

ASTRONOMY

# Longest Constellation

## April Evenings Provide Best Opportunity to See Hydra, Which Extends More Than Quarter Way 'Round Sky

By JAMES STOKLEY

**T**HOUGH a number of bright stars are seen in the sky this month, and, in the early evening, two planets as well, you now have the best chance to see a constellation that, while not of great brilliance, holds a record. It is the longest in the sky.

This is Hydra, the water-snake, which extends through 105 degrees of the sky, more than a quarter of the complete way around the globe of the heavens. On our maps, it is shown in the south, as it appears around ten o'clock at the beginning of April, an hour later at the middle, or two hours later at the end of the month.

A good way to find this group is first to look for Leo, the lion. The "sickle," with bright Regulus at the handle's end, is easily located, high in the south. Low in the southwest is Sirius, brightest of all the stars, in Canis Major, the great dog. Above is Procyon, in Canis Minor, the lesser dog. And just about half way between Procyon and Regulus is the quadrilateral which represents the head of Hydra. The brightest of these four stars, the one nearest Regulus, is called Alphard. It is of the second magnitude.

### Crow Pecking at Snake

First magnitude Spica, in Virgo, the virgin, to the southeast, is just above the water-snake's tail. Also near the end of the tail is Corvus, the crow, a group of four stars whose shape resembles a ship's sail. On the old star maps, the crow was represented as pecking at the snake.

Looking to the north, it is possible to see another snake-like creature among the stars—the dragon, Draco. His head, another quadrilateral, is above the bright star Vega, low in the northeast, his tail winds around the little dipper, ending just under the pointers, in the big dipper. Brightest star in Draco is Thuban. Thousands of years ago, at the time the pyramids were built in Egypt, this was the pole star, but the pole has moved away, because of the slow movement called the "precession of the equinoxes."

In addition to the first magnitude stars already mentioned, the maps show several others. These are Arcturus, high in the east, marking Boötes; Betelgeuse, in Orion, in the west; Aldebaran, in Taurus, low in the west to the right of Orion and Capella, in Auriga, to the northwest, above and right of Taurus.

The brilliant planet Jupiter, and also Saturn, somewhat fainter, appear in the west, early in the evening, with the former above. They have separated considerably since their close conjunction in February. Another planet, Mars, rises late at night, about three hours before the sun, in Capricornus.

### Eclipse of Aldebaran

During March there was a partial eclipse of the moon, and in April there is an "eclipse" of another kind. On the evening of April 1 (and this is no April Fool joke!) the moon will pass in front of, and eclipse, the brilliant red star Aldebaran, in Taurus, the bull. While this is caused in exactly the same way as an eclipse of the sun, another name is given to it. When the moon goes in front of a star or planet, astronomers call it an "occultation." The disappearance of the star is called the "immersion" and its reappearance the "emersion."

Best place to see the occultation will be in the Mid-West, but something of interest will be visible in all parts of the United States and Canada. In Illinois, for example, immersion comes at 9:16 p.m., central standard time, and emer-

sion at 10:08 p.m. In Washington, immersion comes at 10:17 p.m., eastern standard time, but emersion happens after the moon has set.

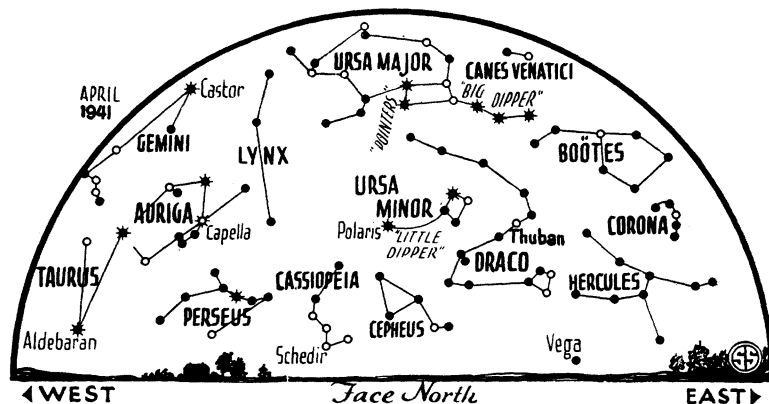
Along the Pacific Coast, the occultation will be over before sunset, but after dark the star and moon will still be close. However, people in that region need not be disappointed, for they will have another chance to see Aldebaran occulted in the early morning hours of August 16.

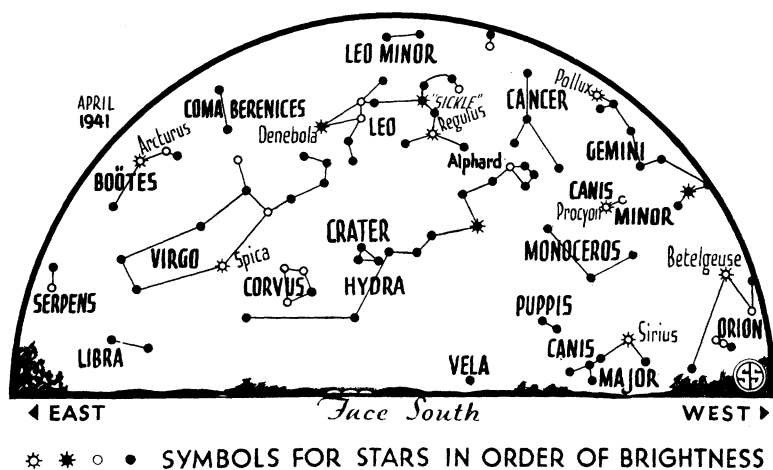
### Telescope Unnecessary

Living in the right parts of the country, you will be able to see this occultation on April 1 with the naked eye, but better will be some small optical aid, like a pair of binoculars, or even opera glasses. The moon will be five days past new, in a crescent phase. Moving eastward as it does, the dark half of the moon will be ahead, and this means that the star will hide in back of its dark limb.

