### PROJECT 10073 RECORD CARD

1. DATE	2. LOCATION		12. CONCLUSIONS
23 Den 59 3. DATE-TIME GROUP Local GMT-23/950Z	10 nautical mi l 4. TYPE OF OBSERVATIO  D Ground-Visual  D Air-Visual	Albuquerque, NM  N  CMGround-Radar  D Air-Intercept Radar	D Was Balloon DX Probably Balloon D Possibly Balloon D Was Aircraft D Probably Aircraft D Possibly Aircraft
5. PHOTOS/ D Yes	6. SOURCE Military		D Was Astronomical D Probably Astronomical D Possibly Astronomical
7. LENGTH OF OBSERVATION	three	Fast	Other
10. BRIEF SUMMARY OF SIGHTING		11. COMMENTS	
Three objs in trail pain pan. Descended at 700' p		direction, & dis	of winds aloft, track stance covered indicates ing was probably a ballor

ATIC FORM 329 (REV 26 SEP 52)

1 December 1959 Oakland-Freemont area, Calif.

as spected high over the Cakland-Freemont area of California last December at and was seen by ten watchers at the Cakland Airport control tower. The Spect was at an astimated altitude of 2,000 feet when first spected. It then that upwards at a familiatic speed and exploded into a white, vaporous bloud. The DPC was also seen by the pilots of two countries plants in the areas.

PI HIH CANAAN, CONT., DEC. 10. -- (UPI) -- TO ENTRUMENT LAILS. PARTY ORRESEALED GUBLLIA OF A STANT TO MALL DELLA CELA TELE LAST GIGHT, ESMIDER A 455-julle med Fillowi dado Annon, boother. THE TWO-OILLIONS CESIC-FOOT FOLYETHEVIEW BALLCON, WHILE SEAL CONT. ABTITUDE OF 100 SOLFEET DURING THE FLICHT, LANDED TWO DAGE YARD. AT HYDE PARK, BEY. THE BALLOON SAS ALLUCHED FROM THE AKROW BURN CLOSE ALREST LY THE GOOLYEAR AIRCRAFT CORP., YESTERLAY TO PHOTOGRAPH THE EARTH'S · CRPACE. IT WAS EQUIPPED WITH AN EXTER ALLY OR UNITED ABBIAL CAMERA, A RADAR-INDICATOR CALERA AND OTHER INETRUMENTS. THE LANDING OF THE EGGNECLA CAUSED A FLURRY OF EXCITEMENT HERE THEN IT LANDED. LUCAL PULLSA BEFUELD TO DISCLOSE THE NATURE OF THER CHUICT AND REFERRE! ALL INGUIRLES TO THE U.S. ALE FORCE IN WASHINGTON. THE AIR FORCE, HOWEVER, DISCLAIMED ANY KNOWLENGE OF THE YSTERIOUS OBJECT. THEM THE GOODY FAR PEOPLE ANNOUNCED THAT IT WAS SOME OF THEIR CALLOONS AND THE FIFTH SUCH FLIGHT IT HAS COLLUCTED OND THE AX AIR FORCE CONTRACT. THE PURPOSE OF THE FLIGHTS IS TO GUTAIN AERIAU-RADAR PHOTOGRAPHS OF THE EARTH'S SURFACE FROM STRATUS PHERIC WLTITUMS. AT A RATE OF SOU FRET PERSON DATE AND HIT ITS PEAK ALTITUDE KLAPLY THE COLLEGEA WAS RELIEASEL.

UPI 119N HX

RAPID CITY, S.D., DEC. 14. -- (UPI) -- THE WORLD'S LARGEST BALLOON WAS LAUNCHED FROM THE STRATOBOUL NEAR RAPID CITY TODAY ON A COSMIC RAY EXPLORATION TEST FLIGHT.

THE UNMANNED, 10,000,000 (M) CUBIC FOOT BALLOON WAS SENT ALOFT WITH A 1,300-POUND TEST LOAD IN PREPARATION FOR A SERIES OF COSMIC RAY RESEARCH BALLOOMS WHICH WILL BE SENT UP NEXT MONTH FROM NAVAL VESSELS IN THE CARLEBEAN.

STRONG STRATOSPHERIC WINDS WERE EXPECTED TO CARRY THE BALLON TO LOUISIANA WHERE AUTOMATIC CONTROLS WILL LAND IT TOMORROW.

