

PROJECT 10073 RECORD CARD

1. DATE 9 Apr 60		2. LOCATION Arcata, California		12. CONCLUSIONS ☐ Was Balloon ☐ Probably Balloon ☐ Possibly Balloon ☐ Was Aircraft ☐ Probably Aircraft ☐ Possibly Aircraft ☐ Was Astronomical ☐ Probably Astronomical ☐ Possibly Astronomical	
3. DATE-TIME GROUP Local 1850 GMT 1-103502		4. TYPE OF OBSERVATION ☒ Ground-Visual Telescope ☐ Air-Visual ☐ Ground-Radar ☐ Air-Intercept Radar			
5. PHOTOS ☒ Yes ☐ No		6. SOURCE Civilian			
7. LENGTH OF OBSERVATION n/a		8. NUMBER OF OBJECTS one		9. COURSE n/a	
10. BRIEF SUMMARY OF SIGHTING Source was taking a picture of the setting sun through an 8 inch telescope and when the picture was developed an object was on the picture between the camera and the setting sun.				11. COMMENTS Analysis of the photograph led to the opinion that the spot was a defect in the emulsion.	

AEROSPACE TECHNICAL INTELLIGENCE CENTER
UNITED STATES AIR FORCE
WRIGHT-PATTERSON AIR FORCE BASE
OHIO



REPLY TO
ATTN OF: AFCIN-4E2

SUBJECT: Photoanalysis

3 May 1960

TO: AFCIN-4D4

The attached UFO report, photographs, and negatives are forwarded for your analysis and comments.

Richard R. Shoop

RICHARD R. SHOOP
Colonel, USAF
AFCIN-4E2

1 Atch:
Ltr 21 Apr 60 fr 78th FW
w/atch photos and negatives

Ltr. AFCIN-4E2, 3 May 1960, UFO

1st. Ind (AFCIN-4D4a)

19 May 60

TO: AFCIN-4E2 (Col R. R. Shoop)

1. The attached negative has been analysed and from a photo standpoint the object in question cannot be explained.
2. In an effort to solve the problem Dr. V. Robinson, Air Sciences Division (4E4), CWO W. Kiermaier, Chief of Photo Processing Branch (4D4c), and Mr. L. Griffin, Equipment Support Branch (4A3c) were contacted. In each case it was the opinion that the spot was a defect in the emulsion, similar to many that had been seen in the past.

Wilber Price, Jr.

WILBER PRICE, JR.
Chief, AFCIN-4D4

1 Atch:
no change

AEROSPACE TECHNICAL INTELLIGENCE CENTER
UNITED STATES AIR FORCE
WRIGHT-PATTERSON AIR FORCE BASE
OHIO



REPLY TO
ATTN OF: AFGIN-4E2

SUBJECT: UFO Photograph (Mr. [REDACTED] Jr.)

30 JUN 1960

TO: SAFOI-3d (L/Col Tacker)

1. Reference copy of attached letter to Director of Operations, 78th Fighter Wing, Hamilton AFB, California, from Mr. [REDACTED], dated 21 April 1960.
2. Mr. [REDACTED] forwarded three photographs with his correspondence. Two of these photographs were of the sun and one of the moon. Mr. [REDACTED] refers to the photographs of the sun as #1 and #2, and to the photograph of the moon as #3. On photograph #1 is an object which the witness infers is a flying disc.
3. Analysis of the photograph by the photoanalysis branch of ATIC led to the opinion that the spot was a defect in the emulsion similar to such defects which they have experienced.
4. Mr. [REDACTED] requested that if the ATIC conclusion differed from his that our reasons be forwarded to him. It is suggested that the information contained in paragraphs 8 through 12 of this correspondence be included in your reply to Mr. [REDACTED].
5. Mr. [REDACTED] stated that the configuration and focus of his equipment was unchanged for the photograph of the sun and the moon. If this is true it must be assumed, due to the sharp detail of the moon photograph, that the photographs of the sun are out of focus by a factor approximating 98.7%.
6. From the information provided by Mr. [REDACTED] concerning his equipment, it was determined that the resolving power of his telescope is .56". However, most systems which are used for viewing astronomical objects have their resolving power expressed in terms of angular separation of two points that can be resolved rather than a linear separation. When viewing such objects as stars they are never points of light, but consist of a small round disc surrounded by one or more rings of light. This image form is due primarily to the wave nature of light and the fact that the objective (lens) is circular. The resolving power of [REDACTED] scope indicates a limit of detail on the moon photograph to approximately 61.79 kilometers (33.5 NM), but actual measurement shows detail closer to 45 kilometers. This is due to the absence of the spurious disc effect when viewing such objects as the moon.

7. The object of concern to Mr. [REDACTED] appears to be very nearly in focus. The witness pointed out in his letter that it could not be at the focus of the eyepiece for there is only empty air at this point. (It could, however, have been a particle in the air.) The other possibility is at the focus of the system, and this has already been pointed out in paragraph #5 as being at the moon's distance. If this is true then the diameter of the object would be approximately 45 kilometers (24.5 NM), just at the limit of resolution of the system.

8. Mr. [REDACTED] indicates that diffraction is very much in evidence around the object; this may be true of the negative, but escapes detection on the prints forwarded to ATIC.

9. The witness indicates that the object is distorted in the same direction as the sun. Measurement by ATIC shows the object for all practical purposes to be equal in all directions.

10. Distortion of the sun in the vertical plane is a common phenomena at sunset, and is due primarily to refraction. Other irregular distortion may occur which results from discontinuities in the atmosphere. Since this photograph was taken during the last few seconds of sunset, it would appear that if this were a real object it would have shown these distortions.

11. Mr. [REDACTED] concludes that the object is translucent, and the spot on the film does have a brighter appearing center, but this is probably due to irregularity in the defect.

12. The two photographs of the sun were taken at Arcata, California (40°52'N - 124°05'W) on 9 April 1960, #1 at 1850 PST and #2 at 1855 PST. At this position astronomical sunset was at 1849 (local). [REDACTED] elevation was 209', and it requires approximately 1000' to add four minutes to the time of sunset. It is possible that the witness made an error in time or was at some point with an increased elevation.

13. The photographs are being retained at ATIC as a part of this case file.

14. Mr. [REDACTED] address is:

Mr. [REDACTED]
[REDACTED]
Arcata, California

FOR THE COMMANDER:

Nicholas Post
NICHOLAS POST
Acting Deputy
Science and Components

1 Atch:
Cy Ltr 21 Apr 60 fr
[REDACTED]

AEROSPACE TECHNICAL INTELLIGENCE CENTER
UNITED STATES AIR FORCE
WRIGHT-PATTERSON AIR FORCE BASE
OHIO

REPLY TO
ATTN OF: AFCIN-4X2/59117

11 April 1960

SUBJECT: Extract from ATIC Duty Officers Report

TO: AFCIN-4E2

Following is an extract from ATIC Duty Officer, Capt H. E. Baumgarten, report dated 9 April to 10 April 60 for your information.

0245 Major Sizemore, AF Command Post, Pentagon, phoned in the following information from Capt. Ellison, NORAD Western Region, Hamilton AFB, California.

