

# October Skies over the Pinnacles

October 2024

by Jeff Hutton

## October's Four Principal Phases of the Moon

October 2	New Moon	
October 10	First Quarter	
October 17	Full Moon	
October 24	Last Quarter	



Imagine that skies are clear and the sun is just setting. You may want to head outside to see the overhead wonders the night will reveal. This might be the start of 'one perfect night' but maybe you wish you knew what you are looking at. Is that a planet or a star? What is that fuzzy patch over in the east? Maybe a telescope will help?

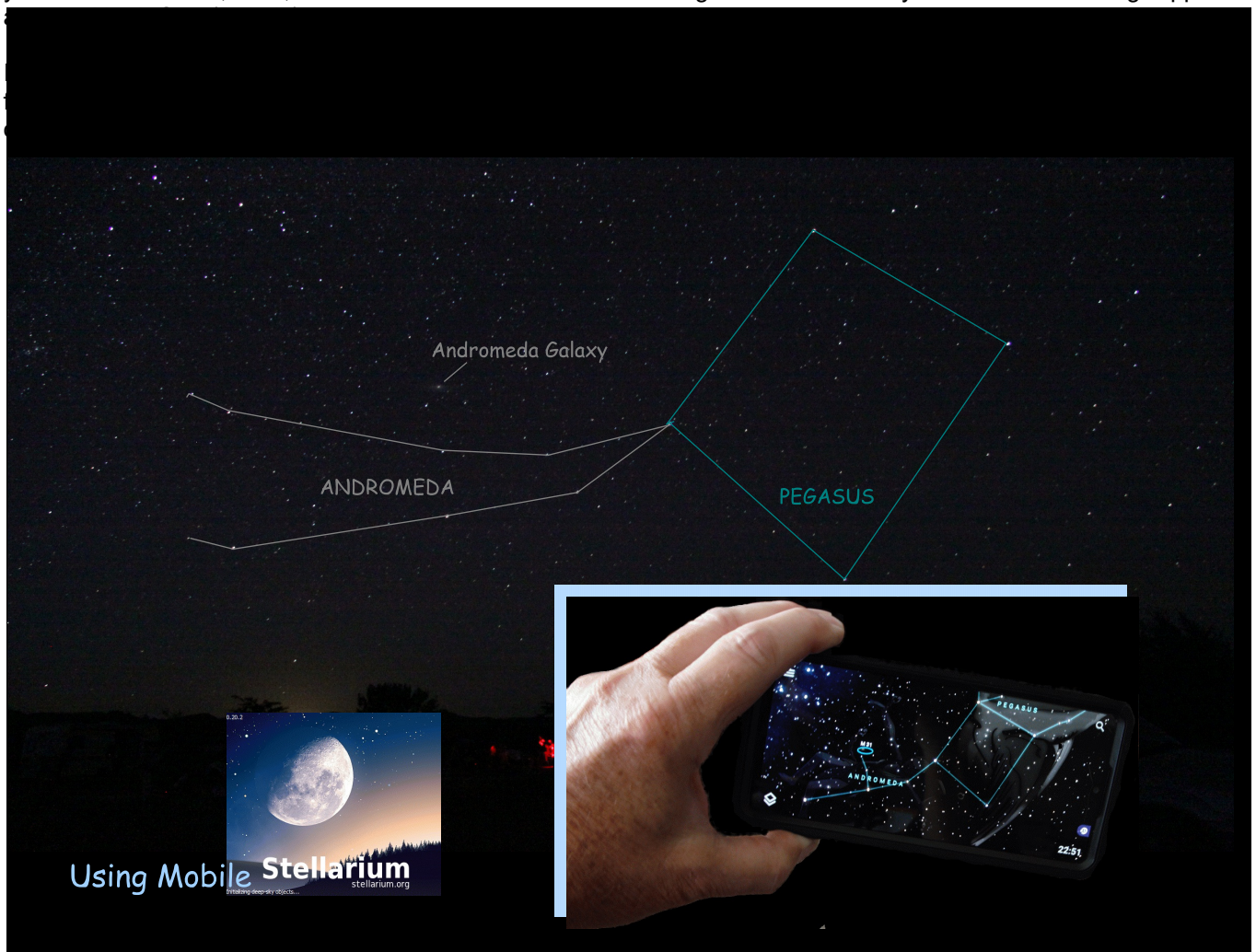
If you are curious about the stars and "don't know anything" about astronomy I would say two things to you. First, you probably know more than you think and, second, no one is born knowing anything about the stars. All you need is curiosity. On September 26, I gave a presentation at the Berea College Forestry Outreach Center for folks who expressed interest in joining the new Pinnacles Astronomy Club. These weren't people with PhD's in astrophysics but were just curious about the sky. I say now that you don't need knowledge to guide your interest, just curiosity. Period.

