

PROJECT 10073 RECORD CARD

1. DATE 31 Mar 58	2. LOCATION Walnut Ridge AFS, Arkansas		12. CONCLUSIONS <input type="checkbox"/> Was Balloon <input type="checkbox"/> Probably Balloon <input type="checkbox"/> Possibly Balloon  <input type="checkbox"/> Was Aircraft <input type="checkbox"/> Probably Aircraft <input type="checkbox"/> Possibly Aircraft  <input type="checkbox"/> Was Astronomical <input type="checkbox"/> Probably Astronomical <input type="checkbox"/> Possibly Astronomical  <input type="checkbox"/> Other _____ <input type="checkbox"/> Insufficient Data for Evaluation <input type="checkbox"/> Unknown
3. DATE-TIME GROUP Local _____ GMT 31/1837Z, 31/0958Z	4. TYPE OF OBSERVATION <input type="checkbox"/> Ground-Visual <input checked="" type="checkbox"/> Ground-Radar <input type="checkbox"/> Air-Visual <input type="checkbox"/> Air-Intercept Radar		
5. PHOTOS <input type="checkbox"/> Yes <input type="checkbox"/> No	6. SOURCE Military		
7. LENGTH OF OBSERVATION 2	8. NUMBER OF OBJECTS one	9. COURSE	
10. BRIEF SUMMARY OF SIGHTING  Obj picked up on radar. alt 64,000 ft speed 1300 knots. EESSKXXXXX FPS-6 Radar.		11. COMMENTS  Insufficient data for eval.	

5 March 1958  
NO CASE - INFO ONLY  
SOURCE: SPACE CRAFT DIGEST - SPRING - 1958

Salem, OREGON

Salem, Oregon..... March 5, 1958..... Mrs. Elinor Frick, 4347 Macleay Rd.  
reports seeing a fiery blue streak trailed by a flashing red area about the  
size of a red large star traveling East at terrific speed at 11:45 PM.....  
Must have been a jet plane because UFO's do not exist says the USAF.

No Case (Information Only)

9 March 1958  
Eureka, California

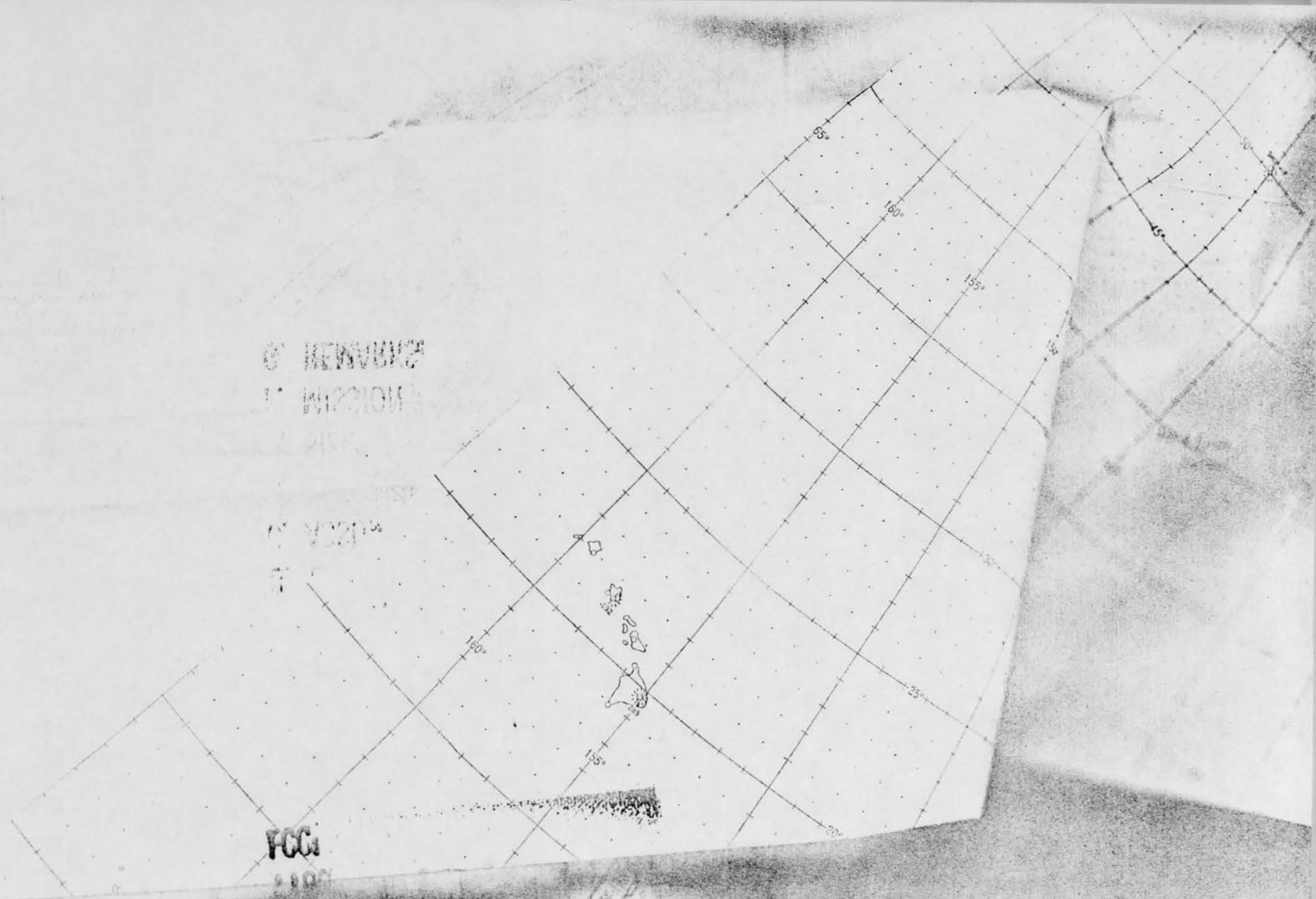
March 9, 1958; Eureka, California  
R. E. Williams and three other witnesses  
observed a shiny oval-shaped object above  
nearby mountains. Through binoculars  
the UFO was seen to hover, move forward,  
reverse course, circle, then disappear  
into a cloud bank.