THE BALLOON IS 411 FEET LONG AND 300 FEET IN DIAMETER. AT CEILING ALTITUDE OF 120,000 FEET, IT WILL DISPLACE 10,000,000 CUBIC FEET OF AIR. THE WORLD'S PREVIOUSLY LARGEST BALLOON WAS 5,000,000 CUBIC FEET.

THE BALLOON WAS LAUNCHED BY WINZEN RESEARCH OF HINDEAPOLIS FOR THE OFFICE OF MAYAL RESEARCH.

CD920P.

# WOMEN SEE MISSILE

An object described as resembling a "silver pencil with fins" was observed over Willoughby, Ohio on Thursday, 10 December by Mrs. Ronald T. Bundy and two other housewives. Mrs. Bundy said there was a loud sound like a clap of thunder, but nothing like the usual sonic booms heard in the area. The moon was out and the time was 5 p.m. Three jets in the air appeared at about the same time that the object did, but they were above it and northbound. The object, headed east, shot straight up and disappeared, leaving a trail of orange-like flame.

1300

## WOMEN SEE MISSILE.

An object described as resembling a "silver pencil with fins" was observed over Willoughby, Ohio on Thursday, 10 December by Mrs. Ronald T. Bundy and two other housewives. Mrs. Bundy said there was a loud sound like a clap of thunder, but nothing like the usual sonic booms heard in the area. The moon was out and the time was 5 p.m. Three jets in the air appeared at about the same time that the object did, but they were above it and northbound. The object, headed east, shot straight up and disappeared, leaving a trail of orange-like flame.

1200

UPI A129 DA

TEXAN THINKS HE SAW WORLD'S LARGEST, LOST BALLOON

LEAD RAPID CITY (A43)

JUNCTION, TEX., DEC. 16.--(UPI)--GEORGE DONNELL, A SAN ANTONIO GERTIFIED PUBLIC ACCOUNTANT, WAS DRIVING NEAR JUNCTION LAST NIGHT WHEN HE SAW SOMETHING IN THE SKY THAT MADE HIM SIT STRAIGHT UP IN HIS CAR SEAT.

IT WAS A HUGE, OBLONG SHAPE AND DONNELL DESCRIBED IT LIKE THIS:
"WHATEVER I SAW WAS 12 TO 15 TIMES LARGER THAN THE BIGGEST STAR IN SIGHT.

"I LOST SIGHT OF IT IN THE OVERCAST BEFORE I COULD TELL WHAT IT REALLY WAS. BUT IT WAS FLOATING SLOWLY AT ABOUT A 45-DEGREE ANGLE."

DONNELL HAD HEARD ON HIS RADIO THAT THE WORLD'S LARGEST BALLOON AND A BRILLIANT ORANGE AND WHITE PARACHUTE, YR FEET IN DIAMETER, GOT LOST MONDAY AT RAPID CITY, S.D.

SO DONNELL CALLED THE WEATHER BUREAU AS SOON AS HE GOT HOME.
JUNCTION, WHERE HE SAW THE SHAPE IN THE SKY, IS IN SOUTHWEST TEXAS,

260 MILES FROM THE NEW MEXICO BORDER.

SAN ANTONIO METEOROLOGISTS CHECKED WIND DIRECTIONS AND SAID HE COULD HAVE SEEN A BALLOON OR PARACHUTE. THEY ALSO SAID THE WIND COULD HAVE CARRIED IT INTO NEW MEXICO.

(PICK UP AT 4TH PGH, RAPID CITY DATE: HERE'S HOW, ETC.)

E1044A.

UPI A43

WORLD'S LARGEST BALLOON GETS LOST ON MAIDEN FLIGHT

RAPID CITY, S.D., DEC. 16--(UPI) --"IT SHOULD HAVE BEEN A GORGEOUS

SIGHT, THE NAVY SPOKESMAN MUSED.

AND IT PROBABLY WAS, IF ANYBODY SAW IT --- A BRILLIANT ORANGE AND WHITE PARACHUTE, 64 FEET IN DIAMETER, PLACIDLY FLOATING EARTHWARD FROM WHERE THE WORLD'S LARGEST BALLOON WAS PLACIDLY LOST.

AT LEAST EVERYBODY THINKS THE PARACHUTE FLOATED EARTHWARD WITH A PAYLOAD OF COSMIC RAY MEASURING EQUIPMENT YESTERDAY. SOMEWHERE IN

TEXAS, OR LOUISIANA, OR ALABAMA, OR EVEN MISSISSIPPI.

