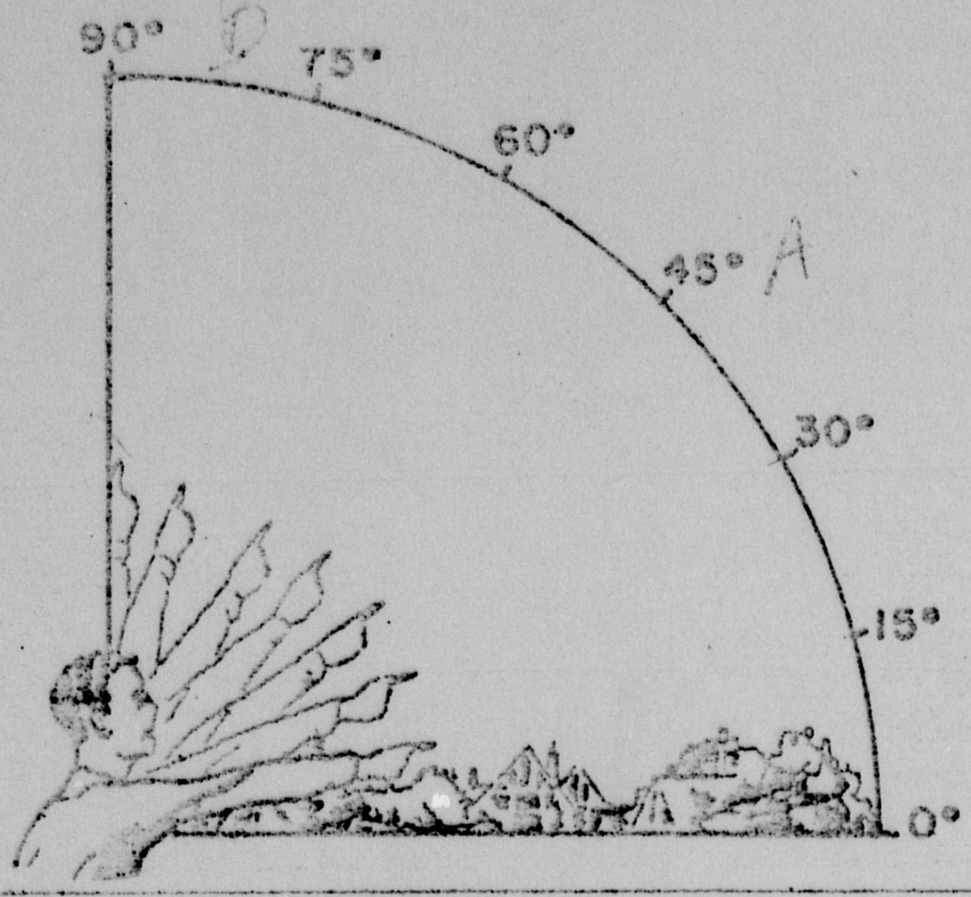
25. Did you observe the object through any of the following?

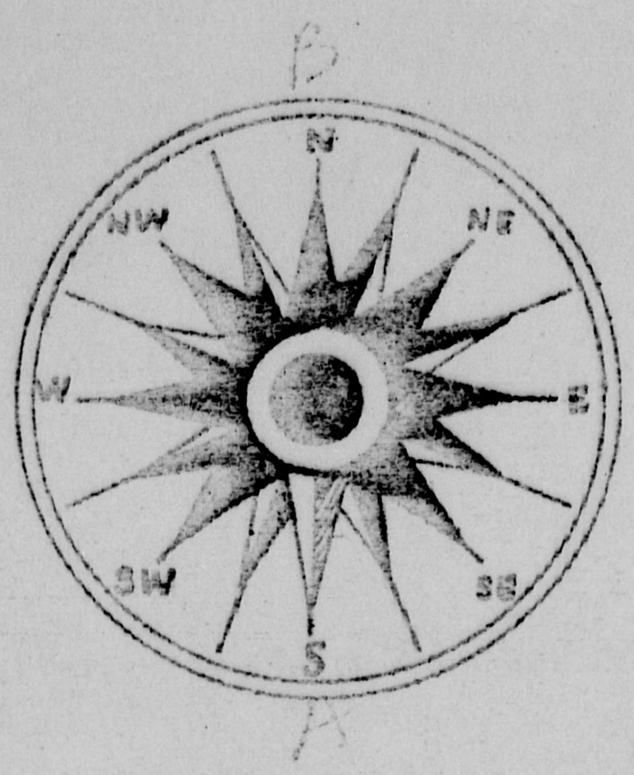
| | | | | | |
|---|---|---|---|---|---|
| a. Eyeglasses | Yes | (No) | e. Binoculars | Yes | (No) |
| b. Sun glasses | Yes | (No) | f. Telescope | Yes | (No) |
| c. Windshield | Yes | (No) | g. Theodolite | Yes | (No) |
| d. Window glass | Yes | (No) | h. Other _____ | | |

26. In order that you can give as clear a picture as possible of what you saw, describe in your own words a common object or objects which, when placed up in the sky, would give the same appearance as the object which you saw.

May have appeared to be a reflective aluminum cooking pan.

27. In the following sketch, imagine that you are at the point shown. Place an "A" on the curved line to show how high the object was above the horizon (skyline) when you *first* saw it. Place a "B" on the same curved line to show how high the object was above the horizon (skyline) when you *last* saw it. Place an "A" on the compass when you *first* saw it. Place a "B" on the compass where you *last* saw the object.




28. Draw a picture that will show the motion that the object or objects made. Place an "A" at the beginning of the path, a "B" at the end of the path, and show any changes in direction during the course.

N/A

29. IF there was MORE THAN ONE object, then how many were there? _____
Draw a picture of how they were arranged, and put an arrow to show the direction that they were traveling.

One object

30. Have you ever seen this, or a similar object before. If so give date or dates and location.

No

31. Was anyone else with you at the time you saw the object? *(Circle One)* (Yes) No

31.1 IF you answered YES, did they see the object too? *(Circle One)* (Yes) No

31.2 Please list their names and addresses:

husband & some children
next door neighbor

32. Please give the following information about yourself:

NAME [redacted] Mrs [redacted] [redacted]
Last Name First Name Middle Name

ADDRESS [redacted] [redacted] [redacted] [redacted]
Street City Zone State

TELEPHONE NUMBER [redacted] AGE 46 SEX F

Indicate any additional information about yourself, including any special experience, which might be pertinent.

33. When and to whom did you report that you had seen the object?

2 August 1965
Day Month Year

Lt. Sparks OSI(AFB) Ohio

34. Date you completed this questionnaire: 2 (Day) Aug (Month) 68 (Year)

by Lt Martin

35. Information which you feel pertinent and which is not adequately covered in the specific points of the questionnaire or a narrative explanation of your sighting.

| 1. DATE - TIME GROUP | 2. LOCATION |
|---|---|
| 4 August 58 05/0300Z | Middle Bldv ft. Dix, N.J. |
| 3. SOURCE<br>Civilian | 10. CONCLUSION<br>BALLOON |
| 4. NUMBER OF OBJECTS<br>One | |
| 5. LENGTH OF OBSERVATION<br>Ltd. Observ | 11. BRIEF SUMMARY AND ANALYSIS<br>Appeared as celestial object of 1st or 2nd apparent magnitude of Venus. Initial observation at 10 deg elevation in NNE. Moving at 1/3 speed of satellite and S. Motion to be appeared to be a twin device but on occasion merged into one observable body. BI only increased the brilliance of the object and no added details were noted. Final observation at 20 deg elevation SSE. Observer became bored with watching and went to bed.<br><br>COMMENTS: Object moving in direction of prevailing winds. Additional information requested from observer. Description indicates a probable balloon observation with running lights. Object also gaining in altitude slightly. |
| 6. TYPE OF OBSERVATION<br>Ground-Visual (GV) | |
| 7. COURSE<br>Eastward | |
| 8. PHOTOS<br>☐ Yes<br>☒ No | |
| 9. PHYSICAL EVIDENCE<br>☐ Yes<br>☒ No | |

FORM
FTD SEP 63 0-329 (TDE) Previous editions of this form may be used.

