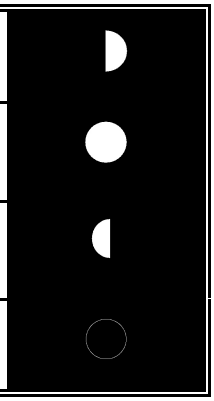
August Skies over the Pinnacles

August 2022

August's Four Principal Phases of the Moon

August 5	First Quarter	
August 12	Full Moon	
August 19	Last Quarter	
August 27	New Moon	

This landscape of "mountains" and "valleys" speckled with glittering stars is actually the edge of a nearby, young, star-forming region called NGC 3324 in the Carina Nebula. Captured in infrared light by NASA's new James Webb Space Telescope, this image reveals for the first time previously invisible areas of star birth.

Called the Cosmic Cliffs, Webb's seemingly three-dimensional picture looks like craggy mountains on a moonlit evening. In reality, it is the edge of the giant, gaseous cavity within NGC 3324, and the tallest "peaks" in this image are about 7 light-years high. The cavernous area has been carved from the nebula by the intense ultraviolet radiation and stellar winds from extremely massive, hot, young stars located in the center of the bubble, above the area shown in this image.

Above is the press release put out by NASA to describe one of the first beautiful images received from the new James Webb Space Telescope. We like to describe the amazing, and the beautiful as being "incredible"

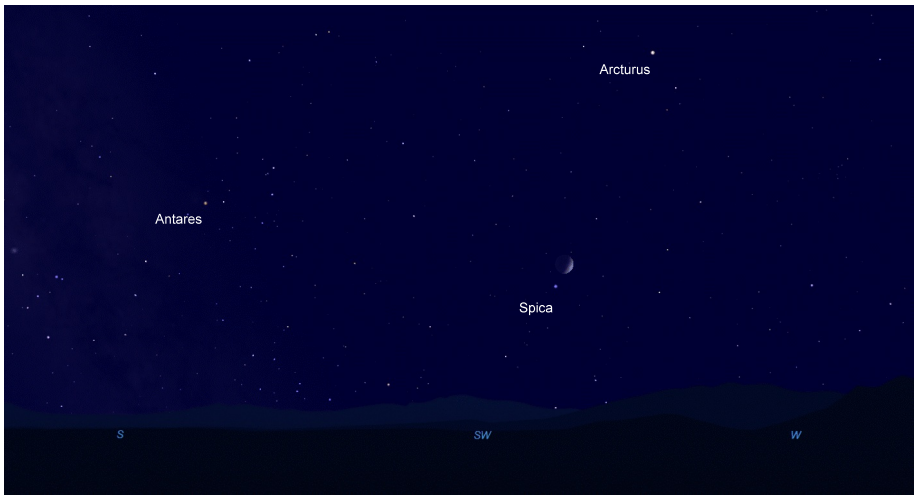
I hate this word (even though I slip-up and sometimes use it myself). The Merriam Webster Dictionary defines 'incredible' as **"too extraordinary and improbable to be believed"**. It seems that to describe an amazing image from space or some other extraordinary discovery of science as "incredible" and is completely missing the point. If a confirmed, world-changing discovery is made, the best way to describe it would be as "credible".

Images from the still-operating Hubble Space Telescope have become iconic and so beautiful that some have been reproduced on clothing, coffee mugs, face masks, cars and even as tattoos.

Consider this. Perhaps the most amazing thing about these images is that we as humans can achieve these goals. The pity is that many people distrust science and really do believe these things are incredible.

Attractions in August
"The Visiting Moon"

August 3 Wander outside just as it is getting dark and find the crescent Moon in the southwestern sky. See that star just below the Moon? That's the blue/white star, Spica, the brightest star in the constellation, Virgo. Now look well above and to the right a little. That's the star Arcturus, brightest star in Bootes, the herdsman. Can you tell a color difference between these two gems? Bright Arcturus is one of the orangest stars we can see without a telescope.