HERE'S HOW THE WORLD'S LARGEST BALLOON AND THE WORLD'S MOST

GORGEOUS PARACHUTE GOT LOST:

MONDAY -- LAUNCHED: ONE BALLOON, TALLER THAN 34-STORY RKO BUILDING IN NEW YORK, FROM RAPID CITY. MISSION: TO GO UP TO 120,000 FEET AND COME BACK DOWN TUESDAY WITHOUT GETTING LOST.

LOST: ONE BALLOON, 411 FEET LONG AND 300 FEET IN DIAMETER, CARRYING 1,800-POUND LOAD OF BALLAST AND SCIENTIFIC EQUIPMENT. LOCATION: OVER NEBRASKA. LOSER: ONE NAVY TRACKING PLANE FORCED DOWN IN BAD WEATHER.

TUESDAY -- BALLOON, MADE OF PLASTIC 1/1,000 OF AN INCH THICK, BELIEVED DRIFTING OVER JULESBURG, COLO. NAVY PLANE GETS INTO AIR AGAIN AT NORTH PLATTE, NEB., SEARCHES FOR ANYTHING RESEMBLING NEW YORK'S RXO BUILDING. NO LUCK.

RESULT: PLANE UNABLE TRIGGER A MECHANISM TO RELEASE BALLOON PAYLOAD, RADAR TECHNICIANS UNABLE KEEP TRACK OF BALLOON WITHOUT PLANE CONTACT.

THEREFORE, BALLOON LOST. SIGHS, RECRIMINATIONS.

AT 1 P.M. (CST) TUESDAY: GORGEOUS PARACHUTE FLOATS EARTHWARD SOMEWHERE IN GULF STATES, WHILE WORLD'S LARGEST BALLOON SILENTLY FOLDS UP ITS PLASTIC BAG AND SNEAKS EARTHWARD, OR SO OFFICIALS BELIEVE.

A SPOKESMAN FOR WINZEN RESEARCH CO., MINNEAPOLIS, MINN., DESIGNERS. OF THE BALLOON, SAID THE BALLOON CONTAINED AUTOMATIC DEVICES WHICH

WOULD HAVE CUT THE PAYLOAD LOOSE AT 1 P.M. YESTERDAY.

THE BALLOON WOULD HAVE LANDED ABOUT 30 MILES FROM THE PAYLOAD.

"IT'S MORE THAN LIKELY IN A REMOTE SPOT," SAID THE NAVY SPOKESMAN."

"IT'S NOT CRITICAL WE GET THE PAYLOAD BACK," HE ADDED, "BUT WE

WOULD LIKE IT TO FILL THE BLANK SPOTS IN OUR DATA."

"WE'VE HAD INSTANCES WHERE THE INSTRUMENTS ARE RETURNED INTACT MONTHS AFTER THEY LAND," HE SAID. "THE PLASTIC IS USUALLY USED BY SOME FARMER TO COVER HIS HAYSTACK. IT HAS NO FURTHER USE TO US."

NAVY OFFICIALS SAID THE PURPOSE OF THE FLIGHT WAS TO TEST THE FEASIBILITY OF USING A BALLOON OF SUCH SIZE TO LIFT HEAVY INSTRUMENT LOADS IN EXPERIMENTS IN THE CARIBBEAN NEXT SUMMER.

THE NAVY DIDN'T COMMENT ON THE FEASIBILITY OF USING BALLOONS THAT GET LOST.

AS FOR THE FLIGHT OF THE WORLD'S LARGEST BALLOON, IT WAS

11545A

UPI A43H AJ HIGHT LEAD BALLOON

IN THE STRATOSPHERE OVER THE MID-CONTINENTAL UNITED STATES FOR NEARLY TWO DAYS, WAS FOUND PUNCTURED AND DEFLATEL IN A MORTH MISSISSIPPI PINE WOODS TODAY.

ITS 1,500 -POUND INSTRUMENTED PAYLOAD TO MEASURE COSMIC RADIATION

WAS UNDAMAGED AND INTACT.

BUT THE ORANGE AND WHITE PLASTIC SHROUD WAS DRAPED OVER NEARLY AN ACRE OF PINES IN THE HEAVILY-WOODED OUTSKIRTS OF THIS LITTLE TOWN. IT WAS DISCOVERED AT DAYBREAK WHEN MRS. EUPAL THORNWERRY, A WIDOWED. SCHOOLTEACHER, WENT OUT TO FEED HER CHIKGENS.