"Mr. [REDACTED] of [REDACTED], Arcata, California, home phone [REDACTED] office phone [REDACTED]

Mr. [REDACTED], an amateur photographer and astronomer, was taking a picture of the setting sun through an 8" telescope at 0205Z, 10 April 1960. When he developed film, picture revealed perfectly round object between sun and earth, comparable in size to Mercury or Venus. As an astronomer, he says that there could not be a heavenly body in that position."

Major Sizemore indicated:

- 1). AF Command Post considers the matter as "interesting" but with no urgency.
- 2). Mr. [REDACTED] is a newspaper man and has the finest camera equipment, so that "picture" is probably not due to faulty equipment.
- 3). Mr. [REDACTED] is keeping film until he hears from AF (ATIC).

Michael J. Stroff, Jr.
MICHAEL J. STROFF, JR.
Maj, USAF
AFCIN-4X2

Wp sent to 1st AF for investigation. 13 April 60

JOINT MESSAGEFORM				SECURITY CLASSIFICATION	
				UNCLASSIFIED	
SPACE BELOW RESERVED FOR COMMUNICATION CENTER					
608/44 15/22352					
1000 APR 15 21 20					
PRECEDENCE		TYPE MSG (Check)		ACCOUNTING SYMBOL	ORIG. OR REFERS TO
ACTION ROUTINE		BOOK	MULTI	SINGLE	CLASSIFICATION OF REFERENCE
INFO				X	AF
FROM:				ORIG	
TO:				SPECIAL INSTRUCTIONS	
ATTC, W-P AFB				34	
HAMILTON AFB, CALIF		RWESB			
/UNCLAS/FROM: AFCIN-LE2 4-1246-E ATTN 28TH ADIV INTELL. CAPT ELLISON, WESTERN NORAD REGION, YOUR STATION, RELAYED THE FOLLOWING INFO TO AFCP: MR [REDACTED] TOOK A PICTURE OF THE SETTING SUN THROUGH AN 8" TELESCOPE AT 0205Z, 10 APR 60. WHEN THE FILM WAS DEVELOPED AN OBJ APPEARED ON THE FILM BETWEEN THE SUN AND THE EARTH. REQ YOU CONTACT MR [REDACTED] AND ALL INFO AS OUTLINED IN AFR 200-2, DTD 14 SEPT 59, PAR 15g AND PAR 19a, PLUS THE PRINTS AND NEGATIVES, BE SENT TO THIS CENTER. MR [REDACTED] ADDRESS IS [REDACTED] ARCATA, CALIF, PHONE - HOME, [REDACTED] OFFICE, [REDACTED]					
				DATE	TIME
				13	1000
				MONTH	YEAR
				APR	1960
SYMBOL		TYPED NAME AND TITLE (Signature if required)		SIGNATURE	
AFCIN-LE2		Major Robert J. Friend		[Signature]	
PHONE 69216		PAGE NR. 1	NR. OF PAGES 1	TYPED (or stamped) NAME AND TITLE	
SECURITY CLASSIFICATION		PHILIP G. EVANS			
UNCLASSIFIED		Colonel, USAF			
		AFCIN-LE			

DD FORM 173
1 MAY 55

REPLACES DD FORM 173, 1 OCT 49, WHICH WILL BE USED UNTIL EXHAUSTED

6. OBSERVER (S) :	
CIVILIAN : (Name, age, mailing address, occupation, and estimate of reliability) MILITARY : (Name, grade, organization, duty, & estimate of reliability)	
Mr. [REDACTED], Arcata, Calif. Home Phone [REDACTED] Office Phone [REDACTED] Newspaper photographer, Amateur astronomer (sounded reliable)	
7. WEATHER :	
OBSERVER (S) ACCOUNT OF WEATHER CONDITIONS :	REPORT FROM NEAREST : AWS OR US WEATHER BUREAU OFFICE : (Wind velocity in degrees & knots at various altitudes)
Clear	NW 11
CEILING :	VISIBILITY :
250	15+
CLOUD COVER :	THUNDERSTORMS IN AREA & QUADRANT :
8. ACTIVITY OR CONDITIONS WHICH MIGHT ACCOUNT FOR SIGHTING :	
Possibility of being Weather balloon, which was launched by the Picket Ship S2 at 0001Z. JET STREAM- Max Winds 125kts, Alt. 34,000 ft.	
9. EXISTENCE OF PHYSICAL EVIDENCE OF SIGHTING :	
Photograph	
10. INTERCEPTION :	
N/A	
11. LOCATION OF AIR TRAFFIC IN AREA OF SIGHTING :	
N/A	
12. REMARKS :	
Mr. [REDACTED] was taking a picture of the setting sun thru an 8 inch telescope and when he developed it this object was on the picture. He stated that judging by his experience and training the object appeared to be fairly close to the earth's atmosphere.	
FILLED OUT BY: <i>Lead Officer [Signature]</i>	

Sh. Cont.

UNIDENTIFIED FLYING OBJECT REPORTING (Short Title : UFO-AFR 200-2)		TIME & DATE REPORT RECEIVED: 0700Z/ 10 Apr 1960
1. DESCRIPTION OF THE OBJECT (S) :		
SHAPE : Perfectly Round	SIZE : (head of a pin, pen, dime, nickel, quarters, half-dollar, silver dollar, baseball, grapefruit, or basketball held in the hand at about arm length) Comparable in size to Venus or Mercury as compared to the sun in the photo.	
COLOR : N/A		
DISCERNIBLE FEATURES OR DETAILS : Round body on photo	NUMBER : one	
FORMATION (If more than one) : N/A	TRAIL, TAIL, OR EXHAUST, INCLUDING SIZE COMPARED OBJECT (S) : N/A	
SOUND : (If heard, describe) N/A	OTHER PERTINENT OR UNUSUAL FEATURES : None	
2. DESCRIPTION OF COURSE OF THE OBJECT (S) :		
HOW FIRST NOTICED : Photograph	ANGLE OF ELEVATION & AZIMUTH OF OBJECT (S) WHEN FIRST NOTICED : Between camera and setting sun.	
ANGLE OF ELEVATION & AZIMUTH OF OBJECT (S) UPON DISAPPEARANCE : N/A	DESCRIPTION OF FLIGHT PATH AND MANEUVERS : N/A	
MANNER OF DISAPPEARANCE OF OBJECT (S) N/A	LENGTH OF TIME IN SIGHT : N/A	
3. MANNER OF OBSERVATION :		
GROUND-VISUAL : AIR-VISUAL : GROUND-ELECTRONIC : (CIRCLE ONE) (If electronic, specify type of radar)	Photographed thru an 8 inch telescope	
OPTICAL AIDS USED, IF ANY : Telescope	IF SIGHTING WAS MADE BY AIR, TYPE AIRCRAFT, ID NUMBER, ALTITUDE, HEADING, SPEED, AND HOME STATION : N/A	
4. TIME AND DATE OF SIGHTING :		
LOCAL TIME & DATE OF SIGHTING : 1805 PST/9 Apr 1960	ZULU TIME & DATE : 0205Z/10 Apr 1960	
LIGHT CONDITIONS : (night, day, dawn, dusk) Sunset		
5. LOCATION OF OBSERVER (S) :		
(Exact latitude & longitude of each observer, or Georef position, or position with reference to a known landmark) Arcata, California		

all 1

HEADQUARTERS
78TH FIGHTER WING (AIR DEFENSE) and HAMILTON AIR FORCE BASE
UNITED STATES AIR FORCE
HAMILTON AIR FORCE BASE, CALIFORNIA



REPLY TO
ATTN OF: WCODG

SUBJECT: Unidentified Object Report

TO: ATIC (AFCIN-4E2)
Wright-Patterson AFB, Ohio

1. In compliance with message AFCIN-4E2 4-1246-E, the attached unidentified object report is forwarded.

2. Also inclosed are photographs and negatives made by Mr. [REDACTED] Mr. [REDACTED] has made a written analysis of the pictures which is also inclosed.

