1. DATE - TIME GROUP	2. LOCATION
28 Sept 64 29/0130Z	Soudan, Minnesota
3. SOURCE Civilian	**10. CONCLUSION** AIRCRAFT Possible sighting of light a/c on VFR flying below overcast
4. NUMBER OF OBJECTS One	
5. LENGTH OF OBSERVATION One Minute	**11. BRIEF SUMMARY AND ANALYSIS** Round circular object, lighted, below 2,000 ft. disappeared out of sight over tree-tops. Additional information in letter indicated WX sky overcast. Object initial impression of object similar to ECHO. Flew low over lake, executed a 180 degree turn returning length of lake, turned 90 degrees heading East disappearing over tree tops. Rate of speed was steady. Surface of object had wrinkles similar to pumpkin.
6. TYPE OF OBSERVATION Ground-Visual	
7. COURSE Manuvered	
8. PHOTOS ☐ Yes XX No	
9. PHYSICAL EVIDENCE ☐ Yes XX No	

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

HEADQUARTERS
DULUTH AIR DEFENSE SECTOR (ADC)
UNITED STATES AIR FORCE
International Airport
Duluth 14, Minnesota

REPLY TO ATTN OF: DUOIN

9 OCT 1964

SUBJECT: UFO Report

TO: AFSC (FTD)

In accordance with AFR 200-2 the following UFO report is submitted:

A. 1. Circular

2.

3. Lighted

4. One

5. N/A

6.

7. None

8.

9. None

B. 1.

2. Below 2,000 feet

3.

4. See attached letter

5. Out of sight over tree tops.

6. One minute

C. 1. Ground, visual.

2. None

3. None

D. 1. 29/0130Z September 1964

2. Dusk

E. 1. 47°46'N - 92°10'W

2. FKNC 5046

F. 1. Mr. J[redacted], Eveleth, Minnesota

2. N/A

G. 1. Overcast, light rain, 2,000, wind calm.

2. Surface- 340° @ 5 kts.

3. 5,000 scattered, high broken

4. 15 Miles

6. None

H. None

I. None

J. None

K. NORAD Intelligence Officer

1. Unknown

L. None

M. See attached letter.

Remarks: A letter has been written requesting further clarification on items left blank and will be forwarded when received.

FOR THE COMMANDER

1 attch: Ltr from Mr. [redacted]

G.B. SMITH
F/L, RCAF
NORAD Intelligence Officer

[redacted]

September 30,1964

Attention:Commander
U.S.Air Force Base
Duluth,Minnesota

Dear Sir:

Please permit me to divert your attention from a busy schedule, for a few moments, to submit the following 'sighting' report. I will keep this report as brief but complete as possible. Should you desire further amplification of this letter, please feel free to contact me at my place of residence, as listed above, or at Radio Station W.E.V.E. in Eveleth,Minnesota; where I am employed.

The observation took place Monday, September twenty-eighth, at seven-thirty in the evening,Central Standard Time. The skies were overcast. An occasional drop of rain was felt. I would judge the cloud ceiling to be at about two thousand feet. There was no wind at the time. The area of sighting was over 'Skelton Lake' which is approximately three miles Southeast of Soudan,Minnesota.

My first impression of the sighting was 'it' to be an 'Echo sattelite' such as we have had the opportunity to view when the giant balloon sattelite was orbited-months ago. The direction of travel was from South to North over the entire length of Skelton Lake, a mile or so beyond, in the same direction; then'it'execute a one hundred-eighty degree turn, which I could not see and reversed its difection, traveling North to South,the length of Skelton Lake, after which it turned ninty degrees, headed in an Easterly direction out of sight, over the tree tops. The object appeared to be circular in shape and lighted. Its rate of travel was steady and about that of a small plane. The entire sighting took place within the time interval of a minute.

Sincerely,

[redacted]

HEADQUARTERS
DULUTH AIR DEFENSE SECTOR (ADC)
UNITED STATES AIR FORCE
DULUTH 14, MINNESOTA

REPLY TO ATTN. OF: DUOIN

12 October 1964

SUBJECT: UFO Report

TO: AFSC (FTD)

The attached map and letter are the follow-up of our UFO report dated 2 Oct 64. Mr. Russ is very cooperative and any further queries would no doubt be answered promptly.

FOR THE COMMANDER

2 Attch:
1. Ltr from [redacted]
2. Map

G.B. SMITH
F/L, RCAF
NORAD Intelligence Officer

[redacted]
Eveleth, Minnesota
October 10, 1964

Headquarters(DUOIN)
Duluth North American Air Defense Sector
Duluth Int'l Airport
Duluth, Minnesota

Attention: G.B. Smith
FL, RCAF

Dear Sir:

In response to your letter of October 7, 1964, I wish to amplify on information which I reported earlier pertaining to the sighting of an object in the sky.

I have enclosed a map of the area in which the sighting occurred. Also, on the map, I have inked the path of this object as I viewed it. My spot of viewing is marked with an 'X'. The dotted line marked, 'Allen Track' is an abandoned railroad bed, used to transport timber out of the area in the days dating about the turn of the century. I was returning from a hike down this track, from Putnam Lake to Skelton Lake, and around a portion of it to the spot which I marked with the 'X'. I had just sat down, under a pine tree, for a rest before continueing to highway 169. The object in question came into view and traversed the path indicated. From where I was sitting, the object could best be described as a large pumkin, lighted, and circular in shape. I would say that it was not more than 1500 feet from the lake surface. There was no noise of any type whatever, until it executed a 90 degree turn and headed in an Easterly direction. At the moment of the turn, I heard, what sounded to me, as the noise of some type of airplane engine, directly above it, in the clouds overhead. This was only heard during the ninty degree turn.

If first impressions are helpful, may I state them. When I first saw the object moving over the lake, I thought it to be an echo sattelite. Then, I noticed that the speed of this appeared to be faster. (This was before the 180 degree turn was executed). The rate of travel was constant. The surface of it appeared to have wrinkles on it much as a pumpkin has.

Please feel free to contact me should you wish further clarification.

Yours sincerely,

[redacted]

(SIOUX PINE ISLAND)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

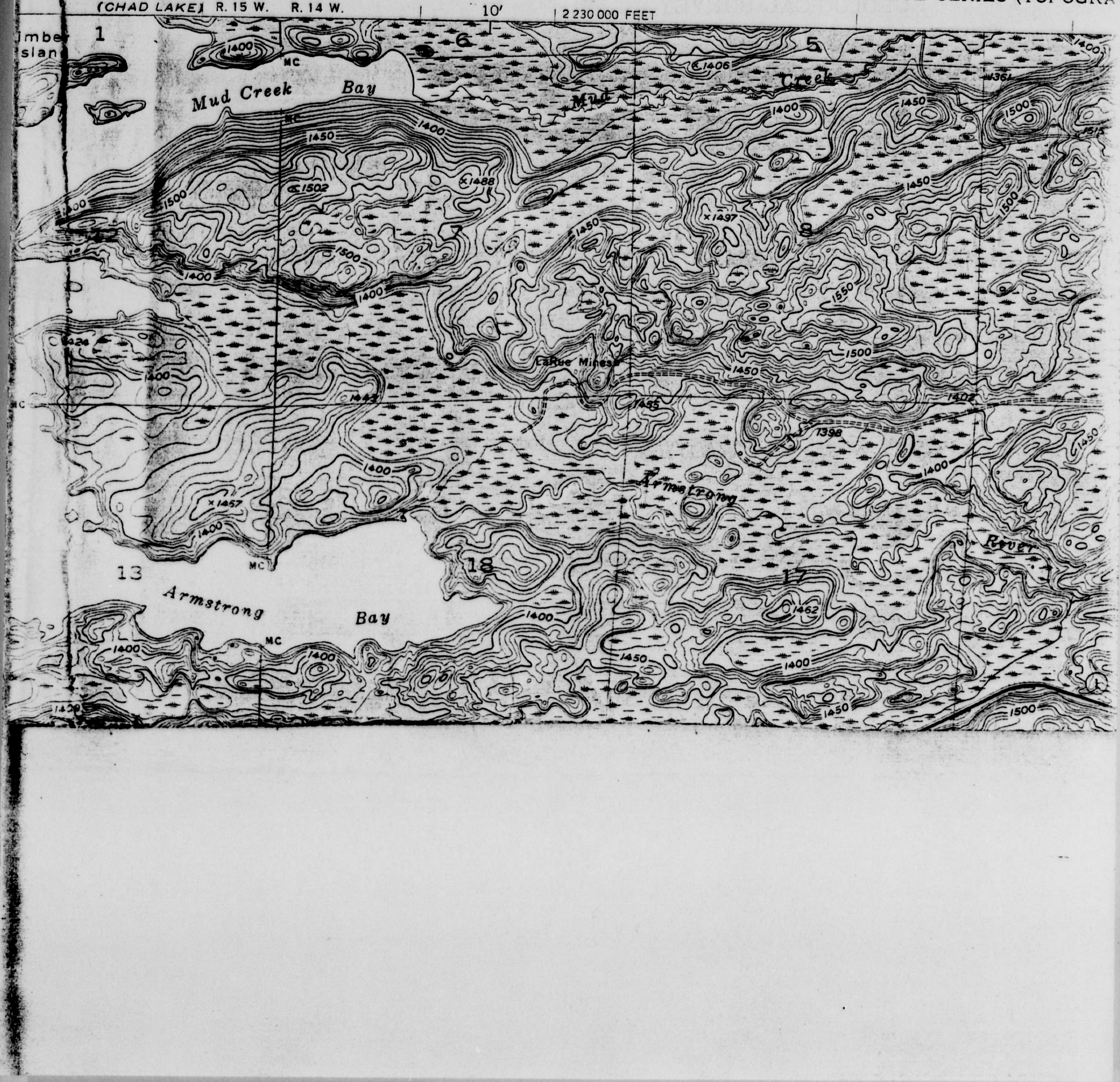
IRON RANGE RESOU S
KAARL

92°15′ 557000m.E. 12′30″
47°52′30″
5302000m.N.