© NEWBURY

1. MISSION

1. 1921

1



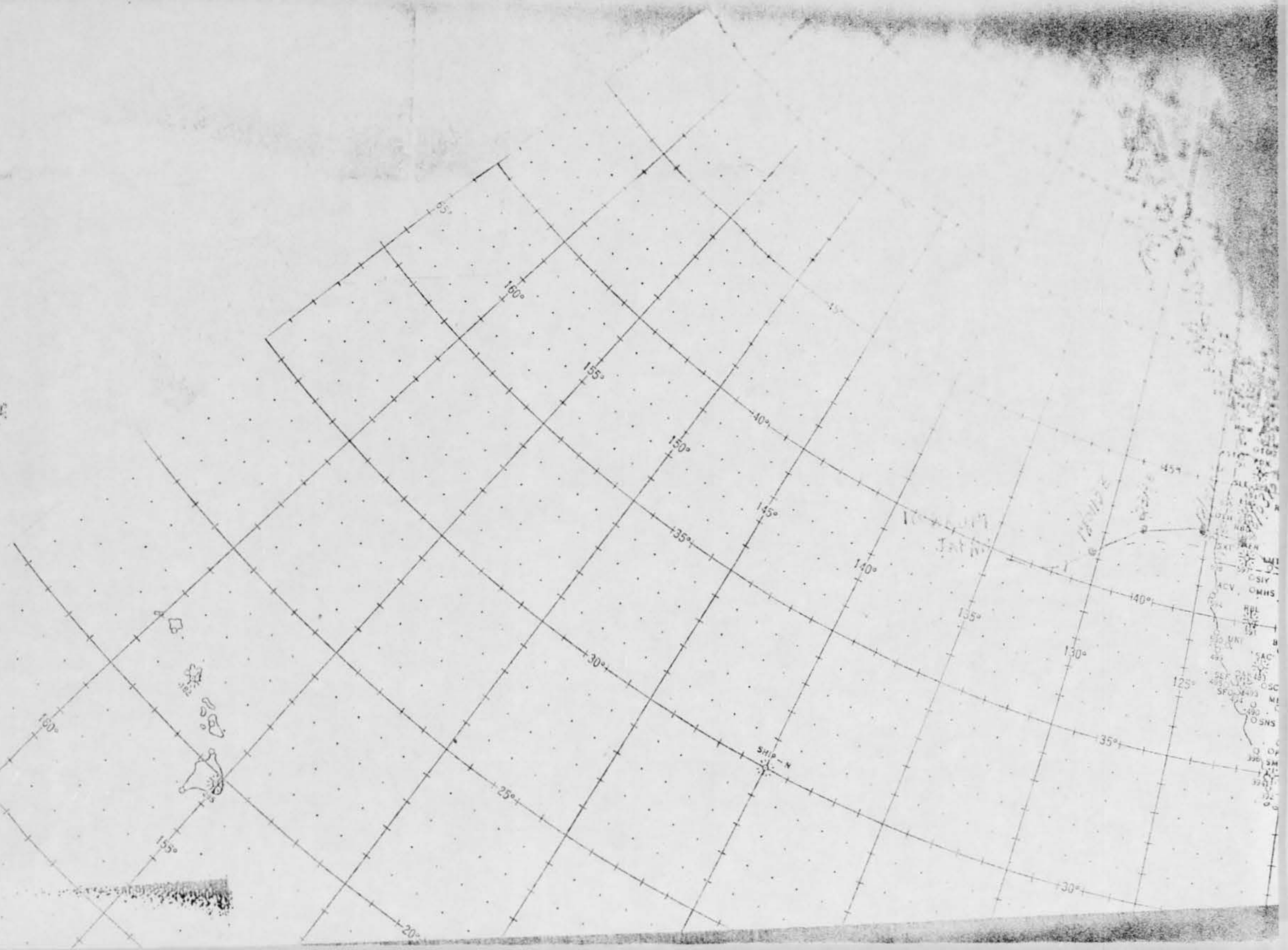
FCC

1921

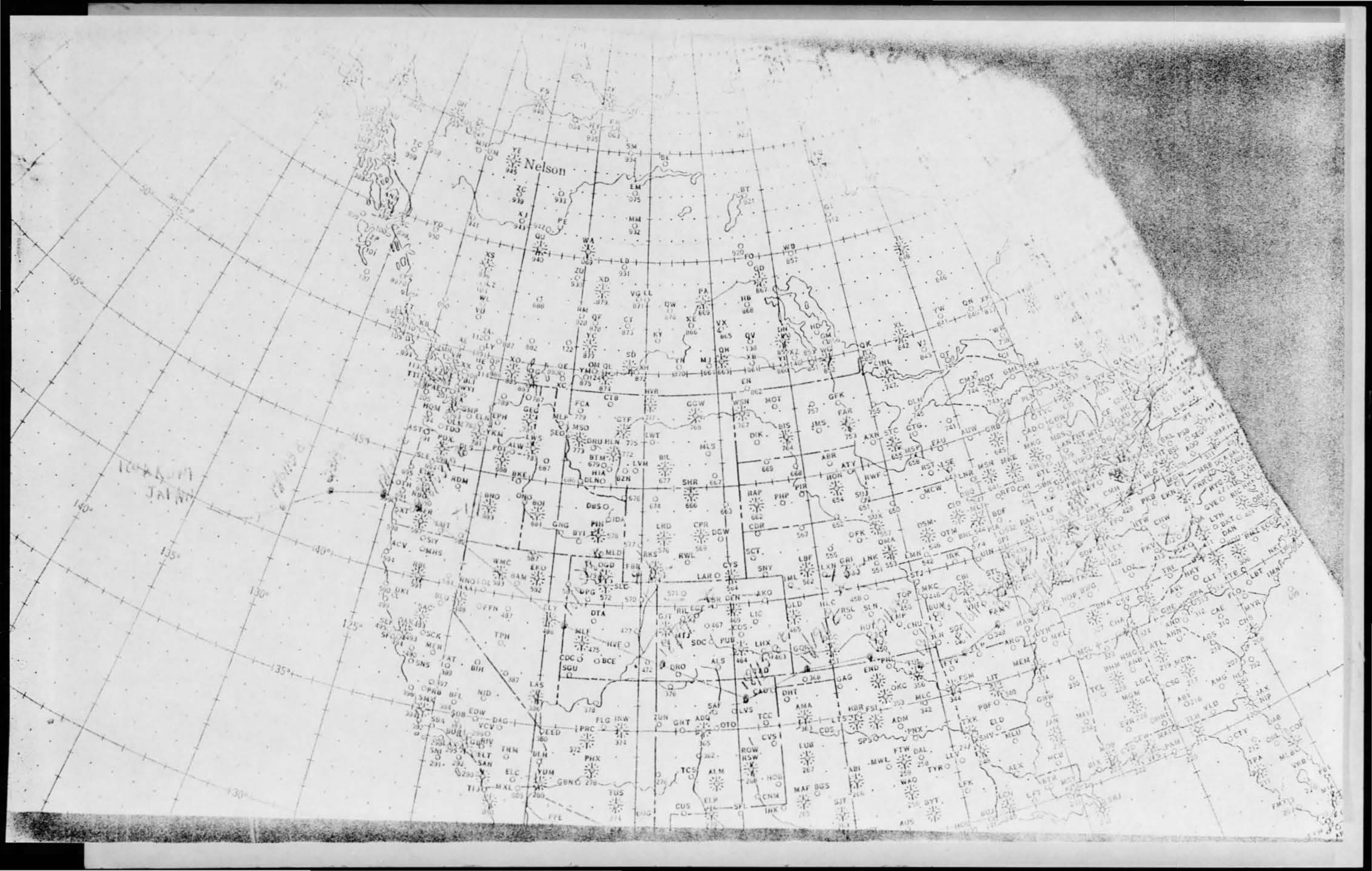
0' NEWBORN  
1' MIZION

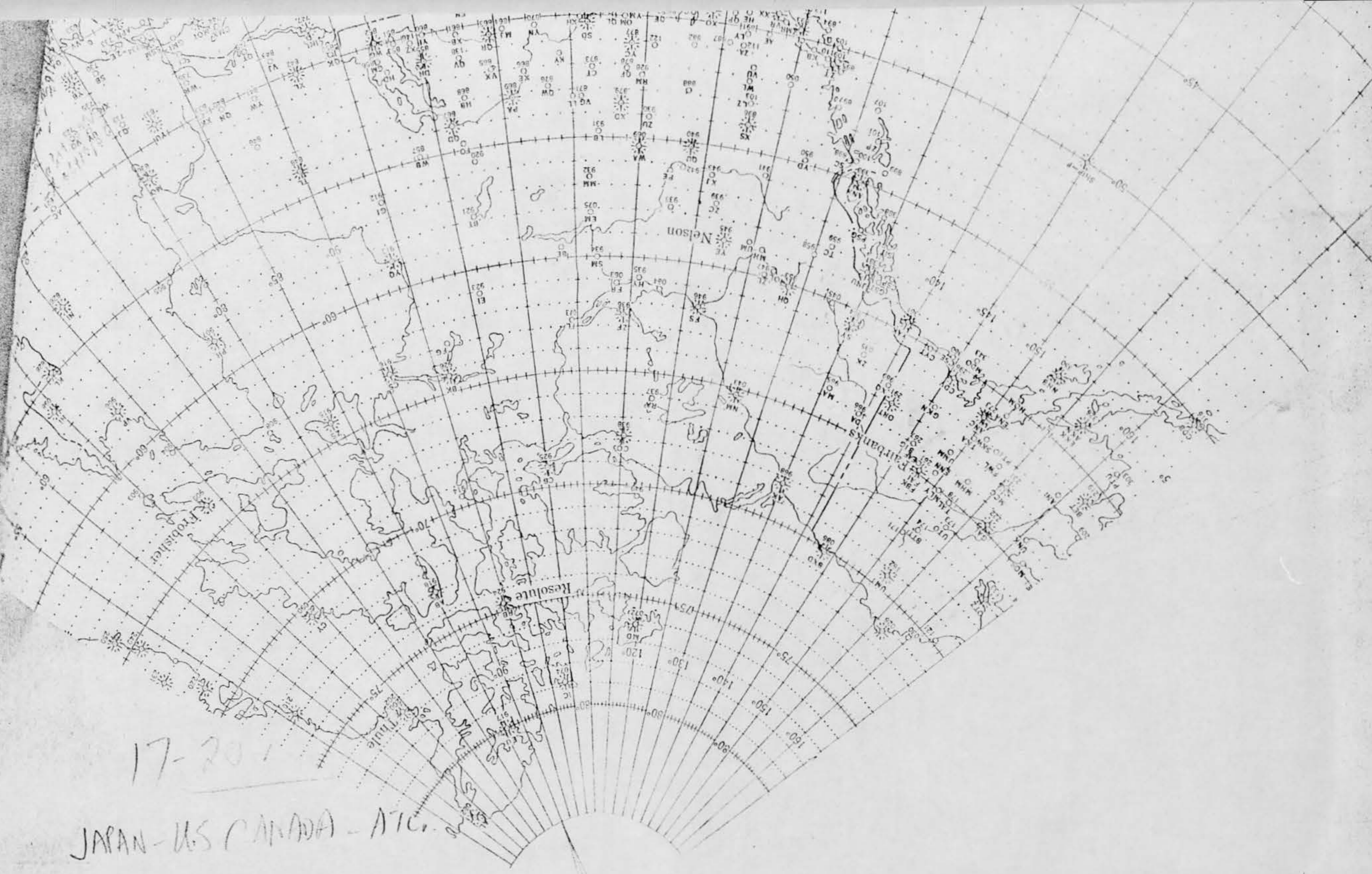
1' 1/2 1/2  
0'

FCC



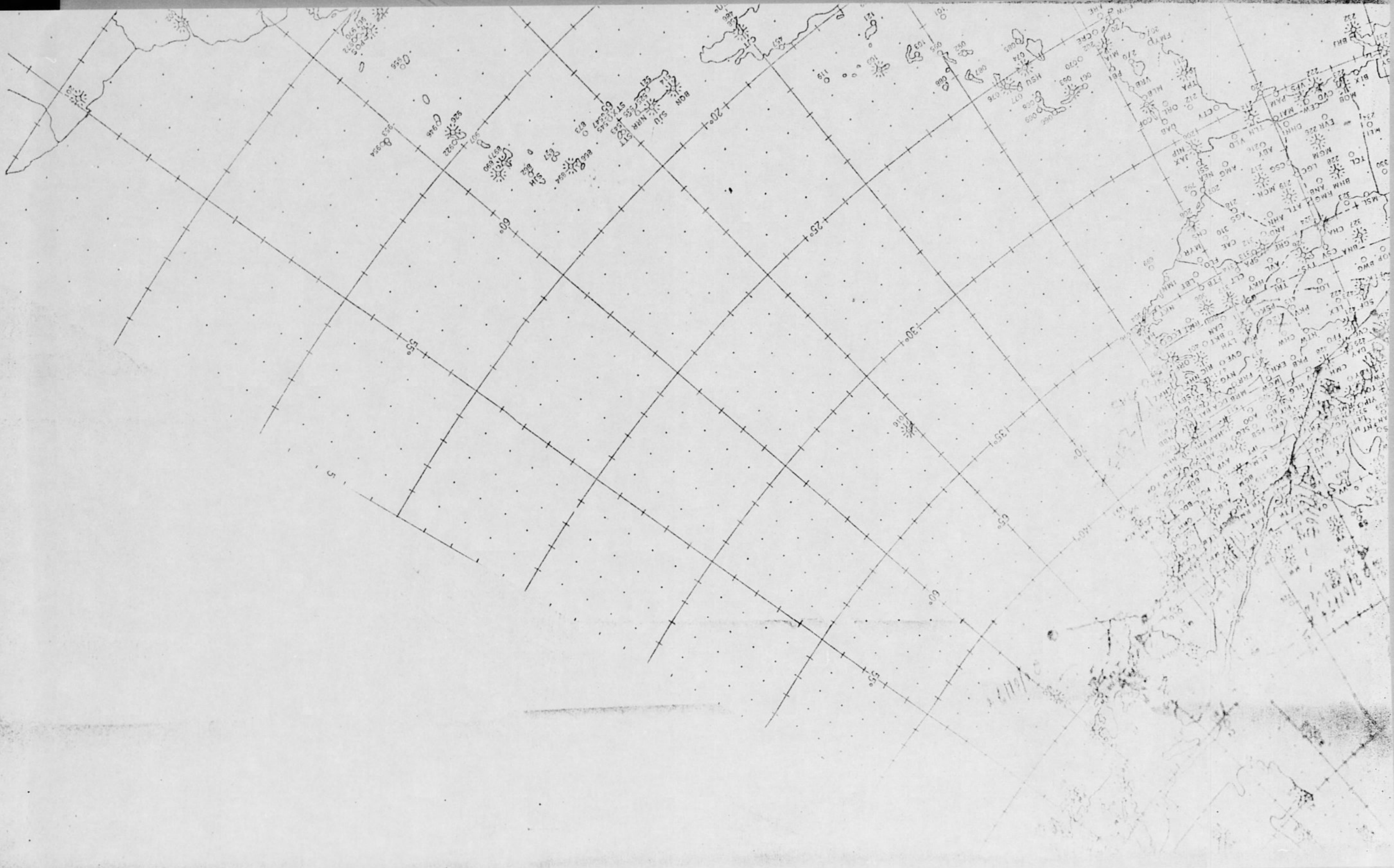
NEWBORN  
MIZION  
ACV  
OMHS  
HBL  
SAC  
SFO  
SNS





