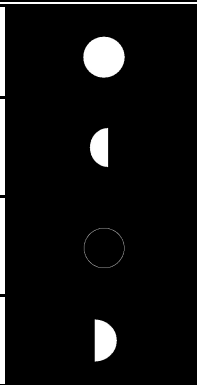


July Skies over the Pinnacles

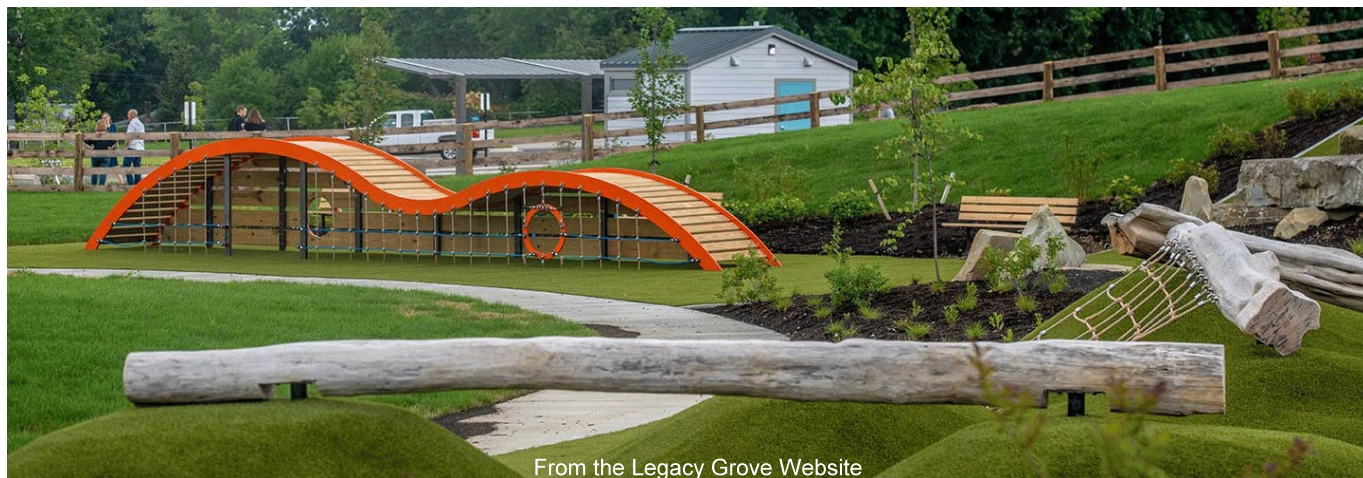
July 2023
by Jeff Hutton

July's Four Principal Phases of the Moon

July 3	Full Moon	
July 10	Last Quarter	
July 17	New Moon	
July 25	First Quarter	

Are You a Scientist?

On June 2, I had the happy opportunity to participate in a star party in Winchester, Kentucky. The sponsor was The Kentucky Environmental Education Council at a city park known as Legacy Grove which covers 30 beautiful rolling acres.



From the Legacy Grove Website

My fellow Eclipse Ambassador, Berea undergraduate Diego Colorado, and I brought two telescopes. Diego used my 80mm refracting telescope to provide views of the Moon and Venus and I operated my homemade 12-inch reflecting telescope. Regular visitors to Forestry Center star parties are familiar with this scope.



Dr. Tracy Hodge and her husband, both professional astronomers, show the Moon to a young visitor.



Cee Byrd, who organized the Legacy Grove Star Party, glimpses Venus through my telescope.



The Author with his 'All Persons Assessable Telescope'.



Many of the visitors brought their own telescopes.

More than once I was asked by visitors, “Are you a scientist?” Aside maybe from my teaching introductory courses in astronomy, I’ve never been described this way. I have not even taken a course for credit in astronomy. That doesn’t mean that I am not a scientist. Let me explain. Like you, I’ve applied what I have learned about doing something: teaching a class, building a telescope, etc. to avoid making the same mistake again, *too often*.

For me, The book that best describes what science is and the scientific method is one written by Carl Sagan near the end of his life, called ‘**The Demon-Haunted World, Science as a Candle in the Dark**’ *. Sagan describes anyone who buys a used car can use the scientific method (or should).