FOR THE COMMANDER:

J. D. [REDACTED]
Captain, USAF
Administrative Officer

3 Atchs:

1. UFO Rept
2. Photographs
3. Ltr fm [REDACTED]

777TH AIRCRAFT CONTROL AND WARNING SQUADRON
United States Air Force
Klamath Air Force Station
Requa, California

REPLY TO
ATTN OF:

SUBJECT: Information on Telescope Photograph
Re: Mr. [REDACTED] Arcata, California

TO: Air Technical Intelligence Center
Wright Patterson Air Force Base
Ohio

In compliance with paragraph 15g and 19a, AFR 200-2, the following data is submitted:

15g-Weather and Winds--Aloft conditions at time and place of sighting.

- (1) High clouds with partial obscurement of sun immediately following photograph.
- (2) This information is retained by weather stations locally for only six hours. Not available.
- (3) 2500 scattered, high broken with cirrus.
- (4) 10 Miles
- (5) Approximately 3 tenths
- (6) N/A
- (7) Temperature 49° Dew Point 39°
 - (a) Station Pressure 29.88
 - (b) Altimeter setting 30.11 hg

NOTE: Weather Report at Eureka, Calif., for this period; 7/10 sky cover @ 1830 PST. 20 miles visibility. Between 1800-1900 PST there was approximately 50 minutes of direct sunshine.

19a--Photographic

1. Prior to this investigation, the negative and prints were sent to; Director of Operations, 78th Fighter Wing, Hamilton AFB, Calif.
2. N/A

3. Supplemental Information

- (a) Rilex (cut film type)
- (b) Brandon Orthoscopic 24mm eyepiece substituted for lens.
- (c) Kodak Panatomic X
- (d) 1/50
- (e) 4.5f
- (f) None
- (g) Equatorial Mount (solid stand)
- (h) No
- (i) Approximately 276° , 0° elevation with respect to the ground.

4. Equipment

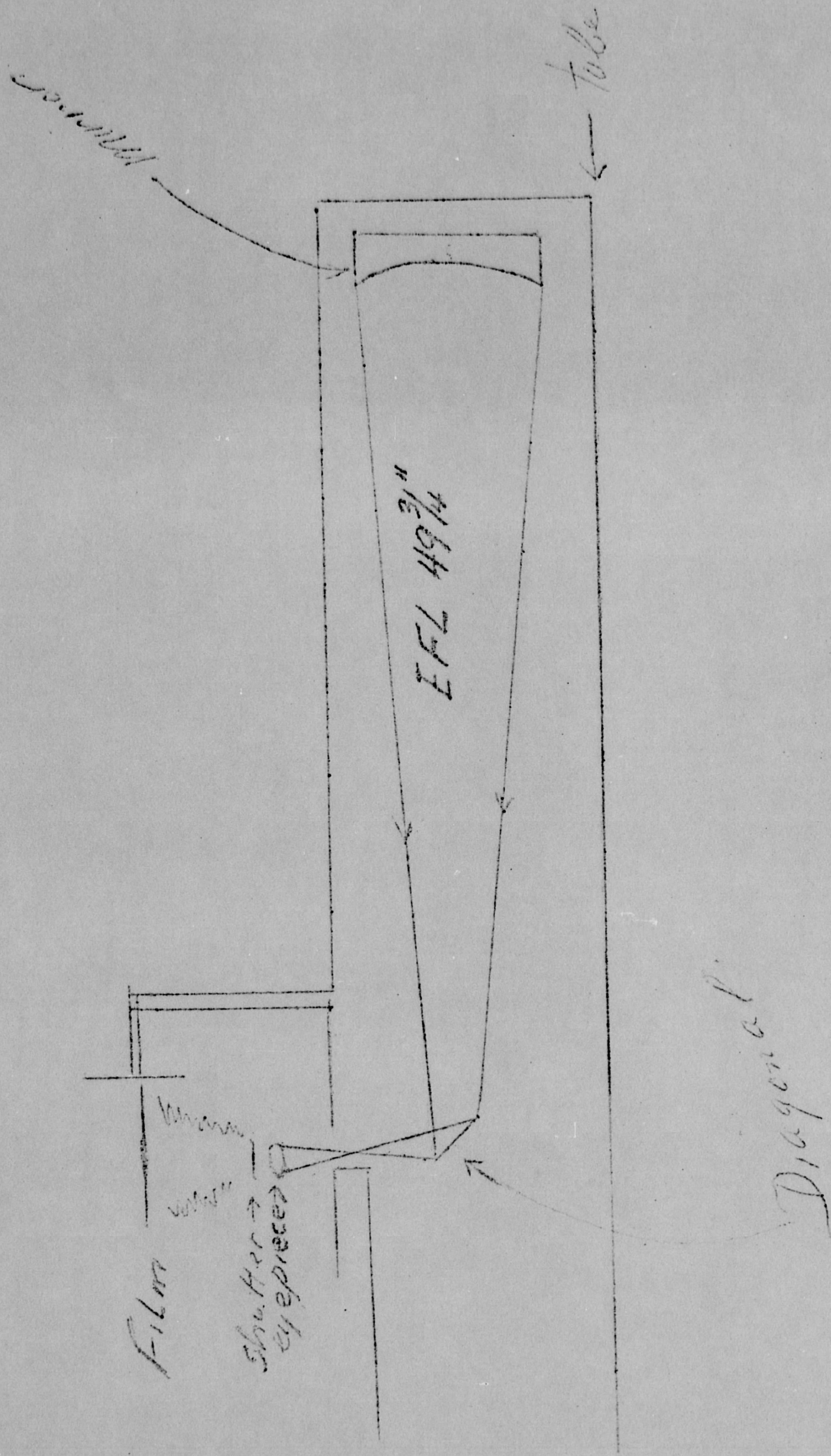
- (a) Rilex (no lens) See 3b above
- (b) 4.5f to 32f
- (c) 1/10 to 1/200

ADDITIONAL INFORMATION: This photograph was taken on 9 April 1968 at 1850 PST. A subsequent photo was taken at 1855 but the sun was partially obscured at this time and the picture did not reveal the object that appeared in the first photograph.