17-20

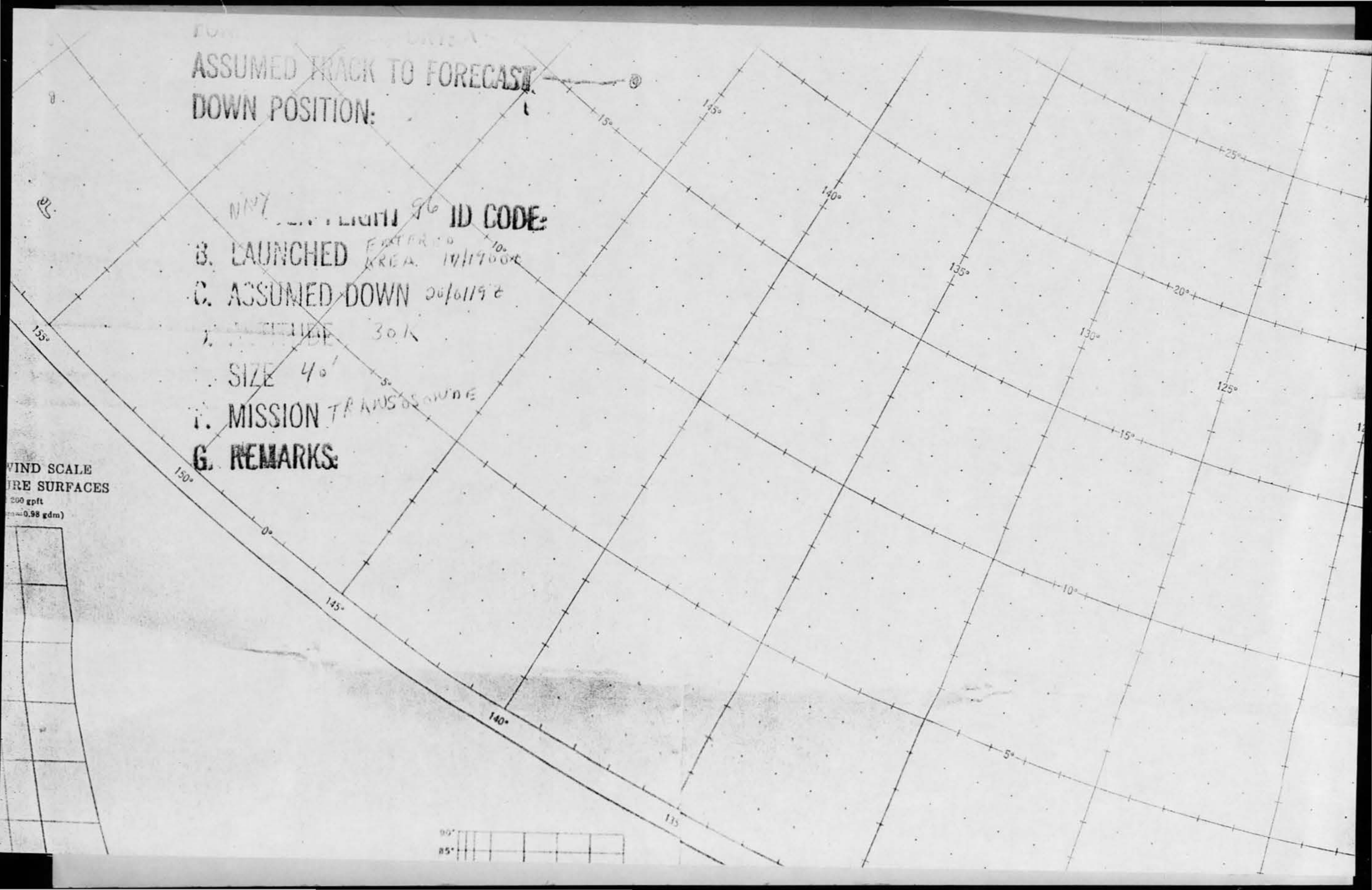
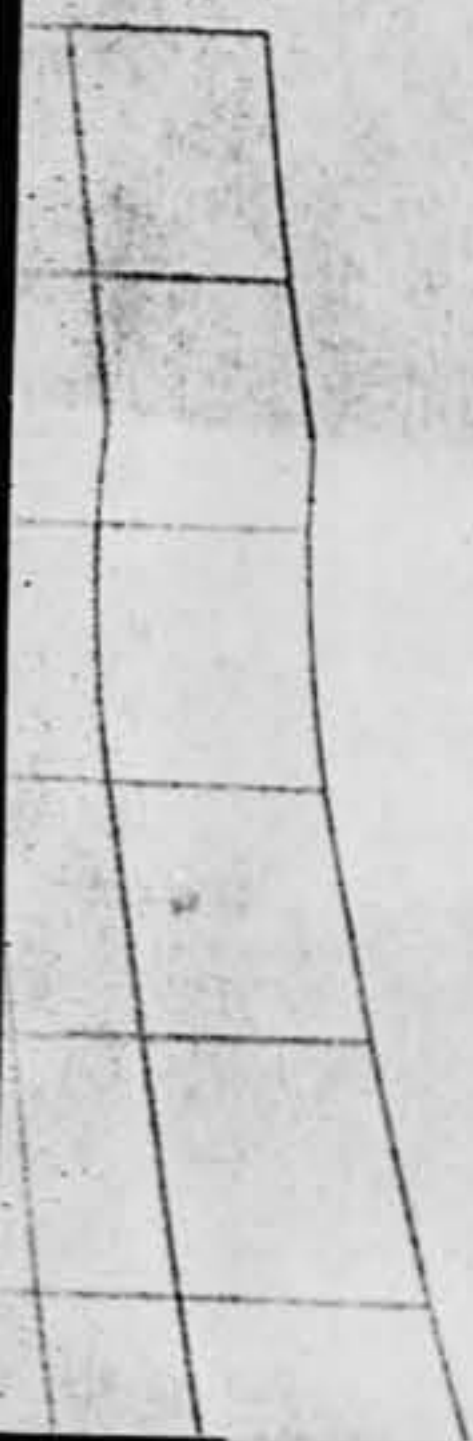
JAPAN - U.S. CANADA - ATC



ASSUMED TRACK TO FORECAST  
DOWN POSITION:

NAVY AIRCRAFT 96 ID CODE:  
B. LAUNCHED <sup>ENTERED</sup> AREA. 17/1900Z  
C. ASSUMED DOWN 20/619Z  
D. ALTITUDE 30k  
E. SIZE 40'  
F. MISSION TRANSDUCER  
G. REMARKS:

WIND SCALE  
PRESSURE SURFACES  
200 gph  
(1 gph = 0.98 gdm)







RJEPHQ/ASSISTANT CHIEF OF STAFF INTELL

RJEPHQ/INFOSER

BT

//UNCLASSIFIED//OPS 145. SUBJECT: UFO (REF AFR 200-2, DTD. 5 FEB 58)

A.

- (1) N/A
- (2) N/A
- (3) N/A
- (4) ONE
- (5) N/A
- (6) N/A
- (7) N/A
- (8) N/A
- (9) ALTITUDE SIXTY-FOUR THOUSAND FEET MSL, EST. THIRTEEN HUNDRED KNOTS.

B.

- (1) SCANNING
- (2) 08.55 DEGREES, 141 DEGREES
- (3) 4.5 DEGREES, 132 DEGREES
- (4) 128 DEGREES MEGNETIC
- (5) OUT OF RANGE
- (6) SI MINUTES

C.

