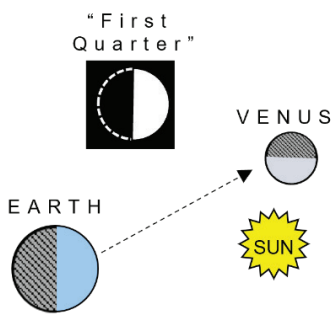
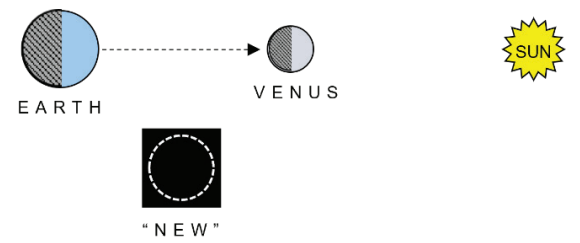


WHAT'S UP?

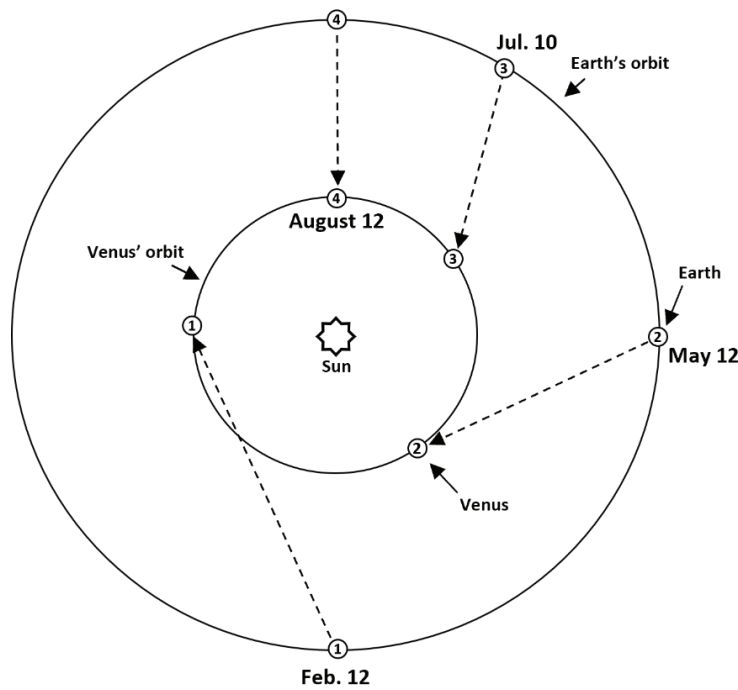
Hello! Summer's here and the time is right for dancin' under the stars. Though it doesn't get dark enough to see them until at least 9:00 p.m., when it is dark enough, the warm nights have plenty to offer. Any discussion of our current night sky must start with Venus. Wow! It's that incredibly bright light we see in the west even before it is "dark out". Shinning at magnitude -4, it can't be overlooked. A view through a telescope or binoculars will reveal a half-illuminated disk – similar to a 1st Quarter Moon. Venus will continue to brighten by a smidge over the coming week and then will begin to dim over the next month and a half until it's no longer visible in our evening sky. Did I just say "evening sky"? Venus is so far to the east of the Sun, that it doesn't set until almost 11:00 p.m. It will reach its greatest apparent distance from the Sun in our evening sky – called its *greatest eastern elongation* – on the 3rd. The changing brightness of Venus is an interesting thing to consider. Our view of the sunlit half of Venus changes over time similar to the way we have an everchanging view of the sunlit side of the Moon. When Venus is in between the Sun and the Earth we are looking at the night side of the planet. The side of the Venus that is lit by the Sun is facing away from us. We can think of this as a "New Venus".



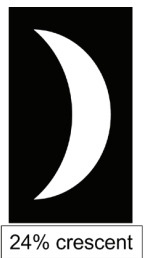
and is at its greatest apparent distance from the Sun (its *greatest western elongation*), we see half of its sunlit side. From our vantage point, the left side of the disk is lit – a "Third Quarter Venus". When Venus is on the far side of the Sun from us, if we could see it, we'd see a "Full Venus". And, as the planet comes around to where it is now, the right side of the disk is lit – a "First Quarter Venus". Why then does Venus appear brighter in our sky now than it does just after or before a Full Venus? The answer to this lies in Venus' everchanging distance from us. At the time of a Full Venus, the planet is as far from the Earth as it can get, so it appears much smaller to us.



As Venus moves from the Full to the amount of the sunlit side that we see together. First, the apparent size of the far side of the Sun, the planet's about 20 arcseconds. When it is Sun, it subtends an angle of about 54 2.7 times bigger. This increase in be the fact that as it moves closer to the Sun, what we see of Venus thin crescent. The sweet spot occurs point, it subtends an angle of 39 4.5. It appears as a crescent. As around the Sun, Venus will pass and will be see again in late August Mercury, too, since it also is closer to the positions of Earth and Venus in



New phase, it gets closer to us. But, the decreases. Let's put these two effects Venus. At its furthest from us, when it is on disk subtends an angle of closest, between us and the arcseconds. That is, it appears Venus' size in our sky is offset us and passes between us and changes from the full disk to a 24% crescent. At that arcseconds and its magnitude reaches about - Venus and the Earth continue their dance between the Earth and the Sun on August 12th just before dawn. All of this applies to the Sun than the Earth is. The diagram shows February, May, July, and August of this year.



I want to remind you know about a series of astronomy mini-courses being offered at the Plympton Public Library this summer. The first course that Carolyn and I are presenting, *The Solar System*, was attended by about a half-dozen folks and livestreamed on the Library's Facebook page. Our second course, *The Structure of the Universe*, starts on June 22nd, to be followed by *Observing* (beginning July 13th), and *Equipment* (beginning August 10th). Each topic runs for three consecutive weeks. I invite you to joins us for some or all of these sessions. They run about one hour.

Planet Roundup: We've covered Venus in detail already. Enjoy viewing it! Mars has moved into the constellation *Cancer, the Crab* and is just east of M44, the *Beehive Cluster*. It can be found about 10 degrees (one fist's width held at arm's length) above and to the left of Venus. Saturn (at magnitude 1.0) rises in the East around 1:30 a.m. followed by Neptune at 2:30 and Jupiter a bit before 4:00. The Full Moon is on June 3rd, the 3Q will be on the 10th, the New Moon occurs on the night of the 17th though the actual *moment* it occurs is on the 18th, a bit after midnight. The next 1Q Moon is on June 26th. And though it feels like summer now, summer doesn't officially begin until Wednesday, June 21st at 10:57 a.m.!

You can reach me at astroblog@comcast.net with any questions and comments. This is *What's Up?* installment #71.

Barry