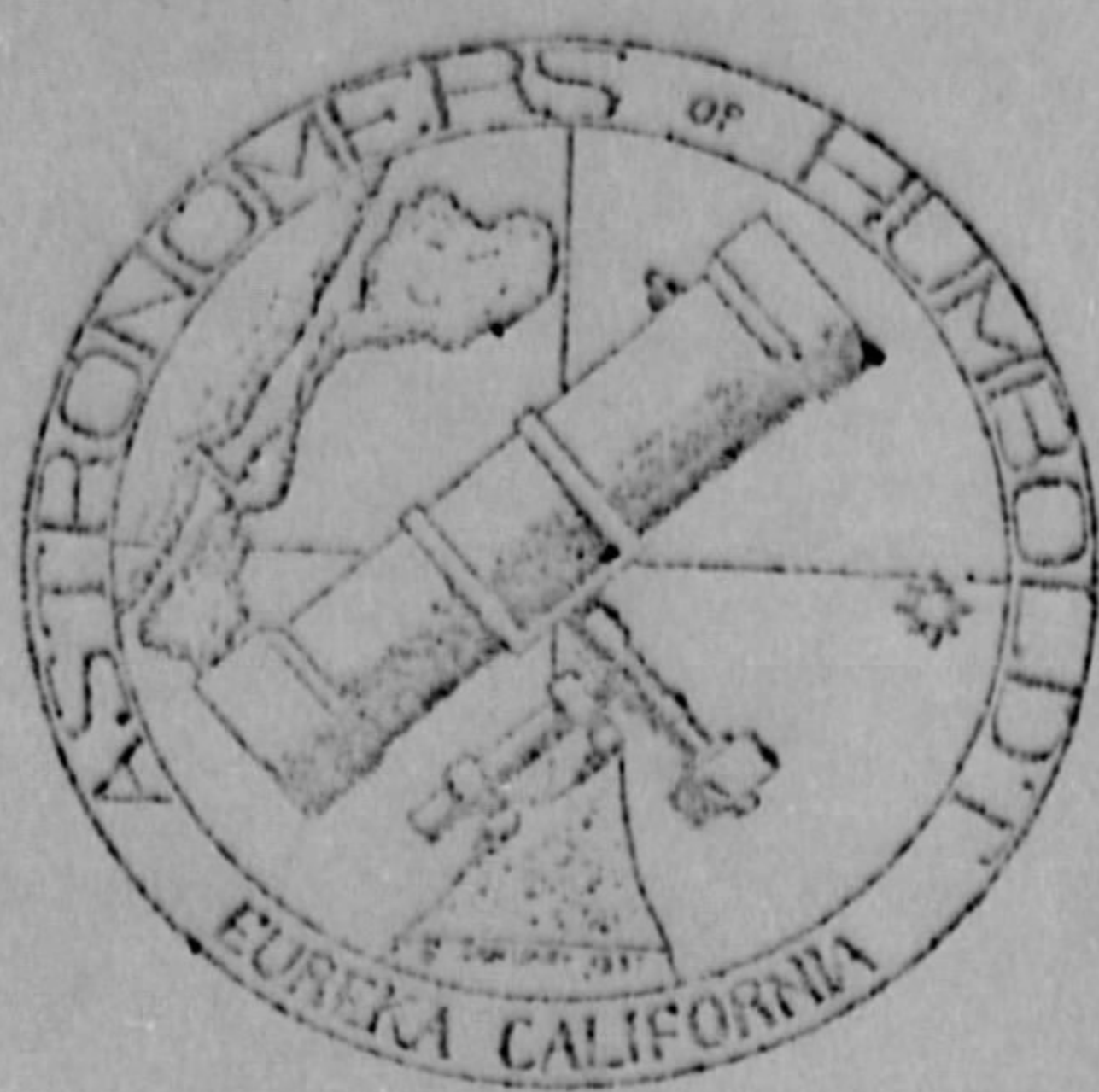
Claude H. Sawyer
CLAUDE H. SAWYER
Capt., USAF
Investigating Officer

- 2 Atch
- 1. Diagram
- 2. cy msg 250IN 4-2930

Copies to:
250IN



DRAWING BY MR. [REDACTED] OF DESIGNED THEORY
OF THE EQUIPMENT USED IN THE SUBJECT PHOTOGRAPH



Arcata, Calif.
21 April 1960

Director of Operations
78th Fighter Wing
Hamilton AFB, California

Dear Sir

Enclosed you will find the photo you requested and two supplementary photos. The one in question is labeled Picture #1. It was taken at 6:50 PM PST through an 8" Newtonian telescope. Picture #2 is the same Sun image taken five minutes later and Picture #3 is a Moon photo taken, as was #2, through the same instrument and with camera and focus in the same position. Date, April 9, 1960.

The negatives accompanying these pictures have been badly abused but are good enough to tell us anything we need to know, I am sure.

Before leaping to any hasty conclusion regarding the spherical grey image at about 10:00 o'clock on Picture #1, permit me to tell you that your first conclusion will probably be the same as my own first conclusion. Also allow me to say that I have had quite a bit of experience with artifacts on Sun, Moon and star photos, even some produced by static electricity and the evidence here weighs very heavily in favor of this as a real image.

If your own evaluation differs from mine, I shall greatly appreciate your telling me in whatever detail you are allowed your reasons. In so doing, you will be making a contribution to this phase of astronomy in this area because this is a field in which, unfortunately, I happen to be somewhat ahead of everyone else. I do some teaching and am connected with virtually everything that is taught in this line here.

I am not a UFO fan. On the contrary, the Humboldt Times makes liberal use of me to explain most of the odds and ends of "mystery objects" which people are likely to see when they bother to look at the sky. By coincidence, I am usually out looking at the sky when these phenomena occur.

But to get to the facts: All three pictures were taken on Panatomic X film and developed in Microdol. Picture #1 was taken at 1/50, numbers 2 and 3 at 1/25. The Rilex camera is bolted to the telescope tube and the Alphax shutter is without lenses. The eyepiece of the telescope, an orthoscopic Brandon 24 mm. focal length takes the place of camera lenses. The Sun was in dim light and I used the full 8" aperture of the telescope. This is important because it can account for the kind of detail claimed. You probably know the formula by which resolving power varies with diameter of aperture or size of objective.

Picture #1 was taken with the film holder square with the equatorial axis - or roughly so since I was using a portable mount on uneven ground. Picture #2 is a hasty effort to secure the film holder with the image and horizon.

The telescope itself, by the way, is an approximate F/5 or 49 3/4" focal length but the mirror is pretty closely figured.

My purpose in sending you Picture #3, which is a fairly good Moon picture for an amateur, is to show the caliber of work that this instrument does. This is an average photograph, taken under average conditions of visibility when there is no overcast. On this photo you will see detail occupying much less degree space than the image in question.