Start with the statement (by the seller), “This is a great car that I must sell it cheap. It has low mileage and is well maintained”. You ask for documentation showing that the car was well maintained and proof that the odometer hasn’t been tampered with. You also take it to a trusted mechanic to find out if the car is in good shape. That is research and that is what scientists do.

* Sagan, C. 1997 *The Demon-Haunted World, Science as a Candle in the Dark* . Ballantine Books
ISBN: 0-345-40946-9

Available from Amazon:

https://www.amazon.com/Demon-Haunted-World-Science-Candle-Dark/dp/0345409469/ref=sr_1_1?crid=2EGN2D9LR5YVJ&keywords=carl+sagan+demon+haunted+world&qid=1685906181&srefix=Carl+Sagan%2Caps%2C158&sr=8-1

I think one of the best parts of this book is on page 210 of Sagan’s book. It has been called “**The Baloney Detection Kit**”. This is what Sagan suggests you do when someone wants to convince you that a claim they make is true.

Confirm the facts. ...
Encourage debate. ...
Remember that authorities can be wrong. ...
Develop more than one idea. ...
Keep an open mind. ...
Measure things. ...
Test every link in the chain. ...
Apply Occam's Razor.

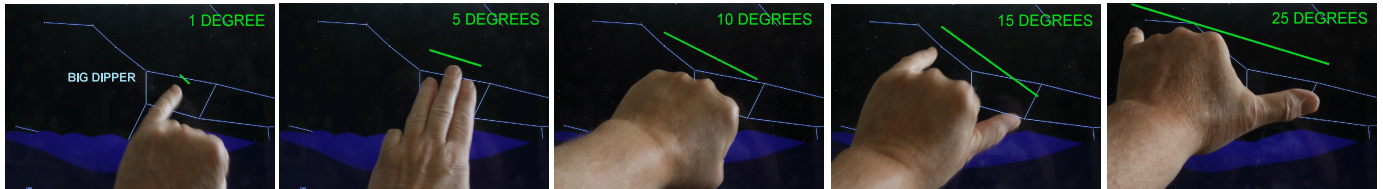
Occam’s Razor states that the *simplest explanation* for something happening, is usually the *best* one.

To read a full article at “Brain Pickings”, download a complete version at.
<https://www.google.com/search?client=firefox-b-1-d&q=baloney+detection+kit+pdf>

To keep from being taken advantage of by the next scammer who comes down the road, you, too, should be a scientist.

