

Saturn now brightest

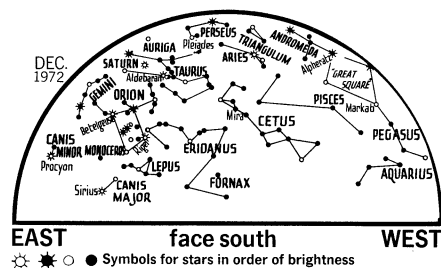
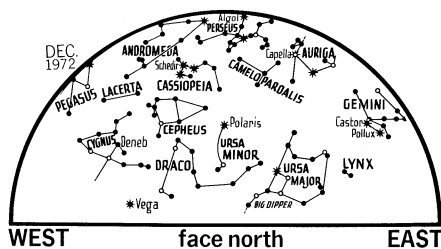
by James Stokley

Jupiter, so prominent in recent months, is still shining low in the southwest as the sky darkens. By the end of December it will be hard to see. (It sets about 5 p.m., soon after the sun.)

Another planet, Saturn, is now conspicuous high in the southeast in the constellation Taurus. It is brighter than any star, except Sirius.

Three more planets appear during the early morning hours of December. Venus, about 19 times brighter than Saturn, rises in the southeast about two and a half hours ahead of the sun. Mars comes up about the same time but it is so faint that it will not be easy to locate. And on Dec. 14 Mercury is farthest west of the sun. For a few days before and after the 14th it will be visible low in the southeast as dawn brightens the sky.

Several factors combine to make Saturn so prominent at this time. On Dec. 8 it will appear to be directly opposite the sun—"in opposition" as the astronomer says. That is, Saturn and earth will be lined up in the same di-



rection from the sun. Saturn will then be at its closest point to earth this year, about 750 million miles away. Rising at sunset it is visible all night. Moreover, with the sun so far south Saturn is now far to the north. For us in the Northern Hemisphere it rises high in the sky.

Saturn is now about 2.75 times as bright as it was at opposition in 1966. Such a great variation occurs with a regular change in the angle at which we view the planet's system of rings. These rings, visible with a telescope of at least moderate size, surround Saturn above its equator. They are not solid but consist of a vast swarm of gravel-sized particles so close together that, from our distance, they look continuous.

Winter in the Northern Hemisphere begins Dec. 21 at 1:13 p.m., EST, when the sun reaches the southernmost point.

The accompanying maps show how the sky looks about 10 p.m., local standard time, on Dec. 1; 9 p.m. on the 15th and 8 p.m. on the 31st.

CELESTIAL TIMETABLE

| Dec. | EST | |
|------|----------|--|
| 3 | 1:00 am | Moon passes south of Venus and Mars |
| | 6:00 pm | Venus passes north of Mars |
| 4 | 9:00 am | Moon farthest, distance 252,600 miles |
| 5 | 3:24 pm | New moon |
| 8 | 1:00 am | Moon passes south of Jupiter |
| | 9:00 pm | Saturn opposite sun |
| 13 | 1:36 pm | Moon in first quarter |
| 19 | 8:00 am | Moon nearest, distance 222,500 miles |
| | 10:00 am | Moon passes north of Saturn |
| 20 | 4:45 am | Full moon |
| 21 | 1:13 pm | Sun farthest south, winter begins in Northern Hemisphere |
| 27 | 5:27 am | Moon in last quarter |
| 31 | 5:00 pm | Moon farthest, distance 252,200 miles |



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