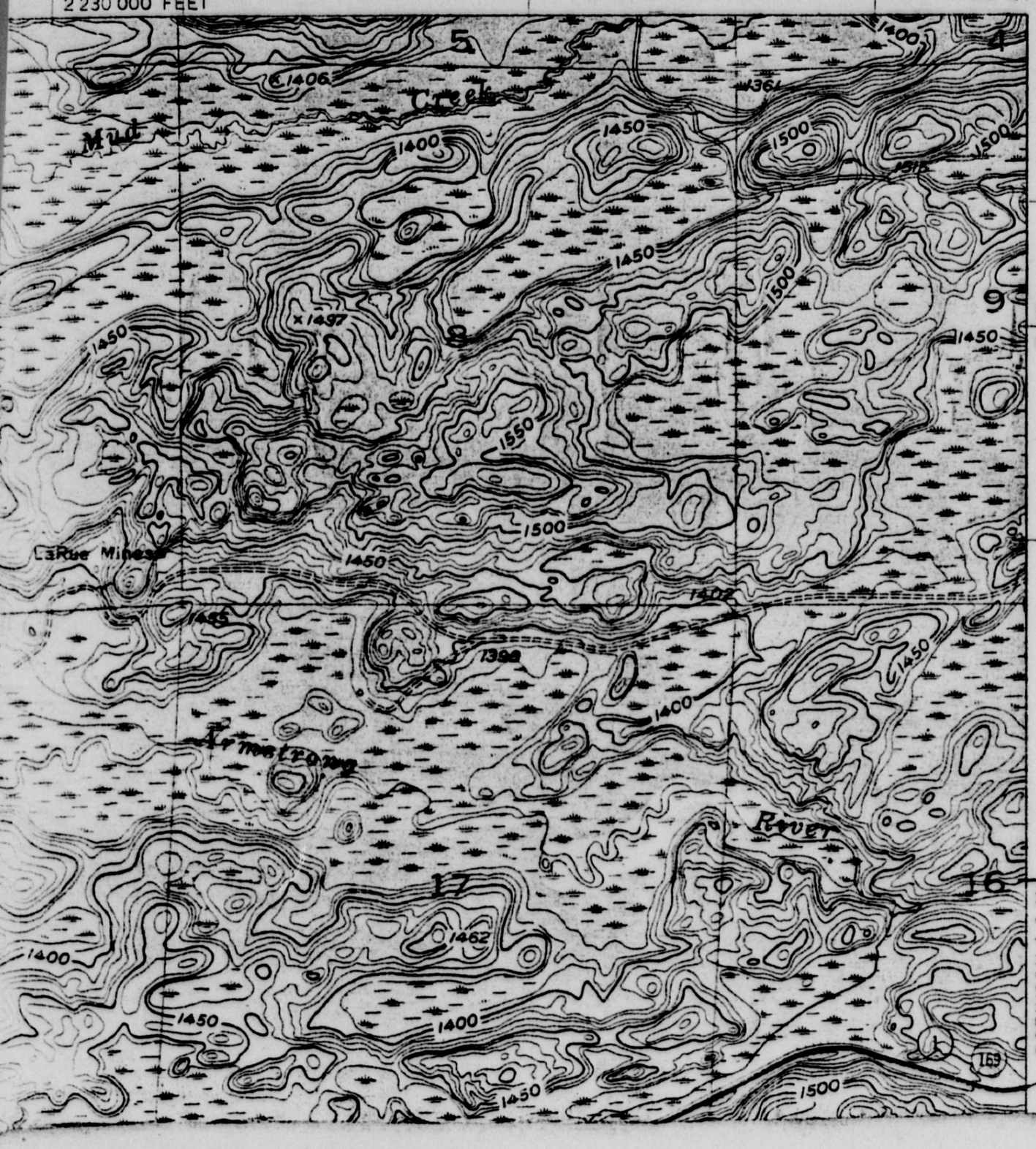
Indian Point 3
Bass Bay
2
1400
1450
1488
1511
1480
MC
10
Timbe
Islan
Nyberg Island
9
J B Island
LAKE
VERMILION
Birch Island 11
Dog Island
MC
ELEVATION 1358
16
MC
1400
1450
Island 15
MC
Hendrickson Island
MC
Raspberry Island
14
1426
Cable Bay
MC

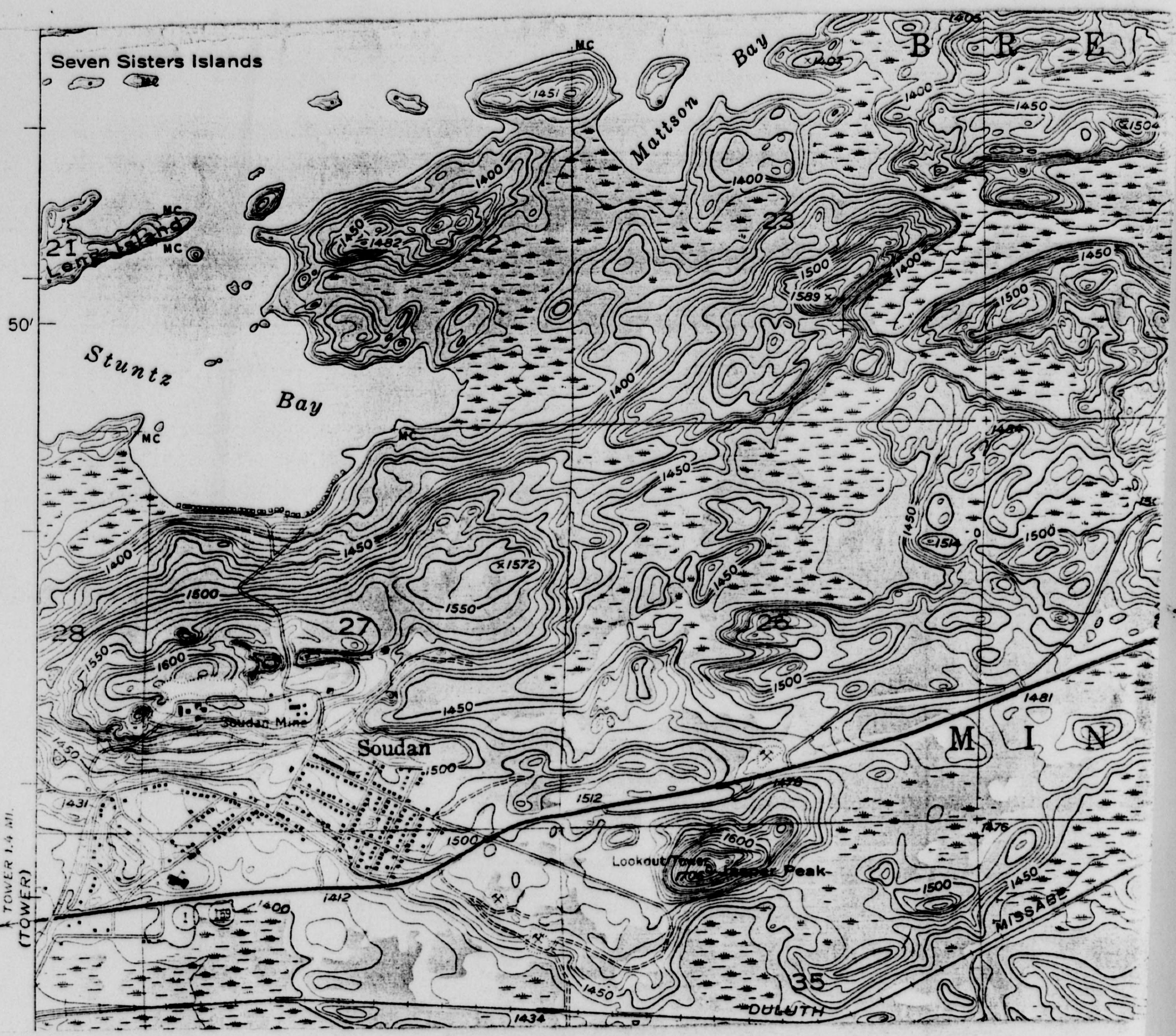
S E OF MINNESOTA
S AND REHABILITATION COMMISSION
OTAVA, COMMISSIONER

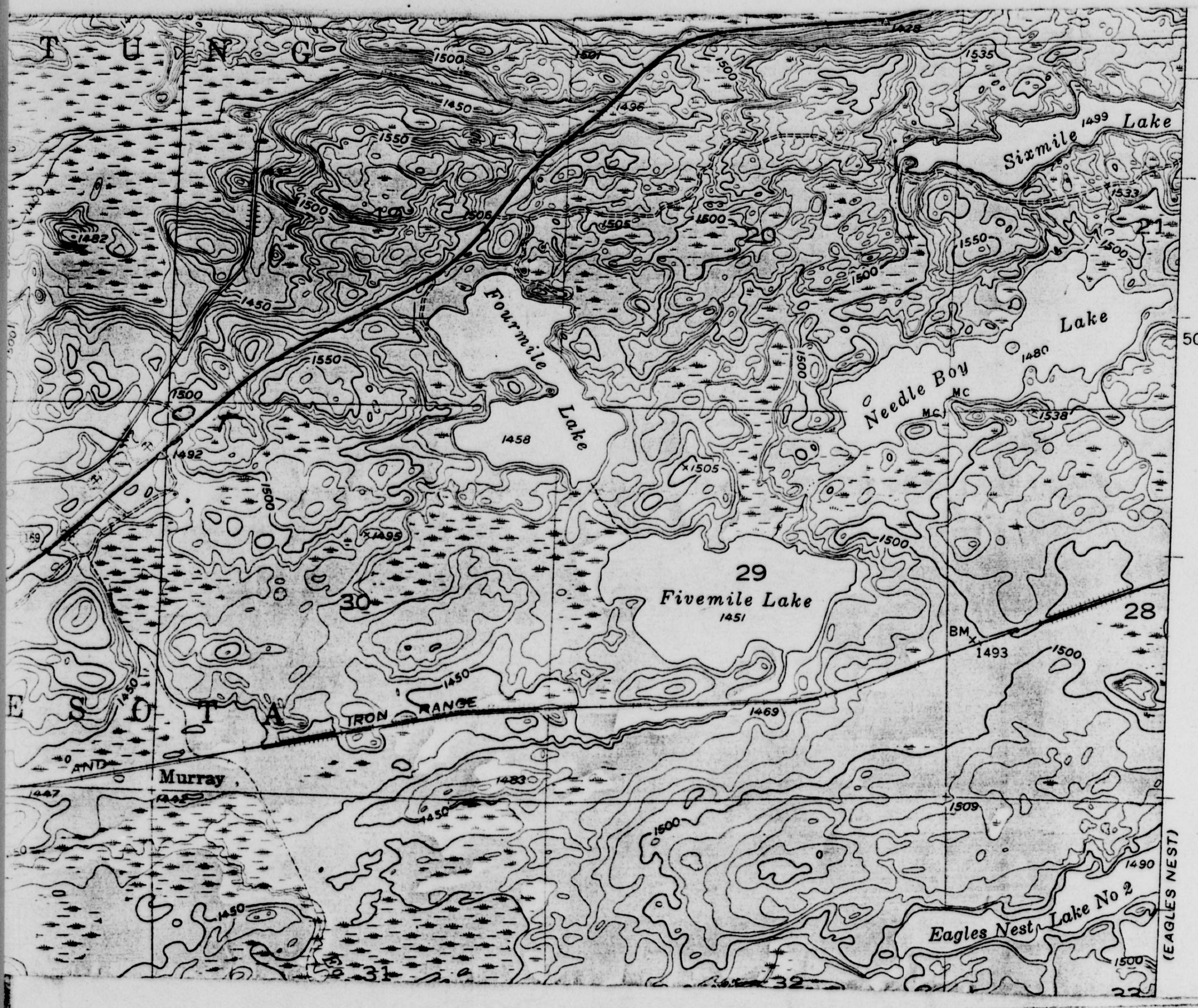
SOUDAN QUADRANGLE
MINNESOTA—ST. LOUIS CO
7.5 MINUTE SERIES (TOPOGRA



SOUDAN QUADRANGLE
MINNESOTA—ST. LOUIS CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



