

SpaceWalk FOR MARCH 2015

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With the winter weather of february waning, having given us probably the final snowfall of the 2014-15 winter in early March, we can enjoy our spacewalks in greater comfort. We discuss three features of March: the start of Daylight Savings Time, the saying about the Lion and the Lamb, and the Jewish month of Nisan.

Daylight Savings Time, DST, was originally promoted in the 1700s as a way to get people to get more use of the early hours of daylight. As spring came, sunrise came earlier, yet people slept until their usual hour, wasting' the early daylight period. If people could get going in their days life earlier, they could also enjoy more sunshine in the evening.

DST in its present form does not actually save daylight. It merely shifts the daily routine of the people to fit more centrally into the fixed number of daylight hours. Nor does it add more hours of activity to the daily life. About the same number of hours are spent, but under DST more are spent under daylight rather than night or dusk.

Several methods of realizing the shift of hours were proposed. Most were so silly they were not seriously rested, like firing cannons, with blanks, to scare people awake earlier in the day.

One method, hardly suited for general public life, is in use by some astronomers. The clock hours of daily activities is shifted to follow the pattern of daylight. Astronomy clubs who offer starviewing at nightfall move the start hour over the months as the sunset hour migrates later and earlier with the season.

In the current system of Daylight Savings Time in the United States, the clocks and time services are set ahead, forward, one hour from a particular Sunday in the spring and returned to standard time at a certain Sunday in the fall.

The dates are established by federal legislation and adjusted every couple decades in reaction to political and economic pressures. The last adjustment was that beginning n 2007 DST starts on the second Sunday of March and ends on the first Sunday of November. For 2015 the calendar dates are March 8 and November 1.

The change-over occurs at 02h by the then prevailing time.

When DST begins, there is NO valid time for 02:00 thru 0:59. Instantly the clock touches 02:00 when crossing into DST it jumps ahead to 03:00. The hour 02:00-02:59 is most, does not exist.

At the return to standard time, instantly the clock touches 02:00. after hoing yhru the 01h block once, it snaps back to 01:00. The hour 01:00-01:59 is repeated.

There are a few peculiar features of Daylight Savings Time in the US. Indian lands are considered as separate nations, not subject to the tDST rules. Each Indian nation works out for itself how to deal with DST in its territory, regardless of the practice outside their frontiers.

Arizona and Hawaii stay on standard time. This is largely the effort of the astronomy economy in these states centered on Mauna Kea and kitt Peak. We astronomers have utterly no need or want for Daylight Savings Time.

DST enters and leaves in a wave across the US, starting in the Eastern timezone and progressing west hour by hour. The change is done

at 02h in each timezone, taking three hours to complete for the lower-48 and a few more for Alaska's timezones.

Where a timezone frontier cuts thru a state, the state decides to let each zone do its own DST change or make the whole state change as a unit.

The US already has a partial all-year DST! When occasionally the timezone boundaries are adjusted they usually are shoved a bit farther west. They are closer to the central meridian of the next western zone than to their own meridian. People near this frontier can be 45 or more minutes later on the clock than true for their longitude. For them sunset is 45 minutes later under their own standard time, before adding the extra hour for Daylight Savings Time.

For us astronomers, DST doesn't exist. We do use it to cite times of activities, like club meetings and public events. For all of our routine work we employ the zone time or GMT. Where provided for in our computers and software we turn off Daylight Savings Time.

Now for the Lion and the Lamb of March. You heard that March comes in like a lion and goes out like a lamb. The saying alludes to the transition of season from winter to spring. This year March did enter like the lion with snow and frigid air. By mid month the air is much milder. Precipitation from now on is rain. March likely will depart like the lamb.