[redacted]
Little Silver, N. J.
07739
August 5, 1964

To Whom it May Concern
Unidentified Foreign Object Office
Wright Paterson Air Force Base
Dayton, Ohio

Dear Sir:

I should appreciate any comment you may make on the following sighting:

Last night during the period of approximately 2300 to 2315 plus or minus 5 minutes Eastern Daylite Time, I observed an unusual object. I accidentally observed a celestial object having the apparent magnitude of Venus, elevation approximately 60 degrees above the West SotthWest horizon moving in an approximately SouthEast direction but at a speed of perhaps one third of that of the Echo satelites,in fact it moved so slowly that I became slightly bored and went to bed. This is a rural community and altho I felt a strong urge to communicate with some authority or other, I realized that there is none within 50 miles of here. I am approximately 50 miles due South of New York City.

The noteworthy feature of this object was that it appeared to be a twin device but frequently the two images coincided. The best way I can describe it is that it resembled a celestial dog fight. My first sighting was with the naked eye. I then used a pair of 8X binoculars which simply increased the brilliance but continued to show the tumbling interchanging of positions. Sunset had occurred about 3 hours prior to the sighting so I suppose the distance from Earth was more than 200 miles;(I don't know the formula for calculating minimum altitude from a given spot on Earth to a point in space that will be illuminated by the Sun 3 hours after sunset.)

Today I phoned the Smithsonian Observatory, Cambridge, Mass. to ask if any similar sightings had been reported and was disappointed when I was told that there had been none reported.

So? I am 99.9% sure that the object(s) was not a manned aircraft. Perhaps it was a rocket with a booster casing within a few miles of it. When I ceased observing,the object(s) was approximately 80 degrees above the South SouthEast horizon. As you can see from the attached schedule of Echo I and II there is no resemblance to those trajectories, and in any case, why the twins?

I am employed by the U S Army as an Electronics Engineer in communications but my purpose in making inquiry is almost entirely personal curiosity, - plus wondering why nobody else reported a sighting to the Smithsonian Observatory. As I ended my vigil the brilliance had decreased and I gained the impression that the object was increasing its distance from Earth. Incidentally on a few occasions for a duration of perhaps 1/10 second or less there was no reflected illumination from the object(s). A star gazing friend of mine told me this is a commonly observed phenomenon attributable to variations in the atmosphere.

Any comments? I sure would like to have someone else say "Yes, I saw it! Pretty wasn't it!" Seriously, I'm curious.

Very truly yours,

[redacted]

[redacted]
75 POINT ROAD
LITTLE SILVER, N. J.

RED BANK
AUG 6
1964
N. J.

5¢ U.S. POSTAGE

Intelligence Office

Unidentified Flying Objects

Wright Paterson Air Force Base

Dayton, Chio

HEADQUARTERS
FOREIGN TECHNOLOGY DIVISION
AIR FORCE SYSTEMS COMMAND
UNITED STATES AIR FORCE
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

REPLY TO
ATTN OF: TDEW

SUBJECT: Request for UFO Information (Charles A. O'Malley)

TO: Hq USAF SAFOI PB (Mrs. Gaiser) 18 AUG 1964

We are in receipt of a letter from Charles A. O'Malley. The apparent speed indicated as 1/3 that of Echo satellite indicates that the observation duration exceeded 30 minutes. The duration was not included in the description of his observation. It is suggested that a FTD Form 164 be forwarded for completion by Mr. [redacted] and returned to us in order that we may evaluate his sighting.

FOR THE COMMANDER

ERIC T. de JONCKHEERE
Colonel, USAF
Deputy for Technology
and Subsystems

YOU - THE NUCLEUS OF SECURITY!

4 Aug 64
Little Silver, N Jersey

September 2, 1964

Dear Mr. [redacted]

This is in reply to your letter of August 5, 1964, in which you reported observing an object or objects in the New Jersey sky on the evening of August 4th.

The delay in response to your letter has been occasioned by our referring it to our Project Office at Wright-Patterson Air Force Base for a possible evaluation. That office advises that it is unable to offer an analysis without additional facts at hand. You listed in your letter an approximate speed of 1/3 that of Echo satellite. This would indicate an observation in excess of 30 minutes; however, the duration was not included in the description of your observation.

Inclosed is an Air Force FTD Form 164. It is requested that you complete the form in the greatest detail possible and return it to this office, via the self-addressed envelope, for further evaluation.

Sincerely,

MASTON M. JACKS
Major, USAF
Public Information Division
Office of Information

Inclosures

Mr. [redacted]
Little Silver, New Jersey 07739

| 1. DATE - TIME GROUP | 2. LOCATION |
|---|---|
| 5 August 61 0500Z | Ft Worth, Texas |
| 3. SOURCE<br>Civilian | 10. CONCLUSION<br>1-2 Misinterpretation of Conventional Object.<br>3-4 Astronomical (stars) |
| 4. NUMBER OF OBJECTS<br>Four | |
| 5. LENGTH OF OBSERVATION<br>2 hours | 11. BRIEF SUMMARY AND ANALYSIS<br>Formation of objects, on white moving 60 deg above north horizon and went down in northwest very rapidly and one white moving 60 deg above northwest horizon went down in the southwest. The two blue-tinted objects were stationary directly overhead. Tail, brilliance, effluent, not observed. Noticed moving objects air brought out telescope (20X by 7"). Angle of elevation and azimuth of object 5 deg inclination to west. Observed object until it disappeared over the horizon.<br><br>CONCLUDED: The two stationary object observed for over two hours were likely stars. Deneb and Vega were overhead at the time of sighting. No explanation of the appearance of these objects are possible. The objects with motion are probably IFO I will send to the |
| 6. TYPE OF OBSERVATION<br>Ground-Visual (TV) | |
| 7. COURSE<br>1. ---; 2. S<br>3/4 Stationary | |
| 8. PHOTOS<br>☐ Yes<br>☒ No | |
| 9. PHYSICAL EVIDENCE<br>☐ Yes<br>☐ No | |

FORM
FTD SEP 63 0-329 (TOE) Previous editions of this form may be used.

(OVER)

7DCOICI/Capt Bloodworth/458

UFO Reports

AFSC (FTD), Wright Patterson AFB, Ohio

1. The following reports on unidentified flying objects are in accordance with AFR 200-2.

2. The attached information was collected by Capt Bloodworth on 5 Aug 64. No additional investigation is deemed necessary owing to the short duration of the sightings.

FOR THE COMMANDER

MERLE M. JONES
Colonel, USAF
Deputy Comdr for Operations

2 Atch
1. AF Form 112 on UFO observed from Kennedale, Tex.
2. AF Form 112 on UFO observed from Fort Worth, Tex.

INTELLIGENCE REPORT INTELLIGENCE REPORT

# DEPARTMENT OF THE AIR FORCE

WARNING: This material contains information affecting the National Defense of the United States within the meaning of the Espionage Laws, Title 18, USC, Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

(Classification)
UNCLASSIFIED

COUNTRY USA

REPORT NO. 2

SUBJECT UFO Report

DATE OF REPORT 12 Aug 64

NO. OF PAGES 1

DATE OF INFO 5 Aug 64

REFERENCES [redacted] Ft Worth, Tex.

PLACE & DATE ACQ. Ft Worth, 5 Aug 64

EVALUATION

SOURCE 7DCOIGI, Carswell AFB, Tex.

FROM

PREPARED BY 7DCOIGI, Carswell AFB

SUMMARY Source reports seeing an unidentified flying object and gave the following data to the investigating USAF Officer.

---

Shape: Circular coil with dark spots on lighted field.
Size: Size of a quarter held at arms length.
Color: (2) white & (2) blue
Number: 4
Formation: One white moving 60° above north horizon and went down in north east very rapidly and one white moving 60° above north west horizon and went down in the south west. The two bluish tinted objects were stationary directly overhead.
Tail, trail or exhaust: None
Sound: None

Reason for noticing object: Noticed moving objects and brought out telescope (30X type) to see them better.
Angle of elevation and azimuth of object: 5? inclination to east, no information on disappearance.
Description of flight path and/or maneuvers: None
Manner of disappearance: Over the horizon, not a fade out.
Length of time in sight: 2 hours

Manner of observance: Gilbert Telescope 80X

Zulu time and date of sightings: 0300Z 6 Aug 64
Light Conditions: Night, clear and no moon

Location of observers: 2 miles north west of Ft Worth
Identifying information on observers: [redacted] Ft Worth, Tex. student.

Observers account of weather: Clear

Physical evidence (photograph): None

DISTRIBUTION BY ORIGINATOR

DISTRIBUTION BY HQ USAF

CIA STATE

ARMY NAVY

NSA

(Classification)
UNCLASSIFIED

INTELLIGENCE REPORT INTELLIGENCE REPORT

AF FORM 112 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

INTELLIGENCE REPORT INTELLIGENCE REPORT

DEPARTMENT OF THE AIR FORCE

WARNING: This material contains information affecting the National Defense of the United States within the meaning of the Espionage Laws,

(Classification)
UNCLASSIFIED

Title 18, USC, Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

COUNTRY USA

REPORT NO. 1

SUBJECT UFO Report

DATE OF REPORT 12 Aug 64

NO. OF PAGES 1

DATE OF INFO 5 Aug 64

REFERENCES Mitchell T. Wyatt
Box #22
Kennedale, Tex.

