



## December skies may make history

by James Stokley

December 1973 may go down in astronomical history for two memorable events: space observations yielding new knowledge of Jupiter, and the brightest comet of the 20th century.

The Pioneer 10 spacecraft was launched from Kennedy Space Center last March 2. On Dec. 3 (if all goes as planned) it will pass within 87,000 miles of Jupiter. This is about 1/5600th its mean distance from earth. Data radioed back to us and analyzed over the coming years will doubtless answer many puzzles about this largest planet in the solar system—and also pose new ones for future study.

Comet Kohoutek, rapidly approaching the sun and the earth, should be visible throughout early December low in the southeast prior to morning twilight. In mid-December it may be visible in the early phase of morning twilight. Toward the end of the month, the comet will move more and more into the glare of the dawn. It will become an evening object after Dec. 28.

Comet Kohoutek does not appear on the accompanying maps, which show the night sky as it appears about 10 p.m. on Dec. 1 (local standard time); 9 p.m. on the 15th and 8 p.m. on the 31st. Neither does Venus, which shines more brightly than any other planet or any star and sets about three hours after sunset. Jupiter, about a twelfth as bright as Venus, sets about an hour later, also before the times of the maps.

However, two bright planets are shown. One is Mars, high in the south

and moving from Pisces into Aries. It is about two-fifths as bright as Jupiter, and shines with characteristic red light. The fourth planet (also shown) of the December evening is Saturn. In the east in Gemini, it's about five-eighths as bright as Mars. □

### CELESTIAL TIMETABLE

Dec.	EST	
2	8:29 pm	Moon in first quarter
6	10:00 am	Moon passes north of Mars
9	8:34 pm	Full moon, partial lunar eclipse
10	5:00 pm	Moon nearest, distance 222,500 miles
	7:00 pm	Moon passes Saturn (From northeastern North America moon will pass in front of Saturn)
16	12:13 pm	Moon in last quarter
19		Venus at greatest brilliancy
21	7:08 pm	Sun farthest south, winter begins in Northern Hemisphere
23	1:00 am	Saturn opposite sun
24	10:07 am	New Moon, partial eclipse of sun visible in eastern half of North America just after sunrise
25	5:00 pm	Moon farthest, distance 252,600 miles
27	5:00 pm	Moon passes north of Venus
	midnight	Moon passes north of Jupiter

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