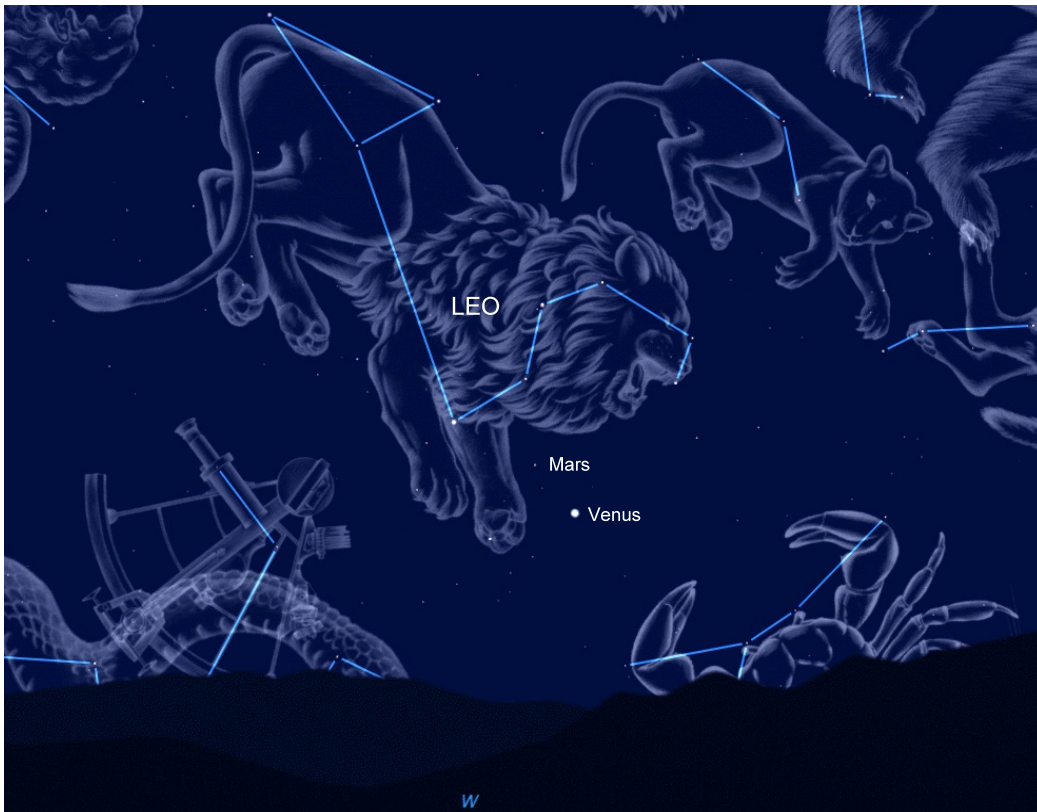
Attractions for July

Lots happening in Leo!

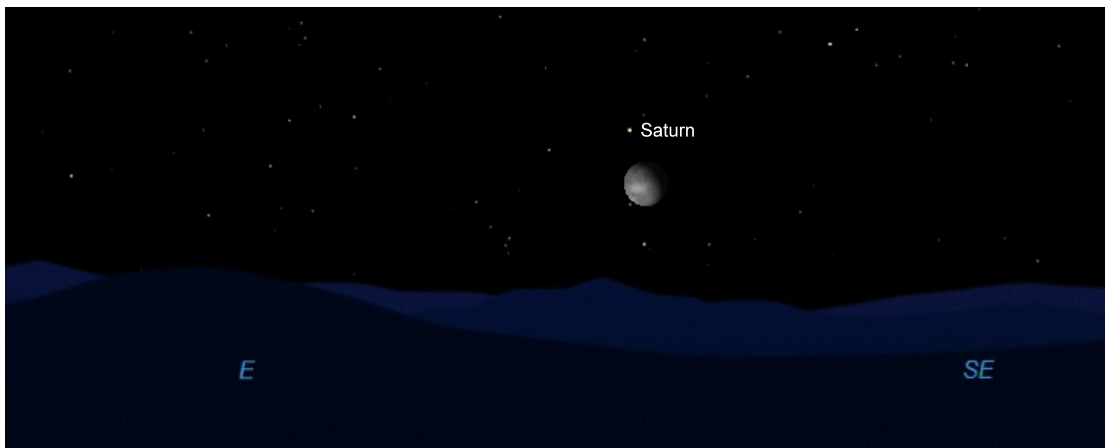


For instance, when you hold your hand all the way out and hold three fingers out, like the scout's salute in panel 2, your fingers create an **angular distance** of 5 degrees, about the width of the bowl of the Big Dipper. When I talk about the distance between, say, the Moon and a star or planet, I'll say that they are separated by a certain number of degrees. Sky and Telescope magazine is my source of most of the following information.