SHE NOTICED SOMETHING STRANGE IN THE WOODS, A PHENOMANA WHICH

APPEARED LIKE A SNOWFALL.

"IT LOOKED LIKE THE TOPS OF THE TREES WERE COVERED WITH SNOW,"
MRS. THORNBERRY SAID. "EVERY PINE TREE IN THE DISTANCE WAS COVERED."
THE BALLOON WAS SENT ALOFT MONDAY NEAR RAPID CITY, S.D. IT WAS
TRACKED FOR PART OF ITS FLIGHT, BUT A SNOWSTORM, FOG AND CLOUDS
CLOSED AROUND IT OVER KANSAS AND OKLAHOMA TUESDAY AND ITS TRACK WAS

THE HUGE BALLOON, TALLER THAN A 31-STORY BUILDING WHEN INFLATED, WAS EXPECTED TO DESCENE SOMEWHERE IN LOUISIAIA BY WEDNESDAY. AIR CURRENTS, HOWEVER, PUSHED IT ACROSS THE MISSISSIPPI RIVER FROM ARKANSAS AND IT FELL SILENTLY LAST NIGHT INTO THE WOODS NEAR THE ALABANA-MISSISSIPPI STATE LINE.

THE BALLOON WAS SENT UP AS PART OF A SERIES OF COSMIC RAY RESEARCH TESTS CONDUCTED BY THE U.S. GEODETIC SURVEY AND WINZEN

RESEARCH CORP.

MRS. THORNBERRY'S NEPHEW, PHILLIP SHEFFIELD, 18, INVESTIGATED THE PLASTIC SHROUD AND FOUND A TAG WITH INSTRUCTIONS ON NOTIFYING AUTHORITIES. SHERIFF'S DEPUTIES CARTED THE PAYLOAD TO THE NATIONAL GUARD ARMORY IN FULTON AND SOUVENIR HUNTERS RIPPED THE PLASTIC SHROUD TO PIECES.

THE BALLOON WAS SUPPOSED TO REACH AN ALTITUDE OF 125,333 FEET.
INFLATED IT WAS 411 FEET LONG AND 333 FEET IN DIAMETER.

MS419P ..

## BOWL-SHAPED CBJECT

At 11:50 p.m., 22 Dec. Kenneth Lindsley Jr., 23 of Oakdale, Calif., was walking in the vicinity of Claribel Road and Mc-Henry Avenue when he spotted a "bowlshaped" object coming down out of the clouds toward him. He estimated its altitude as about 2,000 feet when he first saw it. Its color was bright orange. At first be thought it might have been a reflection of the moon but remembered later that the moon didn't rise until about 1:30 a.m. The object dropped to about 20 feet above the road and was throwing a reflection on the road so bright that Lindsley could see both sides of the road and the trees very clearly. He said it stayed down near the road for about two minutes, then went back up into the air. Lindsley, unnerved, headed back to Modesto to stay with a

friend, instead of continuing to hitchhike home to Oakdale as formerly planned. "I had walked about 11/2 miles and was at the location of the new 'McHenry Bowl' when I spotted the object again, This time it did not come down nearly as close and did not stay so long. The second appearance was at 12:45 a.m." He told of his experience to reporters, hoping that corroborating witnesses could be located. His story appeared in the 24 December Stockton, California Record, and Mrs. Estelle Hendershott of Waterford came forward to report that she had seen the object while driving to her home at about 12:15 a.m., after getting oif work at the John Inglis Frozen Poor plant in Modesto. Other women on the night shift saw the object, also, and Mrs. Charles Erickson, of Modesto reported seeing the object from her home.

The Modesto Bee earried the story, which yielded this further information: Lindsley told a Bee reporter that "It extended over the entire road and on it I could see shadows which appeared to be moving but I could not distinguish what they were. It took about a minute and a half to get down, stopping just above the telephone poles. It stayed there two minutes, then went back down the road and up into the air."

29 December 1959 Boston, Massachusetts

On the eve of the beginning of 1960, over Boston on December 29 a UFO with blue and yellow lights was sighted by residents of several surburbs. The Boston Weather Bureau reported that it received many calls, but was unable to provide an explanation for the phenomena.