Please tell me where you disagree with the following analysis:

- 1 Any image, to register sharply and clearly as an infocus image on the film, with such an optical system as mine, must be located at one of three places: (1) the object making the image must be well outside the instrument at theoretic infinity which, in this case, would be some miles distant. I have to change the focus slightly when I look from Moon or stars to the city of Eureka, eight air miles from my back yard. (2) The object could be inside the instrument at the focus of the eyepiece itself in the position which would be occupied by cross hairs, if there were any. Or (3) The object could be directly on the film or in the film itself.
- 2 We can rule out extraneous light. This causes blurs and smears. Besides, the image in question was caused not so much by light as by the absence of it or by an obstruction to light.
- 3 We can dismiss number (2) because an object at the focal length of the eyepiece will be seen and photographed in very fine detail. Cross hairs show up hard and sharp and even a speck of dust or lint is clearly defined at this point. In this instrument, there is nothing here except empty air.
- 4 In examining the possibilities in number (3), we see right away that this negative contains a number of blemishes and defects. One such defect occupies a position on the picture about two inches to the right of our image and has become a white dot. This was a bubble in the emulsion or in the film structure. In blowing up artifacts of various kinds, we usually find that no matter how much we enlarge, the edges are hard and sharp. There is no graininess at the edges and the grains beneath the obstruction are not affected by development. Enlarge this particular image and you find that development took place not only along the edges but across the image as well. The obstruction then becomes an artifact that is semi-transparent or translucent or that only blocked development for a while. A drop of moisture on the film during exposure might do it. But the holder was loaded 24 hours before. The drop would have had time to dry or at least produce a more diffuse effect. And if it dried, a microscope would reveal the fact. A bubble of air, then, lodging on the film in the developing tray. This would delay development of the area and might even account for later unevenness. But no. A high powered glass or a microscope on the negative produces something more.

5 There is diffraction very much in evidence and diffraction is the bending of light around an obstruction and, in the case of an image on film, the piling up of light around the borders of the obstruction to create a halo effect. The halo is even visible to the naked eye in the print or enlargement. It is even more in evidence in the negative. Note the darker area around the white image with a high powered glass. Something resting loosely on the surface of the film might conceivably allow this kind of diffraction but the nature of this image rules out anything free or loose on the film.

6 But if the image was not caused by something on the film or at the focus of the eyepiece, where was it located? It could not have been on the face of the Sun or its definition would have been shredded, as were the sunspot images. This telescope takes reasonably good sunspot photos, clearly showing umbra and penumbra outlines. These spots are pulled apart, and yet the Sun images are clearly in focus, as is witnessed by some rather delicate refraction effects along the edges and at the bottom of Picture #2. If this image occupies a position at any acceptable distance, it, too, must show distortion due to refraction.

It does. And the distortion is in the same plane as the distortion of the Sun image. Blow it up and you can see.

This, however, may be a weakness of the case. To say that there is distortion, we must assume an apparently spherical object in the first place.

7 If the object is really spherical, then, it does show distortion and in the same rough plane as the Sun shows it. But it does not show as much. And even if it were not on the Sun's surface but was between Earth and Sun, it would still pass through the same shifting layers of air of varying density that cause the distortion of the Sun image and it would be equally altered. It must, then, be positioned somewhat inside the Earth's envelope of atmosphere.

8 If the object is real, what is it like? If we accept the object, we must accept the other facts about the image. There is a light pattern inside the boundaries. An examination of the Moon photo points up the fact that this instrument can position features this small and smaller. The image is either semi-transparent or translucent - or is itself a light source.

CONCLUSION: A spherical, translucent object in motion somewhere inside the earth's atmosphere, its size anywhere from 10 to 400 feet in diameter, depending on its distance.

Under the microscope you will see that the darker area around the image (attributed to diffraction) is composed of grains partially organized in clusters, with channels between, an effect similar to flocci. Here may be found the final proof of whether this is a picture or not.

Yours

Arcata, Calif.

OFFICIAL FILE COPY

AFCIN-442/Maj Friend/amc/69216/typed 27 June 60

UFO Photograph (Mr [REDACTED])

SAFCEI-3d (L/Col Tacker)

1. Reference copy of attached letter to Director of Operations, 78th Fighter Wing, Hamilton AFB, California, from Mr [REDACTED] dated 21 April 1960.
2. [REDACTED] forwarded three photographs with his correspondence. Two of these photographs were of the sun and one of the moon. [REDACTED] refers to the photographs of the sun as #1 and #2, and to the photograph of the moon as #3. On photograph #1 is an object which the witness infers is a flying disc.
3. Analysis of the photograph by the photoanalysis branch of AFIC led to the opinion that the spot was a defect in the emulsion similar to such defects which they have experienced.
4. Mr [REDACTED] requested that if the AFIC conclusion differed from his that our reasons be forwarded to him. It is suggested that the information contained in paragraphs 8 through 12 of this correspondence be included in your reply to Mr Abbey.
5. Mr [REDACTED] stated that the configuration and focus of his equipment was unchanged for the photograph of the sun and the moon. If this is true it must be assumed, due to the sharp detail of the moon photograph, that the photographs of the sun are out of focus by a factor approximating 98.7%.
6. From the information provided by [REDACTED] concerning his equipment, it was determined that the resolving power of his telescope is .56". However, most systems which are used for viewing astronomical objects have their resolving power expressed in terms of angular separation of two points that can be resolved rather than a linear separation. When viewing such objects as stars they are never points of light, but consist of a small round disc surrounded by one or more rings of light. This image form is due primarily to the wave nature of light and the fact that the objective (lens) is circular. The resolving power of Mr [REDACTED] scope indicates a limit of detail on the moon photograph to approximately 61.79 kilometers (33.5 NM), but actual measurement shows detail closer to 45 kilometers. This is due to the absence of the spurious disc effect when viewing such objects as the moon.

COORDINATION:

Robert J. Friend Major, AFCEI 442 27 June 60
442 27 June 60

7. The object of concern to Mr. [REDACTED] appears to be very nearly in focus. The witness pointed out in his letter that it could not be at the focus of the eyepiece for there is only empty air at this point. (It could, however, have been a particle in the air.) The other possibility is at the focus of the system, and this has already been pointed out in paragraph #5 as being at the moon's distance. If this is true then the diameter of the object would be approximately 45 kilometers (24.5 NM), just at the limit of resolution of the system.

8. [REDACTED] indicates that diffraction is very much in evidence around the object; this may be true of the negative, but escapes detection on the prints forwarded to ATIC.

9. The witness indicates that the object is distorted in the same direction as the sun. Measurement by ATIC shows the object for all practical purposes to be equal in all directions.

10. Distortion of the sun in the vertical plane is a common phenomena at sunset, and is due primarily to refraction. Other irregular distortion may occur which results from discontinuities in the atmosphere. Since this photograph was taken during the last few seconds of sunset, it would appear that if this were a real object it would have shown these distortions.

11. Mr. [REDACTED] concludes that the object is translucent, and the spot on the film does have a brighter appearing center, but this is probably due to irregularity in the defect.

12. The two photographs of the sun were taken at Arcata, California (40°52'N - 124°05'W) on 9 April 1960, #1 at 1850 PST and #2 at 1855 PST. At this position astronomical sunset was at 1849 (local). Mr Abbay's elevation was 209', and it requires approximately 1000' to add four minutes to the time of sunset. It is possible that the witness made an error in time or was at some point with an increased elevation.