PLACE & DATE ACQ. Kennedale, Tex. 5 Aug 64

EVALUATION

SOURCE 7DCOIGI, Carswell AFB, Tex.

FROM

PREPARED BY 7DCOIGI, Carswell AFB

SUMMARY Sources report seeing an unidencified flying object and gave the following data to the investigating USAF Officer.

Shape: Circle
Size: Size of a dime held at arms length.
Color: White
Number: 1
Formation: None
Tail, trail or exhaust: None
Sound: None

Reason for noticing object: Observers were observing night sky as pastime.
Angle of elevation and azimuth of object when first observed: nearly overhead, upon disappearance: over horizon.
Description of flight path and/or maneuvers: Abrupt surges of speed as object neared.
Manner of disappearance: Disappeared by the horizon, faded from view but did not go over the horizon line.
Length of time in sight: 5 minutes

Manner of observance: Naked eye

Zulu time and date of sightings: 0300Z 6 Aug 64
Light conditions: Light, clear and no moon.

Location of observers: Kennedale, 4 miles south east of Ft [redacted]
Identifying information on observers: [redacted] Tex., Electronics technician; [redacted] e Ft Worth, Tex., housewife; [redacted] Tex., retired.

Observer's account of weather: Clear no clouds, no haze and no moon.

Physical evidence (photograph): None

DISTRIBUTION BY ORIGINATOR

DISTRIBUTION BY HQ USAF

CIA STATE

(Classification)
UNCLASSIFIED

ARMY NAVY

NSA

INTELLIGENCE REPORT INTELLIGENCE REPORT

AF FORM 112 JUL 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

☆U. S. GOVERNMENT PRINTING OFFICE • JUNE 1961 • J. 539457

| | |
|---|---|
| 1. DATE - TIME GROUP<br>10 August A 10/1716 | 2. LOCATION<br>Rhode Island |
| 3. SOURCE<br>Civilian | 10. CONCLUSION<br>UNIDENTIFIED |
| 4. NUMBER OF OBJECTS<br>One | |
| 5. LENGTH OF OBSERVATION<br>2 Minutes | 11. BRIEF SUMMARY AND ANALYSIS<br>Object appearing as a light blinking intermittently. Object with low intensity. No features noted such as tail, stage etc. Observed at 230 deg azimuth, observed altitude of 3,000'. Object departed on heading of [illegible] deg. [illegible] approach to runway, then abruptly stopped making several [illegible] degree changing course of 90 deg, [illegible] light. Disappeared by gradually fading to the [illegible] observed at night/weather. Total duration, 2 minutes. Observation from a/c parked on runway.<br><br>Comments: No a/c reported by tower personnel. Motion not in accord with balloon, and no balloons reported as released at that time. Motions as reported could not have been performed by a/c. Blinking light tends to rule out bird as well as the duration of |
| 6. TYPE OF OBSERVATION<br>Ground-Visual | |
| 7. COURSE<br>Erratic | |
| 8. PHOTOS<br>☐ Yes<br>☒ No | |
| 9. PHYSICAL EVIDENCE<br>☐ Yes<br>☒ No | |

FORM
FTD SEP 63 0-329 (TDE) Previous editions of this form may be used.

INCOMING
MESSAGE

DEPARTMENT OF THE AIR FORCE
STAFF MESSAGE BRANCH

UNCLASSIFIED



AF IN : 55367 (12 Aug 64) B/jpr

ACTION: NIN-7

INFO : XOP-1, XOPX-5, SAF-OS-3, DIA-15 (32)

| TO | | CYS |
|---|---|---|
| | OS | |
| | OSA | |
| | OSP | |
| | US | |
| | RR | |
| | IL | |
| | ILA | |
| | ILI | |
| | ILP | |
| | ILS | |
| | ILT | |
| | FM | |
| | RD | |
| | MP | |
| | MPP | |
| | MPR | |
| | AA | |
| | AAA | |
| | AAR | |
| | GC | |
| ✓ | OI | |
| | LL | |
| | SS | |
| | DSHG | |
| | | |
| | | |

SMB D0085

ZCZCHQA088ZCRJA830

PP RUEAHQ

DE RUAOKH 67 12/0747Z

P 121615Z

FM 51FTRINTCPWG NAHA AB OKINAWA

TO RUWGALE/ADC ENT AFB COLO

RUEAGL/AFSC

RUEAHQ/HQ USAF (AFCIN) WASH 25 DC

RUEAHQ/SECRETARY OF THE AIR FORCE WASH 25 DC

INFO ZEN/313AIR DIV KADENA AB OKINAWA

BT

UNCLAS E F T O 510C-I-064-3.

UFO. THIS MESSAGE IN ELEVEN PARTS. PART I. DESCRIPTION OF THE OBJECT: (1) OBSERVERS UNABLE TO DETERMINE SHAPE OF OBJECT. APPEARED AS ONE(1) LIGHT INTERMITTENLY BLINKING. (2) SIZE COMPARED TO AIRCRAFT MARKER BEACON. (3) REDDISH TINT-WEAK AS IN LOW INTENSITY WHITE. (4) ONE. (5) NO FORMATION. (6) NO FEATURES DISCERNIBLE. (7) OBSERVERS COULD NOT DETERMINE IF TAIL ETC. EXISTED. (8) NO AUDIBLE SOUND. THERE WERE NO LOUD NOISES IN THE VICINITY WHICH WOULD HAVE PREVENTED OVSERVERS FROM HEARING ANY SOUND. (9) NONE. PART II. DESCRIPTION OF COURSE OF OBJECT:

AF IN : 55367 (12 Aug 64)
PAGE 2 RUAOKH 67 UNCLAS E F T O

(1) OBECT FIRST NOTED BY OBSERVERS ADI9RUPND L DFREA US45;ETERIOTEN BUT THEN MADE RAPID ERRATIC MOVEMENTS. (2) COMPARED TO A B-16 COMPASS, OBJECT FIRST OVSERVED ON A HEADING OF 230 DEGREES. ESTIMATED ALTITUDE OF 3,ØØØ FEET. (3) OBJECT DEPARTED ON HEADING OF 320 DEGREES. (4) APPEARED FIRST AS IF MAKING APPROACH TO RUNWAY AT WAKE ISLAND, THEN ABRUPTLY STOPPED, REVERSED ITSELF SEVERAL TIMES AND CHANGED COURSE. BEFORE GOING OUT OF SIGHT OBJECT AGAIN MADE ERRATIC MOVEMENTS. OBSERVERS STATED THAT OBJECT CHANGED DIRECTIONS "AT WILL- SIMILAR TO MOVEMENT OF LARGE BIRDS IN FLIGHT". (5) OBJECT GRADUALLY FADED OUT TO THE NORTHWEST (320 DEGREES). (6) ESTIMATE VISIBLE FOR TWO MINUTES. PART III. DESCRIPTION OF CURSE OF OBJECT: (1) GROUND VISUAL. (2) NONE. (3) NOT APPLICABLE. PART IV. TIME AND DATE OF SIGHTING: (1) 10/1716Z AUGUST 1964. (2) NIGHT - PRE-DAWN. PART V. LOCATION OF OBSERVERS: OBSERVED FROM FLIGHT DECK OF C-124 PARKED ON TAXIWAY AT WAKE ISLAND (1918N 16635E) APPROXIMATELY 15Ø YARDS FROM CONTROL TOWER. PART VI. IDENTIFYING INFORMATION ON OBSERVERS: (1) NONE. (2) INITIALLY OBSERVED BY CAVENDER, HENRY J., 1ST LT, USAF, 85TH ATS, TRAVIS AFB, CALIF, NAVIGATOR C-124, TRAINED OBSERVER CONSIDERED HIGHLY RELIABLE. NEXT OBSERVED BY JONES, BERNARD C., CPATAIN, USAF, 85TH ATS, TRAVIS

AF IN : 55367 (12 Aug 64)
PAGE 3 RUAOKH 67 UNCLAS E F T O

AFB, CALIF, AIRCRAFT COMMANDER C-124, HIGHLY RELIABLE, EXPERIENCED AVIATOR. PART VII. WEATHER AND WINDS - ALOFT CONDITIONS AT TIME AND PLACE OF SIGHTINGS: (1) WEATHER CONDITIONS REPORTED AS EXCELLENT. LIGHT AND VARIABLE SURFACE WINDS - CLEAR, STARLIGHT NIGHT. (2) SURFACE -090 DEGREES AT 6 KNOTS

5,000 FEET -090 DEGREES AT 8 KNOTS

10,000 FEET - 080 DEGREES AT 9 KNOTS

16,000 FEET - 060 DEGREES AT 19 KNOTS

20,000 FEET - 050 DEGREES AT 13 KNOTS

50,000 FEET - 350 DEGREES AT 20 KNOTS

80,000 FEET - 110 DEGREES AT 40 KNOTS

(3) 2,000 SCATTERED. (4) 15 N.M. PLUS. (5) REPORTED SPARSE-PERCENTAGE UNKNOWN. (6) NONE. (7) 81 DEGREES.