You don't need any equipment to pursue this strange hobby: just a inquisitive mind and a willingness to lose some sleep from time to time. There are amateur astronomers who keep normal hours because they mostly observe the Sun, at least on the weekends and after work. Because you cannot just look at the sun, solar observing requires specialized equipment. Some of this equipment is pricey!

I'll talk about some ways you can enjoy the night sky. The price for this entertainment ranges from nearly \$0 to as much as you want to spend! I'll keep this cheap. Learning the 88 accepted constellations is a good start, especially because they can't all be seen unless you live on the equator. So cut that number in about half. The easiest way to start is by using a printed paper map from an astronomy magazine such as **Sky and Telescope** or **Astronomy Magazine**. Before you subscribe, pick up one of each at a local bookstore or library. Each contains a all-sky map for the current month along with instructions for use. These are also nice because they will show positions for the Moon and naked-eye planets for that month.



Another low-tech way to learn the constellations is by purchasing a rotating star chart like the “Star Wheel” above. I don’t endorse any particular brand and they all work the same. The deluxe versions are printed on plastic or plastic coated paper to keep the dew off. Just rotate the rotating wheel so that the current time and date match. The example above is set for 10PM EDT on May 29, or maybe for midnight, April 14. Now, hold the star chart so that direction indicator is pointed down at the horizon in the direction you are facing. Sometimes a compass can help you determine north, west, south and east. I recommend starting with the north so you can locate the Big Dipper



After setup, all you have to do is go outside and hold the phone up to the sky and you will get a picture on the screen of what you can see in the sky. It even works when it’s cloudy!



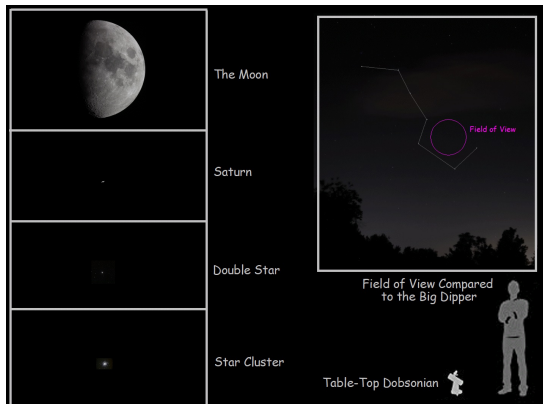
I often am asked the question, “What is the best telescope to get?” My answer is, “The one you will use.” After that I ask, “What do you want to look at?” I usually get back a blank stare. Binoculars are usually a good first step in ‘vision enhancement’. If you want to go beyond “naked-eye astronomy” consider something that will get used on more than the occasional clear night when you want to venture out. Do you like bird watching? Watching your kid’s football or soccer games? If you choose binoculars that can also be used for astronomy, try to get binoculars that have objective lenses (the big ones in front) of at least 30mm across and magnify around 6 times. These are referred to as 6-by 30 (6X30) binoculars. An interesting site to visit is **oberwerk.com**. Prices and quality are good and you can go from little birding binoculars to massive versions that require a tripod! These monsters are referred to as ‘binocular telescopes’.