13. The photographs are being retained at ATIC as a part of this case file.

14. Mr. [REDACTED] address is:

Mr. [REDACTED]
[REDACTED]
Arcata, California

FOR THE COMMANDER:

NICHOLAS POST
Acting Deputy
Science and Components

1 Atch:
Cy Ltr 21 Apr 60 fr
[REDACTED]

oi-3d/Lt Col Tacker/am/72291

8 July 1960

Dear Mr. [REDACTED]

This is to acknowledge your letter of 21 April 1960 addressed to Hamilton Air Force Base concerning unidentified flying objects shown on photographs submitted with your letter.

Analysis of the photographs by the Air Force lead to the opinion that the spots were defects in the emulsion.

No diffraction can be detected in the photographs and measurements show the object for all practical purposes to be equal in all directions.

Distortion of the sun in the vertical plane is a common phenomena at sunset, and is due primarily to refraction. Other irregular distortion may occur which results from discontinuities in the atmosphere. Since this photograph was taken during the last few seconds of sunset, it would appear that if this were a real object it would have shown these distortions.

With your permission, the Air Force would like to retain the photographs in this case for the official file. If this is not possible please let me know and I will return the photographs to you immediately.

Thank you very much for your interest in this matter.

Sincerely,

LAWRENCE J. TACKER
Lt. Colonel, USAF
Public Information Division
Office of Information

Mr. [REDACTED]
[REDACTED]
Arcata, California

oi-3d comeback
oi-1 reader

This case contains
2, 2"x3" negatives, 1, 5"x7"
photographs and 2, 8"x10"
photographs.

7. The object of concern to Mr. [REDACTED] appears to be very nearly in focus. The witness pointed out in his letter that it could not be at the focus of the eyepiece for there is only empty air at this point. (It could, however, have been a particle in the air.) The other possibility is at the focus of the system, and this has already been pointed out in paragraph #5 as being at the moon's distance. If this is true then the diameter of the object would be approximately 45 kilometers (24.5 NM), just at the limit of resolution of the system.

8. Mr. [REDACTED] indicates that diffraction is very much in evidence around the object; this may be true of the negative, but escapes detection on the prints forwarded to ATIC.

9. The witness indicates that the object is distorted in the same direction as the sun. Measurement by ATIC shows the object for all practical purposes to be equal in all directions.

10. Distortion of the sun in the vertical plane is a common phenomena at sunset, and is due primarily to refraction. Other irregular distortion may occur which results from discontinuities in the atmosphere. Since this photograph was taken during the last few seconds of sunset, it would appear that if this were a real object it would have shown these distortions.

11. Mr. [REDACTED] concludes that the object is translucent, and the spot on the film does have a brighter appearing center, but this is probably due to irregularity in the defect.

12. The two photographs of the sun were taken at Arcata, California (40°52'N - 124°05'W) on 9 April 1960, #1 at 1850 PST and #2 at 1855 PST. At this position astronomical sunset was at 1849 (local). Mr. [REDACTED] elevation was 209', and it requires approximately 1000' to add four minutes to the time of sunset. It is possible that the witness made an error in time or was at some point with an increased elevation.

13. The photographs are being retained at ATIC as a part of this case file.

14. Mr. [REDACTED] address is:

Mr. [REDACTED]
[REDACTED]
Arcata, California

FOR THE COMMANDER:

NICHOLAS POST
Acting Deputy
Science and Components

1 Atch:
Cv. Ltr. 21 Apr 60 fr
[REDACTED]

AFCIN-4B2

UFO Photograph (Mr [REDACTED])

30 JUN 1980

SAFOL-3d (L/Col Tacker)

1. Reference copy of attached letter to Director of Operations, 78th Fighter Wing, Hamilton AFB, California, from Mr [REDACTED] dated 21 April 1960.
2. Mr [REDACTED] forwarded three photographs with his correspondence. Two of these photographs were of the sun and one of the moon. Mr [REDACTED] refers to the photographs of the sun as #1 and #2, and to the photograph of the moon as #3. On photograph #1 is an object which the witness infers is a flying disc.
3. Analysis of the photograph by the photoanalysis branch of ATIC led to the opinion that the spot was a defect in the emulsion similar to such defects which they have experienced.
4. Mr [REDACTED] requested that if the ATIC conclusion differed from his that our reasons be forwarded to him. It is suggested that the information contained in paragraphs 8 through 12 of this correspondence be included in your reply to Mr [REDACTED].
5. Mr [REDACTED] stated that the configuration and focus of his equipment was unchanged for the photograph of the sun and the moon. If this is true it must be assumed, due to the sharp detail of the moon photograph, that the photographs of the sun are out of focus by a factor approximating 98.7%.
6. From the information provided by Mr [REDACTED] concerning his equipment, it was determined that the resolving power of his telescope is $.56''$. However, most systems which are used for viewing astronomical objects have their resolving power expressed in terms of angular separation of two points that can be resolved rather than a linear separation. When viewing such objects as stars they are never points of light, but consist of a small round disc surrounded by one or more rings of light. This image form is due primarily to the wave nature of light and the fact that the objective (lens) is circular. The resolving power of Mr [REDACTED] scope indicates a limit of detail on the moon photograph to approximately 61.79 kilometers (33.5 NM), but actual measurement shows detail closer to 45 kilometers. This is due to the absence of the spurious disc effect when viewing such objects as the moon.

Arcata, Calif.
21 April 1960

Director of Operations
78th Fighter Wing
Hamilton AFB, California

Dear Sir

Enclosed you will find the photo you requested and two supplementary photos. The one in question is labeled Picture #1. It was taken at 6:50 PM PST through an 8" Newtonian telescope. Picture #2 is the same Sun image taken five minutes later and Picture #3 is a Moon photo taken, as was #2, through the same instrument and with camera and focus in the same position. Date, April 9, 1960.

The negatives accompanying these pictures have been badly abused, but are good enough to tell us anything we need to know, I am sure.

Before leaping to any hasty conclusion regarding the spherical grey image at about 10:00 o'clock on Picture #1, permit me to tell you that your first conclusion will probably be the same as my own first conclusion. Also allow me to say that I have had quite a bit of experience with artifacts on Sun, Moon and star photos, even some produced by static electricity and the evidence here weighs very heavily in favor of this as a real image.

If your own evaluation differs from mine, I shall greatly appreciate your telling me in whatever detail you are allowed your reasons. In so doing, you will be making a contribution to this phase of astronomy in this area because this is a field in which, unfortunately, I happen to be somewhat ahead of everyone else. I do some teaching and am connected with virtually everything that is taught in this line here.

I am not a UFO fan. On the contrary, the Humboldt Times makes liberal use of me to explain most of the odds and ends of "mystery objects" which people are likely to see when they bother to look at the sky. By coincidence, I am usually out looking at the sky when these phenomena occur.

But to get to the facts: All three pictures were taken on Panatomic X film and developed in Microdol. Picture #1 was taken at 1/50, numbers 2 and 3 at 1/25. The Rilex camera is bolted to the telescope tube and the Alphax shutter is without lenses. The eyepiece of the telescope, an orthoscopic Brandon 24 mm. focal length takes the place of camera lenses. The Sun was in dim light and I used the full 8" aperture of the telescope. This is important because it can account for the kind of detail claimed. You probably know the formula by which resolving power varies with diameter of aperture or size of objective.