- (1) GROUND ELECTRONICS FPS-6
- (2) N/A
- (3) N/A

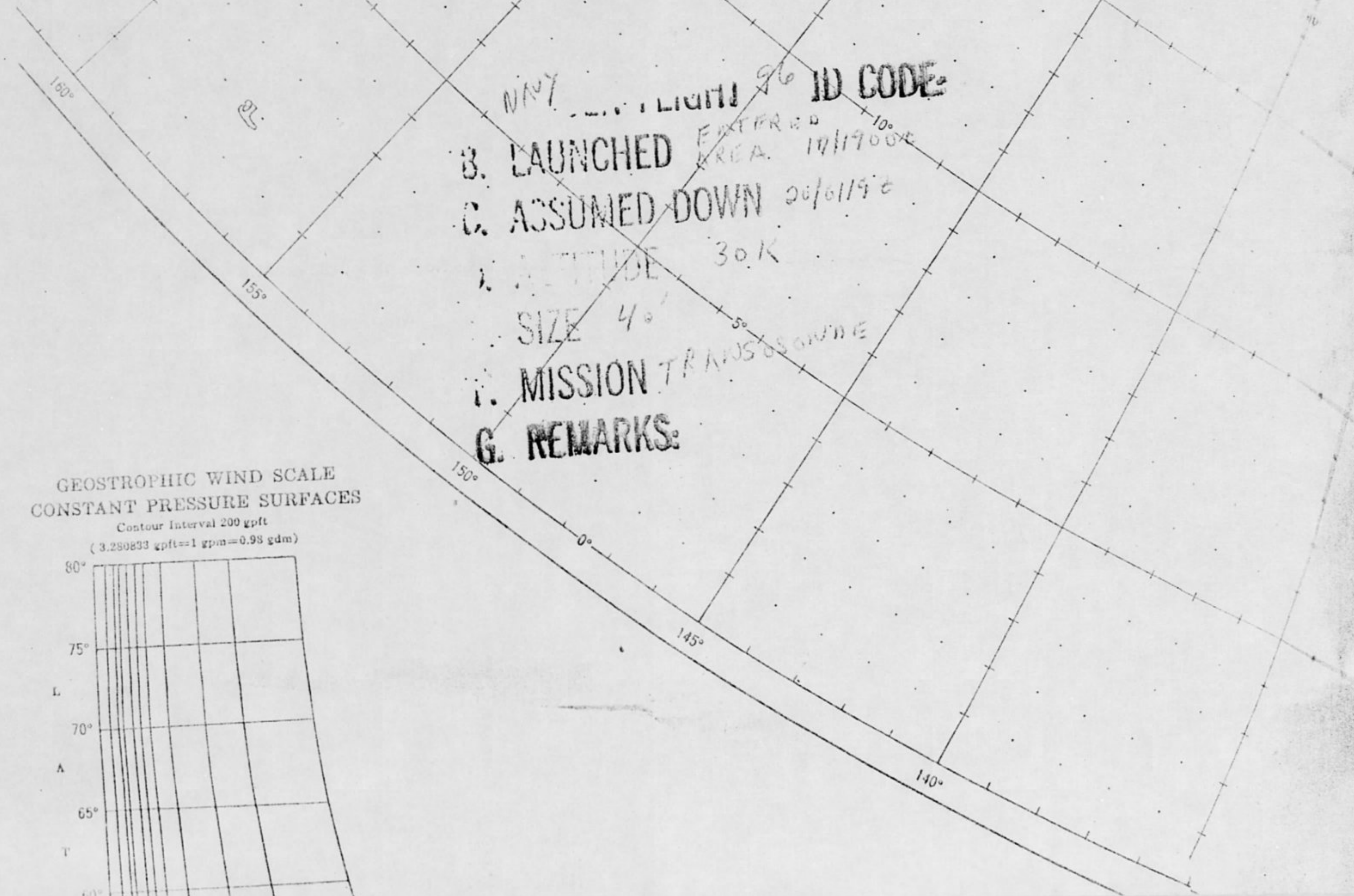
D.

- (1) 31 MARCH 0958, 1837Z
- (2) DAY

- (1) FJ QG 0508

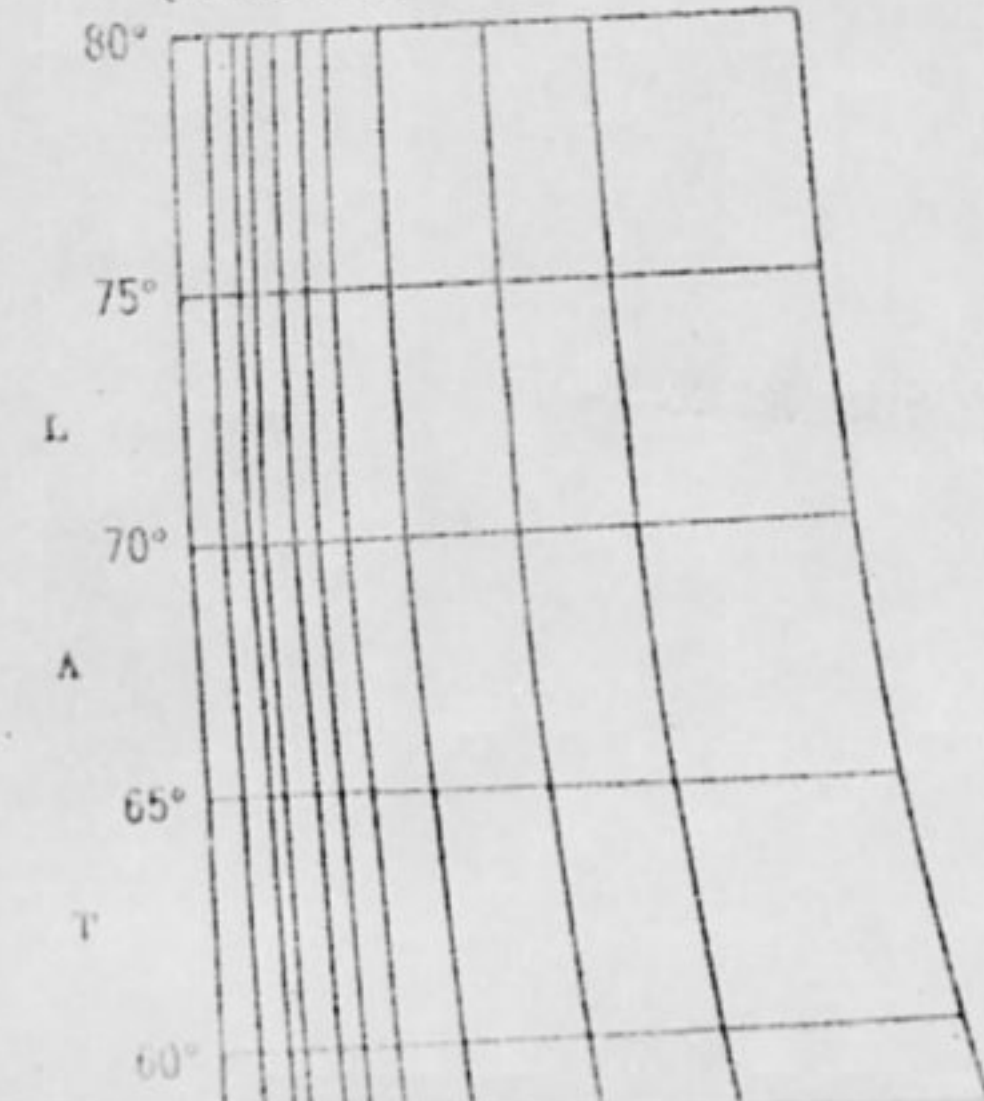
AAUJSE

FORECAST TRAJECTORY: X  
ASSUMED TRACK TO FORECAST  
DOWN POSITION:



NINETY ... LIGHT 96 ID CODE  
B. LAUNCHED ENTERED AREA 10/1900E  
C. ASSUMED DOWN 20/6119E  
D. ALTITUDE 30K  
E. SIZE 40'  
F. MISSION TRANSDUCER  
G. REMARKS:

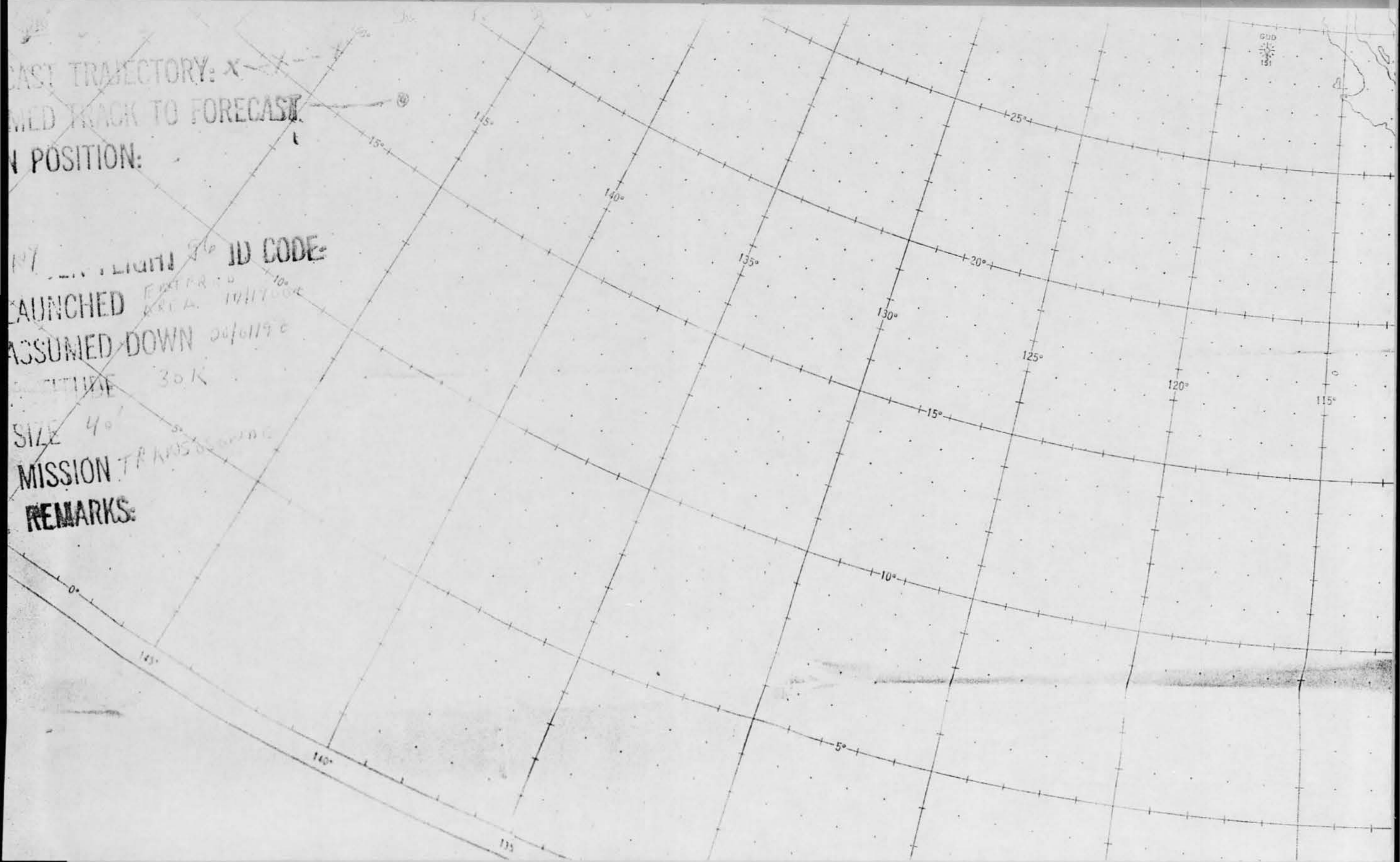
GEOSTROPHIC WIND SCALE  
CONSTANT PRESSURE SURFACES  
Contour Interval 200 gpft  
(3.280833 gpft=1 gpm=0.98 gdm)



LAST TRAJECTORY: X  
MED TRACK TO FORECAST  
N POSITION:

LAUNCHED  
ASSUMED DOWN  
SIZE 40'  
MISSION  
REMARKS:

ID CODE  
30K  
TRANS





Then the bright, low flying objects were seen to rise vertically and to be recovered behind them also. Then they returned, raising the attention of the people of the square. "Flying Saucers! Look up! Here are the Flying Saucers. Finally they do exist. Come and see! Quickly."