Binoculars give you a nice view of broad areas of the sky. Often I offer “**Binocular Alerts**” for certain celestial happenings because they are best seen this way.

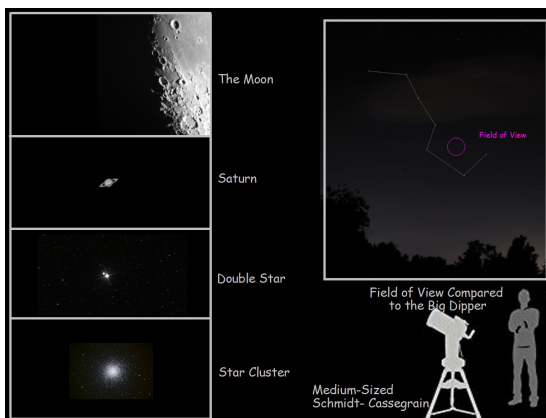


If you want to get a closer look, keep in mind that telescopes meant for astronomy can be frustrating for terrestrial use, that is, for looking at daytime subjects like birds or mountain tops. That’s because they will give an image that is upside-down, switched left-to-right, or both. That’s because they usually don’t have the complicated optics contained in binoculars that give a right-side-up image. The money is, or should be, in the optical parts to give the most clear image.

Some telescopes give a wide view of the sky, like binoculars but with generally more light grasp that allows you to see dimmer objects in the sky. Others can see only a tiny circle of sky but are more powerful. This power is expressed in magnification (expressed as ‘X’). In general, think of the 6X30 binoculars I mentioned above as making it appear to make object appear 6 times closer to you. If you want to see the rings of Saturn, you would need a telescope that magnifies at least 50 times, or 50X.



Here’s a slide I created for my presentation on September 26. It shows the relative size of a table-top telescope that gives low magnification but has a wide field of view. The purple circle at right shows how much sky it can show you, compared to the bowl of the Big Dipper. At left are views you might get of the Moon, Saturn, a pretty double star called Alberio and a globular star cluster.

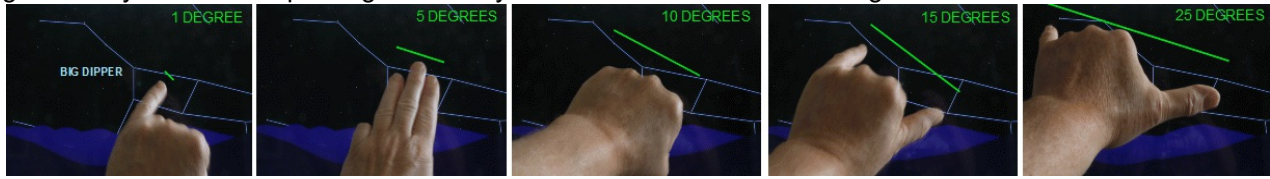


In this slide, I show the silhouette of a pricier 8-inch Schmidt Cassegrain-type telescope. Note the much smaller purple circle and the views represented on the left.

If you want to know more, contact me at [sawandtelescope@gmail.com](mailto:sawandtelescope@gmail.com). I’d love to hear from you!

