ASTRONOMY

Jupiter Joins Winter Stars

Planet added attraction in January's usually brilliant display of bright stars. Approach of Mars and total eclipse of sun among astronomical events for 1952.

By JAMES STOKLEY

➤ THE NORMALLY brilliant display of bright stars, which January evenings always bring to our southern skies, is augmented this month by the planet Jupiter in the southwest.

Of magnitude minus 1.9, Jupiter is about a third brighter than Sirius, the most brilliant star. This shines in the southeast, in the constellation of Canis Major, the great dog.

Above and to the right of Sirius we find Orion, the warrior, its position depicted on the accompanying maps. These represent the appearance of the skies at about 10:00 p.m. your own kind of standard time at the first of January, an hour earlier on the 15th and two hours earlier on the 31st.

Orion can easily be recognized by the three stars in a row that form the warrior's belt, even though these are not the brightest stars in the constellation. Above the belt is Betelgeuse and below it is Rigel, both of which are of the first magnitude.

Still higher than Orion and a little farther to the right is Taurus, the bull, in which stands brilliant Aldebaran, marking the eye of the beast.

Above and to the left of Sirius is the lesser dog, Canis Minor, in which there is another bright star called Procyon. And still higher and farther left are the twins, with Castor and Pollux, the latter of the first magnitude. Climbing still higher we find directly overhead Auriga, the charioteer, containing the brilliant Capella.

Few First Magnitude Stars

Aside from those in and around Orion, only two other first magnitude stars are visible these January evenings and both are so low that they are considerably dimmed by the great thickness of earth's atmosphere their light has to penetrate.

Low in the northwest, as indicated on the maps, the very top of Cygnus, the swan, is visible, the rest having passed below the horizon. The top star is Deneb, which in this position looks about fourth magnitude. The other first-magnitude star is shown directly east—Regulus, in the constellation of Leo, the lion. During the evenings of late winter and spring this will climb into better view in the south.

Glancing ahead for the year 1952 we find an approach of the planet Mars and a total eclipse of the sun among the chief events on the astronomical program. The eclipse, unfortunately, will not be visible in the United States and political unrest seems likely to interfere with its observation along the path where it will be visible.

This goes across Africa, Arabia, Iran and Siberia. The Siberian part of the world has naturally been out of consideration for an observing site by astronomers of the west. Iran seemed a possibility, but the anti-British agitation there has made that country generally unavailable also. Saudi Arabia is hard to enter, but the Anglo-Egyptian Sudan, around Khartoum, attracted the attention of interested astronomers, particularly since it was not far from the part of the path where the eclipse will last longest. But now the troubles in Egypt make the Sudan less hopeful.

Farther to the southwest, the path goes through the jungles of equatorial Africa, hardly a suitable location for eclipse observations, so perhaps observations of this eclipse will be considerably more curtailed than was expected a year or so ago.

Four Eclipses Scheduled

Actually, the Feb. 25 eclipse is one of four of 1952—two of the sun and two of the moon. The second solar eclipse, likewise invisible in the United States, comes on Aug. 20. This is an annular eclipse, where the moon does not completely cover the sun's disk but leaves a bright ring visible, even where the eclipse is at its greatest. This ring will be seen in South America. Over a large area, including Central and South America, there will be a partial eclipse, with one edge of the solar disk being hidden by the moon.

Of the two moon eclipses, the first, on Feb. 10, will be visible in the United States and Canada. This, however, is a small partial eclipse, with less than a tenth of the diameter of the moon's disk being covered by the shadow of the earth. The second moon eclipse, on Aug. 5, also partial, will not be seen at all in North America.