Picture #1 was taken with the film holder square with the equatorial axis - or roughly so since I was using a portable mount on uneven ground. Picture #2 is a hasty effort to square the film holder with the image and horizon.

The telescope itself, by the way, is an approximate $F/6$ or $49\frac{3}{4}$ " focal length but the mirror is pretty closely figured.

My purpose in sending you Picture #3, which is a fairly good Moon picture for an amateur, is to show the caliber of work that this instrument does. This is an average photograph, taken under average conditions of visibility when there is no overcast. On this photo you will see detail occupying much less degree space than the image in question.

Please tell me where you disagree with the following analysis:

1. Any image, to register sharply and clearly as an infocus image on the film, with such an optical system as mine, must be located at one of three places: (1) the object making the image must be well outside the instrument at theoretic infinity which, in this case, would be some miles distant. I have to change the focus slightly when I look from Moon or stars to the city of Eureka, eight air miles from my back yard. (2) The object could be inside the instrument at the focus of the eyepiece itself in the position which would be occupied by cross hairs, if there were any. Or (3) The object could be directly on the film or in the film itself.

2. We can rule out extraneous light. This causes blurs and smears. Besides, the image in question was caused not so much by light as by the absence of it or by an obstruction to light.

3. We can dismiss number (2) because an object at the focal length of the eyepiece will be seen and photographed in very fine detail. Cross hairs show up hard and sharp, and even a speck of dust or lint is clearly defined at this point. In this instrument, there is nothing here except empty air.

4. In examining the possibilities in number (3), we see right away that this negative contains a number of blemishes and defects. One such defect occupies a position on the picture about two inches to the right of our image and has become a white dot. This was a bubble in the emulsion or in the film structure. In blowing up artifacts of various kinds, we usually find that no matter how much we enlarge, the edges are hard and sharp. There is no graininess at the edges and the grains beneath the obstruction are not affected by development. Enlarge this particular image and you find that development took place not only along the edges but across the image as well.

The obstruction then becomes an artifact that is semi-transparent or translucent or that only blocked development for a while. A drop of moisture on the film during exposure might do it. But the holder was loaded 24 hours before. The drop would have had time to dry or at least produce a more diffuse effect. And if it dried, a microscope would reveal the fact.

A bubble of air, then, lodging on the film in the developing tray. This would delay development of the areas and might even account for later unevenness. But no. A high powered glass or a microscope on the negative produces something more.

5 There is diffraction very much in evidence and diffraction is the bending of light around an obstruction and, in the case of an image on film, the piling up of light around the borders of the obstruction to create a halo effect. The halo is even visible to the naked eye in the print or enlargement. It is even more in evidence in the negative. Note the darker area around the white image with a high powered glass. Something resting loosely on the surface of the film might conceivably allow this kind of diffraction but the nature of this image rules out anything free or loose on the film.

6 But if the image was not caused by something on the film or at the focus of the eyepiece, where was it located? It could not have been on the face of the Sun or its definition would have been shredded, as were the sunspot images. This telescope takes reasonably good sunspot photos, clearly showing umbra and penumbra outlines. These spots are pulled apart, and yet the Sun images are clearly in focus, as is witnessed by some rather delicate refraction effects along the edges and at the bottom of Picture #2. If this image occupies a position at any acceptable distance, it, too, must show distortion due to refraction.

It does. And the distortion is in the same plane as the distortion of the Sun image. Blow it up and you can see.

This, however, may be a weakness of the case. To say that there is distortion, we must assume an apparently spherical object in the first place.

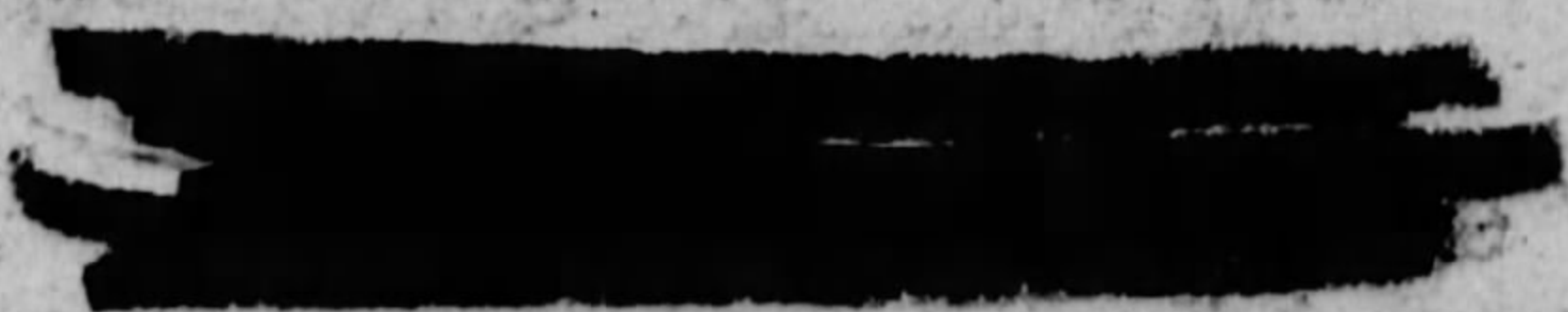
7 If the object is really spherical, then, it does show distortion and in the same rough plane as the Sun shows it. But it does not show as much. And even if it were not on the Sun's surface but was between Earth and Sun, it would still pass through the same shifting layers of air of varying density that cause the distortion of the Sun image and it would be equally altered. It must, then, be positioned somewhat inside the Earth's envelope of atmosphere.