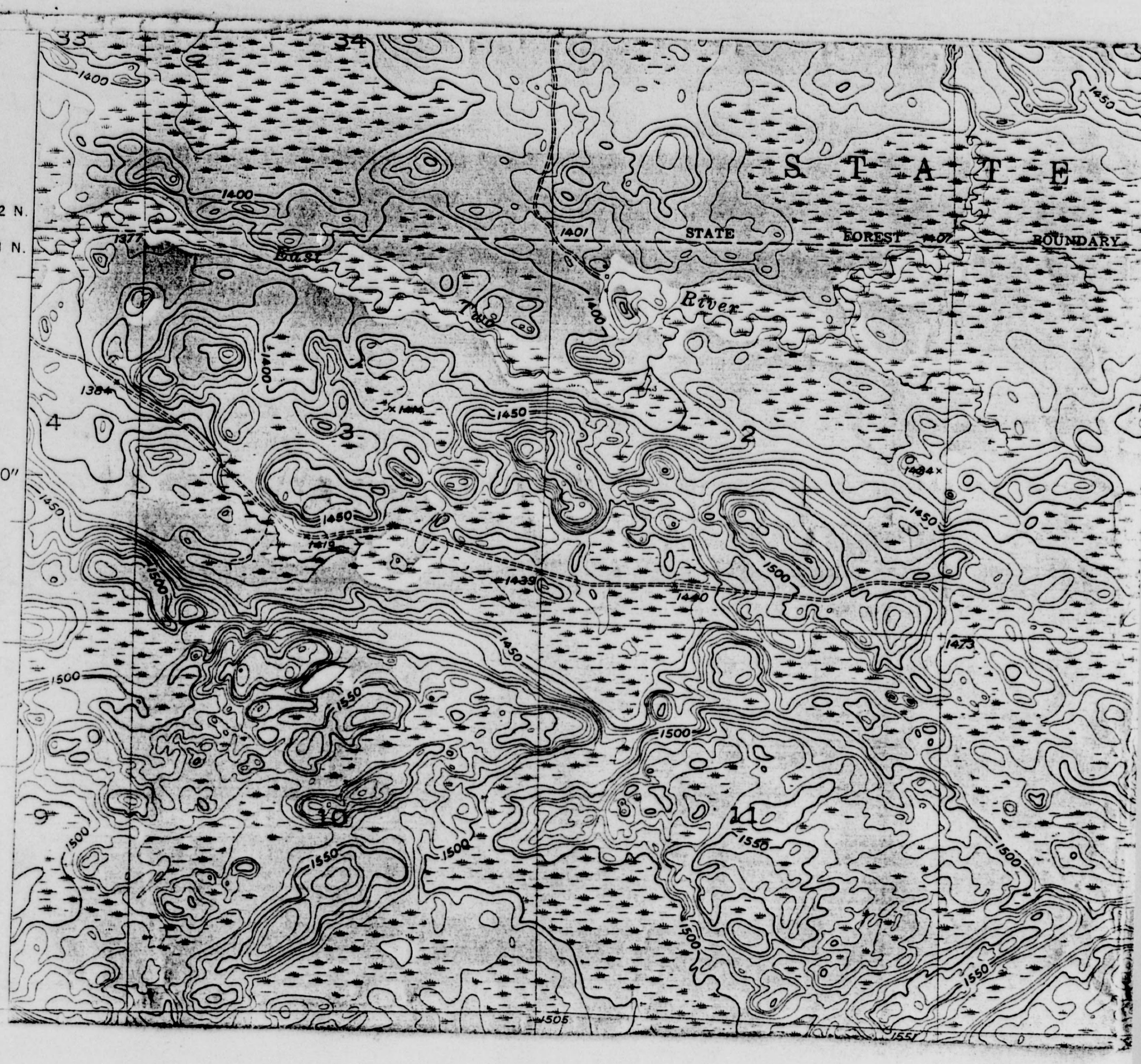

Seven Sisters Islands
MC
1451
Mattson
Bay
B R E
1405
1400
1450
1504
1400
23
1450
1482
21
Lens Island
MC
MC
1500
1589
1400
1450
1500
50'
Stuntz
Bay
MC
MC
1400
1450
1572
1550
1450
1500
28
27
26
1550
1600
1500
Soudan Mine
1450
1481
M I N
Soudan
1500
1431
1512
1478
1500
1600
1476
Lookout Tower
1450
1500
1450
MISSABE
1412
1400
35
1450
DULUTH
1434
VIRGINIA 30 MI.
TOWER 1.4 MI.
(TOWER)

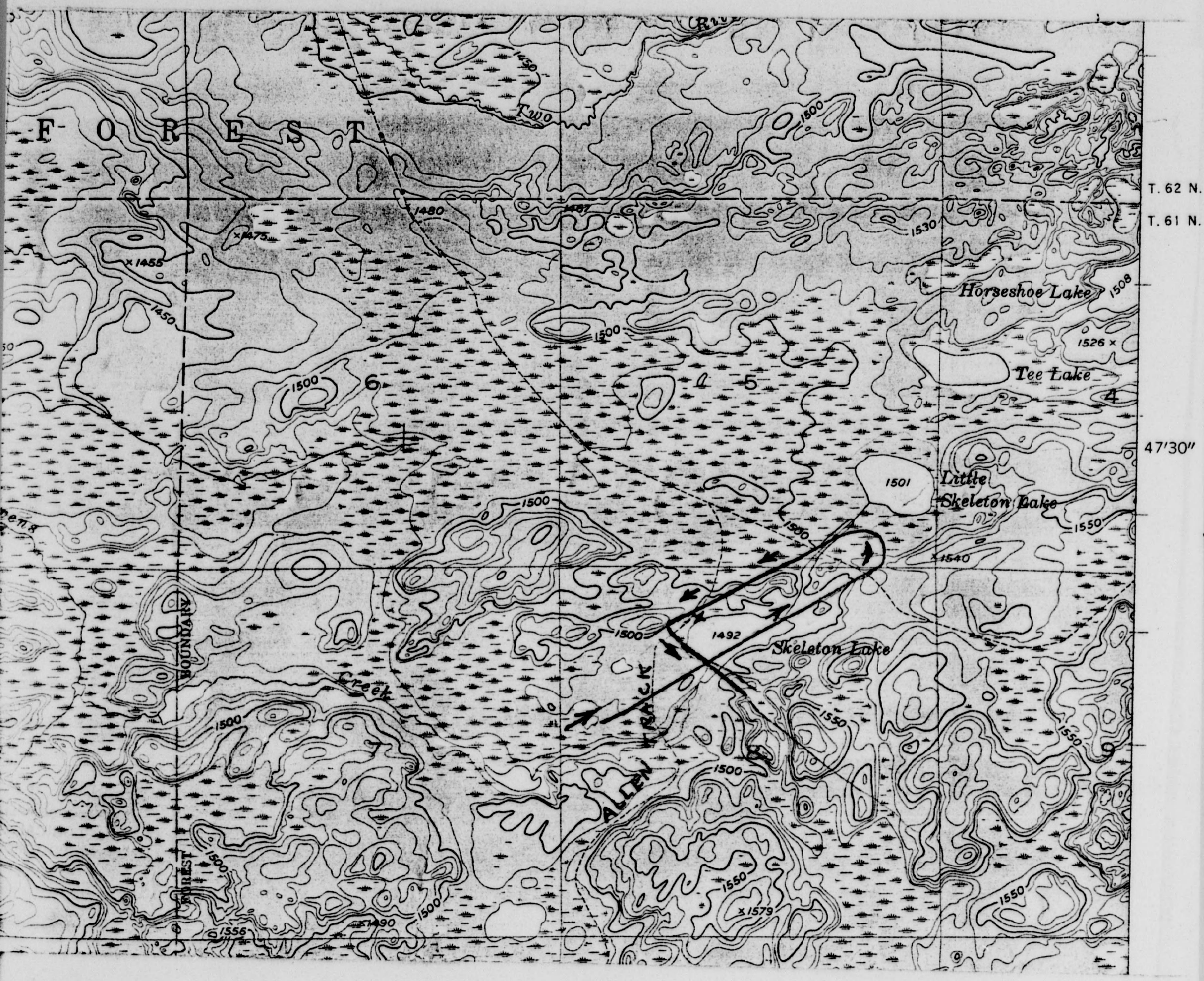

T U N G
1500
1450
1550
1500
1482
1450
1550
1500
1492
1500
1495
30
1450
E S O T A
AND
Murray
1447
1445
1450
31
1500
1505
1500
1496
1505
20
1500
Fourmile Lake
1458
1505
1500
1495
29
Fivemile Lake
1451
1450
TRON RANGE
1469
1483
1450
1500
1428
1535
Sixmile 1499 Lake
1533
21
1550
1500
1500
Lake
1480
Needle Boy
MC
MC
1538
50'
1500
BM
1493
1500
28
1509
1500
1490
Eagles Nest Lake No 2
1500
(EAGLES NEST)
32
22

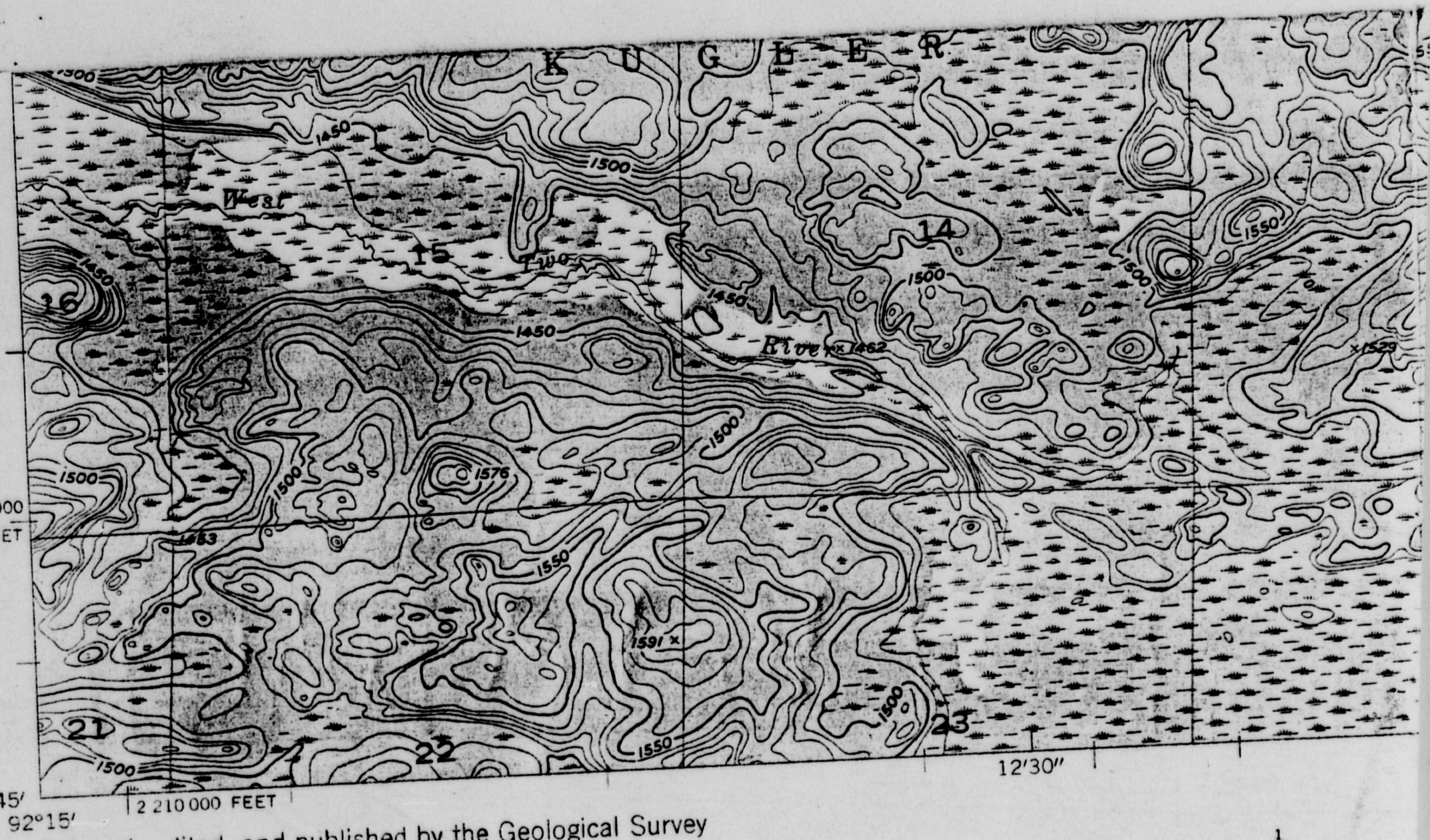
T. 62 N.