Because the moon has no layer of atmosphere, to cause a gradual reduction of light, the star will appear with full brightness until it reaches the lunar edge, then will vanish instantly. Emersion, of course, will occur from behind the moon's bright, or sunlit, edge. At many observatories astronomers will watch the occultation, and make accurate determinations of the times, for from these it is possible to check accurately the motion of the moon.

The full moon on the afternoon of April 11 is of particular interest because it is the "paschal full moon," the one which determines both the date of Easter and Passover. It also happens that less than a day later the moon is at perigee, or nearest earth, at a distance of 222,000





miles, or about 17,000 miles nearer than its mean distance.

This will have a bearing on the height of the tides. These, as most people know, are caused by the gravitational pull of both moon and sun. When these bodies are in line, as they are at new or full moon, the two pulls reenforce each other, and the tides are extra high or low. These are the spring tides, which have nothing to do with the season, since they occur in autumn as well. Neap tides occur at first and last quarter, when the effect of the moon counteracts that of the sun, and the extremes are much less.

The distance of the moon from the earth also plays a part, for its effect is most when closest. So when it is closest at the time of full moon, as it is this month, the tides reach a maximum. At Sandy Hook, for instance, on April 3, the neap high tide reaches a height of only 3.5 feet above mean low water, a rise of only 3 feet from the preceding low. But on April 12 the high spring tide, at a height of 6 feet, is 7.4 feet above the previous low.

At Dover, England, where the tidal changes are greater, the spring high on the 12th at 11:38 p.m. London time, is 20 feet above mean low water, 5 feet higher than the neap high on the 4th. If the Nazi invasion has not previously been attempted, Hitler might find that a good opportunity, since the full moon would furnish illumination.

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### Celestial Time Table for April

**Tuesday, April 1**, after 9:00 p.m., Occultation of Aldebaran. **Friday, April 4**, 7:12 p.m., Moon in first quarter. **Thursday, April 10**, 4:26 a.m., Algol at minimum. **Friday, April 11**, 4:15 p.m., Full moon. **Saturday, April 12**, 3:00 a.m., Moon nearest; distance 222,000 miles. **Sunday, April 13**, 1:15 a.m., Algol at minimum. **Tuesday, April 15**, 10:04 p.m., Algol at minimum. **Friday, April 18**, 8:03 a.m., Moon in last quarter; 6:53 p.m., Algol at minimum. **Saturday, April 19**, 12:26 p.m., Moon passes Mars. **Monday, April 21**, early a.m., Meteors of Lyrid shower visible. **Saturday April 26**, 8:00 a.m., Moon farthest, distance 252,600 miles; 8:23 a.m., New moon. **Sunday, April 27**, 4:59 a.m., Moon passes Saturn; 5:55 p.m., Moon passes Jupiter.

the training camps this past winter. Even influenza, which was widespread throughout the civilian population, did not reach epidemic proportions in the training camps.

One reason for the absence of these diseases, it was pointed out, is the system whereby the young men are held in many small reception centers for a considerable period before being sent to larger training camps. The period of stay in the reception centers is long enough to cover the incubation period of the ordinary communicable diseases.

"Working quarantine" is another measure used by the Army to fight epidemics. If one or two men in a company get measles, the entire company would be put in work-quarantine, going ahead with their work, but segregated from the rest of the men in the camp. This helps to limit the spread of the disease.

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### ICHTHYOLOGY

## Electric Device Aids In Study of Herring

"ELECTRIC detectives" are the newest aids to Canadian scientists engaged in the study of the lives and travels of Pacific Coast herring. Data obtained are needed for the more intelligent and efficient management of this important natural food resource.

The scientists insert metal tags bearing date and place of capture into the bodies of herring hauled up in their nets. Then they toss the fish overboard again. After a time, some of the tagged herring are again captured by commercial fishermen, along with thousands of other, untagged fish.

At the processing plant, induction coils on the conveyor system pick out the tagged fish by the electrical disturbance set up by the metal tags as they pass the coils. This causes a trap door to open, and the tagged fish fall through, along with some others.

Later, all the fish caught through the trap door are sent over the conveyor system again, spaced some distance apart, and this time only the tagged fish fall through the trap door. From these tagged fish, scientists can then reconstruct the story of each herring's travels and growth since its first capture. Gradually, by this and other means, the scientists can build up an accumulation of data on the life and ways of herring and thus ascertain what steps are desirable to conserve the fishery and protect fishermen's interests.

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### PUBLIC HEALTH

## Measles Increasing Among Civilians But Not In Army

MEASLES is continuing to increase among the civilian population but fortunately the young men in Army training camps have escaped the epidemic.

A total of 43,060 cases were reported by state health officers to the U. S. Public Health Service for the week ending March 15. The previous week's total was 34,420. States chiefly affected are New York, Pennsylvania, Ohio, Illinois and Michigan, each of which reported

4,000 or more cases for the week. Virginia reported 1,900, New Jersey 2,500 and North Carolina 921.

There is no recognized epidemic of measles or any other respiratory disease in any of the Army training camps at the present time, according to reports received in the Surgeon General's office.

Army medical authorities feel they have been fortunate because no epidemics of respiratory disease have occurred in