PART VIII. ANY OTHER UNUSUAL ACTIVITY OR CONDITIONS: NAVIGATOR REPORTED NO UNUSUAL ACTIVITIES OR CONDITIONS. PART IX. INTERCEPTION OF IDENTIFICATION ACTION TAKEN: NONE. PART X. LOCATION, APPROXIMATE ALTITUDE, AND GENERAL DIRECTION: NONE. PART XI. POSITION VTITLE AND COMMENTS OF PREPARING OFFICER: CHIEF, INTELLIGENCE DIVISION, 51ST FIGHTER INTERCEPTOR WING, NAHA AB OKINAWA. IT IS CONSIDERED UNLIKELY THAT THIS OBJECT WAS AN AIRCRAFT. OBSERVERS

CALLED WAKE ISLAND CONTROL TOWER AT 10/1805Z AUG AND ASKED IF ATC PERSONNEL HAD SIGHTED AN OBJECT AT 1716Z/1718Z. TOWER REPLIED NEGATIVE, HAD SEEN NOTHING "AT THAT TIME". SPEED OF THE OBJECT WAS DESCRIBED AS COMPARABLE TO THAT OF A JET FIGHTER ON FINAL APPROACH, BUT THE MOVEMENTS DESCRIBED COULD NOT HAVE BEEN PERFORMED BY AN AIRPLANE. NO WEATHER BALLONS WERE KNOWN TO BE IN THE AREA AT THAT TIME, AND BY VIRTUE OF THE REPORTED INTERMITTENT BLINKING LIGHT AND MOVEMENTS OF THE OBJECT AS COMPARED TO PREVAILING WINDS IT IS CMUSIDERED UNLIKELY THAT THE OBJECT WAS A BALLOON. BIRDS ARE RULED OUT BECAUSE OF THE BLINKING LIGHT AND THE REPORTED SPEED OF THE OBJECT.

NO SEARCHLIGHT WAS REPORTED IN OPERATION ANYWHERE IN THE VICINITY AT THAT TIME. THE PREPARING OFFICER CONSIDERS THE TWO OBSERVERS TO BE HIGHLY RELIABLE. BOTH REPORTED THAT NEVER IN THEIR EXPERIENCE HAD THEY SEEN ANYTHING WITH WHICH TO COMPARE THIS OBJECT. NO OTHER INFORMATION IS AVAILABLE OTHER THAN THAT CONTAINED IN THIS REPORT.

BT NOTE: ADV CY DELIVERED TO DIA and NIN.

| | |
|---|---|
| 1. DATE - TIME GROUP<br>10 August 4 12/0025Z | 2. LOCATION<br>Las Vegas, Nevada |
| 3. SOURCE<br>Civilian | 10. CONCLUSION<br>Astronomical (Meteor) |
| 4. NUMBER OF OBJECTS<br>2 or 3 | Additional data requested as to number of objects observed on other observations. Does not correspond to 4. |
| 5. LENGTH OF OBSERVATION<br>1. 2 Seconds | 11. BRIEF SUMMARY AND ANALYSIS<br>1. Observation of two objects flying parallel, each at 30-90 deg. elevation in the SE heading NE at very high speed disappearing about 1/2 second flight. Sound accompanied the flight. Slight reddish color to objects.<br>2. At 0400 bright light appearing at 40 deg elevation on Eastern horizon in flight to East for 20 seconds disappearing near Orion.<br><br>NOTE: Observers are amateur astronomers with appreciable good knowledge of meteors, stars, satellites and a/c observations. |
| 6. TYPE OF OBSERVATION<br>Ground-Visual | |
| 7. COURSE<br>1. NW 2. East | |
| 8. PHOTOS<br>☐ Yes<br>☒ No | |
| 9. PHYSICAL EVIDENCE<br>☐ Yes<br>☒ No | |

FORM
FTD SEP 63 0-329 (TDE) Previous editions of this form may be used.

August 20, 1964

To: Comanding General
Kirtland Air Force Base
Albuquerque, New Mexico

Subject: Unidentified Flying Objects

Dear Sir,

It has recently come to our attention that you may be interested in observations of unusual objects in the sky. We have been interested in astronomy for the past several years and have spent much time in observing various kinds astronomical phenomena. We have been using a 4¼ inch reflecting telescope for many of our observations. We are in the ninth grade in school at present.

During the past month we have been observing the Perseid meteor shower and plotting their paths on a star map. We have been making these observations, whenever weather permits, from 1 AM to about 4:30 AM, MST.

At 1:25 AM on August 12 one of us [redacted] spotted a very strange sight. It appeared to be two bright lights which suddenly appeared about 30-40 degrees above the horizon in the southeast direction. These moved rather rapidly in a northward direction and disappeared about 2½ seconds later near the position of Polaris. They moved parallel to each other and seemed to keep the same distance apart. They were slightly redish in color. As they moved they made a strange sound which is hard to describe. It was something like a sharp high frequency chirping. This sound started when the lights first appeared and stopped when they disappeared. The path of this (these?) object(s) is plotted on a star map which accompanies this letter.

At 4:00 AM on the same morning we both saw another bright light which first appeared about 30 degrees above the western horizon and in about 20 seconds it moved east and appeared to go into a cloud near Orion (Eta). We heard no sound this time. This object moved much to fast to be mistaken for any of the recognized satellites.

At 7:55 PM on August 18 one of us [redacted] again saw a strange object which appeared as two reddish objects near the northern horizon which moved very quickly accross the sky within about one second, with no sound.

As mentioned above we have done much observing during the past several years and have never before seen anything like the objects which we described in this letter. We feel that we can easily recognize normal meteors, airplanes or any of the artificial satellites. These observations have been made near our homes in Las Vegas. We would be glad to try to answer any further questions which you may have about these objects

Sincerely,

[redacted]

[redacted]
Las Vegas New Mexico

[redacted]

Las Vegas, New Mexico

HEADQUARTERS
FOREIGN TECHNOLOGY DIVISION
AIR FORCE SYSTEMS COMMAND
UNITED STATES AIR FORCE
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

REPLY TO
ATTN OF: TDEW

SUBJECT: UFO Sightings, Las Vegas, New Mexico, 12 Aug 64 — 4 Sep 64

TO: Hq USAF SAFOI PB (Mrs Geiser)
Wash D C 20330

This office has received a report of unidentified flying objects from [redacted], both of Las Vegas, New Mexico. It will not be necessary to send them FTD Forms 164. However, we are interested in [redacted] and Larry giving us a description as to how these sightings differ from the different meteor sightings they have observed.

FOR THE COMMANDER

ERIC T de JONCKHEERE Maj.
Colonel, USAF
Deputy for Technology
and Subsystems

1 Atch
Ltr, [redacted]
20 Aug 64

YOU - THE NUCLEUS OF SECURITY!

September 17, 1964

Dear [redacted]

This is in reply to your letter of August 20, 1964, in which you both gave a very interesting narrative of some observations of unusual aerial objects.

We are interested in finding out from you both just how these sightings have differed from meteor sightings you previously observed. It would be appreciated if you would write us, giving your observations on this matter, and we will in turn attempt an evaluation of your sightings from the additional information. Attached is a self-addressed envelope for your convenience.

Sincerely,

MASTON M. JACKS
Major, USAF
Public Information Division
Office of Information

Messrs [redacted]

Las Vegas, New Mexico



Jupiter drawing by ALPO member Phillip Budine, 102 Trafford Rd., Binghamton, N. Y., through his 6" *f/10 SURVEYOR Refractor* at 214x. Mr. Budine has depicted the Red Spot Hollow border and the long-enduring white Temperate Zone Oval above the GRS. Festoon activity in the Equatorial Zone is also shown.