T. 61 N.

47'30"




F O R E S T
T. 62 N.
T. 61 N.
47'30"
Horseshoe Lake
Tee Lake
Little Skeleton Lake
Skeleton Lake
Allen Creek
Boundary Creek
National Forest
1450
1500
1530
1508
1526
1501
1550
1540
1492
1579
1490
1556
1455
1475
1480
1487



(BIWABIK NE)

Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography from aerial photographs by Keish plotter
Aerial photographs taken 1954. Field check 1956

Polyconic projection. 1927 North American datum
10,000-foot grid based on Minnesota coordinate system, north zone
1000-meter Universal Transverse Mercator grid ticks,
zone 15, shown in blue

Unchecked elevations are shown in brown

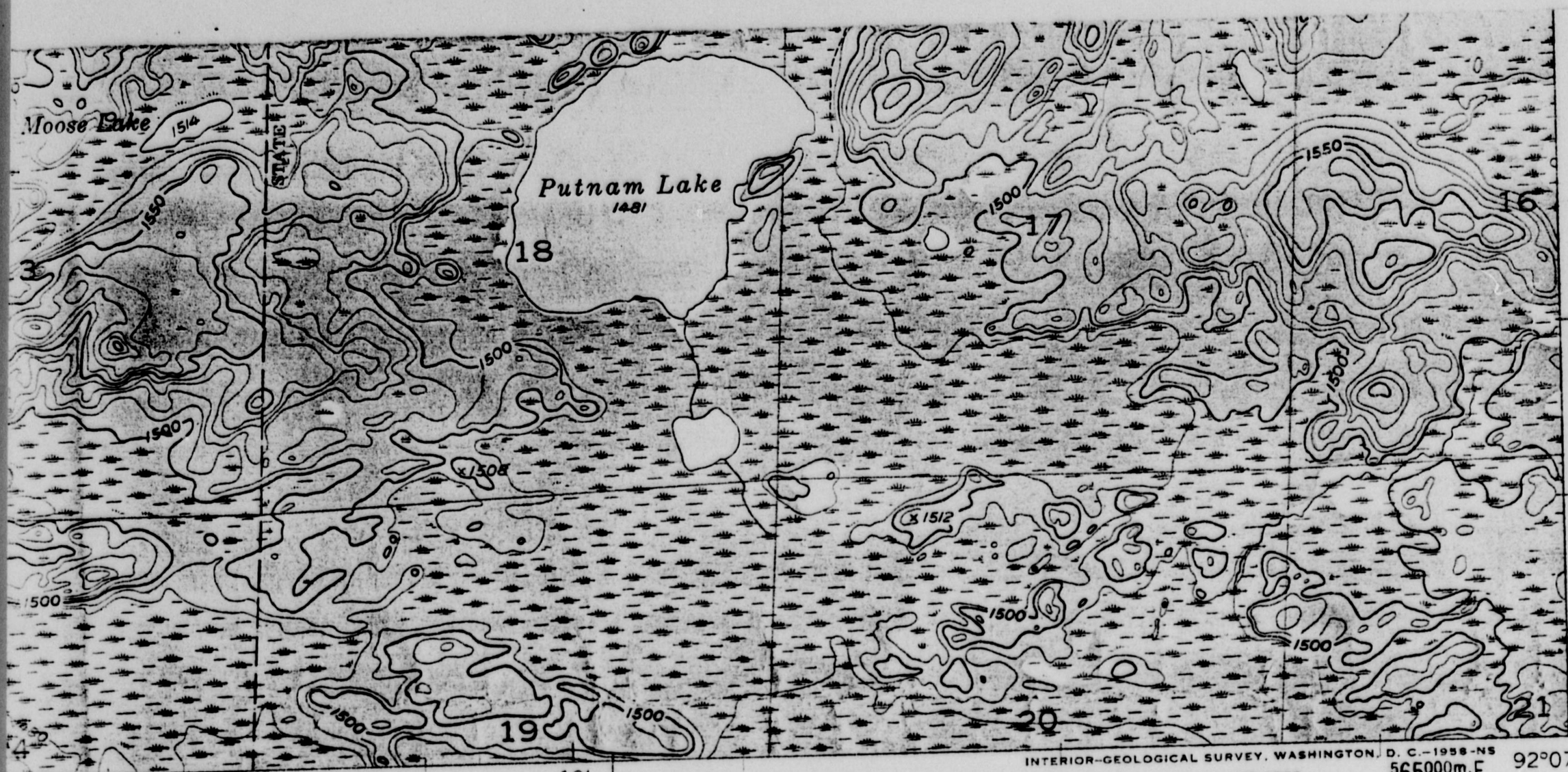
1 1/2
1000 0 1000
1 .5

CO

4°
TRUE NORTH
MAGNETIC NORTH

APPROXIMATE MEAN
DECLINATION, 1956

THIS MAP COMPLIE
FOR SALE BY U. S. GEOLOGICAL S
A FOLDER DESCRIBING TOPO



SCALE 1:24000

1 MILE
0
3000 4000 5000 6000 7000 FEET
0
1 KILOMETER

OR INTERVAL 10 FEET
M IS MEAN SEA LEVEL

TH NATIONAL MAP ACCURACY STANDARDS
EY, DENVER 2. COLORADO OR WASHINGTON 25, D. C.
HIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



QUADRANGLE LOCATION

ROAD CLASSIFICATION

Heavy-duty ——— Light-duty ———

Unimproved dirt ========

State Route

SOUDAN, MINN.

N4745—W9207.5/7.5

1956

ASTRONOMY

Jupiter Joins Saturn

Jupiter, shining brightly in the constellation Taurus in the east, and Saturn in Aquarius to the south, will be visible in October evening skies.

By JAMES STOKLEY

➤ WITH THE COMING of October we have two planets joining the stars of the autumn evening.

To the south, in the constellation of Aquarius, the water carrier, stands Saturn. And in the east, about 15 times as brilliant, you can see Jupiter in Taurus, the bull.

Both planets, as well as the stars, are shown on the accompanying maps. These maps show the sky as it looks about 11:00 p.m., your own kind of daylight saving time, at the beginning of October—an hour earlier at mid-month and two hours earlier at the end.

The "great square" in the constellation of Pegasus, high in the south, is an outstanding grouping, although it contains none of the brightest stars that astronomers classify as first magnitude. The star called Markab is in the lower right-hand corner and extending from it to the right is a row of stars that marks the head of this mythical winged horse.

Just underneath these stars is Aquarius, now more conspicuous than usual because of the presence of Saturn. Still lower is the bright star Fomalhaut, in Piscis Austrinus, the southern fish.

To the right of Aquarius is Aquila, the eagle, with Altair. Above this group, and a little to the right, stands Cygnus, the swan. Most of this constellation is shown on the northern sky map, including the brightest star, Deneb. Below it is Lyra, the lyre, with brilliant Vega.

Andromeda in Northern Sky

High in the northeast is Andromeda, said to represent a chained princess, a constellation that extends from the star Alpheratz, which is in the upper left corner of the square of Pegasus. Andromeda's mythological mother, the queen Cassiopeia, is just below. Her royal spouse, the king Cepheus, is just to the left, a little below Cygnus. And below him stands the little bear, Ursa Minor, with Polaris, the pole star.

Ursa Major, the big bear, of which the big dipper is part, is now poorly placed for viewing. It is very low in the north, and some of the constellation is hidden below the horizon.

Low in the east (shown on the map of the northern skies) is Taurus, the bull, in which Jupiter now stands and shines far more brightly than any other star or planet. The group is also marked by the star Aldebaran. To the left of Taurus is Auriga, the charioteer, with first magnitude Capella.

Above Auriga is Perseus, representing a champion, with the star Algol, a famous "eclipsing binary." Actually it is two stars, one much fainter than the other. Every 2 days 21 hours, the faint star partly eclipses its brighter companion, temporarily dimming it.

Mars rises in the east about 2:00 a.m., in Cancer, the crab. It is about half as bright as Saturn. Then, about three hours ahead of the sun Venus rises, shining even more brightly than Jupiter. Mercury is not visible in October.

No one knows today the origin of most of the constellation figures but apparently they were formed thousands of years ago by the people who lived in the Tigris-Euphrates valley. A number of features about them seem to indicate that originally there was some sort of system to their names and arrangement.

A good example of this is the group of constellations visible in the south on October evenings, all of which have something to do with water. In fact, in this ancient astronomy, that part of the sky was called "The Sea."

First, there is Aquarius, where Saturn now stands. From time immemorial this has been represented as a man, or sometimes a boy, pouring water from a bucket or urn. The Arabs, whose religious law forbade depicting the human figure, showed it as a mule carrying two water barrels, or simply as a water bucket.