## JANUARY 1960 SIGHTINGS

DATE	LOCATION	OBSERVER	EVALUATION
Jan	SE of Philadelphia, Peansylvania		Insufficient Data
1	Tillamook, Oregon	Sandard States	Insufficient Data
3	Mormon Mesa, Nevada	TWA/ UAL	Astro (METEOR)
3	Seattle, Washington		Other (REFLECTION)
3	Kingman, Arizona/Lake Mead, Nevada		Astro (METEOR)
Ĭ.	Bloomfield, Connecticut		Aircraft
6	Winter Haven, Florida		Other (MISSILE)
8	Long Island, New York		Other (HALLUCINATION)
a	West Alexandria, Ohio		Insufficient Data
ó	2 Mi H of Scottsburg, Indiana		Other (CLOUD)
10-11	30.30N 139.05W (Pacific)	Taranta & Carallel San Carallel	Astro (METEOR)
15	Baudette, Minaesota		Astro (METEOR)
15	North Dakota, Minnesota, Wyoming	Multi	Astro (METEOR)
18	Gulf of Mexico	RADAR	Other (ANOMALOUS PROP)
18	Deaver, Colorado	Turbini, and the same of the s	Astro (METEDR)
18	Lakota, North Dakota		Astro (METEOR)
50	08.45N 168.25W (Pacific)	CNO	Other (FLARE)
21	22.06N 179.49E (Pacific)	CNO (PHOTO)	Other (MISSILE)
22	Sea of Japan CASE MISSING	Military	Balloon
24	Bryan, Ohio	TILLI COLLY	Astro (METEOR)
24	Erie, Pennsylvania/Jackson, Mich	NM Orient/UAL	Astro (METEOR)
		HIT OF LEGIC ONL	Other (HALLUCINATION)
27	Sylvania, Ohio	MATS .	
28	Poiteres, France	PEATS	Aircraft

## ADDITIONAL REPORTED SIGHTINGS (NOT CASES) -

E EVALUATION
ce News Ltr
lipping
lipping
lipping
ry - Fireball Reports
lipping
lipping
r (Ltr)
lipping

ELEPHONED DC 142 CZCSQF492ZCWYA319 PP RJED30 DE RJUFDNY P 241330Z ZEW FM COMDR 687TH ACWRON TO RUMFAL/COMDR ADC RJWFDN/COMDR 34TH ADD RJEDST/COMDR AIR TECHNICAL INTELLIGENCE CENTER RJEZHQ/HQ USAF

RJEZHQ/SECRETARY OF THE AIR FORCE

UNCLAS / 637TH OPS 894 FOR: INT. SUBJECT: UNIDENTIFIED FLYING OBJECT REPORT (U.F.O.B.). IN COMPLIANCE WITH AIR FORCE REGULATION 200-2, THE FOLLOWING REPORT IS SUBMITTED: A.1. NEGATIVE A.2. OBJECT PAINTED LIKE A COMMON PIN ON HRI A.3. NEGATIVE A.4. THREE (3) A.5. TRAIL A.6. NEGATIVE A.7. NEGATIVE A.8. NEGATIVE A.9. INITIAL PICKUP ALTITUDE 70,000 FEET, FINAL ALTITUDE 11,000 FEET A DISAPPEARANCE ON RADAR B.1. RADAR PICKUP OF VERY HIGH ALTITUDE TRACK E.2. 208 DEGREES AT 72 MILES B.3. 120 DEGREES AT 65 MILES E.4. OBJECT FLEW 090 DEGREES HEHEADING, DESCENDED AT 700 FEET Grad Speed = 40 NM/hr

