

ASTRONOMY

Jupiter High in the East

Although there are 20 stars of first magnitude in the heavens, only 15 of these can be seen from the Northern Hemisphere, of which seven are now visible.

By JAMES STOKLEY

► SHINING BRIGHTER than any other planet or any star now visible, Jupiter is a conspicuous object in the east on January evenings.

It stands in the constellation of Gemini, the twins, as shown on the accompanying maps. These depict the sky as it appears about 10:00 p.m., your own kind of standard time, at the beginning of January, an hour earlier at the middle and two hours earlier at the end.

The part of the sky where Jupiter is now seen hardly needs the added glory, since this general region contains more bright stars than any similar area. In all the sky there are only 20 stars as bright as the first magnitude on the astronomical scale of brilliance, and five of these cannot be seen from most parts of the United States.

Of the 15 that we can see, seven, or nearly half, are now visible in the southeast. Among these is the brightest of all, Sirius, the dog-star, in Canis Major, the larger dog.

Orion Easily Recognized

Above Sirius, to the right, is the figure of Orion, the warrior, easily recognized by the three stars (not of the first magnitude) that form his belt.

Below the belt is a bright star called Rigel, in Orion's foot, and above it another, Betelgeuse, which is in one of his shoulders. Still higher and farther right we come to Taurus, the bull, in which Aldebaran shines, marking the animal's eye.

Almost overhead (shown on the map of the northern sky) stands Capella, in Auriga, the charioteer. Below this, toward the east, are Gemini, the twins, with the stars Castor and Pollux, the latter of first magnitude.

Between Pollux and Sirius is Procyon, in Canis Minor, the smaller dog. And between Pollux and Procyon is Jupiter, more brilliant than any of them.

In addition to these seven, two other stars of the first magnitude are indicated on our maps, although both are so low in the sky that much of their light is absorbed by the earth's atmosphere and they appear considerably fainter than when they are higher in the sky.

One is Regulus, in Leo, the lion, visible low in the east, which will become more conspicuous in evenings of late winter and spring. The other is Deneb, in the west, all that can be seen of Cygnus, the swan, about to disappear from the evening skies until late spring.

Also, another planet is visible, but it also has faded from its brightness of a few months ago, even though it still equals a star of the first magnitude.

The planet is Mars, in Pisces, the fishes, just south of the four stars that form the "Great Square" in the group of Pegasus, the winged horse.

In addition, it may be possible to catch a glimpse of Mercury, nearest of all the planets to the sun, at the end of the month as it reaches a position farthest east of the sun on Jan. 28, and remains in the western evening sky for a short time after sunset.

Two other planets can be seen in the early morning sky. At about 4:30 a.m. at the beginning of January, Saturn rises in the east, in Libra, the scales. It is brighter than Mars.

Venus Very Bright

A little later—about two hours ahead of the sun—Venus appears, in Ophiuchus, the serpent-holder.

Of magnitude minus 4.2, this is about 11 times as bright as Sirius, or more than six times the brilliance of Jupiter.

Although most of the brighter stars, and some fainter ones, have proper names, the astronomer seldom uses them. He has other designations, often merely a number in a star catalog.

However, the names have considerable interest and reflect, in many cases, the development of the science of astronomy. Many of them are derived from the Arabic. During the dark ages in Europe, the Arab countries maintained an interest in the study of the stars, and it was from the Arabs that much of this lore later came back into European knowledge.

As did other early peoples, these Arabs imagined the stars arranged in groups, representing figures, animals, etc., and when they wanted to designate a certain star, they would give it a name that described its position in the figure.

The group we call Orion they also saw as a giant and, because of its prominent position, they called it "Al Jauzah," meaning "the central one."

Consequently, the star marking his shoulder they called "Ibt al Jauzah," which means "the armpit of the central one." In the course of the ages, this name was corrupted and finally came down to our present "Betelgeuse."