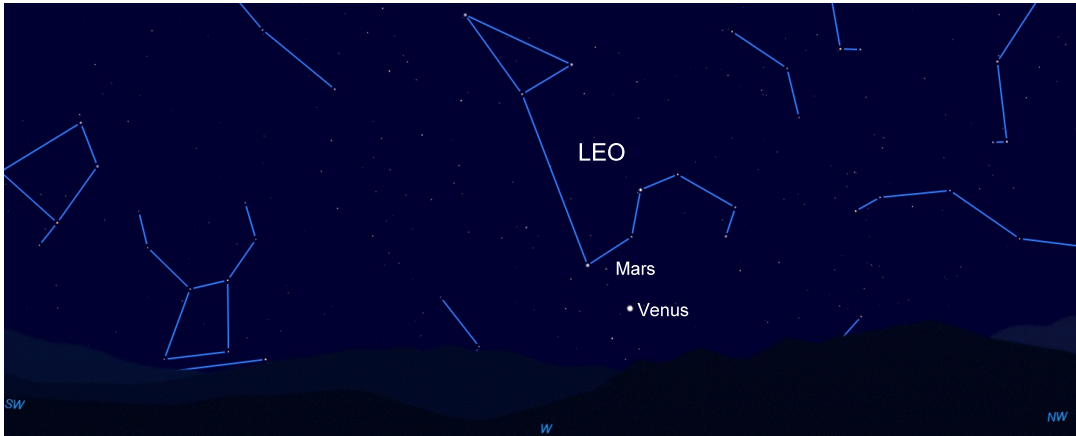
July 1 Wander out around 9:30 and look low in the west and find brilliant Venus lighting up the western horizon the planet Mars is just 3.5 degrees away to the upper left. Can you see a tilted and backward question mark “?” just above? That's the head and mane of Leo the Lion, playing with these two planets like a cat with a ball of yarn.



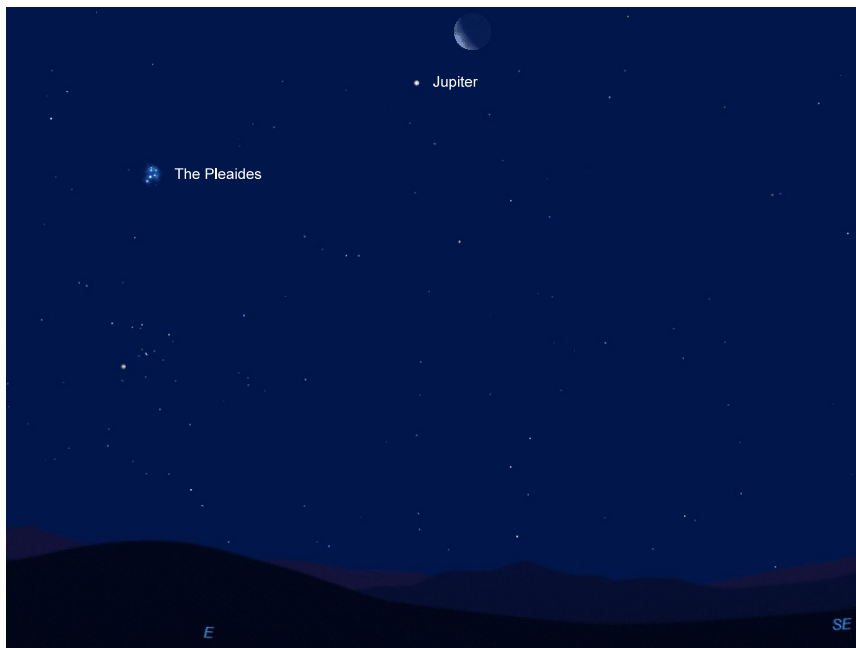
July 6 Just so you know, the Earth is farther away from the Sun on this day than on any other day of the year. The orbit of the Earth elliptical, not circular, so we are 3.4% farther from the Sun than at our closest that occurs in January. (Nothing to see here, so don't go looking at the sun without proper eye protection.) BUT... head out at about 1AM and see the ringed planet Saturn in the east, rising above the Moon 3 degrees away.



July 8 This might be your last chance this year to catch Leo playing with the planets Venus and Mars. Note how much closer Mars is to the bright star Regulus, at the base of the backward “?”. Back when we believed that the earth was at the center of the universe, the night-to-night motions of these two planets caused the most frustration to the astrologer/astronomers. They ‘behaved badly’.