PAGE TWO RUWFDRM 7

THRITY-TWO (32) MINUTES C.1. GROUND ELECTRONIC MPS-14 C.2. NEGATIVE C.3. NEGATIVE D.1. 23/1950Z DECEMBER 1959

D.2. DAY E. EJPF CSOS F.1. NONE

F.2. RALPH C REYNOLDS, MAJOR, SETTH ACAN CO., OPERATIONS
OFFICER. ALFRED F. O'DONNEL, JR., CAPTAIN, 687TH ACAN ST.,
ASSISTANCE OPERATIONS OFFICER. G.1. GOOD G.2. 20,000 FEET
250 DEGREES AT 35 KNOTS, 30,000 FEET 260 DEGREES AT 75 KNOTS,
50,000 FEET, 250 DEGREES AT 50 KNOTS G.3. ESTIMATED 11,000
LROKEN, HIGH OVERCAST G.4. SIXTY (60) MILES G.5. S/10 TO
9/10 G.6. NEGATIVE H. NEGATIVE I. ONE (1) F36L SCRAMBLED,
ONE (1) F89J DIVERTED. NO IDENTIFICATION MADE J. NEGATIVE
K. ALL INDICATIONS OF SIGHTING POINT TO THE POSSIBILITY OF
BALLONS OF SOME TYPE. L. NEGATIVE M. INTERCEPTS WERE
CONDUCTED AGAINST OBJECTS SIGHTED ON THE HIGHT FINDER RADAR,
TO NO AVAIL

BT

24/2000Z DEC RJWFDNM

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



REPLY TO

AFCIN-4E48

SUBJECT: UFO Sighting

29 December 1959

AFCIN-4EL TO:

> The attached UFO report is forwarded to your office for your analysis and comments.

PHILIP G. EVANS Colonel, USAF

AFCIN-4E

1 Atch:

Inc Msg CITE OPS 894. dtd 28 Dec 59

Memo, AFCIN-4E4g, 29 Dec 59, Subj: UFO Sighting

1st Ind (AFCIN-4Ela/Capt. Keriakou/jc/74201)

20 Jan 60

TO: AFCIN-4E4g

- 1. An evaluation of this report indicates that the UFO is probably a balloon as stated in the basic report.
- 2. An analysis of the winds aloft, track direction and distance covered by track, indicate a target ground speed of approximately 40 knots/hr. This order of ground speed is compatible with a balloon track. The area of sighting is in New Mexico, where there is considerable activity using balloons, in conjunction with various test programs.
- 3. To further substantiate this report, are results of a recent test conducted by Rome Air Development Center, which definitely proved that ground radar will detect balloons in flight, and the radar scope paint is comparable to an aircraft return.

Colonel, USAF AFCIN-4E1

1 Atch

# Orion Visible

Finest display of bright first magnitude stars is seen in the sky. Also observable is the interesting double "eclipsing variable" star, Algol, in the constellation of Perseus.

### By JAMES STOKLEY

NO NAKED-EYE planets appear in the evening skies during December this year, but their loss is not very noticeable. The display of stars at this season is the finest that we can ever see.

The stars are shown on the accompanying maps, which are drawn to depict the skies as they look about ten p.m. (your own kind of standard time) at the first of December, an hour earlier at the middle and two hours earlier at the end.

Orion, which stands in the southeast, is the most conspicuous group and you can easily recognize it by the three stars in a row that form the belt of this warrior, as the old star maps represented him. Modern astronomers pay no attention to these ancient fancies.

Above and to the left of the belt you see the first-magnitude star Betelgeuse (in one of Orion's shoulders). Another, called Rigel, is below and to the right. This is in one of his legs. Rigel, incidentally, is an extremely bright star, as measured by its actual luminosity, for it is about 60,000 times brighter than our sun. If the sun were at Rigel's distance (900 light years) we would need a telescope to see it.