The new 6" SURVEYOR Brochure sent on request.

VERNONscope & Co.
Candor, New York 13743
Phone: 607 OL 9-4301

IBM COMPUTER COMPONENTS

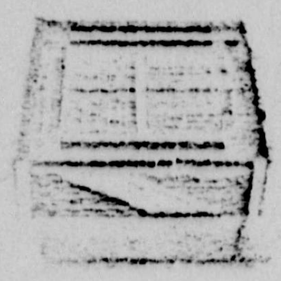


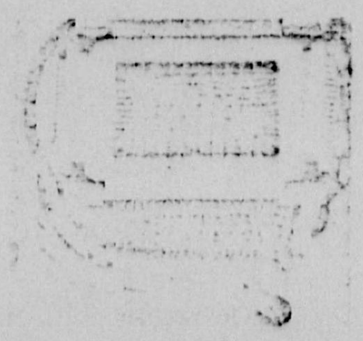
MEMORY DRUM

Approximately 40 read-write heads, with 115-volt 60-cycle drive motor .....$100.00

WIRED MEMORY STACK

8 frames, 10,000 cores per frame, with fan. Good condition $100.00





WIRED MEMORY STACK

7 frames, 100 cores per frame .....$25.00

F.O.B. Lynn. Send for free 72-page catalog listing the finest in government surplus material.

JOHN MESHNA, JR.
*Surplus Electronic Material*
19 Allerton St., Lynn, Mass.
617-LYnn 5-2275


# OBSERVER'S PAGE

**Universal time (UT) is used unless otherwise noted.**

## MANY AMATEURS COUNT PERSEID METEORS

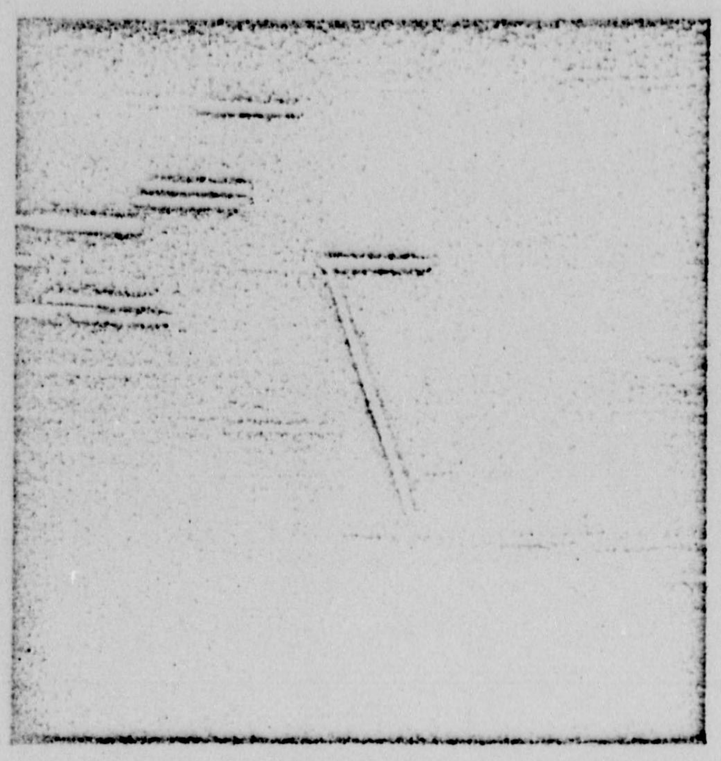
HIGH hourly rates and an occasional fireball held the attention of many watchers during the night of maximum activity of the Perseid meteor shower, August 11-12. That evening the crescent moon set early, and clear skies over most of the United States made this one of the best-observed Perseid displays in years. Forty-two reports of it have been received.

There is a particularly attractive property of a meteor shower: you can observe it anywhere, without any equipment. If the sky is clear and dark, just step outside, watch, and wait. This was the experience of Jack D. Drummond, III, of Hialeah, Florida, who writes:

"I was aboard the USS *John Paul Jones*, then south of Sardinia. The Mediterranean sky was unblemished from horizon to horizon, and so clear that M31 stood out large and bright; even M33 was visible without any trouble.

"From my location, it was possible to observe during the predicted peak of the shower, scheduled to occur at 2$^h$ Universal time on the 12th. My watch from 23$^h$ to 2$^h$ gave these counts for successive hours: 62 Perseids, 12 sporadics; 57, 14; and 66, 14. Four of these were fireballs of magnitude −2 or brighter that left trains visible from 15 to 20 seconds. The typical Perseid was of magnitude +1½, blue, and with a short streak."

Perhaps the most useful kind of meteor observation that an amateur can make is to count the number of shower meteors (as distinguished from sporadic ones) seen during one-hour intervals. Afterwards, these counts can be adjusted to give the hourly numbers that the observer would have seen if the shower radiant had been in his zenith. Zenithal rates are necessary in comparing counts made at different places or times, for the apparent number depends on the radiant's altitude above the horizon.



A blue-white Perseid of magnitude −2 that passed Alpha Persei (brightest star shown) was filmed the morning of August 15th by Rodney Norden, Norfolk, Virginia, with a Miranda F camera.

The present analysis makes use of the relationship between number and altitude given on page 49 of the *Handbook* of the British Astronomical Association for 1964. This states, for example, that if the radiant has an altitude of 25°, an observer can expect to see only half the zenithal number of meteors.

Reports of 22 meteor watchers contained the data needed to derive zenith-



This wide-field, seven-minute exposure caught two Perseid meteors. Note the divergence of their trails as they moved out from the radiant. T. M. Gates and M. A. Bennett of the Morrison Planetarium in San Francisco, California, used an f/2.5 Exakta camera and Tri-X film. Aries is at left center.

