

### June packs big events

**By Vernon Whetstone**

*Amateur Astronomer*

Lots to do this week, so let's get to it. The first big event is the summer solstice, the first day of summer, although I think the weatherman beat us to it.

Technically at 11:04 p.m., MDT, on Thursday, June 20, the Sun will reach the Tropic of Cancer—some 23 degrees north of the equator which supposedly gives us the longest day and the shortest night of the year.

I received an e-mail from someone asking why the first day of summer was on June 20, instead of June 21, like it has always been.

Well, first of all, it has not “always” been on June 21.

As you should know by now, the seasons are not events of the calendar, they are astronomical, and thus governed by the motion of the Sun and Earth.

The timing of the event this year is such that if you live anywhere east of the Mountain Time Zone, summer starts at 12:04 a.m. on June 21. If you live in, or west of the Mountain Time Zone, summer starts at 11:04 p.m., a little less than an hour before midnight on June 20.

As for June 20, being the longest day of the year, there are actually 10 longest days of the year. From Monday, June 16 through Wednesday, June 26, the length of daylight is 15 hours and one minute.

After June 26, the days begin to shorten as the Sun begins to move south again shortening by an average of anywhere from two to four minutes a day.

Our other “big event” is the so-called “Super moon” of Sunday, June 23, when the time of the full moon is just a half-hour away from the moon's closest approach to Earth for the year.

Please don't be confused by all the “hype” in the news and on the internet. There is nothing particularly “super” about this moon, it is just a coincidence that the event of being full, and being at its closest to Earth are so close together time wise.

In actuality, the difference between the apparent size of this moon and any other full moon is between seven to 14 percent, so that is not really a great lot.

Now, I can hear you saying, “Wasn't there a “super moon” last month? Yes, there was, and there will be a “super moon” next month too. It is just the juxtaposition of the time the moon is full, and the time it is closest to Earth for that month being close together, so it is really no big deal.

Now, I think we all know that a full moon does appear large when it rises, because of the optical illusion called, “The Moon Effect.” It really only looks large, but it is not really all that large.

To find out for yourself here are two experiments you can do. First get an ordinary dime, a ten-cent piece. Hold it at arms length between your thumb and forefinger up next to the rising moon. You will notice they are about the same size.

Now, wait a few hours, go back outside when the moon is much higher in the sky (preferably almost overhead) and put the dime up next to the moon again. You see, they are still the same size.

The other experiment you can do is to turn around with your back to the moon, bend over at the waist and look at the moon through your legs, see, it looks small. Please don't ask me why, it just does.

**SKY WATCH:** Full moon, Sunday, June 23. Venus and Mercury are still dancing together after sunset in the west for our viewing pleasure. Our harbinger of spring, Leo, the Lion, is taking a nose dive toward the western horizon just as our good friends, the Summer Triangle (Vega, Deneb, and Altair), are just clearing the eastern horizon. Keep watching Venus for the next few weeks as it rises higher toward some very interesting conjunctions.

**NEXT WEEK:** More about those conjunctions, and more astronomical blather.