

* * * * Symbols For Stars In Order Of Brightness

ASTRONOMY

Summer stars now shine

by James Stokley

Although not as prominent as in recent months, the planet Jupiter remains visible on July evenings, especially early in the month. It sets 2 to 3 hours after the sun. Still in the constellation of Leo, the lion, Jupiter can be seen low in the west as dusk is falling, so bright that it is easily located.

There is another planet in the northwest, but it's much harder to find. This is Venus, which passed behind the sun on June 20. Now east of the sun, it remains visible in the west after sunset. On July 1 it sets only 15 minutes later, while the sky is much too bright for the planet to show. By month's end it sets some 40 minutes after sunset. Then you may be able to see it, very low in the northwestern twilight.

Neither planet remains in view long enough to appear on the maps.

They show the sky as it is at about 11:00 p.m., local daylight saving time, on the first and an hour earlier on the 15th. It has a similar appearance at the end of the month about 9:00 p.m.

Another planet can be seen on July nights—if you stay up late. Saturn rises about 1:30 a.m. on July 1 and about 11:30 p.m. on the 31st. About July 11, when it's farthest west of the sun, you may get a glimpse of Mercury just before sunrise, low in the east.

Although planets are lacking, the summer evening stars appear in full glory. Brightest is Vega nearly overhead, a little east of the zenith at the map times. This stands in Lyra, the lyre.

Second brightest is Arcturus, high in the southwest, in Bootes, the herdsman. Below is Virgo, the virgin, with bright Spica, low enough to be somewhat dimmed because of atmospheric absorption of its light. That is why it's indicated by the symbol for a second magnitude star.

Low in the south stands Scorpius, the scorpion, with Antares. This is another star dimmed by its low altitude.

Two more bright stars (i.e., first magnitude) appear toward the east. In the southeast is Altair, in Aquila, the eagle. To the left is another bird: Cygnus, the swan, with the star Deneb.

With no planets easily visible on July evenings, it will be a good time to consider the stars and the constellations. These are the men, animals and objects certain groups of stars are supposed to picture, even though many of them seem very far-fetched.

Modern astronomers have little concern for these old fancies. A constellation is merely an area of the sky. Just as the continental United States is di-

vided into 48 areas called states, so the entire sky is divided into 88 areas called constellations. Some of them, far to the south, cannot be seen from northerly parts of the world.

Most of these areas are named after the old figures with which the ancients populated much of the sky. But you should not expect them to look like



Nova Planetariums

Are Designed For Any School Anywhere In The World.



Union Hill Road, W. Conshohocken, Pa. 19428
215-825-0434

CELESTIAL TIMETABLE FOR JULY

July	EDT	
2		Earth farthest from sun, distance 94,455,000 miles
3	8:42 p.m.	Moon in first quarter
8	5:00 a.m.	Moon nearest, distance 224,600 miles
9	11:18 p.m.	Full moon
11	8:00 a.m.	Mercury farthest west of sun
17	5:12 a.m.	Moon in last quarter
	9:00 a.m.	Moon passes north of Saturn
20	5:00 a.m.	Moon farthest, distance 251,700 miles
25	7:50 a.m.	New moon
27	11:00 p.m.	Moon passes north of Jupiter



More Telescope — per Dollar

Why settle for a small telescope? Get the light grasp and resolution of an eight-inch instrument at truly modest cost.

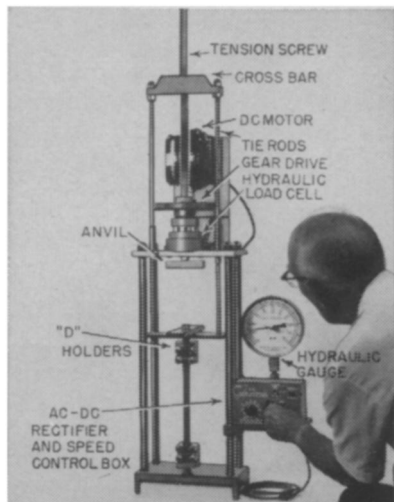
Hundreds of schools have found that the Discoverer presents far more impressive and interesting views of all sky objects than do smaller instruments. With increasing sky fog around all cities, a telescope such as this is needed to observe the fainter objects as they should be seen.