## 1964 PERSEID METEOR SHOWER HOURLY RATES

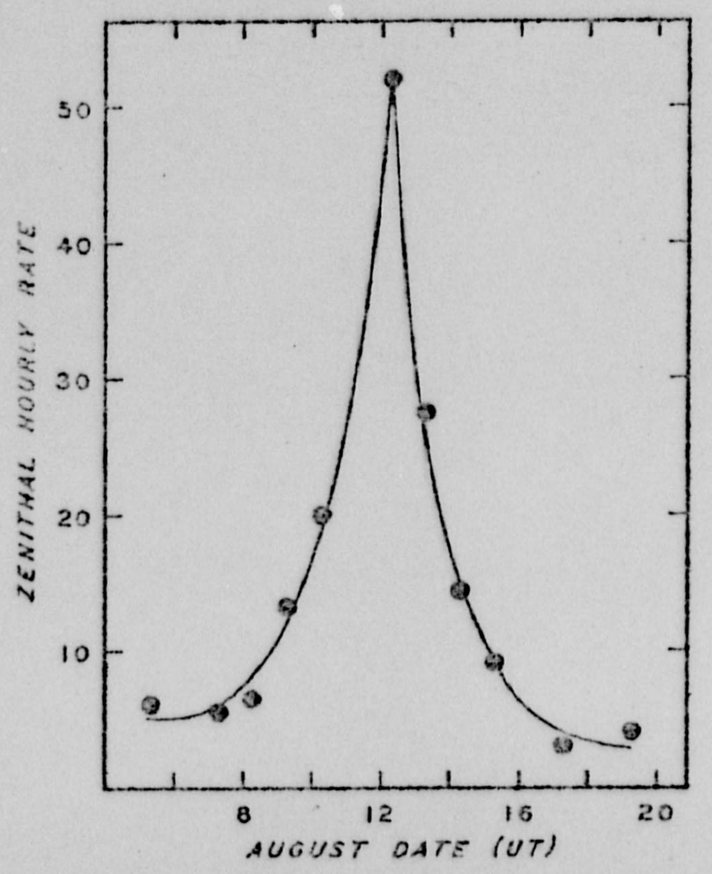
| *Time (UT)* | *P* | *ZHR* | *Ob* |
|---|---|---|---|
| AUGUST 3 | | | |
| 4:00-5:30 | 4 | 5 | Su |
| AUGUST 5 | | | |
| 4:00-5:00 | 3 | 6 | Su |
| AUGUST 7 | | | |
| 7:33-8:33 | 2 | 2 | Po |
| 8:34-9:34 | 8 | 9 | Po |
| AUGUST 8 | | | |
| 7:26-8:26 | 9 | 11 | Po |
| 8:40-9:40 | 2 | 2 | Po |
| AUGUST 9 | | | |
| 5:00-6:00 | 9 | 15 | Sa |
| 6:00-7:00 | 7 | 10 | Sa |
| 8:50-10:05 | 15 | 15 | Ea |
| AUGUST 10 | | | |
| 7:03-8:03 | 17 | 20 | Po |
| AUGUST 11 | | | |
| 23:00-24:00 | 62 | 95 | Dr |
| AUGUST 12 | | | |
| 0:00-1:00 | 57 | 76 | Dr |
| 1:00-2:00 | 66 | 80 | Dr |
| 3:00-4:00 | 19 | 58 | Mc |
| 4:00-5:00 | 14 | 33 | Mc |
| 5:00-6:00 | 29 | 56 | Mc |
| 6:00-7:00 | 30 | 47 | Ba |
| | 35 | 56 | Mc |
| 6:30-7:30 | 18 | 26 | Wo |
| 7:12-8:12 | 27 | 36 | Ra |
| 7:15-8:15 | 34 | 44 | Ba |
| 7:25-7:55 | 22 | 51 | Pr |
| 7:30-8:30 | 30 | 38 | Wo |
| 7:45-9:15 | 80 | 65 | Ea |
| 8:05-9:00 | 47 | 57 | Bu |
| 8:12-9:12 | 44 | 52 | Ra |
| 8:25-9:25 | 35 | 41 | Ba |
| 8:30-9:30 | 31 | 36 | Wo |
| 8:45-10:00 | 42 | 38 | Mi |
| 9:12-9:45 | 35 | 72 | Ra |
| 10:40-11:40 | 45 | 56 | Jo |
| AUGUST 13 | | | |
| 2:00-3:00 | 13 | 43 | Bo |
| 3:00-4:00 | 15 | 38 | Bo |
| 3:30-5:00 | 19 | 20 | Lo |
| 4:00-5:00 | 15 | 30 | Bo |
| 4:00-5:05 | 14 | 21 | No |
| 4:05-5:00 | 17 | 30 | Sa |
| 4:08-5:00 | 7 | 15 | Su |
| 5:00-6:00 | 16 | 27 | Bo |
| | 21 | 30 | Sa |
| | 13 | 21 | Su |
| 6:00-7:00 | 18 | 25 | Bo |
| | 29 | 36 | Sa |
| 7:00-7:30 | 7 | 18 | Bo |
| 7:14-8:14 | 23 | 29 | Po |
| 8:26-9:26 | 30 | 34 | Po |
| 8:45-10:00 | 20 | 18 | Mi |
| 9:26-9:56 | 15 | 33 | Po |
| AUGUST 14 | | | |
| 5:00-6:00 | 8 | 12 | An |
| | 9 | 14 | Er |
| | 7 | 11 | Ha |
| | 11 | 17 | Sc |
| 5:50-7:10 | 19 | 18 | No |
| 6:00-7:00 | 10 | 14 | An |
| | 11 | 15 | Er |
| | 9 | 12 | Ha |
| | 10 | 14 | Sc |
| 7:20-8:20 | 13 | 15 | An |
| | 13 | 15 | Er |
| | 17 | 20 | Sc |
| 8:20-9:20 | 9 | 10 | An |
| | 11 | 12 | Er |
| | 13 | 14 | Ha |
| | 13 | 14 | Sc |
| 8:45-9:15 | 8 | 17 | Ma |
| AUGUST 15 | | | |
| 2:30-3:30 | 5 | 11 | Ma |
| 3:30-4:30 | 2 | 4 | Ma |
| 4:06-4:35 | 8 | 28 | Du |
| 4:30-5:30 | 2 | 3 | Ma |
| 5:30-6:30 | 5 | 7 | Ma |
| 6:30-7:30 | 5 | 6 | Ma |
| 7:30-8:30 | 5 | 6 | Ma |
| 8:30-9:00 | 4 | 9 | Ma |
| AUGUST 17 | | | |
| 6:30-7:30 | 1 | 1 | Ma |
| 7:30-8:30 | 4 | 5 | Ma |
| AUGUST 19 | | | |
| 7:00-8:00 | 3 | 4 | Ma |

al hourly rates: the date, beginning and ending time of the counting session (preferably one hour), the numbers of shower and sporadic meteors, and the observing location. Cloud coverage (as a percentage of sky area) and atmospheric transparency (expressed as the magnitude of the faintest stars visible) are also valuable information. It is possible to use only counts by individual observers; combined numbers by several individuals cannot be analyzed.

The table contains both the original counts of Perseids (*P*) and the corresponding zenithal hourly rates (*ZHR*) for the following observers (*Ob*), identified by the first two letters of their last names.

E. Anderson, Crete, Ill.; R. Baldwin, De Funiak Springs, Fla.; R. Boineau, Columbia, S. C.; T. Busemeyer, Cincinnati, Ohio; J. Drummond (39° N., 7½° E.); T. Dunkle, Jersey Shore, Pa.; D. Earl, St. Petersburg, Fla.; D. Erickson, Crete, Ill.; J. Hawtree, Crete, Ill.; A. Johnson, Chantry Flats, Calif.; D. Lounsbury, Stoneham, Mass.

T. Mallama, Solon, Ohio; L. McDonald, Beggs, Okla.; J. Millard, Cocoa Beach, Fla.; G. Norman, Willowdale, Ont.; E. Powell, Marietta, Ga.; H. Probst, Berea, Ohio; E. Ray, De Funiak Springs, Fla.; F. Sanner, Pottsville, Pa.; R. Scharf, Crete, Ill.; J. Sulentic, Waterloo, Iowa; W. Wooten, De Funiak Springs, Fla.

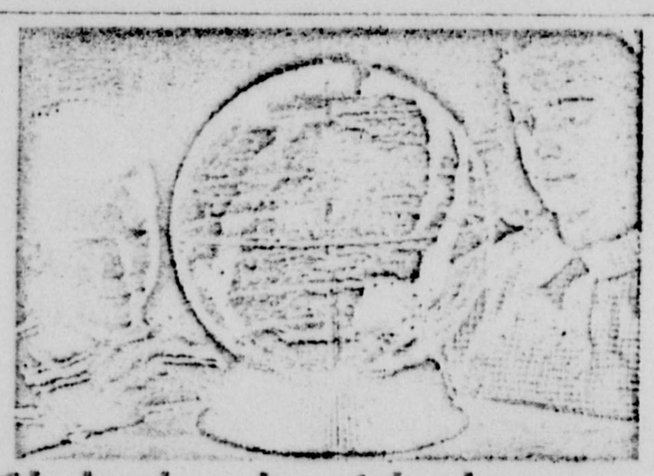



**Shown here for each available date are averages of the hourly numbers of Perseids an individual observer would have seen if the meteor shower's radiant had stayed in his zenith.**

Serving as a concise summary of the table, the diagram presents the average zenithal rate for each date. It is based on 76 count intervals, 21 of them on August 11-12. Note the sharply peaked



**This Perseid of magnitude —2 crossed Camelopardalis at 9:18 UT on August 11th. It is one of 35 meteors N. D. Petersen, Tujunga, California, filmed on 59 exposures in four nights. For his 35-mm. Exakta camera he used Tri-X film, developed in Acufine and printed on Agfa Brovira 4 paper. Perseus stars are on the right-hand side.**

**Shake hands with the stars**

Who could forget a galaxy when it's met face to face? Who wouldn't know a star when it's put in its place? Who could fail to understand what's taking place, when taking part in it?

Bring the heavens to earth with the new Hubbard Basic Transparent Celestial Globe, which has been designed to accurately locate the stars. Earth-space relationships can be demonstrated, the behavior of the stars, their usefulness to man, the population of the universe as it exists.

- Shows major constellations and stars to the fifth magnitude
- Easily, accurately set, any time, any place
- Sturdy construction, safe, durable
- Mark, plot, erase in seconds
- Earth and sun models rotate independently
- Study guide describes uses

12-inch Basic Celestial Globe, BCG-310 $29.95. CG-300 12-in. Globe with full horizon mounting, $49.90.

*Write for free guide to complete line of Astronomy models, planetariums, celestial globes, solar systems, star finders.*

HUBBARD SCIENTIFIC COMPANY
Dept. ST, P.O. Box 105, Northbrook, Ill.

When David Meisel took this 2½-minute test photograph of Comet Ikeya (at left) on August 2nd, he accidentally caught a 2nd-magnitude Perseid as well. About two degrees of trail are seen; motion was from left to right. Mr. Meisel used the 16-inch Schmidt telescope at Perkins Observatory, Delaware, Ohio. The meteor appeared at 8:52.3 Universal time. The bright star in the lower right corner is 6th-magnitude GC 6574, at 5h 19m.0, +8° 23′ (1950 coordinates).

character of the curve and its symmetry.