Names Corrupted by Time

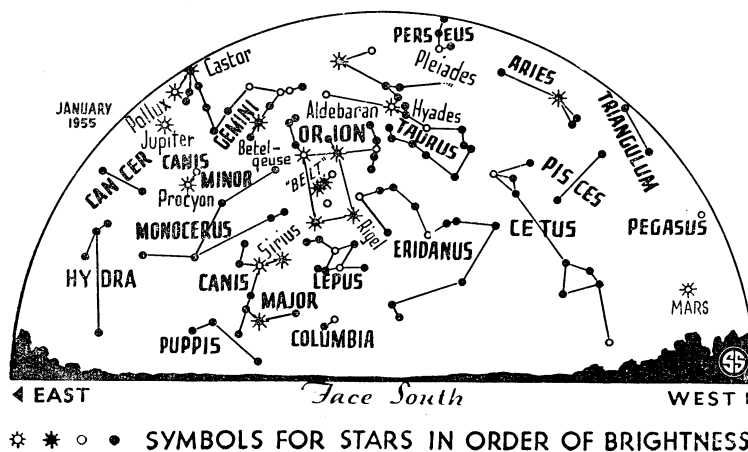
Similarly, the second brightest star in this group was called "Rijl Jauzah al Yusra," or "the left leg of the central one." In this case, only the first word of the whole name, with spelling altered to Rigel, has come down to modern times.

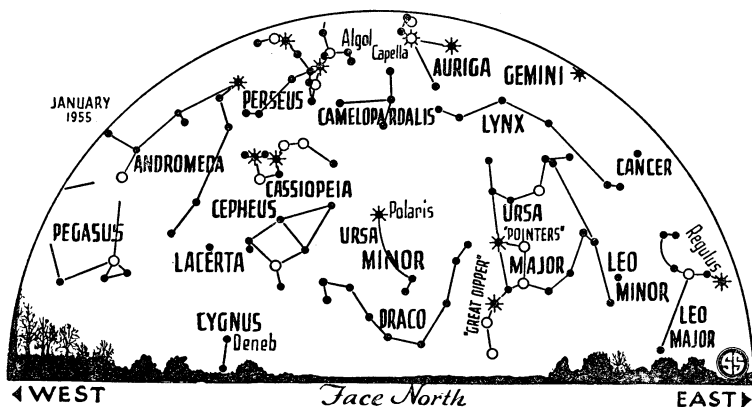
The name Sirius, however, is not Arabic, but comes from a Greek word meaning "sparkling," applied on account of the brilliance of this star.

Procyon has a similar origin. It comes from a Greek word meaning "before the dog," which refers to the fact that it rises ahead of Canis Major. Capella, on the other hand, is Latin and means "the little she-goat."

The name of Aldebaran for the star marking the eye of Taurus is Arabic, as one might guess from the first two letters of the name. "Al" is the Arabic article "the" and most star names that begin with these letters have an Arabic origin.

The original form of the name was only slightly different—"Al Dabaran"—which means "the follower." A little to the west is a cluster of fainter orbs known as the Pleiades, which have always attracted great attention and, as this star followed them across the sky, it was so named.





Deneb likewise is Arabic and means "the tail," since it is in the tail of the swan. However, its full name, to the Arabs, was "Al Dhanab al Dajajah," or "the hen's tail," for they made it a different bird.

Regulus sounds Latin, and indeed it is, meaning "a little king." This has been applied to it because it was supposed, according to the superstitious beliefs of the old astrologers, that it ruled the affairs of the heavens.

The Romans themselves called it "Cor Leonis," or the heart of the lion, and this was adopted by the Arabs, translated as "Al Kalb al Asad," but this has not survived as Aldebaran did.

Pollux also is Latin, the name of one of the twins who were favorite Roman gods, especially among the sailors.

Celestial Time Table for January

Jan. EST

- 1 3:29 p.m. Moon is in first quarter.
- 2 2:30 a.m. Algol (variable star in Perseus) at minimum brightness.

- 4 7:00 a.m. Earth nearest sun; distance 91,342,000 miles.
- 6 4:00 a.m. Moon nearest earth; 225,600 miles.
- 7 8:08 p.m. Algol at minimum.
- 8 7:44 a.m. Full moon.
- 10:21 p.m. Moon passes Jupiter.
- 10 4:57 p.m. Algol at minimum.
- 15 3:00 p.m. Jupiter in opposite direction from sun and nearest earth; distance 395,400,000 miles.
- 5:13 p.m. Moon in last quarter.
- 17 10:00 p.m. Moon farthest distance 251,600 miles.
- 10:25 p.m. Moon passes Saturn.
- 19 6:38 p.m. Moon passes Venus.
- 23 8:06 p.m. New moon.
- 25 1:01 a.m. Algol at minimum.
- 10:00 a.m. Venus farthest west of sun.
- 27 9:50 p.m. Algol at minimum.
- 28 3:00 a.m. Mercury farthest east of sun.
- 11:37 p.m. Moon passes Mars.
- 30 6:39 p.m. Algol at minimum.
- 31 12:05 a.m. Moon in first quarter.