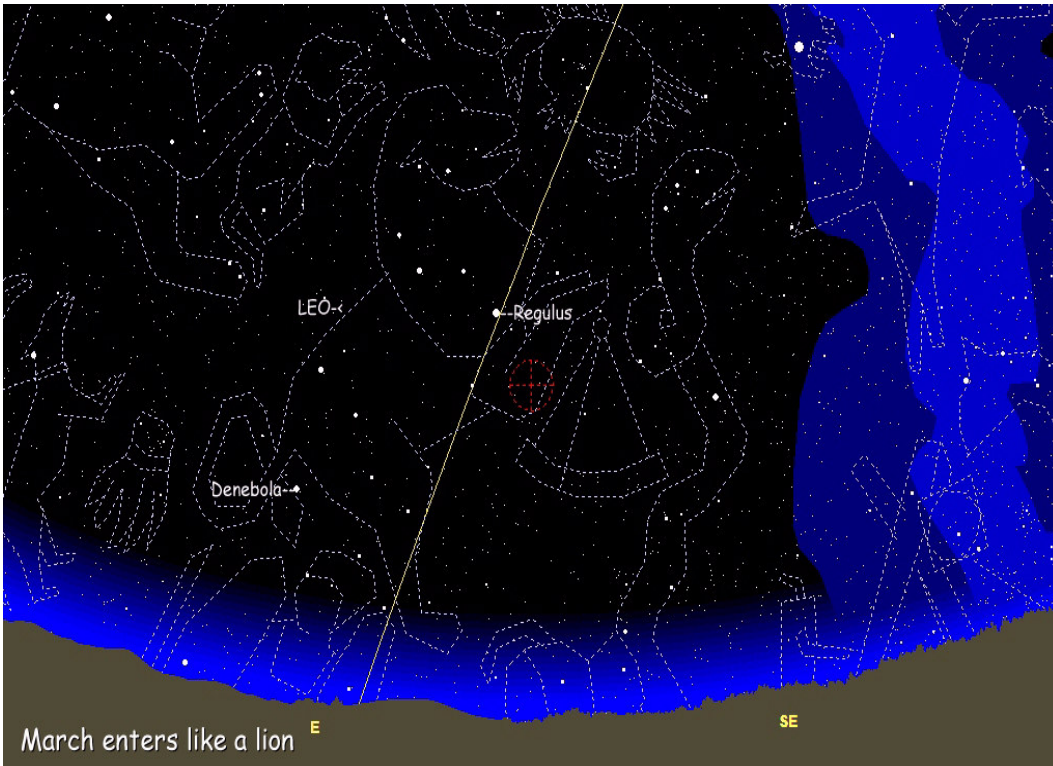
Why these two animals? Yes, they are good choices but hardly the only ones. There are lots of fierce and tame animals. How about 'March enters like a gorilla and leaves like a kitten'? Somehow it doesn't grab you. It's the lion/lamb pair that fits best.

Some year in the late 20th century one of my elder astronomers explained the saying. He set up a planetarium software set to mid March at nightfall. He pointed out that in the east Leo (LEE-oh), the lion of the zodiac, is rising. In the west Aries (A-reez), the ram or lamb of the zodiac, is setting.

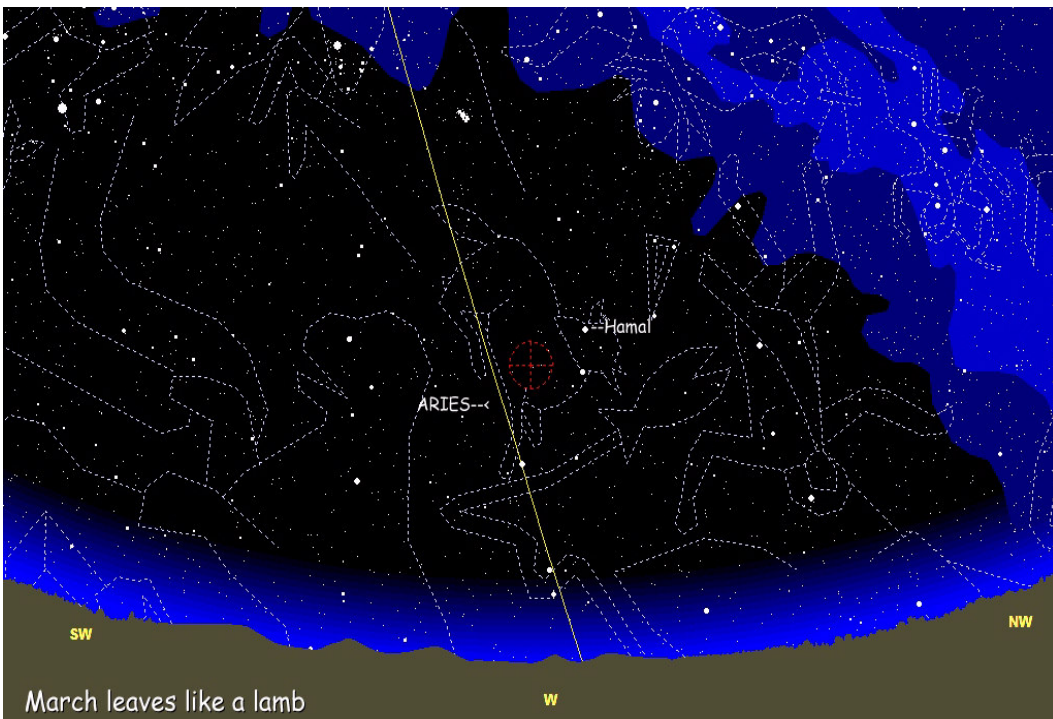
That's it!

Here are the two groups with stylized creatures around the stars. A few stars are labeled to correspond with the panorama chart. The sloping straight line in each picture is the ecliptic.