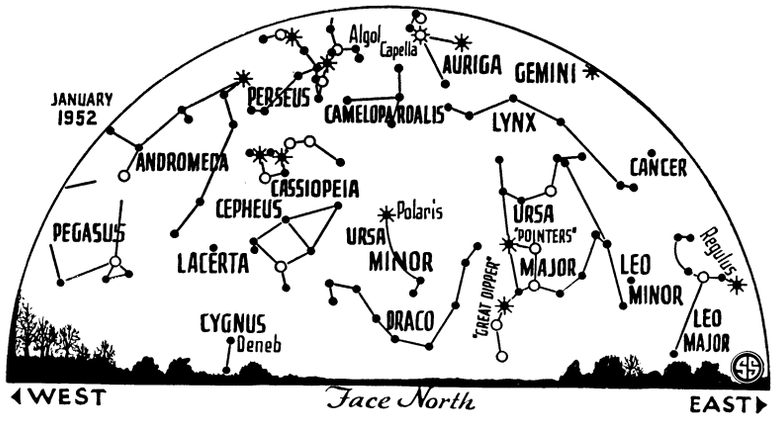
Every two years and two months, approximately, Mars is at opposition, directly opposite to the sun as seen from earth and then it is nearest to us for that particular Martian revolution. However, the orbit of Mars is so much farther from a true circle than is the orbit of the earth that the distance of Mars at opposition varies from as little as 34,500,000 miles to a maximum of 62,900,000 miles.

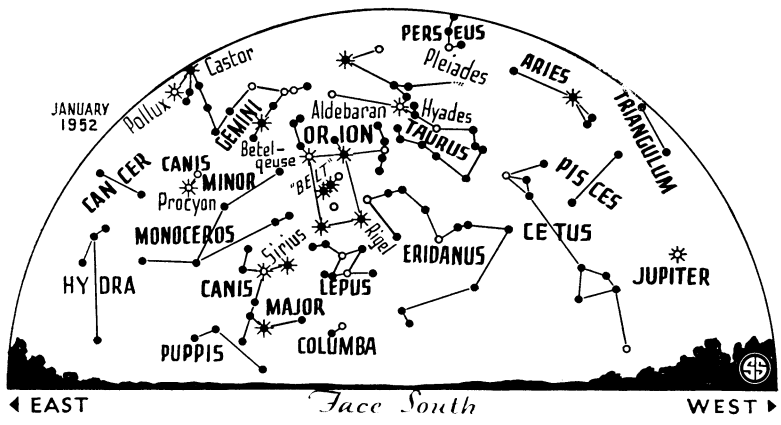
Mars Closer in 1956

A close one occurs every 15 or 17 years, the last having happened in 1939. In recent years the oppositions have been unfavorable ones, but now the planet is working towards us. When opposition occurs in 1952 on May 8, it will be 51,925,000 miles away. This is fairly good though not as favorable as in 1954, when it will come within 40,300,000 miles, or in 1956 when it makes the remarkably close approach of 35,400,000 miles.

In January Mars rises about midnight or a little after. By the end of April it will rise at sunset and for the rest of the year it will be visible in the evening sky. Jupiter, which is now so prominent in the evening, will disappear completely around the middle of April, when in line with the sun. By May it will be a morning star, visible in the east before sunrise. By next autumn, as now, it will become visible in the evening sky.

Saturn is now almost opposite to Jupiter, so it will play an opposite role. This month Saturn rises about midnight, soon after Jupiter sets. By April Saturn will be seen throughout the evening and will continue to be visible until late summer. Last year the rings of Saturn were on edge as seen





☼ ✱ ○ • SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS

from the earth, and hence for part of the time were practically invisible, even through a telescope. Now they are opening up again and the planet will become a most interesting object for observatory visitors to view.

Venus, which also is now a morning star rising about three hours ahead of the sun and shining more brilliantly than any other star or planet, will disappear behind the sun by late spring. By the beginning of autumn, it will become visible in the early evening. From then on its visibility will improve until it becomes a very prominent object in the evening in the spring of 1953.