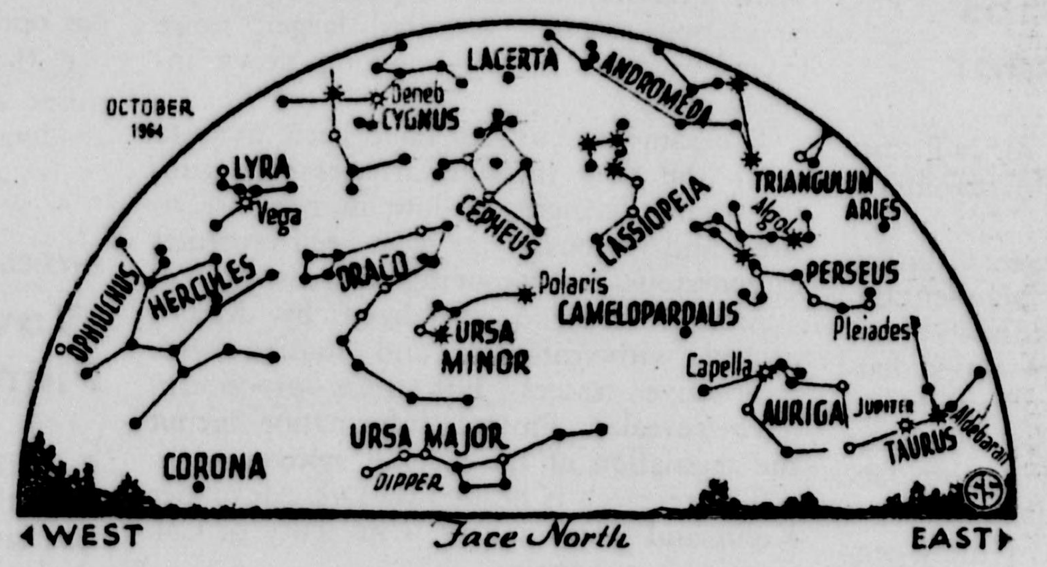
Of course, as with most of the constellation figures, it is hard to see this in the stars. The water jar, however, was supposed to be represented by the three stars quite close together that are shown on our map a bit above Saturn. The curved row of stars extending down from the jar forms the stream of water that flows, very appropriately, toward Piscis Austrinus, the southern fish.

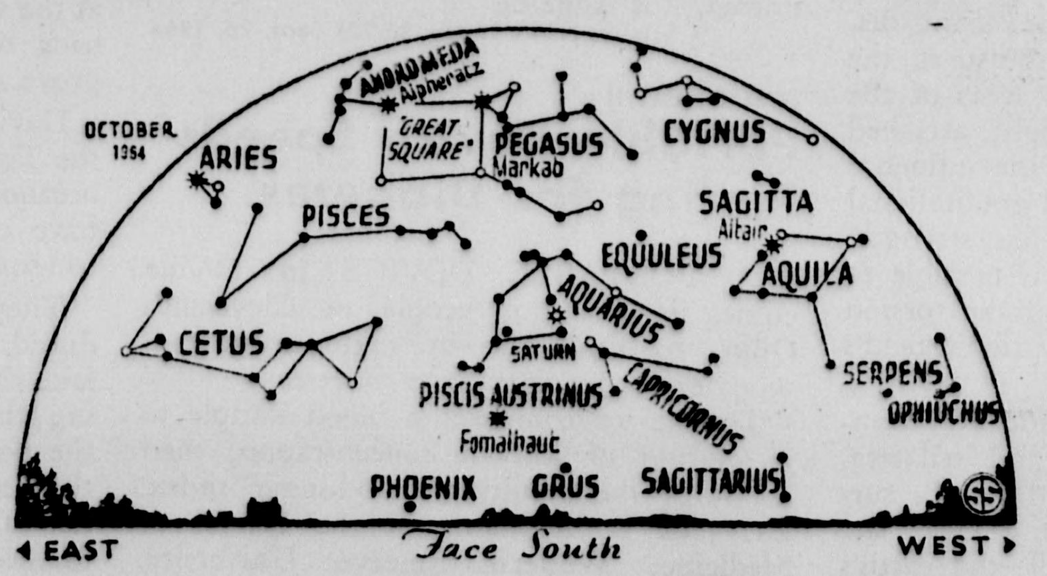
Very curiously, however, the fish is not swimming in the water, as you might expect. He is drinking it!

Another watery constellation is just to the right of Aquarius: Capricornus, the horned goat. This creature is represented as the horned head of a goat attached to the body and tail of a fish.

Aquatic Animals in Patterns

A little higher, marked by only one star on our map, is Equuleus, the colt. Dr. Donald H. Menzel, director of Harvard College Observatory, suggests that this is really a sea horse! Above it, not shown on the map, is the faint constellation of Delphinus, the dolphin, still another aquatic animal. And to the left of Aquarius there are more. There is Cetus, the whale, and Pisces, the fishes, which are tied together, according to the pictures on old star charts. Even Grus, the crane, near the southern horizon, has a connection with water, for the crane is a wading bird.





☼ ✸ ○ • SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS

E FIELDS

ASTRONOMY

Stellar Pair in Dipper Found to Be Seven Stars

➤ THE FAMOUS PAIR of visible stars in the handle of the Big Dipper, Mizar and Alcor, has now been found to consist of seven stars.

The ability to distinguish the faint companion, Alcor, from brighter Mizar was widely used as a test of normal vision before the days of eye glasses and oculist's charts. However, the ability to spot the six other stars now known to be around the middle star of the Dipper's handle will never be used as a test of even supersensitive vision —a telescope is needed to separate them.

It has been known for years that Alcor is actually a double star. Mizar is also really two stars, called Mizar A and Mizar B, and Mizar A has long been known to be a double star.

Now Wallace R. Beardsley of the University of Pittsburgh's Allegheny Observatory, Pittsburgh, has found that Mizar B consists of a pair of stars revolving around each other every 182 days, with a third companion orbiting the pair in 1,350 days.

Details of Mr. Beardsley's study of this seven-starred system are reported in Sky and Telescope, 28:131, 1964.

• Science News Letter, 86:201 Sept. 26, 1964

ENGINEERING

New Twist for Maps With Old Instrument

➤ A 65-YEAR-OLD INSTRUMENT can make the task of mapping an area much simpler—at least in theory.

Ohio State University engineers, under the direction of Prof. Ivan I. Mueller, department of geodetic science, have been investigating new uses for the torsion balance, an instrument given up 30 years ago as useless in map making. Their findings have brought the torsion balance from laboratory attics into new prominence.

The torsion balance is an extremely sensitive device that, instead of measuring distances between two points, measures the degree of gravity in different areas of the local gravitational field. A weight, attached to a fine wire, "twists" under the influence of the earth's gravity or a local gravitational field in proportion to the field's strength. From a series of readings, it is possible to determine the exact location of the torsion balance in relation to the gravitational field's known center.

Maps are conventionally made by an ancient process, "triangulation and trilateration." Three points are located with a surveying instrument, necessitating clear site lines to both points. However, the earth's curvature prevents using trigonometry to find the distances between the points. Elaborate and tedious computations must instead be used.

The location of points on earth from star observations—a technique used by Renaissance ships at sea to keep from "sailing off the end of the earth"—are compared with these triangulation distances. From this data and a myriad of correction factors, map "scales" are established to get different distance sitings to "fit" together.

Prof. Mueller's work disposes of this long, drawn-out process with a few simple twists of knobs. The only drawback to using the torsion beam balance in map making is its extreme delicacy and sensitivity to locally "irregular" gravity fields.

• Science News Letter, 86:201 Sept. 26, 1964

BIOTECHNOLOGY

Doughnut-Like Device Aids Circulation Study

➤ NEW CLUES to heart attacks, strokes and other critical heart and brain problems may result from research with a plastic doughnut smaller than an aspirin tablet.

The device, which electromagnetically measures blood flow through arteries as small as four-hundredths of an inch in diameter, was designed to determine how blood is delivered to vital centers in the body.

By placing several of these devices around different heart arteries at the same time, researchers have discovered that the heart's arterial tree is not uniform, as has been assumed by many investigators.

This knowledge makes possible advances in prevention and treatment of heart attacks involving arterial obstructions that block delivery of blood to heart muscle.

The device permits blood flow studies in small animals such as rats. Previous blood circulation research required larger, more expensive animals, thus slowing down investigations.

The same techniques have been used to study the flow through arteries supplying the brain. Changes in flow in response to stress and various drugs have been recorded in conscious, freely-moving animals.

Arteries can be visualized by X-rays, probed with catheters and studied with radioactive tracers. But these procedures have revealed limited information about the regulation of the arterial system.

The research is headed by Drs. Alexander Kolin and Gordon Ross, University of California, Los Angeles.

• Science News Letter, 86:201 Sept. 26, 1964

PUBLIC HEALTH

Portable Device Speeds Testing for Diabetes

➤ A PORTABLE DEVICE in mobile clinics is enabling people in Cleveland, Ohio, to find out—in eight minutes—whether or not they have diabetes.

The device compares a blood sample to a solution of known concentration, then measures the resulting blood-sugar index. Dr. Jack R. Leonards of the School of Medicine, Western Reserve University, Cleveland, developed the apparatus.

• Science News Letter, 86:201 Sept. 26, 1964

ASTRONOMY

Comet Rediscovered, Unseen for 58 Years

➤ A COMET that has not been seen for 58 years has been rediscovered, due to remarkably accurate predictions of its location after such a long gap.

The long-lost Comet Holmes is far too faint to be seen in any except very large telescopes. Dr. Elizabeth Roemer of the U.S. Naval Observatory, Flagstaff Station, Ariz., used the 40-inch telescope there to spot the faint object.

She rediscovered Comet Holmes on the basis of accurate positions predicted by Brian G. Marsden of Yale University Observatory, New Haven, Conn. Comet Holmes was first seen in 1892. It was also observed in 1899 and 1906.

The comet has a history of such physical activity as outbursts when it draws close to the sun, as it is doing now. It is in the constellation of Capricornus, the horned goat, which is now in the southern sky.

News of the rediscovery of Comet Holmes was telegraphed to astronomers by Harvard College Observatory, Cambridge, Mass., the clearing house for astronomical information in the Western Hemisphere.

• Science News Letter, 86:201 Sept. 26, 1964

ENGINEERING

New Suspension Bridge Fourth Largest in World

➤ THE LONGEST suspension bridge in Europe, and fourth largest in the world, the first three being in the United States, has opened in Edinburgh, Scotland.

Called Forth Road Bridge, it has 30,000 miles of mild-steel wire holding up its roadway, with a 3,300-foot central span.

• Science News Letter, 86:201 Sept. 26, 1964

PHYSICS

Wave Analysis Locates Plane Crash in Lake

➤ THE POINT OF IMPACT of a jet airliner that crashed into Lake Pontchartrain, La., last Feb. 25, was calculated by looking at the waves it made, and then tracing them back to their origin—a method that may prove useful in similar cases in the future.

David E. Amstutz and Steve Neshyba of the Texas A & M University department of oceanography figured that the plane would have caused a two-inch-high wave in the 640-square-mile lake.

They checked the recorded graphs produced by four tide gauges located on the lake during the period immediately following the crash. From this, they calculated the point of the crash within 1,200 feet of the actual location of the wreckage, which had already been spotted by conventional methods. The study was reported in Science, 145:921, 1964.

• Science News Letter, 86:201 Sept. 26, 1964

These do not exhaust the inhabitants of the celestial sea. East of Cetus (not shown on the map, but visible later in the night) there is the long, winding constellation of Ehidanus, the river.

Still farther ot the east is the water monster, Hydra.