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

Science News Letter, December 25, 1954

DERMATOLOGY

Winter Weather Effects

► WINTER WEATHER damage to the skin starts most cases of "housewives' hands," Dr. Matthew J. Brunner of Northwestern University, Chicago, charged at the meeting of the American Academy of Dermatology and Syphilology in Chicago.

Soap, detergents, dust, solvents and other materials the housewife handles every day play their part. But when Dr. Brunner tried to pin the trouble down on a single irritant by having women soak their hands in a detergent solution, he found it could only be done in the winter. In the summer, women's hands remained free of eczema even when soaked in the detergent.

Very small cracks, called fissures, in the skin in winter apparently are what pave the way for the irritating substances to cause the skin trouble.

"When the path of the detergent through the skin was followed," Dr. Brunner explained, "it was seen that it did not seep or permeate through the laminated stratum

corneum (the horny top layer of skin), but that it quickly gained entrance through the minute fissures seen on the hands in winter-time dried out, cracked, chapped skin.

"Thus, one may say that the physical barrier offered by a continuous coherent stratum corneum is of paramount importance, rather than its alkali-neutralizing power."

This outer layer of skin, together with sebum, a fatty excretion on the skin, appears to have acidic groups that neutralize alkali. If the outer layer of keratin becomes thinner than usual or the sebum is reduced in quantity, the alkali-neutralizing power will be limited and the skin will have poor resistance.

However, Dr. Brunner points out that this, of itself, cannot be a universal cause of eczema because it does not account for damage inflicted by acids, fat solvents, turpentine and neutral agents.

Science News Letter, December 25, 1954

MEDICINE

Enzyme Might Help in Polio If Vaccine Fails

► IF VACCINATION by the Salk vaccine or some other fails to stop polio, there is a new chemical treatment that might provide speedier and more complete recovery to victims of the disease.

Good results with this treatment, in trials in a small number of cases, were reported by Dr. George J. Boines, chief of communicable diseases and poliomyelitis at Wilmington General and St. Francis Hospitals, Wilmington, Del., at the meeting of the Delaware Academy of General Practice.

The treatment Dr. Boines used toward the end of last summer's polio season consisted of injections into the muscles of a solution of purified trypsin in sesame oil. Trypsin is a digestive enzyme secreted by the pancreas. It has anti-inflammation properties but has been considered unsafe for internal use until recently.

Trypsin can be given safely, recent reports show, if used in very small quantities and injected into muscles instead of into the blood stream directly.

Its effect in polio presumably would come through its ability to reduce edema, or watery swelling. This edema, if occurring in the central nervous system, could play a big part in causing the paralysis of polio, Dr. Boines pointed out. If enzyme treatment could reverse this swelling fast enough, it might prevent paralysis.

In Dr. Boines' patients, progression of paralysis was apparently arrested after 48 hours of the enzyme treatment. "Most significant," he said, "was the return of muscle strength in these patients."

The number of patients treated was too small, he pointed out, to be sure of its value, but he thinks it worth further trial.

The trypsin preparation he used is marketed under the trade name Parenzyme.

Science News Letter, December 25, 1954

MEDICINE

Antibiotic From Germs in Wax Moths

► DISCOVERY OF a new antibiotic, or anti-germ chemical like penicillin, is announced by Drs. T. Valyi-Nagy, J. Uri and I. Szilagyi of the University of Debrecen, Hungary, in *Nature* (Dec. 11).

The antibiotic has been named primycin. It is made by microorganisms found in the larvae of the wax moth, *Galleria melonella*.

Primycin seems to be active against viruses as well as against such larger organisms as the staphylococci that cause boils.

Good results in treating superficial infections in man are reported by the Hungarian scientists. However, the new antibiotic may have limited usefulness since trials in animals showed it to be toxic. Consequently it has only been used for superficial infections in humans and may never get beyond that kind of use.

Science News Letter, December 25, 1954