Though Mercury will swing to the east of the sun, and remain above the western horizon for a while after sunset on three occasions in 1952, it is when this happens on March 18 that one will have the best opportunity of seeing this elusive little planet. For a few days before and after that date it should be easy to locate in the west as twilight is falling. Around Dec. 18, 1952, will be the best time for seeing it in the eastern sky, just before sunrise. However, it will similarly be a morning star early in January, for it will also be farthest west of the sun on the sixth.

Celestial Time Table for January

Jan.	EST	
2	9:57 p.m.	Algol (variable star in Perseus) at minimum brightness
3	3:15 p.m.	Moon passes Jupiter
	11:42 p.m.	Moon at first quarter
4	4:00 p.m.	Earth nearest sun, distance 91,449,500 miles
5	6:46 p.m.	Algol at minimum
6	3:00 p.m.	Mercury farthest west of sun
11	11:55 p.m.	Full moon
12	1:00 a.m.	Moon farthest, distance 252,500 miles
19	3:48 a.m.	Moon passes Saturn
20	1:09 a.m.	Moon in last quarter
	7:29 a.m.	Moon passes Mars
23	11:41 p.m.	Algol at minimum
24	2:24 a.m.	Moon passes Venus
26	7:00 a.m.	Moon nearest, distance 227,100 miles
	5:26 p.m.	New moon
	8:30 p.m.	Algol at minimum
31	6:54 a.m.	Moon passes Jupiter

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

Science News Letter, December 29, 1951

METEOROLOGY

Jet Stream Brought Storms

➤ A 150 TO 200 miles-an-hour jet stream of wind 30,000 to 40,000 feet up over the United States and a "wrong way" ridge moving westward out over the Pacific 10,000 to 20,000 feet up were responsible for the recent series of winter storms.

This is the opinion of Jerome Namias, the Weather Bureau's extended forecast expert. The "wrong way" ridge was a south-pointing indentation in the broad current of air which circles the northern hemisphere 10,000 to 40,000 feet up, traveling from west to east. Only this ridge had been traveling westward, in the opposite direction.

It was first responsible for the movement of warm moist air from the Gulf of Mexico up to the mid-western United States. Then it moved out over the Pacific, where the warm moist air over that ocean was moving northward. In both instances cold Arctic air moved down the ridge to meet the warm moist air, thus setting up the conditions for the storms and snow.

The pattern of alternating cold waves and snowstorms across the country was a by-product of both the jet stream and the ridge, according to Mr. Namias. It is his theory that jet streams are formed through the meeting of warm air from the south and cold Arctic air. This jet stream is the force that is responsible for the fast movement of the storms across the United States.

Science News Letter, December 29, 1951

MEDICINE

Greater Cold Risk If Children Are Under 10

➤ PARENTS OF children under 10 years old run a greater risk of getting colds, sore throats and the other respiratory diseases than parents of older children.

This has long been suspected by parents and now it is presented as a fact established through studies of 1,000 families in Pleasantville and Mt. Kisco, Westchester County, N. Y. The studies were made by Miss Jane E. Coulter and Miss Doris Tucker of the Milbank Memorial Fund in New York.

Fathers having only children under 10 had from 17% to 88% more colds, sore throats, etc., than fathers of children aged 10 to 18. Mothers of the young children had 36% to 61% more colds and respiratory illness than mothers of older children.

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TECHNOLOGY

Colored Lights Help to Sort Fruits and Vegetables

➤ BETTER QUALITY fruits and vegetables are foreseen through the use of colored lights in sorting defective food from good material.

G. M. Peterson and W. M. Carleton of Michigan State College's Agricultural Experiment Station, East Lansing, find that the problem of spotting small defects is much simpler when background and lighting colors are carefully chosen.

Besides changing the lighting color, they suggest that inspection belts be given the right color either by making the rubber the required shade or by using a transparent belt with the right color placed underneath. Rubber conveyor belts can not be painted because of sanitary reasons.

This new approach to detecting small but important defects in fruits and vegetables increased the efficiency of workers as much as 64%, their recently completed tests with cherries in 13 Michigan processing plants showed.

Science News Letter, December 29, 1951