

Ponder the Portage County Skies with Paul Sky events for November 2008

1 Sunrise 07:36 am; 20 degrees south of due east

1 Sunset 05:46 pm; 20 degrees south of due west

2 Daylight Savings Time ends 2:00 am

5 First Quarter Moon (moon overhead at sunset)

5-6 Taurid meteor shower with moon hindering

6 (1572) Tycho Brahe records supernova

11 Veteran's Day

13 Full Moon 12:17 am (moon rises at sunset)

17-18 Leonid meteor shower with moon hindering

19 Last Quarter Moon (overhead at sunrise)

19 (1969) Apollo 12 makes second lunar landing

27 New Moon (moon under the sun about noon)

30 Venus passes under Jupiter in SW at sunset

30 Sunrise 07:31 am; 33 degrees south of due east

30 Sunset 04:20 pm; 33 degrees south of due west

Highlights for November? Jupiter and Venus

are evening planets for all of November with

Jupiter appearing to be a bright star in the south

moving west a degree per day and Venus

appearing to be even a brighter star in the south

southwest all month. Jupiter and Venus join each

at sunset on Nov. 30th. Saturn appears to be the

bright pre-dawn star in the East all month. Mars

and Mercury are two near the sun this month.

How much daylight do we loose in

November? One hour and three minutes of

daylight is lost this November. We go from ten

hours and 10 minutes of daylight to start the

month down to nine hours and seven minutes of

daylight to end the month. We will only lose

another seventeen minutes of daylight this year.

Any daylight savings time stories? One thing

on my mind is getting my three Astronomy classes

out to view the winter constellations and stars in

the morning, before daylight savings time ends.

This way we can meet at 5:30 am instead of 4:30

am. What the famous Wisconsin astronomer Jack

Horkheimer calls the sensational celestial six-

pack of Sirius (1), Procyon (7), Pollux (17), Capella

(11 & 14), Aldebaran (13), and Rigel (6) forming a

near perfect hexagon in the morning sky with

Betelgeuse (9) inside them. Again, as Jack says,

seven of the brightest stars all in a huddle, WOW!

Also, on Sunday morning the 2nd of November, if

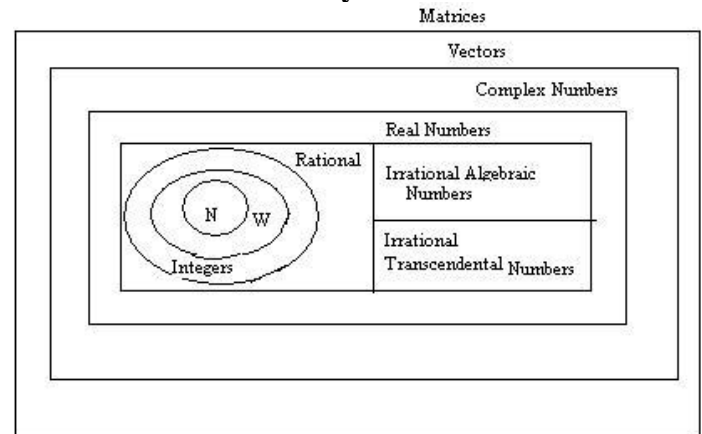
someone asks you what happened at 1:15 am,

remember to answer them, which 1:15 am?

Remember, at 2 am we turn the time back to 1 am

so we go by 1:15 am twice that night.

Why did you mention Tycho Brahe and Apollo 12? People usually forget that without Tycho Brahe's accurate celestial records pre-telescope that Johannes Kepler would not have been able to formulate his three laws of planetary motions. Also, Apollo 11, 13, and 17 get most of the recognition and Apollo 12 is the most forgotten moon landing. Six Apollo landings with two Astronauts walking on the moon each time, makes for a dozen people who have walked on the moon. **Talking about a dozen, could you review the last dozen articles for us?** Note the Venn diagram (nutshell) below as Astronomers use all dozen of these number systems to do their work.



To solve $x + 2 = 5$, the answer is $x=3$, so natural numbers are required. To solve $x + 2 = 2$, the answer is $x= 0$, so whole numbers are required. Also, remember dividing by zero is prohibited. To solve $x + 2 = 1$, the answer is $x = -1$, so integers are required. To solve $2x = 1$, the answer is $x = \frac{1}{2}$ so rational numbers are required. To solve $x^2 = 2$, the answer is the square root of 2, so irrational algebraic are required. To solve the circumference of a circle divided by its diameter, the answer is pi, so irrational transcendental numbers are required. To solve $x^2 = -1$, the answer is $x = i$, so complex numbers are required. To solve, if a rocket is lifting off the launch pad with a given velocity but a wind is blowing due north at this other given velocity, which way will the rocket go? This one needs to use vectors. Finally, if a shuttle has to be delayed for a month because of a newly developed malfunction of the Hubble space telescope, a matrix manipulation is performed to advance all the dates in the database for this flight up a month. GNATS