

Northern summer solstice

by James Stokley

On June 21, at 3:43 p.m. EDT (2:43, CDT; 1:43 MDT and 12:43 PDT) the sun is farthest north in the sky for this year. It then reaches the solstice, which means "a standing of the sun." Ever since winter began in December, it has been moving northward. Now it stops this motion and stands briefly before it starts southward.

Because the sun is now so high in the Northern Hemisphere, there will be long days and short nights. The 21st is the longest day of the year. At 40 degrees north latitude sunrise comes at 5:31 a.m., daylight saving time, on the central meridian of a time zone. (This would be the 75th for Eastern time, 90th for central, 105th for mountain and 120th for Pacific.) Sunset comes at 8:32 p.m., so the sun is in the sky for about 15 hours.

Next Dec. 22, when the sun is farthest south at the year's second solstice, and winter begins in the Northern Hemisphere, the sun will rise at 7:18 a.m., standard time, and set at 4:38 p.m. This will be the shortest day, with

9 hours and 20 minutes of sunshine.

Even after the sun has gone below the western horizon, and before it appears in the east in the morning, it is shining on the atmosphere high above our heads. Since the light is scattered, it gives the illumination called twilight. But there are several kinds of twilight.

Civil twilight ends when the sun is six degrees below the horizon. Then it is dark enough that street lights and automobile headlights are turned on. Nautical twilight ends with the sun 12 degrees below the horizon and until then it is impossible to see the horizon as well as the brighter stars. The navigator of a ship at sea can use his sextant to measure the height of these stars and determine his position.

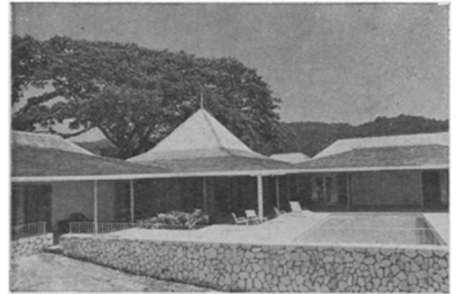
The accompanying maps show how the sky looks about 11:00 p.m., local daylight saving time, at the first of the month, and an hour earlier at the middle, two hours earlier at month's end. At this time of year in the United States and Canada the sky remains bright long into the evening. □

CELESTIAL TIMETABLE

June	EDT	
1	midnight	Moon passes north of Saturn
3	10:21 p.m.	New moon
5	11:00 a.m.	Moon passes north of Mars
6	6:00 p.m.	Moon passes north of Venus
9	4:00 p.m.	Moon farthest, distance 251,400 miles
10	5:00 a.m.	Moon passes north of Regulus
11	5:00 a.m.	Venus passes south of Pollux
12	12:07 a.m.	Moon in first quarter
15	1:00 a.m.	Moon passes south of Jupiter
18	2:00 a.m.	Moon passes south of Antares
19	8:28 a.m.	Full moon
21	2:00 p.m.	Moon nearest, distance 225,600 miles
	3:43 p.m.	Sun farthest north, summer begins in Northern Hemisphere
26	12:01 a.m.	Moon in last quarter
29	noon	Moon passes north of Saturn

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