About twelve people came up, and they all did see.

In a part of his report he wrote: "They seemed to be formed by two parts, though we could not distinguish them perfectly--a higher one like the upper part of a Maccartine hat, and encircled by a narrower ring."

And deeply moved he added:

"I was like dazzled. . . then I felt a pang to run and tell every body that the Flying Saucers did exist, that they are a reality, that they were in front of me going down and up and furthermore, my friend, I am sure that they did it vertically and at such a quick speed it was rather difficult to follow them with our eyes! I assure you I am not exaggerating!"

Please notice: "going up and down vertically at a tremendous speed!" But there are further surprising details of these evolutions, as you are going to see.

"The regaining of speed (in opposite directions) after the falling took only a few seconds during which we could not see them on account of the natural relief of the ground there. The extraordinary acceleration they must have to be able to go down and up again at the same rate is inexplicable.

And everything in front of my eyes!!!"

"It seemed that gravity laws did not exist, or else the direction of their force was acting crookedly, as time consumed between falling and recovery was about five seconds."

But those evolutions were not for the four of them at the same time sheer fancy. They formed a line, and only the first and the fourth were moving, while the two in between were not moving!

This see-saw movement repeated during about four minutes and at last one of them described a curve with great inclination and actually feeble speed as to show better his circular shape.

In these positions it lost the reflection of the sunlight and its color was dark, opaque.

My friend F. tells also that since it stopped at the beginning, he could hear no other noise afterwards. And now I make an addition. This fact may have been made on purpose to attract their attention, and if I had been there it might have happened that I would have gone to a lonely place in the hope of a "contact", like Adamski.

Then they disappeared in profoundness Northwards, and after three or four minutes they returned again, only to again disappear completely in a few seconds.

Sr. Marcelina Alves, LISBON, PORTUGAL--Aug. 1958

EDITOR'S NOTE---- I spent some time in the Summer of 1958 with Sr. Alves and his friendly family. We took a tour to the convent of Matra, near Lisbon, and on a delightful Sunday afternoon I had dinner with the family. During this time I satisfied myself that the reporting of Sr. Alves is of the highest type of integrity in nature and that his background is such that his word is to be respected. I had the feeling that he is a gentleman of the old school that is fast disappearing in our fast moving modern society--a man of high principles.

SPACE-RAFT DIRECT po Box 168 SALEM, OREGON, USA page 11

Source: Space Craft Digest, Fall Issue 1958

## SAUCERS OVER PORTUGAL

by Sr. Marciano Alves



Sr. Pilot Lt.

LISBON. . . In the Spring of 1958 four jet pilots of the Portuguese Air Force on a problem between Granada and Lisbon first noted four glowing saucers cavorting and called to each other on their communications gear. The four brightly glowing saucers were from a cigar-shaped "mother" ship, they observed. The four excited pilots abandoned their problem and watched the mother ship and the saucers for some 45 minutes. They told of their "sighting" and Sr. Marciano Alves of Lisbon personally interviewed them. The story was covered in the papers for a couple of days and then their senior officer told them that it might "be better" if they did not talk too much about what they "saw".

Sr. Alves became interested in the UFO phenomena because of the following story reported to him by a young friend of his from the South of Portugal who is an engineering student. Sr. Alves reports to the SPACE-CRAFT DIGEST. . .

"In its humble kind of popular observation, I will tell it to you as if I myself have lived it; because the testimonial of my friend F. is that

of a friend never misguiding a fellow, and his experience as a student finishing a course, having already accomplished his military, exceptionally cheerful and intelligent, is a guarantee that he did not mistake balloons, birds, or jets for the flying saucers.

He was spending a day with his bride and some other friends in an estate in the country. They were walking and chatting when suddenly they heard a strange, growing noise which forced them to peer the sky in search of a plane. But they could see nothing from the site where they stood, and then the interest grew because the sound was now strong and it did not seem to him to be the proper sound of an airplane.

According to his description, there were two sounds after one another -- one of them like a sharp whistle and the other one like a "roar", but completely different from what his military ears were familiar with.

They both made up their minds to discover the origin and in rapid agreement they defied one another, although without the remotest idea of flying saucers, which they had read some articles about in the newspapers.

At this occasion the case of Ota base was not yet known to the public.

They ran out of the hall ground, but on their way the strange noise stopped suddenly and my friend stopped, too, making in his mind the hypothesis of an aircraft accident.

Then he saw them!!!

Shining, very shining, like a mirror reflecting the sunlight. There were four flying saucers before him at a height of about 40 degrees.

SPACE-CRAFT DIGEST, P.O. BOX 766 SALEM, OREGON, U.S.A. Page 10

22-23 MARCH 1958

DAYTON, OHIO

7-3 Local  
SATURDAY  
22-23 MARCH 58

### Watch Tonight For Sputnik II

Contrary to an earlier report, Sputnik II may be visible tonight to Daytonians. Kenneth E. Kisseil of Fairborn said yesterday.

It should be seen at 7:38 p. m. at 16 degrees above the western horizon moving northward, he said. The satellite should reach its highest point in the sky a little west of due north and disappear over the northern horizon. "It'll be about as bright as the brighter stars."

Sputnik II may also be visible at 7:06 p. m. tomorrow at 28 degrees above the western horizon as it moves northeastward in a similar path.

Kisseil is chairman of the local "moonwatch" team here which has a station at Civil Defense headquarters at Stillwater sanatorium, 8100 N. Main st.

1 - 15 APRIL 1958 SIGHTINGS

<u>DATE</u>	<u>LOCATION</u>	<u>OBSERVER</u>	<u>EVALUATION</u>
Apr 1	4 MI NE Shelby, Iowa	[REDACTED] (PHYSICAL S)	Other (CHAFF)
1	Kettering, Ohio	[REDACTED]	Aircraft
1	- Miami, Florida	[REDACTED]	Astro (METEOR)
3	- Kenia, Ohio	[REDACTED]	Aircraft
4	- Morro Bay, California	Military	Insufficient Data
7	- Cuzick, Kentucky	[REDACTED] (PHYSICAL S)	Other (ORDNANCE SHELL)
7	- Dayton, Ohio	[REDACTED]	Other (MISINTERPRETATION)
7	- Canton, Austinberg, Ohio	Multi	Astro (METEOR)
7	- Boonville, Missouri	[REDACTED]	Insufficient Data
8	- Greens Fork, Indiana	[REDACTED] (PHYSICAL S)	Other (ROCK)
8	- NE of Palm Springs, California	[REDACTED]	Insufficient Data
8	Barbados, B.W.I.	[REDACTED]	Other (MISSILE)
8	Mesa, Arizona	[REDACTED]	Aircraft
9	- Thurston, Pierce Counties, Wash	Multi	Astro (VENUS)
10	- Birmingham, Alabama	Military	Other (PRACTICE BOMBS)
10	- Louisiana	Multi	Astro (METEOR)
10	- 5 MI W of Pecos, Texas	[REDACTED]	Other (UNRELIABLE REPORT)
11	- 60 MI W of Argentia, NE	Military	Astro (METEOR)
11	- Indio, California	[REDACTED]	Astro (METEOR)
12	- Brownsville, Tennessee	[REDACTED]	Balloon
12	- Bakersville, North Carolina	[REDACTED]	Astro (METEOR)
12	- Manitowoc, Wisconsin	Sister Mary [REDACTED]	Astro (POLLUX/BETELGEUSE)
12	- N of Selfridge AFB, Michigan	[REDACTED] (PHOTO/HR)	Other (UNRELIABLE REPORT)
13	- West Indies	[REDACTED]	Other (SPUTNIK DECAY)
13	- Wantagh, New York	[REDACTED]	Astro (METEOR)
14	Uruguay	[REDACTED]	Insufficient Data
14	- Lynchburg, Virginia	Military	UNIDENTIFIED
14	- Denton, Nebraska	[REDACTED]	Aircraft
15	- Atlantic, off Virginia	Coast Guard	Astro (METEOR)
15	- Jutland, Denmark	[REDACTED]	Insufficient Data

ADDITIONAL REPORTED SIGHTINGS (NOT CASES)

<u>DATE</u>	<u>LOCATION</u>	<u>SOURCE</u>	<u>EVALUATION</u>
Apr 1	Sussex, England	Saucer News	
1	Willoughby, Ohio	Newsclipping	
3	Columbus, Ohio	Newsclipping	
8	- Elyria, Ohio	Newsclipping	
10	New York	Newsclipping	
11	Johannesburg, South Africa	Newsclipping	
14-21	Albuquerque, New Mexico	[REDACTED] (Ltr)	

3111837Z (RADAR)

Called 01015Z

44

31 MAR

1 APR 50 07 26

INSUFF DATA

1) 454  
2) 454  
3) 454  
4-4X20  
RJD

V SQA012 TYC015  
OO RJEDWP  
ZOV RJEP  
TDA004 YTB004 YDA002KFA002KFG007FGH002  
~~OO RJEDDN RJEP RJEPHQ~~  
~~DE RJEDKF 1GH~~  
O 312330Z  
FM COMDR 725TH ACZRON WALNUT RIDGE AF STA ARK  
RJEDDN/COMDR CADF  
RKE/COMDR 21TH AIR DIV

(1) RODNEY G HAWORTH 1/LT., 725TH ACWRON; SENIOR DIRECTOR

G.

(1) N/A

(2) 6 THOUSAND FEET 360 DEGREES AT 10 KNOTS

10	"	"	300	"	"	20	"	
16	"	"	300	"	"	30	"	
20	"	"	300	"	"	40	"	
30	"	"	280	"	"	50	"	
50	"	"	260	"	"	57	"	
80	"	"	NOT AVAILABLE					

(3) N/A

(4) N/A

(5) N/A

(6) N/A

H. N/A

I. N/A

J. N/A

K. RODNEY G HAWORTH 1/LT; SEN. DIR. NO COMMENT.

L. NONE

BT

31/2345Z MAR RJEDKF

INSUFF  
DATA

*ATTC Comment:*

*1. Very little data given here upon which to evaluate; only that an object was seen on a scope for 6 minutes at a bearing from 141° to 137°.*

*2. Contrary to AFR 200-7 the station director did not make any checks or investigate the numerous facilities to 1st.*

## LANGUAGE

**Longer Words Found Easier to Understand**

➤ LONGER WORDS to identify letters of the alphabet are more easily understood than shorter ones, two scientists report in *Science* (Feb. 7).

