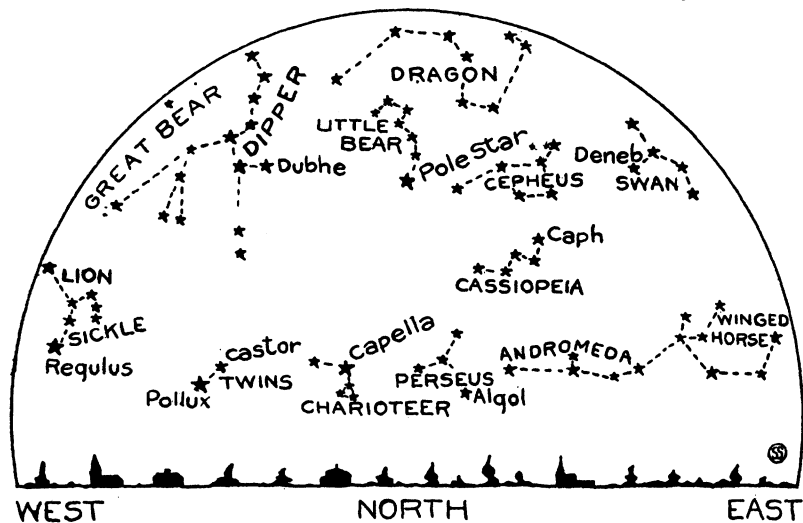


Sun Now Farthest from Earth

Astronomy



By JAMES STOKLEY

When you go on a picnic now and, perhaps, sweat in the hot sun, and wish that it was winter again, you may possibly gain some consolation from knowing that this is the time of year when the sun is farthest from us.

In fact, last January, to which in hot weather we are likely to look back with longing, the sun was more than three million miles closer to us than it is in July. July 4 was the date of the sun's "aphelion," as the astronomer calls the time when it is farthest from the earth. The "perihelion," when it was closest, happened six months ago, on January 4. Then it was 91,341,000 miles from us, but this month it has receded to 94,451,000 miles.

Well, then, one might ask, if the sun is several million miles farther away now than it was in January, and if, as we were taught in high school, its radiation gets less as the square of its distance increases, why don't we get less heat now instead of more? The answer is that now the sun is shining more squarely at us. Take a beam of sunlight (and also sunheat) a yard square. When the sun is directly overhead, this will cover a square yard of the earth's surface. When the sun is not directly overhead, the beam strikes the earth at an angle, and the same amount of heat may be spread over as much as several square yards of the earth's surface. At such times, a single square yard would only get a fraction of the heat that it gets when the sun is overhead. At this time of year the sun, though not overhead at any place in the United States, is more nearly so than in

winter. Therefore, the earth is heated more, and so are the people on it.

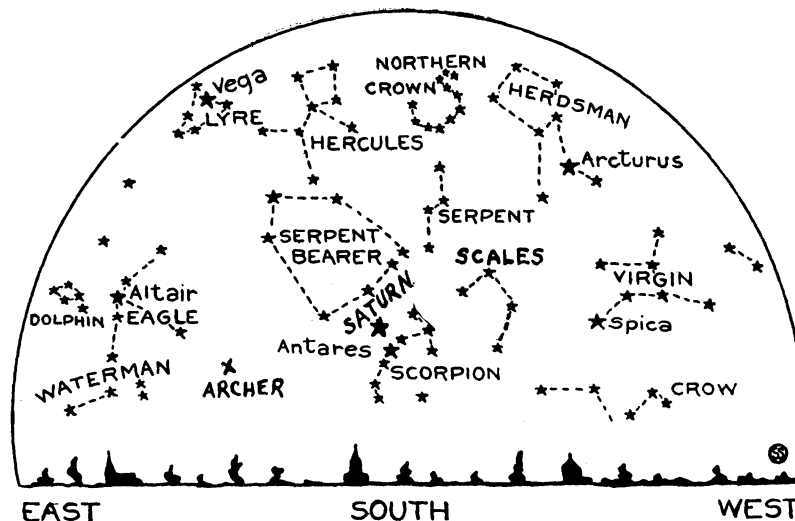
But it is the evening skies that interest people in summer more than the sky of day. During the day we try to get in the shade, where we can see as little as possible of the sky, but at night the summer skies, especially if one has the proper companionship, are the cynosure of many eyes. For one thing, this is the time of year of moonlight excursions. July brings a full moon on Monday the second. Last quarter, when the moon rises in the east at midnight, comes on the tenth. New moon, when the moon is on line with the sun, occurs on the sixteenth. At this time the moon itself is invisible, but a few evenings later it appears as a slender crescent in the evening twilight. Then on succeeding evenings it waxes gradually, reaching first quarter, at which time the

moon is directly south at sunset, on the twenty-fourth of the month. All this means that from about July 1 to July 5, and from July 22 for the rest of the month, the moon will be in the evening sky.

The only planet that is easily visible during the July evenings is Saturn. It is in the southern sky, as shown on the map, a short distance above, and to the east of Antares, the bright red star in the constellation of Scorpio, the scorpion. Saturn is considerably brighter than Antares, about a full magnitude, according to the astronomer's reckoning, and is also of a yellowish color. It shines with a steadier, more leaden, light than the star. Incidentally, the terming of its light "leaden" has historic significance, because the ancient alchemists, who identified various metals with the different planets, assigned lead to Saturn, doubtless because of its color.

The maps show the stars that can be seen during the July evenings. Vega, in the constellation of Lyra, the lyre, high in the eastern sky, is the most conspicuous. High in the western sky, in Bootes, the herdsman, is Arcturus, the next brightest. Altair, in Aquila, the eagle, is to the southeast, and ranks next. Spica, in Virgo, the virgin, low in the southwest; Antares in Scorpio, already mentioned, and Deneb, in Cygnus, the swan, to the northeast of Lyra, and lower in the sky, complete the half-dozen first magnitude stars that are with us these July evenings.

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HOLD THESE MAPS IN FRONT OF YOU. The upper then shows you the northern and the lower the southern sky as it appears on July evenings