The average rate on August 11-12 is 54 Perseids an hour — close to the frequently quoted 50 for the zenithal hourly rate of this shower at maximum. Our diagram indicates that the intensity of the Perseid shower remained above one-quarter the peak rate for about five days in 1964. This is fairly typical of Perseid behavior.

Listed below are other observers who submitted reports that were valuable in obtaining an overall characterization of this meteor shower. An asterisk indicates that pictures were sent.

J. Ault*, Merritt Island, Fla.; K. Bromberg, Livingston, N. J.; G. Franklin and M. Stewart, Magnolia, Ark.; J. Garner, Carmi, Ill.; C. Goeringer*, Lansdale, Pa.; M. Hilgart*, Marshfield, Wis.; J. Hoff, Indianapolis, Ind.; B. Keate, Salt Lake City, Utah; C. Legg, Columbus, Ohio; F. Leonard*, Santa Cruz, Calif.

N. McLeod, Tallahassee, Fla.; J. Miller, Hickory, N. C.; M. Morrow*, Honolulu, Hawaii; H. Pitnof, Milton, Mass.; K. Polley, Ajo, Ariz.; W. Shakalis, Stoneham, Mass.; D. Spier and B. Asper, Harrisburg, Pa.; J. Truxton, Van Nuys, Calif.; E. Turco*, Cranston, R. I.; W. Werner*, Wooster, Ohio; D. Wolff*, Columbus, Ohio; R. Yajko*, Leechburg, Pa.

The next annually recurring meteor shower that is comparable in richness to the Perseids is the Geminids, whose peak activity is due December 13th. Conditions for observing these slower, yellow meteors will be relatively favorable in 1964, since the moon will be only at first quarter.

L. J. R.

## SUNSPOT NUMBERS

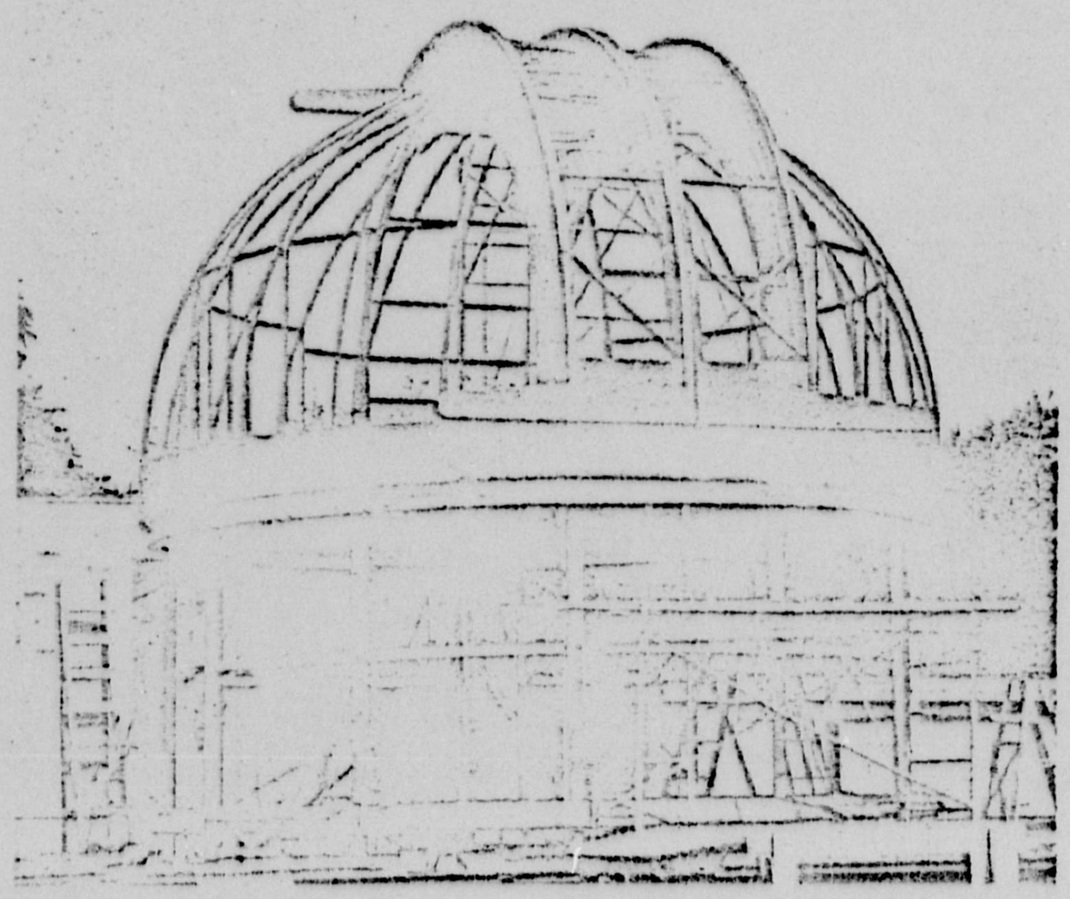
The following American sunspot numbers for July have been derived by Dr. Sarah J. Hill, Whitin Observatory, Wellesley College, from AAVSO Solar Division observations.

July 1, 3; 2, 0; 3, 1; 4, 4; 5, 3; 6, 1; 7, 0; 8, 0; 9, 0; 10, 0; 11, 0; 12, 0; 13, 1; 14, 13; 15, 13; 16, 13; 17, 6; 18, 2; 19, 0; 20, 0; 21, 0; 22, 0; 23, 0; 24, 0; 25, 0; 26, 0; 27, 0; 28, 0; 29, 0; 30, 0; 31, 7. Mean for July, 2.2.

Below are provisional mean relative sunspot numbers for August by Dr. M. Waldmeier, director of Zurich Observatory, from observations there and at its stations in Locarno and Arosa.

August 1, 9; 2, 20; 3, 17; 4, 8; 5, 8; 6, 7; 7, 7; 8, 0; 9, 0; 10, 7; 11, 8; 12, 21; 13, 21; 14, 36; 15, 30; 16, 30; 17, 12; 18, 8; 19, 7; 20, 7; 21, 7; 22, 0; 23, 0; 24, 0; 25, 0; 26, 0; 27, 0; 28, 0; 29, 0; 30, 0; 31, 7. Mean for August, 8.9.

Dr. Waldmeier predicts these smoothed monthly sunspot numbers: October, 7; November, 7; December, 7; January, 8.

HEART
OF THE
DOME....

Here are some reasons why there are more Astro-Domes® in use than any other kind. We believe that this observatory dome, shown under construction, clearly illustrates why the framework is the heart of any dome.

The steel ribbed completely welded frame is so structurally sound that the dome can never lose its true hemispherical shape. These features, plus the solid plate steel wall cap and dome ring, are positive assurance that your Astro-Dome will forever rotate smoothly without binding or sticking in any kind of weather.

Why do we go to all this trouble? . . . because we know you want an observatory dome that will protect your instruments and building, and give years of trouble-free service.

Astro-Domes® may be supplied with a substructure or may be mounted on your structure or building.

For further information, no matter what your size or specification requirements, please write...

ASTRO-DOME
INCORPORATED

1801 BROWNLEE AVE., N.E. * CANTON 5, OHIO
GLendale 6-8361

| | |
|---|---|
| 1. DATE - TIME GROUP<br>[illegible] | 2. LOCATION<br>[illegible] |
| 3. SOURCE<br>Civil | 10. CONCLUSION<br>Insufficient data for evaluation |
| 4. NUMBER OF OBJECTS<br>One | |
| 5. LENGTH OF OBSERVATION<br>2 min 30s | 11. BRIEF SUMMARY AND ANALYSIS<br>Flat rounded object with silver dots. Orange color. Moved rapidly. Test Pilot North then West. Smooth curved flight. Observed with BX. No features, exhaust trail obs, reported.<br>OBJECT: Other [illegible] disappearance obs not included. Observed with aid of binoculars and yet no details were reported. Insufficient data for analysis. |
| 6. TYPE OF OBSERVATION<br>Ground-Visual (GV) | |
| 7. COURSE<br>West-North-West | |
| 8. PHOTOS<br>☐ Yes<br>☒ No | |
| 9. PHYSICAL EVIDENCE<br>☐ Yes<br>☒ No | |

FORM
FTD SEP 63 0-329 (TDE) Previous editions of this form may be used.

