

ASTRONOMY

# Meet the Stars

## In August, It Is Still Warm in the Evening and Sun Sets Early Enough to Let You Get Acquainted with Sky

By JAMES STOKLEY

WHILE it is true that the stars we see in the evening skies of August are not among the most brilliant, as are those we see in the wintertime, they have a beauty of their own. Now that it is still warm, but with the sun setting early enough to bring on darkness considerably sooner than in June, August makes a particularly good month to get acquainted with constellations.

A good place to start is with Vega, in Lyra, the Lyre, which is directly overhead about 10:00 p. m., August 1, and 9:00 p. m., August 15. These are the times for which the maps are prepared, and Vega, brightest star visible in the summer sky, is shown upon them.

Due east from Lyra you find Cygnus, the swan, of which the most conspicuous stars form the "northern cross." Deneb is the bright star at the top of the cross, to the north. And to the southeast from Vega is Altair, most brilliant orb in Aquila, the eagle.

Low in the west is Arcturus, in Bootes, which can be found, if you wish, by following the curve of the handle of the "big dipper." Directly above Arcturus is a semi-circle of stars, Corona Borealis, the northern crown, mythologically the one worn by Ariadne. And between Corona and Lyra is Hercules, famed strong man of Grecian lore. Somewhat inappropriately, perhaps, six of the stars in his group form the outline of a butterfly, heading to the west. And just below Hercules, to the south, is another celestial giant, Ophiuchus, holding the snake, Serpens. Ophiuchus is represented as treading on the scorpion, Scorpius, low in the south, with brilliant and ruddy Antares. This figure can be recognized by the hook-shaped tail of the scorpion, just below the teapot-shaped group of Sagittarius, the archer.

### Venus Seen Early

No planets are shown on the maps, but Venus is seen earlier, in the west, shining brighter than any other star or planet, and setting more than an hour after the sun. Later in the evening, as the constellation of Pisces, the fishes,

climbs into better view in the east, Mars appears, not quite as bright as Venus, but surpassing any star, and conspicuous by its redness. By midnight Saturn rises into sight, and an hour or so later you can see Jupiter in the east, between Mars and Venus in splendor. Mercury is not visible at all this month.

This coming autumn we are to have an exceptionally interesting display of planets. Venus is slowly brightening, remaining in view later and later in the evening. Mars, on the other hand, is rising earlier, and also increasing in grandeur, as he approaches the earth. In a few months Jupiter and Saturn will also be visible in the evening hours.

The latter two are perhaps most interesting through a telescope. Even a modest-sized one suffices to show the four large moons of Jupiter, revolving around that great planet which is 87,000 miles in diameter. The rings of Saturn can also be seen with such optical aid.

These rings, really a vast swarm of tiny moonlets all traveling around Saturn together, vary in their prominence. Sometimes they are invisible, at other times they can be observed much more easily. This, however, is not due to any actual change in their make-up, but rather to the angle they present to the earth. Though the rings are enormous, about 171,000 miles in outer diameter, the system is extremely thin. Probably the thickness is about 10 miles.

Saturn revolves about the sun once in

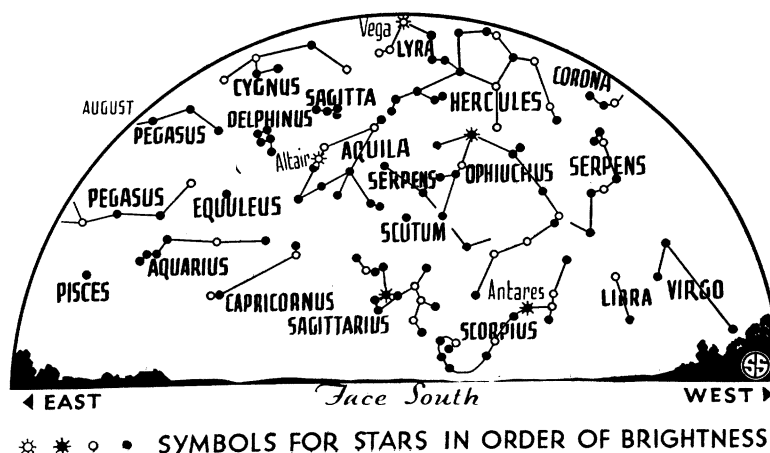
29½ years. Since the plane of the rings is slanted to the plane in which the planet encircles the sun, it means that their angle changes.

Sometimes, as in the summer of 1936, they are exactly on edge, as seen from earth. Then they are hard to observe with even the biggest telescope. But afterwards they open up, and are seen better and better. It happens that this month, on August 31, they will have opened up to their maximum. On that date the plane of the rings and the line from Saturn to the earth, will make an angle of 24 degrees. During the coming months, though the rings will start to close again, the change will be slight, and during autumn and winter, if you should have a chance to see Saturn through a telescope, you will be able to see the rings nearly at their best. But about five years from now they will again be on edge, and invisible.

