

“ The night will never stay,
 The night will still go by,
 Though with a million stars
 You pin it to the sky;
 Though you bind it with the blowing wind
 And buckle it with the moon,
 The night will slip away
 Like sorrow or a tune.

- Eleanor Farjeon

HEAVENLY EVENTS TO WATCH FOR IN DECEMBER, 2010

Envision a merry-go-round on which the horses do not all circle the center in the same amount of time, with the inner horses moving more slowly than those on the outside. Instead, on the solar carousel the innermost horse is very much the fastest, and the outermost is the slowest; the Earth is 3rd horse from the Sun at the center. You, a rider on that 3rd horse, could then picture how the fastest horse, MERCURY, can actually pass between you and the

4th horse, MARS, five times while Mars crosses the far side of the Sun. Before mid-December Mercury passes Mars for the 2nd time in their quintuple conjunction; they can be seen together very low over the southwest horizon a half-hour after sunset, with binocular or telescopic help. (View over open water.) By month's end the speedy Mercury will begin to appear very low in the southeast within the hour before sunrise. VENUS has leapt into the morning sky and is rising ever higher in the southeast before dawn, peaking at -4.9 magnitude early in the month. Beneath the Circler stars of Pisces in the evening sky, -2.5 magnitude JUPITER picks up a bit of speed eastward and is closing in on 5.8 magnitude URANUS for a 3rd conjunction in January. SATURN rises in the east-southeast by 2 AM this month, between the stars Porrima (γ) and Spica (α) in Virgo, well above Venus which rises later. Saturn, at 0.8 magnitude and only slightly brighter than Spica, is well up in the south at daybreak. By month's end its rings will have opened to 10[°] from edgewise.

- 1 Mercury is at greatest elongation east of the Sun. After sunset, look for Mars a bit lower in the southwest. By daybreak tomorrow, find the waning crescent Moon alongside Venus.
- e New Moon is on the 5th. Capella and the Kids of Auriga are overhead around 11:30 PM. They and the comparison stars for Epsilon (ϵ) Aurigae are all well up for observation most of the night.
- 5 Algol, β Persei, is in mid-eclipse at 10:29 PM; and again at 7:18 PM on the 8th.
- 6 Retrograde motion ends for Uranus, which is less than 3[°] to the upper-left of Jupiter. Long Islanders may want to try for a view of the 1-day-old crescent Moon just over the southwest (ocean) horizon just after sunset, using telescope, below and to the right of Mercury. Mars might be found, minutes away from being occulted by the Moon - but both will set just before the occultation begins. Tomorrow evening the thin crescent Moon will be above Mercury.
- 9 Earliest sunset is today, about 4:28 PM, (depending on your location.)
- 13 Find Mercury and Mars within 30 or 40 minutes after sunset. They're about 1[°] apart - Mercury is higher - marking the 2nd stage of their quintuple conjunction. Also this evening, the first quarter Moon rides above Jupiter. And after moonset it's time to enjoy the best of this year's Geminid meteor display. Lie back and look nearly straight up for the source (radiant) of these meteors.
- 20 Full Cold Moon tonight provides us with a total lunar eclipse, seen from beginning to end across the United States. The heavily-cratered southern hemisphere will be deeper into the umbral shadow than the darker-hued mare to the north. Times after midnight:

12:29 AM	begins	penumbral eclipse	ends	6:05 AM	
1:33 AM	begins	partial eclipse	ends	5:01 AM	
2:41 AM	begins	total eclipse	ends	3:53 AM	Mid-eclipse: 3:17 AM
- 21 Winter begins at 6:38 PM as the Sun is overhead at the Tropic of Capricorn over the south Pacific.
- 28 Algol is in mid-eclipse at 9:02 PM, and again at 5:31 PM on the 31st.

Prepared by Robert Chapin