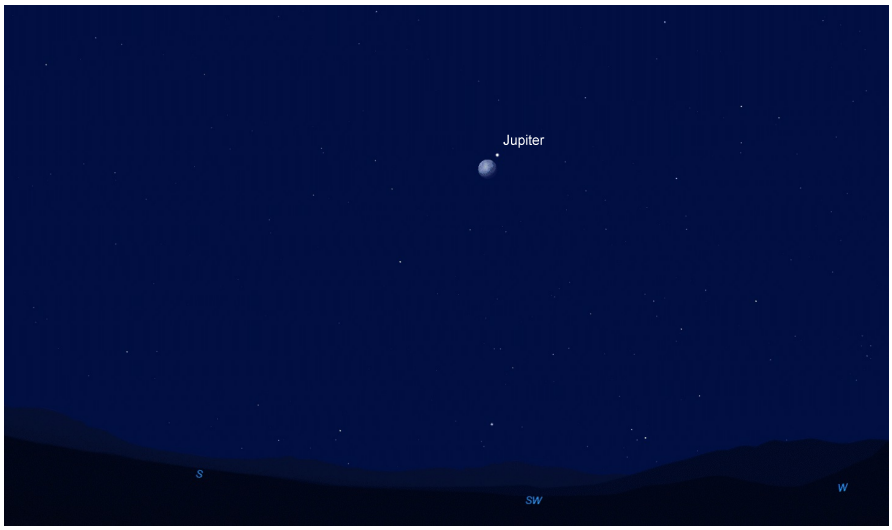
August 4 August star party at the Forestry Outreach Center! Following a brief presentation on astronomy, we'll head out to the darkened parking lot to view our Moon and view some of her features, including maria, thought to be watery before Galileo came along. We'll also view craters made from ancient impacts from asteroids. See valleys and mountains close up. We can even see lunar sites where astronauts walked. Later, we can look past the moon into our Milky Way and see distant star clusters and places of star birth as well as remnants of their deaths. Come by early and bring your telescope if you have one, especially if you have questions about it! The fun starts at 7:30.

August 6 Now find the moon again, this time in the south. We say that it is **"waxing"** until it is full on August 12. Look how much the Moon has traveled in 2 days! Now it is neatly between the star, Antares, brightest of the constellation Scorpius and the scorpion's claws. The name 'Antares' means ". anti-Mars" because it appears to be the same color in the sky as the planet Mars.

August 12-13 These are the mornings of the most famous annual meteor shower, the Persieds. They are called that because they appear to mostly come from the direction of the constellation called Perseus**.** These bits of space dust don't really come from Perseus. That's just a really cool illusion. Too bad the Moon is nearly full during this time. Light reflecting off the moon will make catching all but the brightest meteors hard to do.

August 14 Now let's follow the moon eastward when less of the sunlit side is visible to is visible to us. Now we say that the moon is **"waning"**. Can you see that 'star' that is rising with it in the southeast? This time, that's no star. It's the ringed Planet Saturn. You can't see the rings without a telescope but you can see two things about Saturn without a telescope. First, Saturn, like all planets, generally doesn't twinkle like the stars do. Second, the color of Saturn is very un-starlike. Think about the pages of an old book. That's the color. Tonight the orbits of both Earth and Saturn place these planets exactly on the same side of the sun. We call this event **"opposition"**.

August 15 The Moon now pays a visit to another planet, giant Jupiter. Only now you have to get up early, before sunlight fills the sky. Look in the southwestern sky to find the **waning** Moon snuggled up to Jupiter.



August 19 Early this morning, look for another visit between the Moon and a planet. This time, it's red Mars, just under the Moon. Also notice old friends, the Pleaides above and the '**>**' shaped star cluster, called the Hyades, with bright red Aldebaran at one end. The Hyades form the face of Taurus the Bull.

August 25 Get up early and catch a super-thin crescent Moon just above the brilliant planet Venus, just above the eastern horizon. Can you see the dimly lit night-side of the Moon? We can see that from here because a bright Earth is visible in the lunar sky from the near-night side of the Moon.