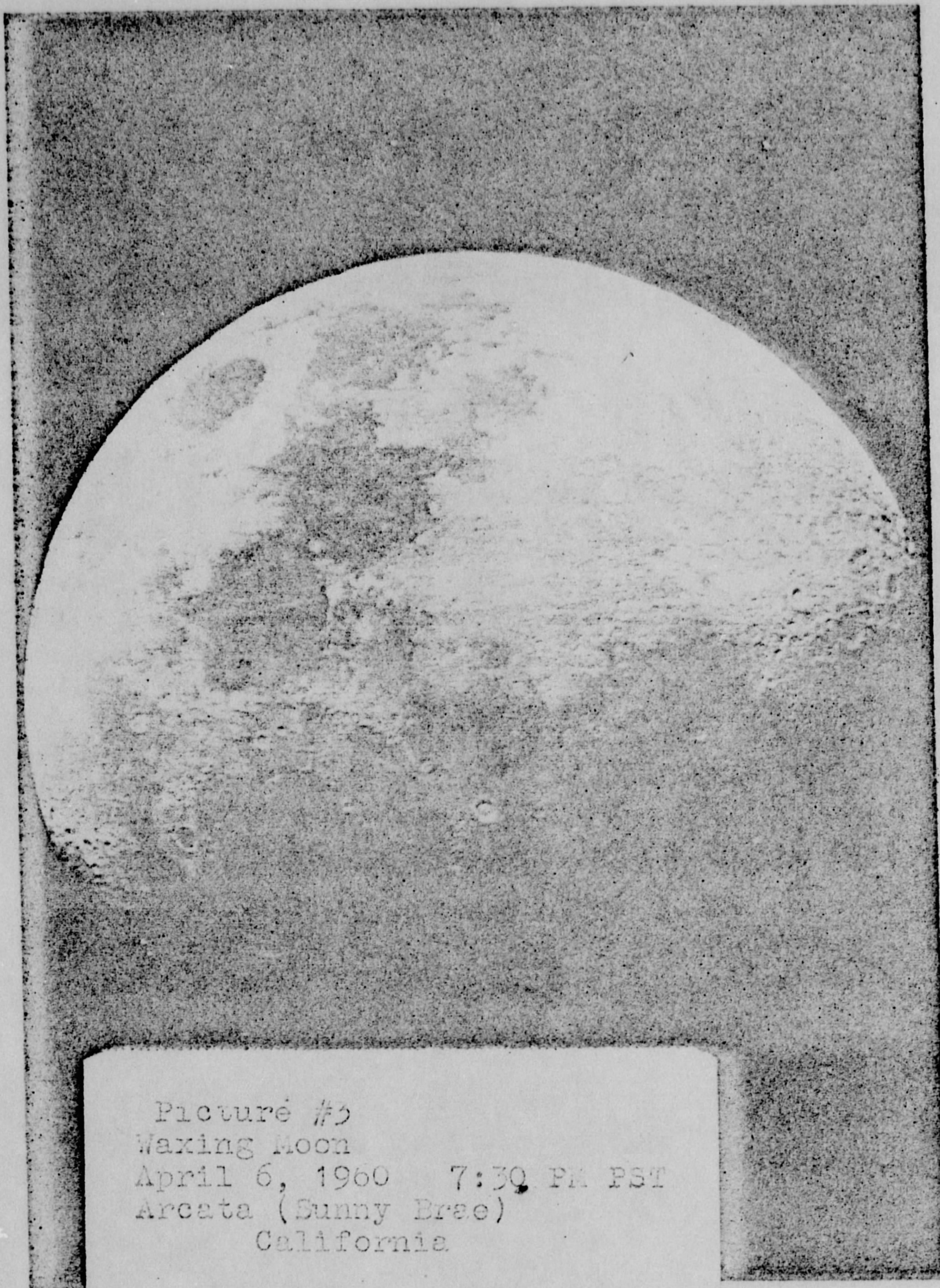
8 If the object is real, what is it like? If we accept the object, we must accept the other facts about the image. There is a light pattern inside the boundaries. An examination of the Moon photo points up the fact that this instrument can position features this small and smaller. The image is either semi-transparent or translucent - or is itself a light source.

CONCLUSION: A spherical, translucent object in motion somewhere inside the earth's atmosphere, its size anywhere from 10 to 400 feet in diameter, depending on its distance.

Under the microscope you will see that the darker area around the image (attributed to diffraction) is composed of grains partially organized in clusters, with channels between, an effect similar to floccul. Here may be found the final proof of whether this is a picture or not.

Yours,

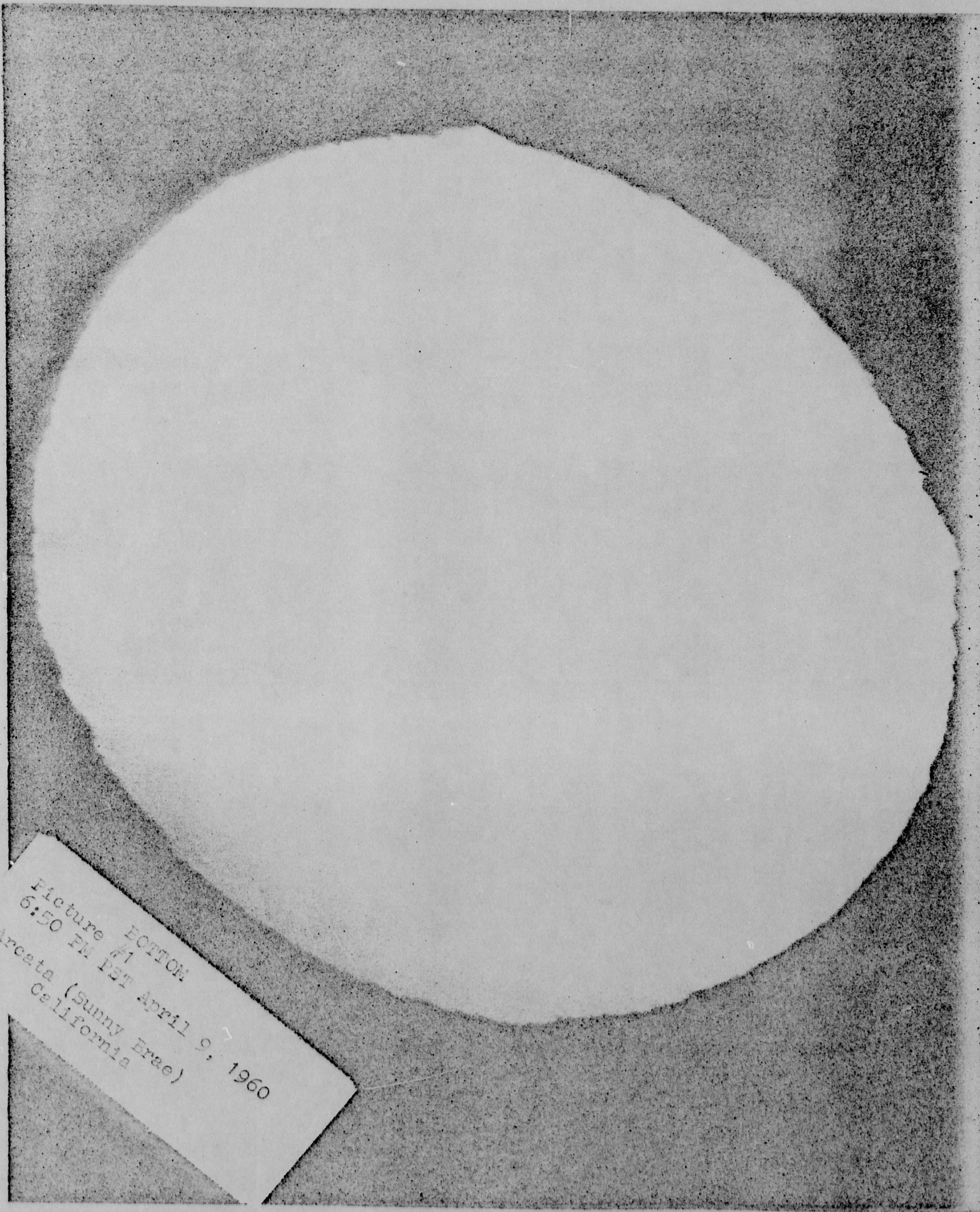

Arcata, Calif.



Picture #3
Waxing Moon
April 6, 1960 7:30 PM PST
Arcata (Sunny Brae)
California

Bottom
Picture #2
6:55 PM PST April 9, 1960
Arcata (Sunny Lake)
California





Picture BOTTOM
6:50 PM PST April 9, 1960
Arcata (Sunny Brae)
California