They suggest the familiar Able, Baker, Charlie, Dog, and so on should be replaced with longer words to increase their intelligibility. A person named Sedgwick, for instance, might explain the spelling of his name this way: "S as in 'student,' E as in 'examination,' D as in 'department,' G as in 'grandmother,' W as in 'welcome,' I as in 'industry,' C as in 'companion,' K as in 'kindness.'"

Drs. Mark R. Rosenzweig and Leo Postman of the University of California, Berkeley, have surveyed factors governing intelligibility of words. They found frequency of use and length were the most important. They suggest identifying words for the letters of the alphabet should be chosen from a pool of words that are both frequently used and long.

*Science News Letter, February 22, 1958*

## ASTRONOMY

**Martian Atmosphere Has Very Little Water Vapor**

➤ ALL THE WATER vapor on Mars equals that found in a box of earthly air two feet wide, two feet long and ten feet high.

If this vapor were condensed to liquid water, it would form a film only one three-hundred-eighteenth of an inch thick over the entire planet.

This is the final conclusion of the most delicate examination yet made of the Martian atmosphere. The studies were done by four National Bureau of Standards scientists, Dr. C. C. Kiess and Mrs. Harriet K. Kiess, and C. H. Corliss and Mrs. Edith L. R. Corliss.

They found the upper limit of water vapor surrounding Mars by examining photographs of sunlight reflected from the planet when the light was spread out into its rainbow colors, or spectra. Their observations were made from both Mauna Loa, Hawaii, and Georgetown College Observatory, Washington, D. C.

The Martian spectra were compared with those of the moon taken at the same time. This was done because the moon is known to be essentially without an atmosphere and because the same sunlight is reflected from the moon as from Mars.

To aid in detecting Martian water vapor and distinguishing it from that in the earth's atmosphere, the spectra photographs were taken both when the planet was moving toward the earth and moving away from it during 1956.

Most of the measurements were made in the infrared, the invisible region beyond visible red when sunlight is broken down into its various components. The scientists recommend that future studies be made even deeper in the infrared.

Although their results are relatively negative, the scientists concluded from visual observations of the planet that Mars does have an atmosphere, and that there is exchange of water vapor between the northern and southern polar caps. As the thin frost at one cap covers a larger area, the area at the other cap shrinks.

They found no evidence for carbon dioxide in the Martian atmosphere.

The Hawaiian phase of the scientists' studies was supported by the National Geographic Society.

*Science News Letter, February 22, 1958*

## METEOROLOGY

**See Advance Storm Warning**

➤ DETECTING the formation of hurricanes and predicting the paths of these giant tropical storms for several days in advance are foreseen in a report issued by the Smithsonian Institution.

R. C. Gentry and R. H. Simpson of the Weather Bureau's National Hurricane Research Project, West Palm Beach, Fla., reported meteorologists are now making "considerable progress" in understanding the basic mechanisms of hurricanes. They believe some day it may even be possible to put "power brakes or steering wheels" on the great storms.

Doing this, however, means obtaining control of as yet unknown forces in hurricanes themselves. The natural force of the great storms is so much stronger than anything man can ever hope to bring against it that control by any external means probably will always be impossible.

Radar and storm-plunging reconnaissance planes are two fruitful sources of hurricane information.

The discovery of spiral rainbands is among the recent findings concerning the tropical storms. Most of the heavy rain in hurricanes, the second greatest factor in loss of life and property damage, occurs in rainbands that spiral inward toward the storm's center. Between these bands, rainfall is relatively light and near the outer edges there frequently is no rain at all.

Most hurricanes, it is now known, have several centers that may or may not be the same.

There is the center of wind circulation, the point of lowest air pressure and also the point around which the spiral rainbands, or "cloud streets," rotate. Location of these centers may differ by as much as 20 miles.

Hurricanes frequently move along an irregular path that wanders back and forth across the relatively straight path the storms were previously believed to have followed. Some of these oscillations have a short period of three to six hours, some a period of 12 to 36 hours.

*Science News Letter, February 22, 1958*

## ENGINEERING

**Army Using Invisible Light to Carry Messages**

➤ INVISIBLE rays of infrared light are being used to transmit voice messages over considerable distances by Army Signal Corps engineers at the Electronic Proving Ground, Fort Huachuca, Ariz.

The "invisible light" waves can be made into a very narrow beam which can only be intercepted or stopped by physically coming into the beam. Once perfected, the communication system will find wide application on the battlefield, since an enemy would not even be aware the light beam existed without special equipment.

Radio or wire messages are fed electrically into the infrared transmitter, and the output at the receiving end can be put on a telephone line, radio transmitter or public address system as desired.

The range of the communication system can be extended by putting relay stations on hilltops to take advantage of the line-of-sight characteristics of the wave, similar to television signals.

The communication systems now commonly used by the Army, such as radio and wire, have certain drawbacks that the new system may be able to overcome.

In time of conflict, radio traffic is so congested that it may become inadequate, while wire-laying is time consuming and the wire is vulnerable to cutting.

*Science News Letter, February 22, 1958*

## PHYSIOLOGY

**New Technique Studies Heart Muscle "in Action"**

➤ A TECHNIQUE of studying the heart muscle "in action" may provide science with a better understanding of the intricate mechanism of the heartbeat.

Designed by Dr. William J. Whalen of the University of California at Los Angeles Medical School, the method makes possible simultaneous physical and biochemical measurements of heart muscle action.

Tiny strips of human and animal heart muscle are suspended in a small chamber in which is circulated a physiological solution. Highly sensitive strain gauges measure changes in the muscle strip's length, tension, and rate of contraction.

Simultaneously, chemical changes in the solution reflect oxygen consumption of the tissue, thus giving an indication of biochemical activity associated with the muscle action.

Various types of drugs can be put into the chamber to test their effects on heart tissue.

Through the use of this technique it is hoped that the precise biochemistry of the heartbeat may be eventually established and, perhaps, some chemical changes associated with heart failure, Dr. Whalen says.

The work is described in *Circulation Research*, and is being supported by the Los Angeles County and American Heart Associations.

*Science News Letter, February 22, 1958*

UNIVERSE

# Jupiter Makes Appearance

March, the month that sees the official end of winter with the coming of the vernal equinox on the 20th, is also a good time for observing the planets.

By JAMES STOKLEY

▶ WITH THE COMING of March the planet Jupiter enters the evening sky early enough to appear on the accompanying maps. These show how the sky looks about 10:00 p.m., your own kind of standard time, on March 1, an hour earlier at the middle of the month and two hours earlier at the end.

Jupiter is low in the east, in the constellation of Virgo, the virgin, to the left of the star Spica. The planet is so bright, minus 1.9 on the astronomical scale, that even with the dimming of its light by reason of its low altitude it is a conspicuous object.

But Jupiter is not the only planet to be seen on March evenings. About the 29th, seldom-seen Mercury will put in a brief appearance. For several evenings around this date you may see it low in the west as the sky darkens, until about two hours after sunset, when it, too, will descend below the horizon. It is not as bright as Jupiter, but is more brilliant than any nearby star, so it will be easy to locate if you have a clear view. It is not shown on our maps, since it sets before the times for which they are drawn.

Brightest star of the March evenings is Sirius, the dog-star, in Canis Major, the great dog, which stands in the southwest. To the right is Orion, with two first-magnitude stars, Betelgeuse and Rigel, and the three stars between them that mark the belt of this warrior. That was the way he was depicted on the old star maps. The pictures of the figures were drawn around the stars.

Farther right, and a little higher, you can find Taurus, the bull, with bright Aldebaran to mark his eye. And moving upwards, you come to Gemini, the twins, with Castor and Pollux, the latter a star of the first magnitude. To the south of Pollux is Procyon, the brightest star in the figure of Canis Minor, the lesser dog.

## Following the Zodiac Path

To the left of the Gemini is Cancer, the crab, a rather inconspicuous constellation although it is one of the 12 marking the zodiac, the path through which the sun, moon and planets seem to move. But to the left of Cancer is Leo, the lion, quite a prominent group. The eastern part, which includes the lion's head, forms the "sickle," with Regulus the star at the end of the handle.

Continuing along the zodiac, next, below Leo, is Virgo, in which Jupiter now stands, alongside Spica. To the left of Virgo,

toward the northeast, is Bootes, the bear driver, with the star called Arcturus.

Next to this group, higher and to the left, is the familiar great dipper, which is part of Ursa Major, the great bear. A good way to locate Arcturus, in fact, is to follow the curve of the dipper's handle around to the south. This brings you first to Arcturus, then to Spica.

The other planets may be seen in March later in the night. Saturn, which is in Ophiuchus, the serpent-carrier, rises into view about 2:00 a.m. It is followed, about 4:00 a.m., by Mars, which is in Sagittarius, the archer. Only a few minutes later, about two hours before sunrise, Mars is followed by Venus. This is the brightest of all. It now shines in the east in the early morning as brilliantly as it did in the west in the evening a few months ago.