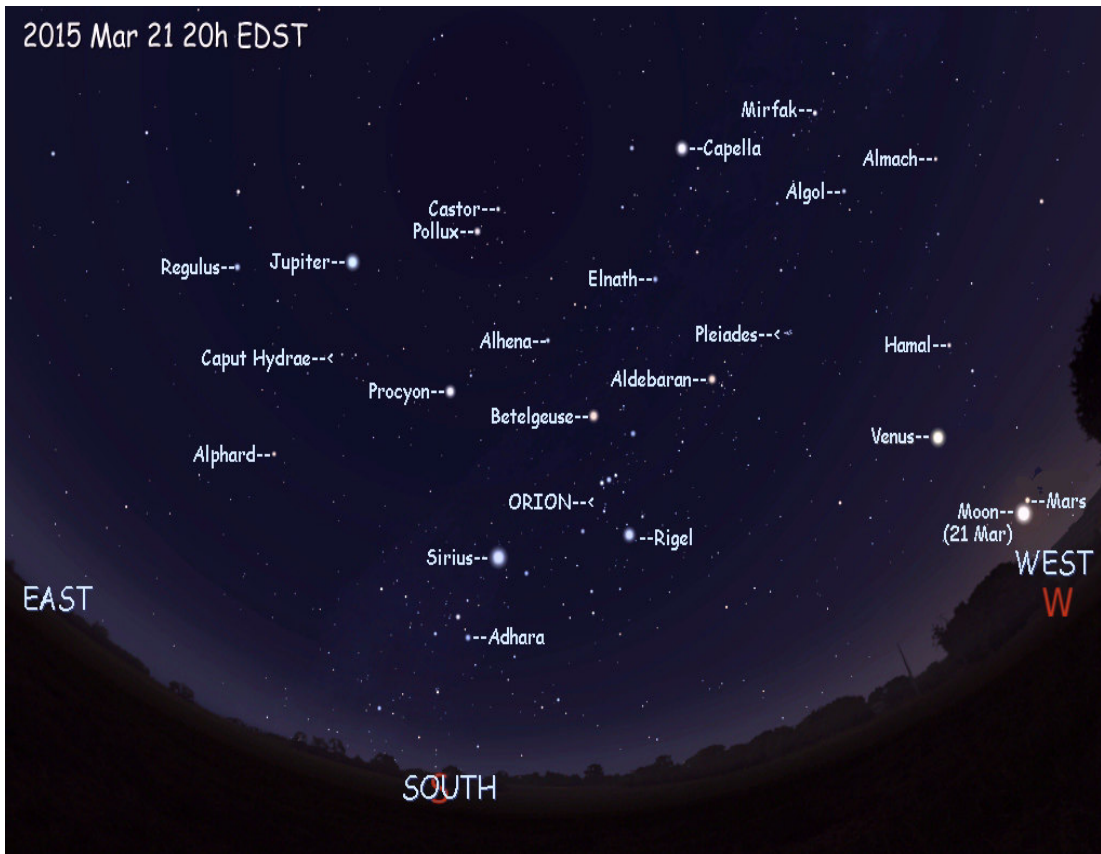
Leo is entering, coming in during March. Aries is leaving, going out.



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Our panorama chart is plotted for 2015 March 21 at 20:00 EDST. We look south with zenith at 184 from top center.



We be in the early weeks of Daylight Savings Time, which started on Sunday, March 8th. We jump back to standard time on the first Sunday of November. For astronomers, DST artificially pushes nightfall an hour later into the night, complicating plans for observation and disruption social and domestic activities.

In the early nightfall period, when the sky is not yet fully dark it may be hard to see Aries and Leo. In just this particular year of 2015 we are blessed with two celestial aides. Venus in March sits in Aries and Jupiter sits just west of Leo.

By now you are spotting Venus in the west as the blazing white star above the sunset point. Aries is the set of stars around her. Doing an about-face aims you into Jupiter, the brilliant yellow star in the eastern sky. Leo is the group of stars to his lower left.

This heavenly marker lasts only for this very year. Next year Jupiter moves into the middle part of Leo but Venus is then no where to be seen in evening. You have to know the constellations to appreciate Aries. Binoculars will help here.

The Orion group is sliding to the west and will be mostly lost in twilight during April. Venus stands in Aries in the west while Jupiter is near Leo in the east. As mentioned above, they mark the Lion and Lamb of march for this year.

See the Moon way down there about to set? If you are looking at 19:30 the sky may be too bright with twilight to find the Moon. After 20:30 she is already set and out of the sky for the night. She's 'over-exposed' in the chart so I give here a tempered close-up of this Moon.

First Crescent of Nisan 2015 Mar 21 dusk



This thin crescent Moon opens the Nisan, the first Hebrew month of spring. By chance the view from New York this year is near the earliest moment a person can actually see the Moon after new phase.

Nisan has observances for both Passover and Easter. Both observances bank off of the the full Moon, about two weeks after March 21st.

Because it is really tough to tell by bare eye just when the Moon is good and round, the Hebrew calendar sets the 15th day of each month as the full Moon. This is quite halfway thru the phase cycle on the way to the next new Moon and the next month.

This year the new Moon, on March 20th, the last day of the

preceding Hebrew month, was also a solar eclipse. The full Moon next following, the Passover Moon, is a lunar eclipse. Both eclipses are not visible from the City. When a lunar eclipse occurs when the Moon marks a Hebrew observance it's commonly called a Blood Moon. News about such an eclipse is mixed with dire claims of doom and disaster.

If the sky be clear and you have a low skyline to the west, you may try to spot this crescent for yourself. Doing so strongly links you to the millennia of astronomers who announced the new month with a direct sighting of the first crescent.