Farther south in the sky, not visible from the U.S., is the great ship Argo, so huge that astronomers divide it into four constellations. These are Carina, the keel; Puppis, the stern; Vela, the sails; and Pyxis, the mariner's compass. Still more southerly are Volans, the flying fish, and Dorado, a fish.

However, these are not really ancient constellations. They were added to the sky in 1603 by Johann Bayer, a German astronomer who published a book of star maps and filled in some of the blank spaces.

It is hard to believe that only coincidence accounts for so many watery constellations. Perhaps their originators intended them to picture some connected story. If so, mankind has forgotten what it was.

Celestial Timetable for October

OCT.	EDT	
1	11:00 p.m.	Moon passes Venus
5	12:20 p.m.	New Moon
10	11:50 p.m.	Algol at minimum
11	11:00 p.m.	Moon farthest; distance 251,300 miles
13	12:57 p.m.	Moon in first quarter
	8:40 p.m.	Algol at minimum
15	3:00 p.m.	Mercury behind Sun
16	2:00 p.m.	Moon passes Saturn
	5:30 p.m.	Algol at minimum
21	12:46 a.m.	Full Moon
22	7:00 p.m.	Moon passes Jupiter
23	6:00 p.m.	Moon nearest; distance 226,800 miles
27	5:59 p.m.	Moon in last quarter
29	5:00 a.m.	Moon passes Mars
31	1:30 a.m.	Algol at minimum
	7:00 p.m.	Moon passes Venus

Subtract one hour for CDT, two hours for MDT, and three hours for PDT.

• Science News Letter, 86:202 Sept. 26, 1964

OCEANOGRAPHY

New Ocean Sounder 100 Times More Accurate

➤ AN OCEANOGRAPHIC SYSTEM capable of mapping the ocean's floor to a depth of nearly seven miles, with 100 times the accuracy of previous systems, has been developed.

The new system uses an ultra-narrow rectangular sound beam only two and two-thirds degrees wide, instead of the 60-degree wide beam used in older systems.

In these systems the "echo" from the bottom comes from a very wide area which may include both peaks and valleys. The actual depth beneath the survey ship thus can be only roughly measured. The narrower beam enables oceanographers to "pinpoint" an area of the ocean's floor and to obtain a far more detailed map.

The new system also has a built-in stabilizer that will keep the beam vertical even when the carrier ship is pitching and rolling. Its design is flexible enough for a variety of applications and installations on various vessels.

The General Instrument Corporation's Harris ASW Division, Westwood, Mass., developed the system.

• Science News Letter, 86:203 Sept. 26, 1964

cover the subject from outcrop size to a global point of view, from metamorphic rocks to synsedimentary deformation.

TAXONOMIC BIOCHEMISTRY AND SEROLOGY—Charles A. Leone, Ed.—Ronald, 728 p., illus., $16.50. Papers presented at 1962 International Conference deal with principles of systematics, molecular taxonomy, taxonomic biochemistry of plants, comparative biochemistry of animals, and taxonomic electrophoresis of animals.

THEORY OF SUPERCONDUCTIVITY—John M. Blatt—Academic Press, 486 p., $12.50. Emphasis is on the fundamental properties of superconductors, the nearly complete expulsion of magnetic fields from superconducting materials, and the persistent currents in superconducting rings, with special attention given to thermodynamic properties.

U.S. GOVERNMENT FILMS FOR PUBLIC EDUCATIONAL USE, 1963—Seerley Reid and Eloyse Grubbs with Katherine W. Clugston—OE (GPO), 532 p., paper, $3. Information about the motion pictures and filmstrips of all U.S. Government agencies with source of availability indicated.

VERTEBRATE EMBRYOLOGY: A Laboratory Manual—Richard M. Eakin—Univ. of Calif. Press, 242 p., illus., paper, $2.75. Sections deal with gametogenesis and the estrous cycle, and development in frog larva, chick and pig embryo.

WEST VIRGINIA GEOLOGY, ARCHAEOLOGY AND PEDOLOGY: A Bibliography and Index—William H. Gillespie and John A. Clendening—W. Va. Univ. Lib., 241 p., $5. Reference to all published pertinent literature dealing directly and specifically with West Virginia.

WHAT IS LINEAR PROGRAMMING?—A. S. Barsov, transl. and adapted from Russian by Michael B. P. Slater and Daniel A. Levine—Heath, 110 p., paper, $1.40. Presents an elementary exposition of the general problem dealt with by linear programming and discusses the simplex method and the combinatorial method for solving it.

THE WORLD OF BIRDS—James Fisher and Roger Tory Peterson—Doubleday, 288 p., photographs, illus. by Roger Tory Peterson, 96 p. color maps, $17.95; after Christmas $22.95. Outlines the science of ornithology, discusses techniques, tools and tasks of international bird watching, classifies bird families with census of acceptable genera and species, shows geographical distribution of all bird families, and discusses the problems of conservation.

Nature Note

Deadly Nightshade

➤ *ATROPA BELLADONNA*, the so-called "deadly nightshade," is a tall, poisonous herb that grows to a height of four or five feet and is found growing wild in eastern United States.

A member of the Solanaceae family, it is related to the tobacco plant, the horse-nettle, and the potato, *Solanum tuberosum*, which it resembles in appearance.

A native of Central and Southern Europe, deadly nightshade was imported to this country for cultivation as a source of atropine, a poisonous crystalline alkaloid that occurs in the plant's roots and leaves and is used in medicine.

Atropine affects the nervous system, and can be fatal if taken internally in large doses. Its most common uses are as a relief for intestinal cramps and as pupil-dilating "eye drops."

At one time atropine was used by ladies of the court to dilate their pupils in order to enhance their beauty. This was the origin of the name belladonna, which literally means "fair lady" in Italian.

Deadly nightshade also contains the alkaloid hyoscyamine, which is found in all parts of the plant, especially in its roots and seeds. Deadly nightshade poisoning in humans most commonly arises from eating the berries, which are shiny and black and look like black cherries.

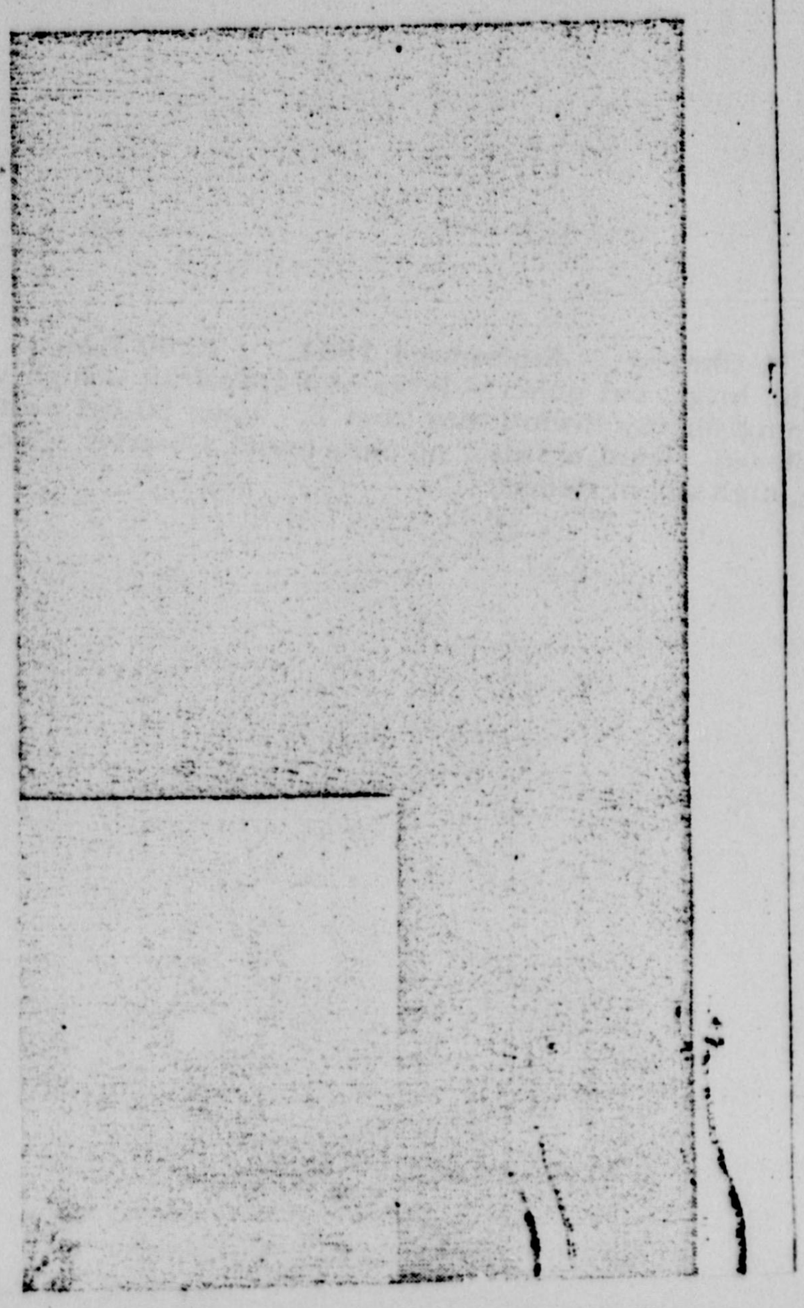
Two - UFOs Photographed

Taken from information received from photographer.

"The exact day the photo was taken is not remembered. It was, though, sometime during the first week of September, 1964.

We then lived at Black Hills Army Depot, Igloo, South Dakota. It was a very cloudy day with high winds, about 11 o'clock in the morning. My mother was looking out of the window, when she sighted two objects. From the position, of the objects above the trees, I would say they were about 15 degrees above the horizon. She then photographed the objects with a Brownie Hawkeye 620 camera. It was very stormy out, so she did not see the objects and does not know what direction they were traveling." August Powell, Flagstaff, Arizona. (State Director HOUFO)

Read the AF evaluation of the photograph as well as Eastmans Kodak in September issue of the IIR.



No Case, Information Only
Source: FSIC Bulletin, Vol 2, # 1

1 September 1964
N. Olmsted, Ohio

N. Olmsted . . . September 1, 1964. . . 10:50 P.M. . . . Level flight, bright red object – large as a grapefruit – high velocity, coming directly toward him from E. When 50 feet past him, it exploded. Heard a swish, no parts found. Observer – Bob Kolling, high school student.

No Case (Information Only)
Source: Sky & Telescope, March 1965

3 September 64
Visalia, California

THE FIREBALL OF SEPTEMBER 3, 1964, by Ronald A. Oriti, *Griffith Observer*, January, 1965. "The probable area of fall . . . turned out to be about fifty miles east of Visalia, California, and covered more than 1,000 square miles. . . . There has never been a meteorite recovered from an observed fall in the State of California. This was our best opportunity, we thought."

No Case, Information Only
Source: FSIC Bulletin, Vol 2, # 1

3 September 1964
Mt Ellis, Calif.

U. S. Reports ... Huge Bolide crashed into the Ellis Mountains (or Mt. Ellis) vicinity in the Sierra Nevada Range in S. California. Meteor experts from the University of New Mexico set out to find the place where the object hit the ground, no other reports. Sept. 3. Eureka?