Other institutional telescopes from 6" to 30" are available. Complete catalog 50 cents. Sent free to institutions requesting it on their letterheads. Compare our specifications.

THE OPTICAL CRAFTSMEN, Inc. / Educational Division
20960 Itasca St./Chatsworth, Calif. 91311/(213) 341-5231



FOR UNIVERSITIES, COLLEGES, INDUSTRIES—A PORTABLE TENSILE & COMPRESSION TESTER FOR ALL MATERIALS



**HIGH QUALITY—ACCURATE—
EASY TO OPERATE—LOW IN PRICE**

Range up to 4,000 lbs. Six hydraulic gauges—all interchangeable. Variable speed motor drive from 1/64 to 22" per min.—jaw separation.

The R.P.C Model T-800DC is an engineering marvel in its simplicity of operation. Use it for testing metals, plastics, fabrics, rubber, wire, cord, adhesives, ceramics, abrasives, etc.

Ideal for classroom demonstrations and individual student use. Just plug-in to operate on lighting circuit.

For research and quality control its many advantages for fast and accurate testing have made it the most popular portable tester available.

Tester shown with gear guard removed.

Write for 4-page Bulletin 68-MCT

RESEARCH PRODUCTS CO., INC.
P.O. Box 1047, 1415 3rd St. So. St. Petersburg, Florida 33731

Science News Subscriber Service

MAIL TO: Science News Subscription Dept.
1719 N Street, N.W., Washington, D. C. 20036

TO SUBSCRIBE: Mail this form with your payment and check

- New Subscription
 Renew My Present Subscription.

— Check One —

1 year
\$6.50

2 years
\$11.50

3 years
\$16.50

— Check One —

Check or money
order herewith

Bill
Me

Name _____ Address _____
(Please Print)
City _____ State _____ Zip _____

. . . Summer stars out

those figures—any more than you would expect Washington State to look like a portrait of George.

If you refer to a city called Springfield, you might mean one of several with that name. But when you say it is in Massachusetts, you give its general location and eliminate the others. Similarly, you might say that a certain celestial object is in Hercules. To one familiar with the heavens this gives a general idea of its location and when it might be observed.

We have already mentioned the brightest stars of the summer evening and their constellations. Other interesting groups are easily visible, even though lacking first magnitude stars.

Directly overhead (at the times for which the maps are drawn) stands Hercules, named after the strong man of mythology. Some of its stars form a crooked letter H, the bottom toward the south. Alongside, toward Arcturus in the west, is a little semicircle of stars called Corona, the crown. This does resemble the thing it is named for.

Toward the south, just above Scorpius, stands the large constellation of Ophiuchus, also called Serpentarius. The first is Greek, the second Latin; both mean "serpent holder." The serpent is the two-part constellation of Serpens. As shown on old star maps, the front end was to the right, the head formed by the little triangle of stars just below Corona. The tail extends to the left, toward Aquila.

Also in the south, between Scorpius and Virgo, is Libra, the scales. Five of its stars form a somewhat distorted pentagon. This group is one of those marking the zodiac—the band through which sun, moon and planets seem to move across the sky.

The uppermost star in Libra, greenish in color, is named Zuben Eschamali and just below it to the right is Zuben Elgenubi. These curious names, derived from the Arabic, like so many star names, mean respectively northern claw and southern claw. They go back to very early times, when these stars were considered part of the scorpion. In ancient Rome, when Caesar introduced the Julian calendar in 46 B.C., Libra was made a separate constellation. The old names have been retained since.

To the left of Scorpius is Sagittarius, the archer. It too contains no first magnitude stars but is considerably more conspicuous than Libra. Sagittarius is a zodiacal constellation. The stars outline a teapot, the uppermost two forming the top of the lid. The spout is on the right, toward Scorpius, and the handle to the left (just above the letters "ri" in the name Sagittarius).