## Vernal Equinox

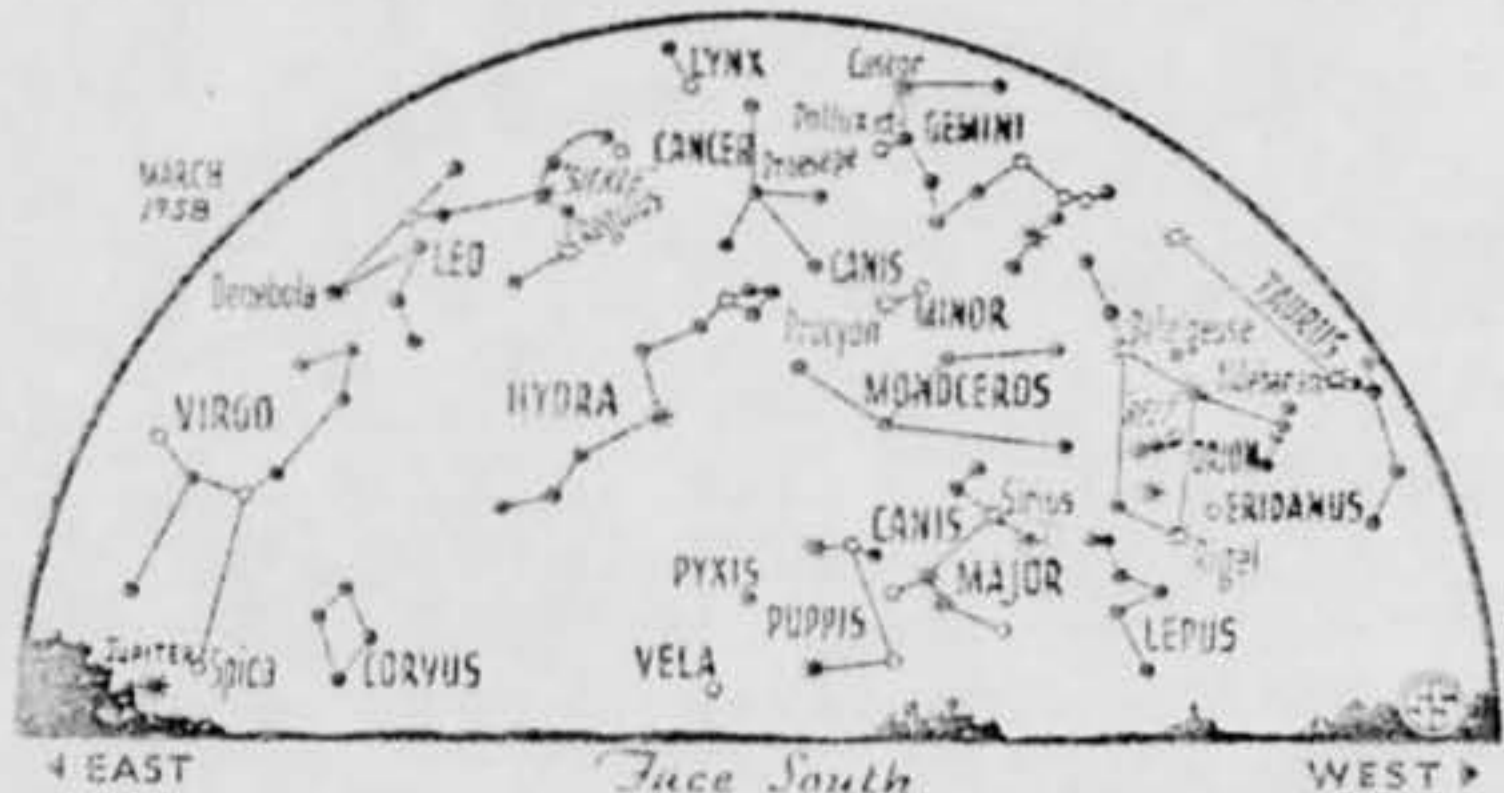
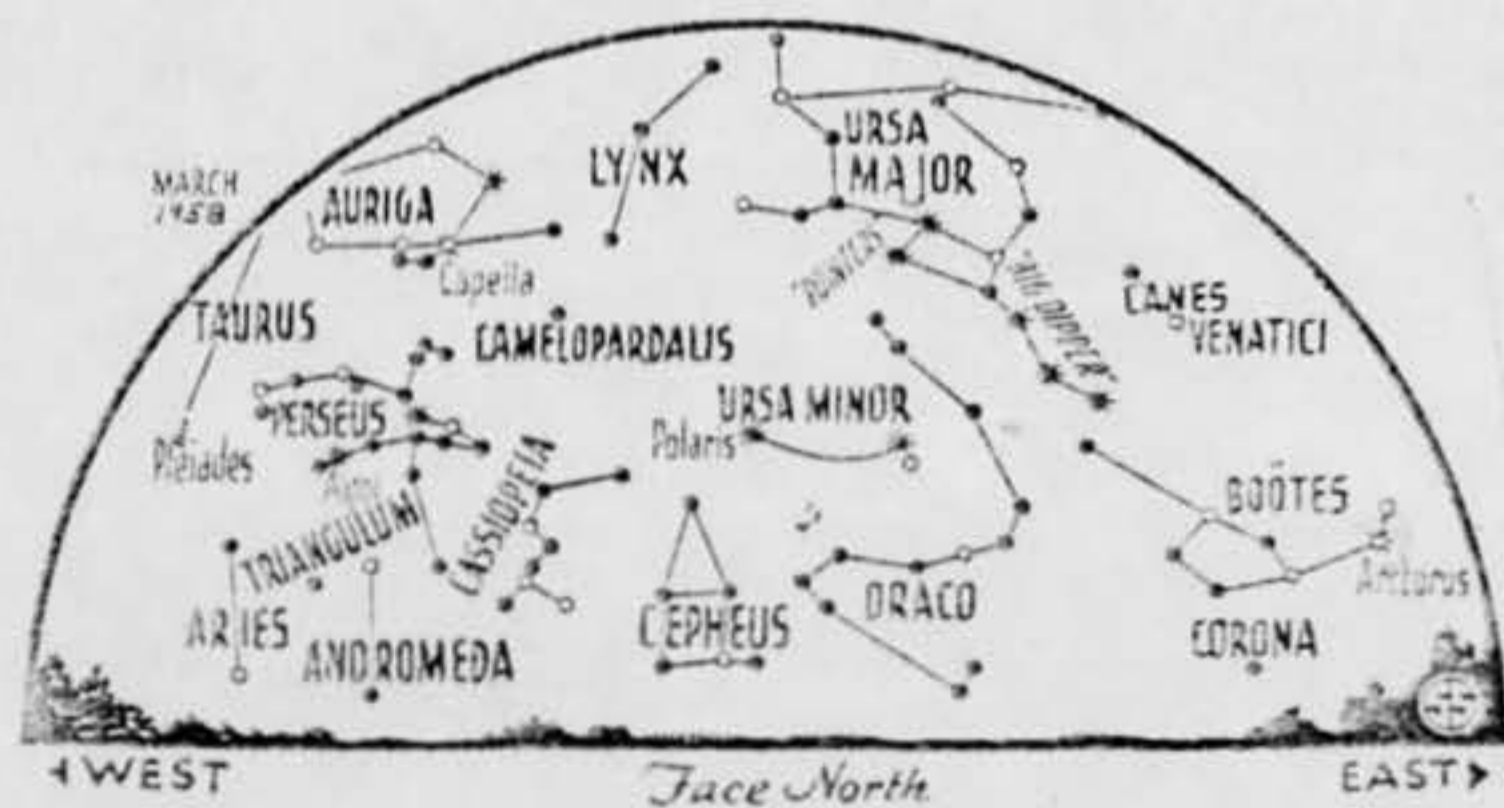
With March comes the end of winter. Officially, in the Northern Hemisphere, this season ends and spring begins when the sun stands directly over the earth's equator. It is then at the halfway point on the northward journey it starts in December, at the beginning of winter, and ends in June, when summer begins.

The sun reaches this halfway point on March 20, at 10:06 p.m. EST. This is called the "vernal equinox": "vernal" because in this part of the world it marks the beginning of spring, while "equinox" refers to the day and night which are now about equal, with the sun rising directly east, setting directly west, and above the horizon for exactly half of the 24-hour day.

## Equal Days and Nights

Actually, however, this is not the case, and the equality of day and night, or the periods during which the sun is above and below the horizon, comes a few days earlier. There is an effect refraction, whereby the earth's atmosphere acts as a prism and bends toward the earth rays of light entering from outside. This has the effect of making any celestial object (unless it is exactly overhead) appear a little higher than it would if there were no atmosphere. Refraction is greatest at the horizon, where it raises an object a little more than the apparent diameter of the sun and moon. As a result we can see the sun before it has actually risen, and continue to see it after it has really set.

The fact that we call this the spring equinox is evidence of our Northern Hemisphere background. As the sun moves northward, it is daily climbing higher into our skies. Its heating effect is increasing and summer is on its way. But, to the people in southern countries, this northward journey means that the sun is gradually getting



AN INTRODUCTION TO CHEMICAL THERMODYNAMICS—E. F. Cullin—*Oxford Univ. Press*, 1956, p., illus., \$8. A text for undergraduate or graduate students.

LOUIS PASTEUR: A Great Life in Brief — Pasteur Vallery-Radot, translated from the French by Alfred Joseph—*Knopf*, 207 p., \$3. A delightful biography of the great scientist written by his grandson.

MEMORY: Facts and Fallacies — Ian M. L. Hunter — *Penguin*, 184 p., paper, 85¢. Experiments on the processes of remembering and forgetting have established important facts and exposed an equal number of fallacies.

METAL POWDER ASSOCIATION: Proceedings Thirteenth Annual Meeting, Vol. I, General Session on Powder Metallurgy—M. Eudier and others—*Metal Powder Assn.*, 147 p., illus., paper, \$4. Conference was held in Chicago, April 30-May 1, 1957.

METAL POWDER ASSOCIATION: Proceedings Thirteenth Annual Meeting, Vol. II: Ferrites and Electronic Core Session—J. A. Roberts and others—*Metal Powder Assn.*, 57 p., illus., paper, \$5.

NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS FORTY-SECOND ANNUAL REPORT 1956: Administrative Report Including Technical Reports Nos. 1254 to 1295—Hugh L. Dryden, Director—*Govt. Printing Office*, 1002 p., illus., \$7.50.

NATIONAL RESEARCH COUNCIL REVIEW 1957—E. W. R. Steacie, President—*National Research Council (Canada)*, 289 p., illus., paper, 75¢. Reporting the scientific work of the Council during 1956 and also some later work.

THE NEW CASSELL'S GERMAN DICTIONARY—Based on the editions by Karl Breul completely revised and re-edited by Harold T. Betteridge, foreword by Gerhard Cordes—*Funk & Wagnalls*, 1229 p., \$7 plain, \$7.75 thumb-indexed. An old favorite in a new, up-to-date dress.

ONLY A TRILLION—Isaac Asimov—*Abelard-Schuman*, 105 p., \$3.50. For the reader who enjoys playing with fantastic numbers. The last two chapters are what the author calls "gentle musing of science."