NO CASE (INFORMATION ONLY)
SOURCE: FOWLER

6 September 1964
Medford, Massachusetts

UFO REPORT - 9/6/64

WITNESSES: Mr. [redacted]
Medford, Mass.
Age: 18
Occupation: Clerk

Miss A[redacted]
Somerville, Mass.
Age: 16
Occupation: H.S. Student

DATE: 6 September 1964 TIME: 11:45 PM

PLACE: Medford, Massachusetts

[redacted] and [redacted] were parked in an automobile along the upper Mystic Lake in Medford, Massachusetts when they observed a "bright royal blue" object carrying a revolving red light move across the horizon from north to northeast. The intensity of the blue light was compared to that of an automobile headlight several blocks away and was steady. It was first seen through the windshield but [redacted] was able to roll down his window in time to see it outside. The duration of the sighting was estimated to be 15 seconds. Several times along its path the object oscillated or bounced up and down. The trajectory was flat and it disappeared from sight as it passed behind a hill. The apparent size of the object was compared to that of a dime or a nickel held at arm's length. Its true size was estimated to be 25 feet long. Estimated speed was 115 mph and distance about a mile from them. No sound could be heard. The object appeared to be solid. Its edges were like a bright star. The weather dry and cool with scattered clouds.

EVALUATION:

I know of no aircraft that carries a royal blue light with revolving red light. Its color, flat trajectory and slow speed rule out a meteor. I believe that Thomas and Anne probably witnessed a UFO with blue exhaust and carrying a revolving red light. Neither had ever witnessed anything like it before. They had no idea what it could have been. Although lights in the sky can usually be attributed to aircraft, reflections of searchlights on clouds, meteors, etc. I felt that this report was worth writing up. Its color and its oscillating movement are characteristic of UFOs. UFOs have been reported in this general area for the past several months.

TO: ATIC - BLUEBOOK
NICAP (xerox copy of UFO DATA SHEET attached)
W. H. Webb
APRO
NE UFO Study Group

FROM: Raymond E. Fowler, Investigator
13 Friend Court,
Wenham, Massachusetts

Raymond E. Fowler
Raymond E. Fowler

MISSOURI FIREBALL OF 1964 SEPTEMBER 7
A.M.S. No. 2382

On this date in the early evening four fireballs were seen from central Missouri, and thanks to Dr. John E. Merrill, Director of Morrison Observatory, and our regional director Mr. E. E. Friton, 10 reports were sent in. Most fortunately, two of these had the plot of the last and apparently most brilliant fireball on star maps, and in fact all but one or two of the reports referred specifically to this object, which appeared about 9:13 p.m., C.S.T. We know that all 4 fireballs started in the northeast as seen by the observers, and it may be assumed with much probability that all came from the same radiant. Indeed, S3 saw the third, a very bright one, only 5 seconds before the one we are discussing. He gave the approximate path for this which would project back not far from the radiant here given. The observers were all in the area between longitudes 90°W and 93°W and within half a degree of latitude 39°, some on each side of it. We have no reports from the regions over which it began and ended. However, thanks to other circumstances it is believed that the path is unusually well determined though based on only 8 or 9 reports. The path was almost N.E. to S.W. and not far from horizontal. The color was described as blue-green-white by different persons, the zenithal magnitude was about −5, the reported duration about 3 seconds. It left a train which was visible at least 3 minutes, and which drifted in a SSE or S direction; it also changed shape and expanded. This long-enduring train covered approximately the last half of the path and lasted longest near the end point. Mr. G. Aulbut, at Martinsburg, S3, plotted the whole path which went right down Cygnus and began at Beta Cass; Mr. S. L. O'Byrne, at Webster Groves, S10, plotted the last half of the path. Both of these observers had intermediate points whose altitudes could be determined. Other observers gave good estimates; for two it passed almost through their zeniths. The solution of every fireball's path has special difficulties; in this case was that for the beginning point we needed an accurate cross line to use with S3 report. Not having this, the slope was determined by the altitudes of several intermediate points. A line through these proved unexpectedly consistent so the actual beginning point is not vital, thought the one chosen must be about correct. The usual data on path and orbit follow.

Date	1964 Sept. 7.63 G.M.T.
Sidereal time at end point	303°
Began over	$\lambda = 90°20'$, $\varnothing = 40°06'$ at 123 km
Ended over	$\lambda = 92°28'$, $\varnothing = 38°10'$ at 79 ± 8 km
Height of long enduring tarin	100 to 79 km approximately
Drift of this towards	$a = 350°$
Projected path length	337 km
Path length	339 km
Observed velocity	113 km/sec. (very uncertain)
Radiant uncorrected	$a = 221°$, $h = 7°$
Radiant corrected for curvature and zenith attraction	$a = 221°$, $h = 4.8°$ $\alpha = 64°$, $\delta = +40°$ $\lambda = 70°$, $\beta = +18°$

Parabolic orbit: $i = 148°$, $\Omega = 166°$, $\pi = 6°$, $q = 0.98$ A.U.

The outstanding feature of this orbit is the retrograde motion. Hence the object, though in the fireball class very certainly, could not have had an asteroidal origin. In Hoffmeister-von Neissl Catalogue, fireballs numbers 337, 339 and 341 seen 1869 Sept. 8, 1896 Sept. 10 and 1905 Sept. 10, have radiants rather near this.

9 Sept 64
NEW RIVER, NEAR
RANFORD, VIRGINIA

.. An unidentified object about the size of a helicopter or a small plane plunged into the New River near Ranford, Virginia, in broad daylight on September 9th. The strange phenomenon was witnessed by several people, including Albert Tolley, who is a Ranford policeman and a former FBI agent. Tolley said that the object appeared to be disc shaped, and was spinning as it fell. Smoke and flames trailed behind it. No planes were reported missing, and no trace of the object could be found, in spite of a careful search..

Information Only
Source: A P R O Bulletin, November 64

Dodge City, Kansas
12 September 1964

Martin Caidin Observes UFO

Aerospace author Martin Caidin was piloting a twin-engine Piper Aztec B on the night of September 12th, 1964, at about 8:30 p m. when he and friend Ed Keyes spotted an orange-colored UFO flying five miles due north of Dodge City, Kansas.

The cabin of their plane began to light up and "I was seeing things I shouldn't be able to see," Keyes, a former Continental Air Lines pilot, said.

"When I first saw it," Keyes said, "it was above a slight overcast. Tumbling action was the most significant aspect of the whole thing. It would slow down when it became flat with the atmosphere and would speed up when pointed downward. "This change in velocity was what caught my attention most," Keyes said.

Keyes stated he had seen many meteors and was certain the object was not a meteor.

When interviewed by the press, Caidin stated he'd seen a lot of meteors and other objects fall from the sky, including airplanes, but "to me this thing looked like an aircraft coming out of the sky. This was absolutely not a meteor. He described the object as a "circular mass".

Don Foulk, Air Traffic Controller for the FAA at Hutchinson, Kansas, said he received reports from several sightings. They came from a pilot over Pratt, Kansas, from one west of Hutchinson, from a pilot landing at Great Bend, Kansas and from a Hutchison resident out in his back yard.

Foulk, who also saw the object at about 7-8 degrees east of due north from the Hutchison towers, said it was yellowish-orange. He said that when he saw it it would fit the description of the final phase or burnout of a meteor. Others reported it as blue-green in color. Foulk said that direct contact with Kansas City, Missouri FAA offices brought reports from Columbia, Missouri.

Raleigh Lackey, meteorologist technician at Wichita U. S. Weather Bureau Tower at Municipal Airport said the bureau had reports from Concordia in Northern Kansas, Goodland to the northwest, Eureka, Kansas, 100 miles east and from FAA officials at Lincoln, Nebraska. The reports from Goodland came from persons west of Hutchinson City who were sure the object fell to the ground just west of Penokee, Kansas.

No Case, Information Only
Source: FSIC Bulletin, Vol 2, # 1

14 September 1964
Brecksville, Ohio

Brecksville, Ohio . . . September 14, 1964 . . . A sixth grade girl reported a strange "contraption" in the clear sky, at about 9:00 P.M. It was at very high altitude but the object was lit up and shiny, like silver. The geometric shape had two lights at the end of extensions above it. It was traveling in a northerly direction. No sound or trail.

NO CASE (INFORMATION ONLY)
SOURCE (R.E. FOWLER)

15 Sept 64

BLUEBOOK
WESTFORD MASS

NOTE: SCURCE SENDS REPORTS TO AF. THIS WITNESS HAS MADE MANY OBSERVATIONS.

32

LOWELL (MASS.) LIBERATOR — Thursday, October 8, 1964



MRS. JOSEPH T. CHORNEY of Westford, and her son, STEVEN

Mother, Son Report UFO Sightings

Flying Saucers Seen Over Westford

Have you ever seen a Flying Saucer or a UFO (Unidentified Flying Object)?

A Westford mother and her 12-year-old son claim they had two sightings, the most recent being on Sept. 15, and the first in April, 1960.

Mrs. Joseph T Chorney and son, Steven, vividly recall both experiences which they say took place in the Greater Lowell area.

Mrs. Chorney's report, in her own words, follows:

"At exactly 7:50 p.m. on Sept. 15, 1964, my family observed a large ship—a very dark object that appeared to be oval-shaped. It had two very bright lights, one at each end, but blinked alternately.

"It circled the area, then hovered for awhile, then came down southwest of my home. There were four small objects appearing like red lights that circled the area for several hours that same evening. They returned to the larger ship's area about midnight. Many aircraft (conventional) were seen that same evening."

Mrs. Chorney's first sighting of a UFO occurred in April, 1960, and of that experience she reported:

"I saw a UFO on Concord Road, Westford. The same year, in October, my son Steven and I approached the exact same object in the same area about 150 feet above the ground. We stopped, got out of the car, and walked under it. It was very large with eight large 'picture' windows on the bottom in a row. There was light in the windows that was very bright,

SAUCERS Page 22

SAUCERS

(Continued from Back Page)

but it did not penetrate the surface.

"We counted the windows with a flashlight, which reflected off the surface of the object. It had a shallow scalloped edge, dark shiny surface, with many lights on the outer edge. We observed this object for about 22 minutes.

"The lights went out, and it left by moving itself in a circular motion. We could hear a slight whir coming from it at that moment."

NO CASE INFORMATION ONLY, 18 SEP 64, ANSEDONIA, ITALY

Mrs Hunt/SAFOICC/72842/13 May 65

May 14, 1965

Dear Miss [redacted],

Thank you very much for your recent letter regarding unidentified flying objects. I must apologize for the delay in answering, but I am sure you will understand that the work involved in answering the many letters and analyzing and evaluating the many reports received in this office is very time consuming.

I am enclosing a copy of the current report on Project Blue Book, the Air Force project on unidentified flying objects. This report gives the official position of the Air Force on this subject.

In 16 years of investigating over 9000 reports of unidentified flying objects, the evidence has proved beyond reasonable doubt that all reported aerial phenomena have been objects either created and sent aloft by man, generated by atmospheric conditions, or caused by celestial bodies or the residue of meteoric activity.