Below Orion is Canis Major, the great dog, with the star called Sirius. This ap-

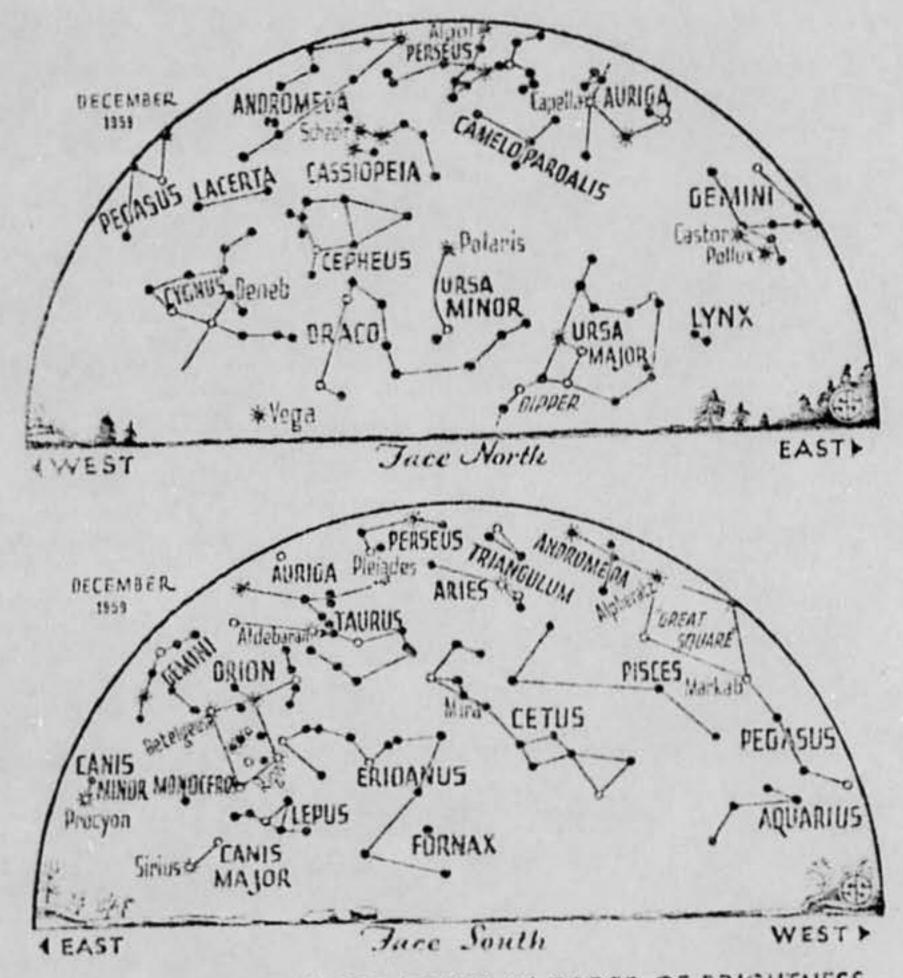
pears to be the brightest star in the nighttime sky, although its low altitude at present dims it a little. Sirius, however, is only about 20 times as bright as the sun; it appears so bright because it is relatively close, at a distance of 8.7 light years. A light year is the distance light travels in a year, at a speed of 186,000 miles per second, or about six trillion miles.

Above Orion stands Taurus, the bull. Its brightest star—distinctly red in color—is called Aldebaran. To the left of Taurus, in the northern half of the sky, you will see Auriga, the charioteer, with another first-magnitude star, Capella. Below this group are Gemini, the twins, with Castor and Pollux. The latter is the brighter of these two stars. Still lower is the lesser dog, Canis Minor, with Procyon.

Thus, around Betelgeuse as a center, there are six bright stars: Sirius, Procyon, Pollux, Capella, Aldebaran and Rigel. These are all of the first magnitude, or brighter. No other part of the sky contains as many in the same area.

Two others are visible toward the northwest. Close to the horizon—and therefore considerably dimmed—is Vega, of Lyra, the lyre. And a little higher is Cygnus, the swan, with Deneb, also fainter now than when it is overhead.

(Continued on p. 369)



\* \* . • SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS

### Orion Visible

(Continued from p. 366)

Although there is no naked-eye planet in the December evening skies, Uranus rises a little later than the time for which these maps are drawn. It is in Leo, the lion, but is too faint to be seen without

a telescope.

About three hours ahead of sunrise Venus appears in the east, in the constellation of Libra, the scales. Its magnitude is minus 3.8, which is about seven times as bright as Sirius, so it is easily located. Mercury is farthest west of the sun on Dec. 12. For a few days around this date it will be visible low in the southeast just before sunrise.

On Tuesday, Dec. 22, at 9:35 a.m., E.S.T., winter begins in the Northern Hemisphere. Then the sun is farthest south and directly over a point on the Tropic of Capricorn. The sun will be at its highest for people in southerly countries, so for them it is the beginning of summer.

For those of us who live in the north temperate zone, Dec. 22 is the shortest day of the year—meaning by "day," of course, the time from sunrise to sunset. But the word also refers to the period of time from one noon to the next, and it is noon when the sun is on the meridian, or directly

south. But if, with an accurate stop-watch, you were to time the sun from noon to noon, you wold not find it to be exactly 24 hours -unless you performed the experiment about the middle of February or May, the end of August, or the beginning of November. At the end of March the day is about 17 seconds short of 24 hours. In mid-June it is about 13 seconds longer. By early September it is about 22 seconds short; then it starts lengthening to its maximum of the year, at about Christmas Day. The day is now nearly half a minute longer than the nominal time of 24 hours. Thus, when Northern Hemisphere daylight is at its shortest, the day itself is longest.