12/1957 Overland Park, Kansas

INCOMING MESSAGE

DEPARTMENT OF THE AIR FORCE
STAFF MESSAGE BRANCH

UNCLASSIFIED



AF IN : 58346 (13 Aug 64) M/jem

ACTION: NIN-7

INFO : XOP-1, XOPX-5, SAF-OS-3, DIA-15 (32)

SMB A163

CHQBS95ZCYJX087

PP RUEAHQ

DE RUCMRG 32 13/1931Z

ZNR

P 131830

FM 328FTRWG RICHARDS GEBAUR AFB MO

TO RUWGALE/ADC

ZEN/29AD RICHARDS GEBAUR AFB MO

RUEAGL/AFSC

RUEAHQ/CSAF

RUEAHQ/OSAF

INFO RUCMSX/SCADS SIOUX CITY MUNI APRT IOWA

BT

UNCLAS 328-0 8465. FOR ADOIN, 290IN, AFSC (FTD), AFNIN,

SAFOI. INFO SCODC-I. UFO REPORT.

PARA 14A: (1) FLAT/ROUNDED DOME. (2) SILVER DOLLAR. (3) SILVER AND ORANGE. (4) ONE. (5) N/A. (6) NONE, MOVED VERY RAPIDLY, EAST, NORTH, AND THEN WEST. (7) NONE. (8) NONE - WINDY. (9) NONE.

PARA 14B: (1) TAKING SUN BATH. (2) 30DEGREES. (3) 30 DEGREES. (4) SMOOH CURVED FLIGHT. (5) BEHIND TREES TO THE WEST. (6) APPROX TWO MIN.

PARA 14C: (1) GROND-VISUAL. (2) 7 X 25 BINOCULARS. (3) N/A.

PARA 14D: (1) 1955Z, 12 AUG 64. (2) DAY.

PARA 14E: [redacted]RD, SHAWNEE MISSION, KANS. NEAR UU 50 HIWAY.

AF IN : 58346 (13 Aug 64)
PAGE 2 RUCMRG 32 UNCLAS

PARA 14F: (1) MRS [redacted] 41, [redacted] RD, SHAWNEE MISSION, KANS, SCHOOL TEACHER AND HOUSEWIFE, [redacted] 10 YR OLD DAU ALSO A WITNESS. (2) N/A

PARA 14G: (1) CLEAR AND SUNNY. (2) SURFACE: 350/10 TO 16K; 6000 - 350/15; 10000 - 330/40; 16000 - 310/40; 20000 - 300/45; 30000 - 300/55; 50000 - 300/40; 80000 - N/A. (3) CLEAR. (4) 15. (5) NONE. (6) NONE. (7) 74 - 40.

PARA 14H: NONE.

PARA 14I: NONE.

PARA 14J: NONE.

PARA 14K: MAJ D R FELTEY, WG INTEL OFFICER. WITH THE INFORMATION AVAILABLE AT THIS LEVEL, NO ANALYSIS CAN BE MADE OF THE POSSIBLE CAUSE OF THE SIGHTING.

PARA 14L: NONE.

BT

| | |
|---|---|
| 1. DATE - TIME GROUP<br>24 [illegible] 1200 25/0600 | 2. LOCATION<br>Johnston Island, Pacific |
| 3. SOURCE<br>Military | 10. CONCLUSION<br>Insufficient data for valid evaluation |
| 4. NUMBER OF OBJECTS<br>One | |
| 5. LENGTH OF OBSERVATION<br>Less than 1 minute | 11. BRIEF SUMMARY AND ANALYSIS<br>Two flash of light observed by six crewmembers aboard C-54 in Section. Object was a white or bright blue-white light. No sound observed by crew members. Light was directly above aircraft when it was last seen. Visibility unlimited, clear, no cloud. Bright flash as if a camera flash bulb had been fired. Total duration less than 1 minute. No different observers noted small of size. Analysis: No visible activity in area. Could possibly be confused with a meteor, however the report low altitude (200-300 ft) tends to eliminate as a possible cause. Although no less than 300 ft of observers gave no detail as to size shape or characteristics other than a white-blue light could be reported. Case regarded as insufficient data. |
| 6. TYPE OF OBSERVATION<br>Ground-Visual | |
| 7. COURSE<br>SE | |
| 8. PHOTOS<br>☐ Yes<br>☒ No | |
| 9. PHYSICAL EVIDENCE<br>☐ Yes<br>☒ No | |

FORM
FTD SEP 63 0-329 (TDE) Previous editions of this form may be used.

~~AF IN : 2192 (15 AUG 64) A/chs~~

ACTION: NIN-7

INFO : SAF-OS-3, XOP-1, XOPX-5, DIA-15 (32)
SMB A111

HQB483ZCRJA030

PP RUEAHQ

ZNR ZFH-1

CCSB877ZCKAA099

P RUWGALE RUCDSQ RUEAHQ RUEPWP

DE RUHLKA 51 15/1146Z

ZNR

P 151145Z

FM CJTG 8.6 JOHNSTON ISLAND

TO RUWGALE/AIR DEFENSE COMMAND

RUCDSQ/AFSC FOREIGN TECHNOLOGY DIVISION WRIGHT PATTERSON AFB OHIO

RUEAHQ/HQ USAF WASHDC

RUEAHQ/SECRETARY OF THE AIRFORCE WASHDC

INFO RUEPWP/CJTF 8 WASHDC

BT

UNCLAS JTG 8.6-1323-64.

UFO.

A. DESCRIPTION.

(1) UNKNOWN

(2) UNKNOWN

(3) LIGHT BLUE

(4) ONE

(5) N/A

(6) NONE

PAGE 2 RUHLKA 51 UNCLAS

(7) SMOKE OR VAPOR, SIZE UNKNOWN

(8) NONE

(9) BRIGHT BLUE FLISH PRIOR TO DISAPPEARANCE

B. COURSE

(1) WHITE AND BLUE LIGHT TO THE NORTHWEST; SECURITY GUARDS - SIX ON DUTY SCANNING THE AREA OFF SHORE

(2) NEAR THE HORIZON, NORTHWEST

(3) OBJECT OVER HEAD TRAVELING SOUTHEAST, APPROX 200 - 300 FEET ABOVE ISLAND

(4) STRAIGHT LINE

(5) AFTER PASSING DIRECTLY OVER HEAD, OBJECT DISAPPEARED AS IF PASSING THROUGH A CLOUD. TOWER OPERATOR NOTED A BRIGHT FLASH AS GIVEN OFF FROM A CAMERA FLASH BULB. NO FURTHER SIGHTING. OTHER OBSERVERS NOTED TRAIL OF SMOKE OR VAPOR, PRIOR TO BLUE FLASH AND DISAPPEARANCE.

(6) SHORT PERIOD OF TIME ESTIMATE LESS THAN ONE MINUTE.

C. OBSERVATION

(1) GROUND-VISUAL

(2) NONE

(3) N/A

D. TIME AND DATE

(1) 150653Z

(2) NIGHT

E. LOCATION OF OBSERVER

LAT 16532ØN. LONG 169313ØW. ALL SIX PERSONNEL ON DUTY.

TOWER IN PROXIMITY TO RUNWAY.

F. IDENTITY.

(1) PETRY, EMMETT A., SSGT, AF15174797, COM-PLOTTER (RELIABLE)

(2) HARLOW, CLINTON B., TSGT, AF13164868, FLT-COMMANDER (RELIABLE)

(3) AGUILERA, JOHN A., A1C, AF19702141, CONTROL TOWER OPERATOR (RELIABLE)

G. WEATHER AND WINDS

(1) CLOUDY, SHOWERS TO THE WEST

(2) SURFACE - Ø9Ø/12K

6Ø - Ø7Ø/17K

1ØØ - Ø8Ø/1ØK

16Ø - 1ØØ/13K

2ØØ - 1ØØ/16K

PAGE 4 RUHLKA 51 UNCLAS

300 - 080/17K

500 - 300/10K

800 - 090/38

(3) 20 SCT 50 SCT EST 90 BKN 120 BKN

(4) 15 MI

(5) .2 CU .3 SC .6 AC .4 AC

(6) NONE

H. NONE

I. NONE

J. NO LOCAL TRAFFIC, HONO FAA ARTC REPORTED NO IFR TRAFFIC IN AREA.

K. REPORTING OFFICER HAS BEEN INFORMED BY ANOTHER OFFICER THAT A HONOLULU NEWSPAPER CARRIED AN ARTICLE NOTING A NOTICEABLE INCREASE OF ATMOSPHERIC PHENOMENONS TO TAKE PLACE DURING THIS TIME OF YEAR.

L. NONE AVAILABLE.

BT

NOTE: ADV CY TO DIA AND NIN.