There has never been any evidence that UFOs reported to the Air Force represented extraterrestrial vehicles. No such object reported to the Air Force has given any indication of a threat to this planet nor has any evidence been presented that any unidentified flying object exhibited characteristics beyond the scope of current technical or scientific knowledge.

During the course of investigating UFO reports, it is often necessary to check air traffic, balloon launches, and weather reports. Due to the great distance between our investigating office and home, it would be extremely difficult for us to try to evaluate your report.

I have been in touch with the Assistant Air Attache from Italy. He suggests that you contact someone at the following address with regard to your sightings.

Ministero della Di Fesal Aeronautico
Stato Maggiord-Sios
Via Cosseti 4
Rome, Italy

Thank you again for your letter. If we can be of further assistance, please let us know.

Sincerely,

JOHN P. SPAULDING
Lt Colonel, USAF
Chief, Civil Branch
Community Relations Division
Office of Information

1 AF
Blue Book Report

[redacted]
Rome, Italy

AFDASCA/273

[redacted]

Rome, Italy

4 April 1965

Project Blue Book Information Officer
HQ USAF (SAFOIPB)
Washington

It is only now that I have your address. I would like to inform you of the sighting of a luminous object by myself and two other persons near me, at about 10 p.m. (local time) on the 18th of. September 1964, in the sky at Ansedonia (Orbetello), a cape on the coast of Tuscany.

The egg-shaped object emanated an impressive, diffuse, dazzling, blue-green, jade light, with golden hues. It appeared from the west, followed a brief path southward, came down for a time (it seemed to measure about three meters), rose again and paused about 5 seconds, then, always directed southward, vanished on a giddy course, leaving us astonished and shaken.

We do not think it could have been a celestial body or phenomenon, or a passenger plane.

I will try, at the foot of this letter, to sketch both the luminous saucer-shaped body we saw, as well as its trajectory.

[signed] [redacted]

[See original letter for sketch]

Roma 4 - aprile - 65

Spett. Officer Information

Project Blue Book

Washington

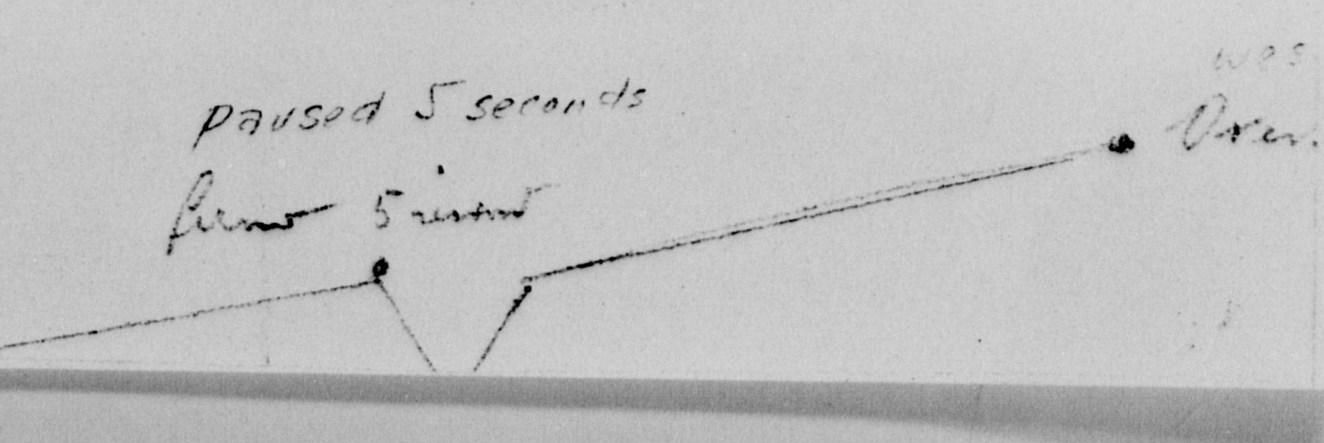
Solo ora vengo a conoscenza del Vostro indirizzo e ne approfitto per segnalare l'avvistamento di un oggetto luminoso, osservato da me e da altre due persone che mi erano vicine, il 18 settembre dello scorso anno 1964, alle ore 22 circa (ora locale), apparso nel cielo di Ansedonia (Orbetello) - un promontorio della costa toscana-

L'oggetto, di forma ovoidale, era di una impressionante, diffusa smagliante luce azzurro-verde giada, con delle sfumature dorate. Esso apparve da ovest, seguì una breve traettoria verso sud, si abbassò per un tratto (potrei calcolarlo di un tre metri, per la nostra vista), risalì e si fermò per circa 5 secondi quindi, puntando sempre verso sud, sparì in una corsa vertiginosa lasciandoci sorpresi ed emozionati.

Escludiamo possa essersi trattato di corpo celeste o fenomeno celeste né, escludiamo ancora, si trattò di aereo di passaggio.

Proverò, in calce, a tracciare uno schizzo e del corpo luminoso che vedavamo come un piatto, e della traettoria.

(redacted)



NO CASE (Information Only)
Source: APRO Bulletin, Jul, Aug, 65

24 September 64
Rio Del, California

Cigar Circles Calif. Town

Donald Martin, a lumberman, and his two daughters as well as others in Rio Del (24 miles south of Eureka) watched a cigar-shaped object which circled the town between 9:30 and 10:00 on September 24, 1964. Martin, who used a 60- power telescope to observe the object, was interviewed by an APRO member who prefers to remain anonymous.

Martin's two daughters were out using the telescope when they heard the "rumble". Martin himself heard no sound but said others in the community later said they had, including a schoolteacher and a man friend of Martin's.

The Martin girls watched the object through 2 "orbits" (from the northern horizon to the south and back again) and he (Martin) watched it through three. With unaided eye it appeared as a bright star at great height (Martin guessed at least 50,000 feet) and traveling "faster than a plane." Martin saw two lights on the object, his daughters said it had one light on the front and three behind. Martin said he thought it could conceivably be a U-2 but didn't think any plane could move that fast. At one time it passed fairly close below the moon but there was no change in light intensity, indicating to Martin that it was not reflecting light but rather originating it.

No Case, Information Only
Source: FSJC Bulletin, Vol 2, # 1

A check of the Echo 2 sighting schedule at The Herald revealed that the satellite was not visible in the area and would not be seen again until 11:48 P.M. Sunday when it would be north of the city, 15 degrees above the horizon and moving southeast.

The Stevenson boys' mother and sister also viewed the UFO following the initial report to The Hearald at 10:45 P.M. It was still visible at midnight!

Another Flying Object Seen . . . October 5, 1964 . . . Another UFO was sighted by two fox hunters early Saturday morning near the Titusville Airport on Route 27.

Seen by Ronald Cooper, 16, of 2 Belair Drive, and Jim Clark, 16, of Stone Spring House Road, the object was about the size and brilliancy of a shooting star.

"We couldn't see its shape, but it was about like a shooting star, except that it flew along the horizon with its lights blinking at irregular intervals," Cooper said. "We watched it as it flew, stopping and starting, for about a minute. Then it disappeared."

Observed at about 5:15 A.M., the UFO was believed to have been the fifth sighting reported here in less than a month.

'Snowflake' UFO seen, 3rd UFO in Week . . . September 16, 1964 . . . Several local residents last night reported sighting an unidentified flying object in the skies in the Warren vicinity.

Barney Lewis of Titusville said late last night that he and several friends observed the UFO through binoculars while standing at the corner of Walnut and Drake Streets.

He said that through binoculars it appeared as a snowflake, with red lights around the edges. He said that the lights would disappear periodically, and he believed that this was due to the rotation of the object. He said it appeared to change course often.

Last night's UFO report was the third received at the Herald this week. (Titusville Herald)

A few days later, we obtained a copy of "The Kane Republican", a newspaper in Kane, Pa. In the issue of October 20th, it reported sightings in the Titusville, Pa. area. (Credit Louise Holt).

We wrote the Titusville Herald and received an answer from NICAP investigator William B. Weitzel, who was in the area making inquiries. He was kind enough to send us thermofax copies of several cases.

Flying Lights Seen Over City By Residents for 1-1/2 Hours . . . . September 24, 1964 . . . Another unidentified flying object, the fourth one in the last 10 days, was reported to The Herald last night by several Brook Street residents.

Charles Stevenson, 19, and his brother, Edward, 15, of 216 Brook Street, said that they and a friend first saw the object north of the city and just above the horizon at 10:30 P.M.

Charles Stevenson said that when viewed through 30 power binoculars, the object appeared to be round with a cone-shaped top. He said that there were two lights in front of and two behind the UFO, appearing as separate objects. The main object appeared to shine brightly at first and was red and white, he said.

The youth said that by 11 P.M. the UFO appeared to be in the middle of the horizon and had moved east of the city.

Stevenson said he checked all of the planets listed in the World Almanac and could not tie any of them in with the location and appearance of what they had seen.

24 September 1964
Titusville, Penna

25 Sept 64
S. F Bay area

S. F. Residents Watch "Boomerang"

At 4 a.m. on Wednesday, 25 September, South Bay residents reported a "boomerang" or "half moon" shaped objects, moving rapidly across the sky above the San Francisco Bay area. Ed Cameron of Walnut Creek, was just starting his paper route and he and some workmen at the Permanente Cement Plant near Los Altos watched the objects, said they were brightly lighted, glowing intensely and fading alternately and according to one observer they "blew up" in the west.

No Case, Information Only
Source: FSIC Bulletin, Vol 2, # 1

29 September 1964
Bath Township, Ohio

NORTHEAST OHIO

LOCAL SIGHTINGS – GREATER AKRON AREA – 1964

Bath Township . . . September 29, 1964

At 2:15 A.M. a terrific burst of light illuminated the whole northern sky with a light whose color was similar to that given off by a mercury lamp. Constable Harry Hood said the light was so intense that it illuminated the spot where he stood in bluish, eerie light.

There was 8/10 cloud coverage that night. The object came straight down through the clouds, causing a vapor trail which extended into the clouds. The object or light extinguished at almost horizon level. The angle of elevation where it came through the cloud cover was about 15-20 degrees. Duration – 3 seconds. No sound.

ALSO SEEN NORTH

Summit and Portage Counties, and Fairport Harbor on Lake Erie, reported illumination, meteor, flares, etc. Geauga County deputies saw the sky light up but did not see the meteor itself, and the Coast Guard at Fairport Harbor was checking reports of lights "like flares" in the sky.

Aurora, Ohio, Ptl. William Russell got a good look at the object while he was on patrol on Rte. 306 near the Geauga-Portage line. He recorded the time at 2:18 A.M. "I was no more than a quarter mile away from it when it came down," he said. "I watched it until it disappeared behind trees." It was a blue-white light; reminded me of a flare. It sort of blinded me for a second. It was only 100 or 150 feet up when I spotted it. It was about as big as a car tire."

Editor's Comment:

Constable Hood and Ptl. Russell were about 20 miles ENE and WSW of each other. The times are closely related.