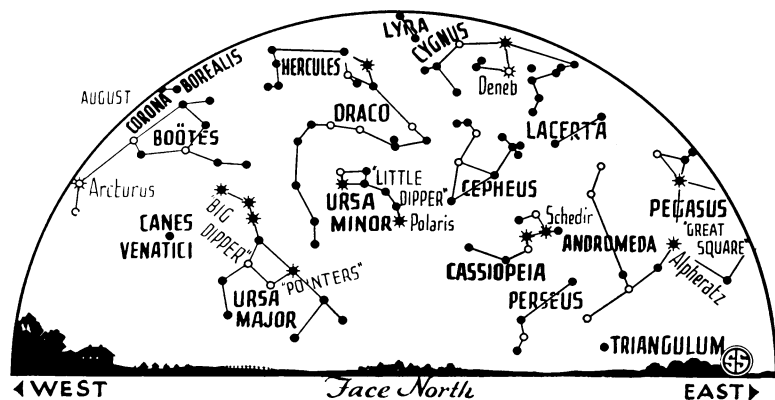
### Celestial Time Table for August

**Friday, Aug. 1,** 5:00 p. m., Moon nearest, distance 229,400 miles. **Thursday, Aug. 7,** 12:38 a. m., Full moon. **Tuesday, Aug. 12,** 4:53 a. m., Moon passes Venus. Shooting stars of Perseid shower visible. **Thursday, Aug. 14,** 1:00 p. m., Moon farthest distance 251,000 miles; 8:40 p. m., Moon in last quarter. **Friday, Aug. 15,** 7:51 a. m., Moon passes Saturn. **Saturday, Aug. 16,** 10:19 p. m., Moon passes Jupiter. **Friday, Aug. 22,** 1:34 p. m., New moon. **Monday, Aug. 25,** 2:45 a. m., Moon passes Saturn. **Tuesday, Aug. 26,** 8:00 p. m., Moon nearest, distance 228,800 miles. **Friday, Aug. 29,** 9:04 a. m., Moon in first quarter. **Sunday, Aug. 31,** Rings of Saturn at greatest angle from earth. Eastern standard time throughout.

*Science News Letter, July 26, 1941*



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PUBLIC HEALTH

# Physical Rehabilitation of Young Men Declared Vital

## Commission Reports That Army Must Lower Standards Or Men Must Be Rebuilt Before or After Induction

THE NATION'S reservoir of young men able to pass Selective Service standards of physical fitness has been drained to the point where: (1) either the Army must lower its present standards, or (2) it must undertake physical rehabilitation of the men after induction or (3) a government-supported program of voluntary rehabilitation must be undertaken, the commission on physical rehabilitation reports. (*Journal, American Medical Association*, July 19.) Newly appointed chairman of the commission is Dr. George Baehr.

The commission "is authoritatively informed that the Army will maintain its present high physical standards of eligibility for military service and will not undertake rehabilitation after induction of men classified by Selective Service and Army induction boards as having remediable physical handicaps."

The commission therefore proposes a plan for voluntary rehabilitation which includes provision for special classification of the men by Selective Service and Army induction board physicians to indicate those having remediable physical handicaps. Registrants so classified are to be told of the condition causing the classification, advised to have it corrected, and given a date for reexamination and reclassification after a time allowance for correction of the defects.

Since it believes only a small proportion of the population will be able or willing to pay for corrective measures

to make them available for military or industrial service, the commission recommends Congressional action to defray the cost through federal defense appropriations to the Federal Security Agency.

"Action is required," the Commission declares, "along the lines of one or other of these alternatives (voluntary rehabilitation, Army rehabilitation, lowering of Army standards), for the present standards of physical eligibility have reduced the nation's reservoir of eligible registrants to a number far lower than had been anticipated."

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RESOURCES

### India, Home of Sandbags, Seeks New Uses for Jute

INDIA, source of millions of sandbags used in air raid defense, is struggling through a jute crisis, in the topsy-turvy confusion of world trade. New uses for jute are being evolved and sought, as a development of the war.

India has shipped 912,000,000 sandbags made of jute for war purposes and has orders for 60,000,000 more, according to reports received at Washington, D. C. The United States continues to receive shipments of this cheap and useful sacking material, imported for gunny sacks, sandbags, camouflage and other purposes. But India's outlets for marketing its

annual five billion pound jute crop are so reduced that the crop this year is drastically restricted to about one-third of last year's, and research to find new uses is being pressed.

A cotton-jute fabric with cotton warp and jute weft, produced in India, has proved so promising as material for canvas for hose-pipes, tarpaulins and similar articles that 3,000,000 yards have been shipped to the United Kingdom. Jute fabrics as road building material are being tested.

Scientists in India are being urged to study chemical processes for producing rayon and paper from jute, and also mixed fabrics such as jute-wool, which would be a source of cheap winter clothing for India.

One scientist comments that Germany probably used a good deal of pre-war jute she imported in producing woolenized material. The French army is said to have used some jute-wool uniform cloth. Since Germany has been cut off from jute sources—98% of the crop

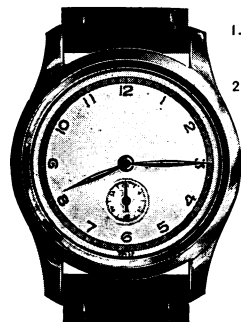
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