The reason for this effect is that the sun's apparent motion around the sky from west to east during the year is not uniform. If you could see the stars behind the sun on Dec. 22, you would find that the sun was in the direction of Sagittarius, the archer, a group visible in the south on summer evenings. But the next day you would find that it had moved to the east about twice its own diameter as measured from the starry background. The distance it moves is greater now than at any other time of year.

This means that the sun is delayed in getting back to the meridian, because its easterly motion across the sky partly offsets the daily westward movement from sunrise to sunset. The delay is greatest, now that the eastward movement is at a maximum. In March, when it is at a minimum, the delay is least, and the length of day is about 45 seconds shorter than it is at Christmas time.

Because it would be inconvenient to have clocks that had to run fast at some times

(Continued on p. 374)

### Orion Visible

(Continued from \$1.369)

of year and slow others, we reckon time from a fictitious body, called the "mean sun," which moves uniformly around the sky. This is the reason that sundial time does not agree with clock time. The sundial may get more than 15 minutes ahead of the clock, or nearly that much behind.

During December the constellation of Perseus is seen to good advantage, for it is directly overhead at a convenient hour. (Its position is shown on the maps.) In Perseus stands the star called Algol, which is a famous variable, i.e., one that regularly

changes in brightness.

Normally it is of the second magnitude, or about as bright as the pole star, but every two days and 21 hours it is about a third of that brightness. It takes five hours to dim, and five more to return to normal. In the Celestial Time Table at the end of this article the times when Algol is at minimum brightness during evening hours are listed, so if you look at it on these occasions, you will find its light reduced.

### Two-Starred Algol

Actually, Algol consists of two stars. One is about 27 times as big as the sun and the the other is still larger, although it is about a fifteenth as bright. These two stars revolve around a point between them—the center of gravity—once in two days 20 hours and 49 minutes.

On each revolution

Dec. EST

On each revolution, as seen from our direction, the faint star passes in front of the bright one and causes a partial eclipse. Algol is the best-known example of a class of stars called "eclipsing variables." In addition there are many other stars that are truly variable. These are single orbs, in which some internal disturbance makes a variation in the output of light.

#### Celestial Time Table for December

TO STATE	200		
2	1:17	a,m.	Algol at minimum
	1:02	p.m.	Moon passes Saturn
4	10:06	p.m.	Algol at minimum
5	2:00	p.m.	Jupiter behind sun
7	6:55	p.m.	Algol at minimum
	9:11	p.m.	Moon at first quarter
2	2:00	a.m.	Mercury farthest west of sun
3	early	a.m.	Geminid meteors visible (seem to radiate from constellation of Gemini)
4	2100	a.m.	Moon farthest, distance 252,- 600 miles
	11:49	p.m.	Full moon
2	9:35	a.m.	Winter solstice—sun farthest south and winter begins in Northern Hemisphere
4	11:49	p.m.	Algol at minimum
6	2:00	p.m.	Moon passes Venus
7			Algol at minimum
8	8:00	p.m.	Moon nearest, distance 222,-
9	2:09	p.m.	New moon
0	5:28	p.m.	Algol at minimum

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

Science News Letter, November 28, 1959

December 1959 (first week of) Cheshire, Ohio

During the first week of December (no exact date) 7 employees at the Kyger Creek Power Plant at Cheshire, Ohio, reported seeing an unidentified object in the area. We are attempting to obtain more information, for this power plant furnishes power for the Atomic Energy Plant at Portsmouth, and this is at least the second time a meneuvering or hovering UFO has been spotted in the vicinity—the first time, November 1957.

1 December 1959 Fontana, California

IN CALIFORNIA

Police Sgl. Robert L. Cochran and Responsery Officer W. B. Brandon were pa-

trolling east Fontana at 9:31 p.m. when they spotted a large, round object which glowed red and white. Spotted from the intersection of Barbes and Palmetto Avenues, the object was at 7 o'clock on the horizon, gave off so much light that it lit up the area. The two men drew a sketch which showed a lampshadeshaped object projecting light downward, A few minutes after it was sighted by the officers, the object took off at high speed, leaving distinct vapor trails from a jet-like apparatus, and shortly disappeared, Sun-Telegram (San Bernardino) reporters received another similar report minutes before Cochran and Brandon reported their experience, from a resident of Del Rosa.