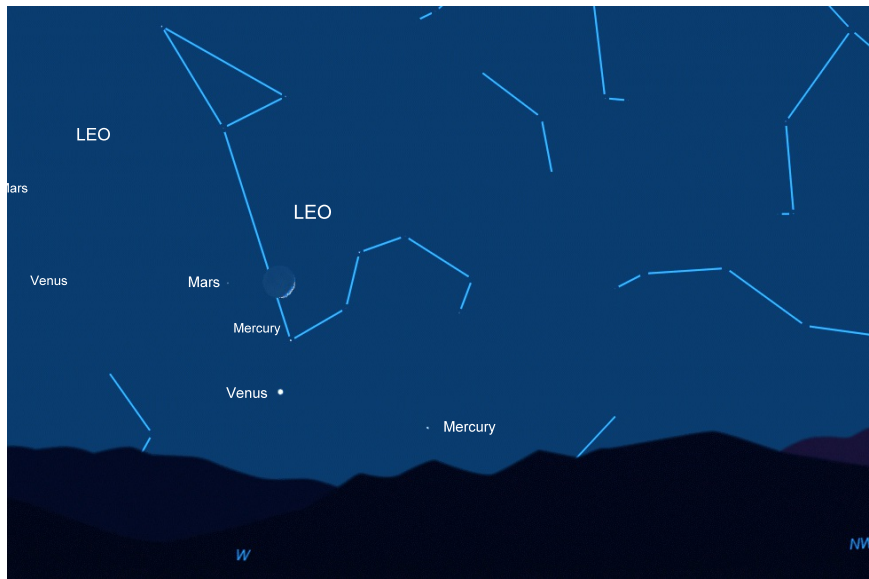
July 11 If you're up early, check out the thin crescent Moon, now paired with the planet Jupiter.



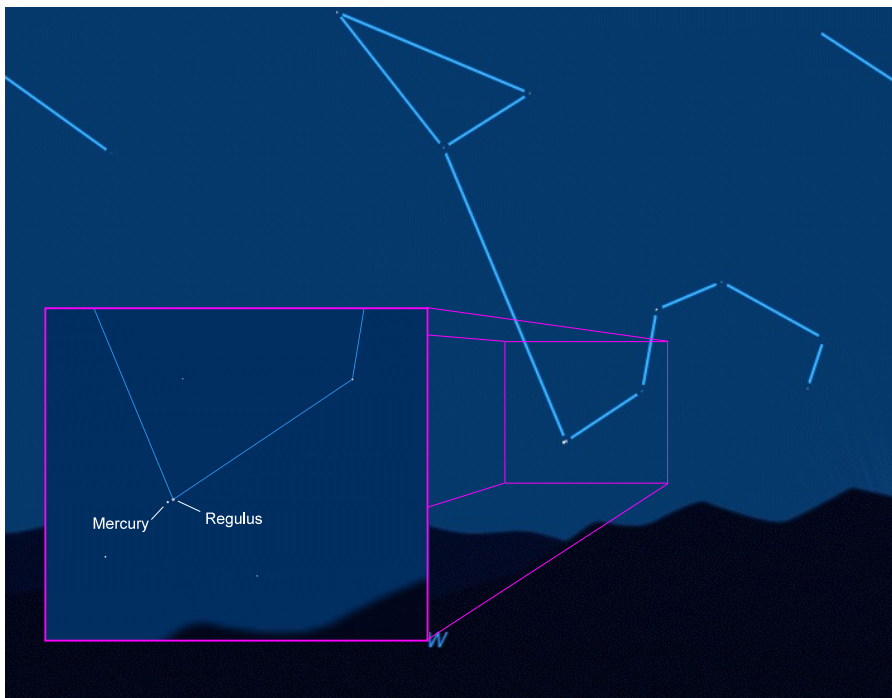
July 19 Binocular Alert! Just as the sky starts to darken at dusk find Leo and the thin crescent Moon. Below and to the right of the Moon you'll hopefully see Mercury with Venus to the left and Mars above and to the left of Venus.



July 20 Just a day later, now check out the same area of sky in the evening! See how much the Moon has moved eastward? If you hold out your hand at arm's length, fingers up, the horizontal distance between the base of your thumb to your little finger is about 12 degrees. That's how much the Moon moves in the sky in one day. Where will the moon be tomorrow?



July 28 Binocular Alert! Now that you know Leo's brightest star, Regulus, find it in binoculars or a small telescope this evening. Right next door is the planet Mercury.



Skies Above the Pinnacles



Scan the QR code above for quick access to my articles, courtesy of the Berea College Forestry Outreach Center.