THE PHYSICS OF FLUIDS, Vol. I, No. 1: January-February, 1958—Francois N. Frenkiel, Ed.—*Am. Institute of Physics*, 72 p., illus., paper, bi-monthly, \$10 annually. Devoted to kinetic theory, statistical mechanics, structure and general physics of gases, liquids and other fluids.

PRIMITIVE MAN AS PHILOSOPHER—Paul Radin—*Dover*, 456 p., paper, \$2. A student edition of a well-known text.

REACHING DELINQUENTS THROUGH READING—Melvin Romain—*Thomas, C. C.*, 125 p., \$4.50. Describing what happened when delinquent children were helped to read by psychotherapy.

RUSSIAN-ENGLISH GLOSSARY OF ELECTRONICS AND PHYSICS—P. Robinson Jr., Ed.—*Consultants Bureau*, 352 p., paper, \$10. Includes Russian terms culled from thousands of pages of the most recent issues of Soviet scientific journals. An appendix for the engineer, enabling him to translate Soviet circuit diagrams.

RUSSIAN-ENGLISH GLOSSARY OF NUCLEAR PHYSICS AND ENGINEERING—I. Emin, Ed.—*Consultants Bureau*, 408 p., paper, \$10. Incorporates all terms of the Russian-English Dictionary of Nuclear Physics and Engineering by N. N. Koshov, Y. V. Semenov and A. I. Cherny, published by the Institute of Scientific Information of the Academy of Sciences of the U.S.S.R.

STUDIES IN FORAMINIFERA—Alfred R. Loeblich, Jr. and others—*Govt. Printing Office for Smithsonian Inst., U. S. National Museum Bull.*, 1957, 411 p., illus., paper, \$2.25. A single species may be recorded from the Arctic to the tropics, from the beach to a depth of 2,000 fathoms, or from Alaska to Egypt.

lower in the sky. March 20, in Australia, for example, is the beginning of autumn. In Chile, winter begins in June.

About March 29, as noted earlier, Mercury will be visible low in the west in the evening twilight and this will be the best opportunity this year to see it.

### Mercury's Revolution

Mercury is the innermost planet of the solar system; it is 36,000,000 miles from the sun, compared to the earth's distance of 93,000,000 miles. The diameter of Mercury is 3,010 miles, that of the earth is 7,918 miles, and it revolves around the sun once in 88 days.

While it makes one such revolution, marking its "year," the earth also has been moving, so Mercury catches up to us every 118 days, when it comes nearly between earth and sun, in the position called "inferior conjunction." Then, of course, it cannot be seen, but about 22 days before this and 22 days afterwards, it is seen farthest away from the sun, either to the east or west. This is called an elongation, and it is the eastern elongation that comes on the 29th. Then it follows after the sun in its daily movement across the sky, and sets well after sunset. Only at such a time can Mercury be seen in the evening sky.

The reason that an elongation to the east in the spring is more favorable than one in the autumn is found in the way the planet stands with respect to the sun.

On Nov. 20 it will be just as far away from the sun as it will be on March 29, but then it will be to the left of the sun and not as much above it. This month it will be well above the sun, and the same amount of elongation will make for the greatest delay in setting after the sun has gone down.

So look for Mercury at the end of March. You will not have as good a chance to see it for another year.

### Celestial Time Table for March

March EST

- |    |            |  |
|----|------------|--|
| 3  | 5:00 p.m.  | Mercury on far side of sun (superior conjunction with sun).  |
| 4  | 5:00 a.m.  | Venus (in early morning sky) at greatest brilliancy (magnitude, $-4.3$ ).  |
| 5  | 11:28 p.m. | Full moon.   |
| 6  | 4:00 a.m.  | Moon nearest, distance 222,100 miles.  |
| 8  | 4:04 p.m.  | Moon passes Jupiter.   |
| 12 | 5:48 a.m.  | Moon in last quarter.  |
|    | 12:44 p.m. | Moon passes Saturn.  |
| 15 | 6:20 a.m.  | Moon passes Mars.  |
| 16 | 6:00 a.m.  | Moon passes Venus.   |
| 19 | 8:31 p.m.  | Algol (variable star in Perseus) at minimum brightness.  |
| 20 | 4:50 a.m.  | New moon.  |
|    | 2:00 p.m.  | Moon farthest, distance 252,000 miles.   |
|    | 10:06 p.m. | Sun over equator, spring commences in Northern Hemisphere.   |
| 24 | 4:58 p.m.  | Moon passes Mercury.   |
| 27 | 5:21 p.m.  | Algol at minimum.  |
| 28 | 6:13 a.m.  | Moon in first quarter.   |
| 29 | 2:00 a.m.  | Mercury farthest east of sun, visible for a few days around this date, low in west in evening just after sunset. |

Subtract one hour for CST; two hours for

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MARCH 1958 PONTA PORAN, BRAZIL (LORENZEN P 141) 3+ WITNESSES 0

MR. MARCIO GONCALVES (SEE RELATED REPORT FOR FEBRUARY 19, 1958), HIS GIRL 0  
FRIEND, HIS YOUNGER BROTHER AND OTHER FRIENDS DROVE OUT ON THE PONTA PORAN 0  
ROAD. BETWEEN TWO SMALL WOODED AREAS GONCALVES STOPPED HIS JEEP AND THE BOYS 0  
WENT LOOKING FOR A \*FLYING SAUCER\* WITH THEIR FLASHLIGHTS. IT WAS ABOUT 10.300  
P.M. GONCALVES AND HIS GIRL FRIEND IN THE CAR SUDDENLY SAW A BRIGHT OBJECT 0  
HANGING OVER THE THICKET AHEAD OF THEM. THE BOYS HAD SPOTTED THE THING, TOO, 0  
AND THEY RAN FOR THE CAR, SHOUTING, \*THE SAUCER -- THE SAUCER.\* WITH 0  
UNEXPECTED SUDDENNESS THE OBJECT SHOT STRAIGHT TOWARD THE RUNNING YOUNGSTERS. 0  
THE BOYS WERE QUICK, HOWEVER, AND THEY REACHED THE CAR AHEAD OF THE OBJECT. 0

THEN EVERYTHING LIGHTED UP AS BRIGHT AS IF IT HAD BEEN DAYTIME. BUT THE 1  
LIGHT WAS BLOOD-RED. GONCALVES SAID HIS HAIR STOOD UP ON THE BACK OF HIS 1  
HEAD. THEY WERE DIRECTLY UNDER THE THING -- IT WAS LARGER THAN THEIR CAR AND 1  
SEEMED TO BE MADE OF POLISHED METAL. IT APPEARED TO BE SO NEAR THEY COULD 1  
HAVE STRUCK IT WITH A SHORT POLE. GONCALVES, FEARING THE OBJECT MIGHT COME 1  
DOWN ON TOP OF THE CAR, STARTED THE JEEP AND HEADED BACK TOWARD TOWN. 1

BUT THE UFO WASN'T THROUGH PLAYING. IT FOLLOWED THEM, FLYING JUST BEHIND 1  
THE JEEP AND ABOUT NINE FEET ABOVE THE GROUND. THE JEEP AND THE SURROUNDING 1  
ROAD AREA WERE ILLUMINATED BY THE BRIGHT GLOW EMITTED BY THE OBJECT. NO NOISE 1  
OR HEAT CAME FROM IT. GONCALVES DROVE AT BREAKNECK SPEED OVER THE NARROW, 1  
ROUGH ROAD. THE CHASE LASTED ABOUT FIFTEEN MINUTES, UNTIL THE JEEP REACHED 2

ANOTHER THICKET WHERE THE ROAD PASSED THROUGH THE WOODS. GONCALVES HOPED THE 2  
OBJECT COULDN'T FLY UNDER THE SMALL TREES. HE WAS RIGHT, FOR THEY WATCHED THE 2  
OBJECT PASS BEHIND THE TREES AND DISAPPEAR. THINKING THE OBJECT HAD LEFT, 2  
THEY RELAXED. BUT WHEN THEY LEFT THE PROTECTION OF THE WOODS THEY SPOTTED IT 2

OVERING OVER THE THICKET, HIGHER IN THE SKY NOW, AS THOUGH THE OBJECT WERE 2  
WAITING FOR THEM TO REAPPEAR. THE ROAD CURVED TOWARD A HILL A FEW HUNDRED 2  
YARDS AWAY. THE OBJECT DIVED AT HIGH SPEED, NOT TOWARD THE JEEP BUT STRAIGHT 2  
TOWARD THE TOP OF THE HILL, WELL AHEAD OF THE VEHICLE. THEN IT DESCENDED OVER 2

THE HILL, STOPPING ON THE GROUND IN THE MIDDLE OF THE ROAD. IT BLOCKED THEIR 2  
WAY. THE JEEP HAD STARTED TO CLIMB THE HILL. GONCALVES WAS PANIC-STRICKEN. 3  
THE OBJECT HAD CUT OFF ESCAPE TOWARD TOWN, HE COULD NOT GO BACK. HE MADE HIS 3  
CHOICE -- HE KEPT GOING. THE JEEP PICKED UP SPEED AND THE YOUNG PEOPLE 3  
PREPARED FOR THE INEVITABLE CRASH. 3

THEN A STRANGE THING HAPPENED. AS THE CAR CLIMBED THE HILL ITS HEADLIGHTS 3  
WERE GRADUALLY RAISED UNTIL THE BEAMS OF LIGHT HIT THE UFO DIRECTLY. TO THE 3  
AMAZEMENT OF EVERYONE IN THE JEEP THE OBJECT BEGAN TO WOBBLE VIOLENTLY, THEN 3  
SHOT STRAIGHT UP INTO THE AIR AS THOUGH IT WAS RUNNING AWAY. GONCALVES KEPT 3  
THE ACCELERATOR PRESSED DOWN. THEY PASSED THE POINT WHERE THE UFO HAD SAT, 3

AND THEY KEPT GOING. THEY PASSED JUST UNDER THE OBJECT, BUT IT DID NOT 3  
INTERFERE WITH THEM. MINUTES LATER THE OBJECT BEGAN TO FOLLOW THE JEEP AGAIN, 4  
BUT AT A DISTANCE. AFTER TEN MINUTES OF THIS, IT CHANGED COURSE AND CLIMBED 4  
VERTICALLY. ITS LIGHT WENT OUT AT ABOUT THREE HUNDRED FEET AND IT VANISHED 4  
INTO THE DARKNESS. 4

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