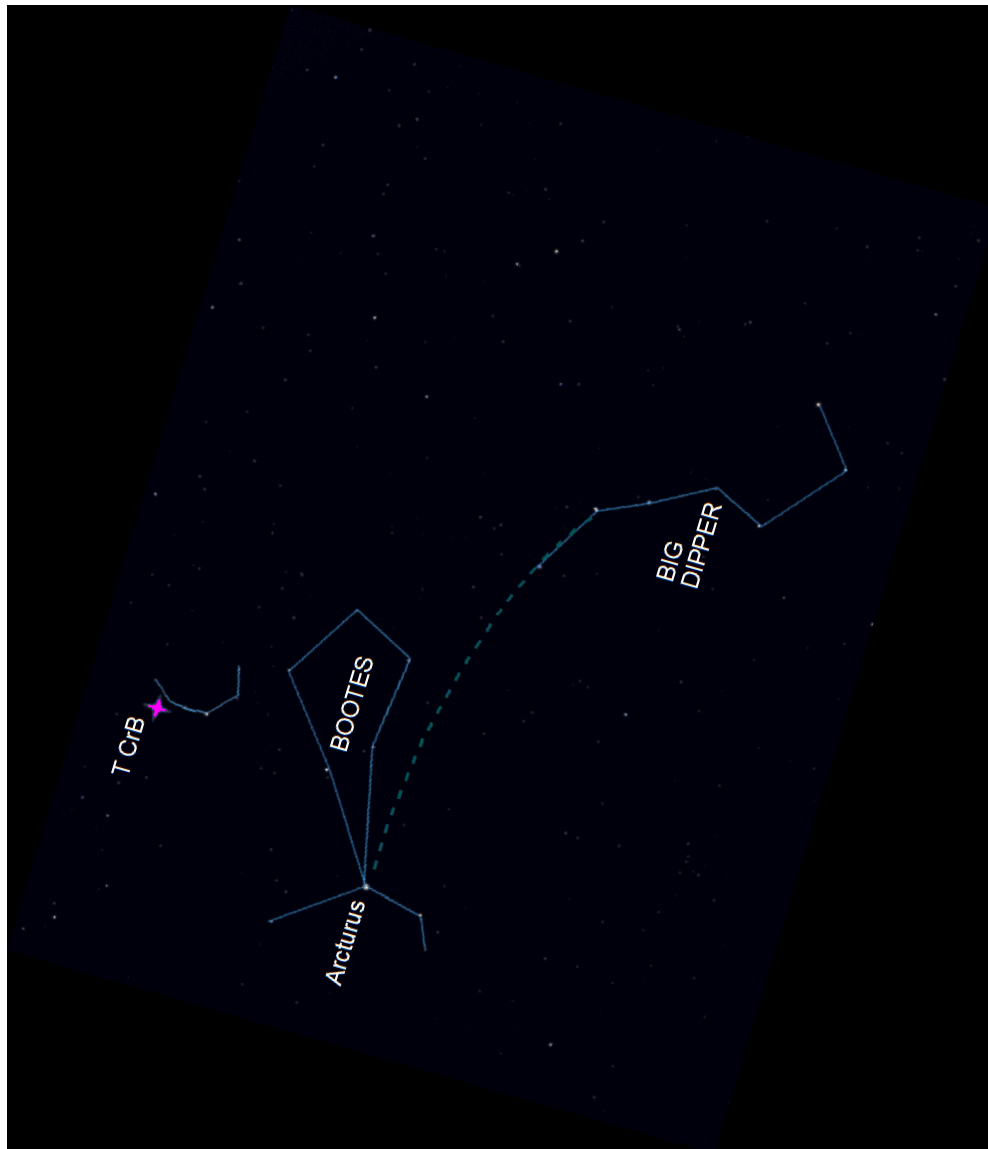
## Attractions in October

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 angular distance between, say, the Moon or a star or planet, I'll say that they are separated by a certain number of degrees. Sky and Telescope magazine is my source for most of the following information.



### Throughout the fall

Keep an eye on Corona Borealis! As of September 24, the last time I looked, the recurring nova in the constellation, Corona Borealis (Northern Crown) hadn't gone off. To find Corona Borealis, face northwest and find the Big Dipper. Then follow the arc of the Big Dipper's handle the bright orange star, Arcturus. Now, find the kite-shaped pattern of stars that form the constellation Bootes. Draw a straight line from the Big Dipper's handle through the top of the kite, which points north, and find the backwards "C" of Corona Borealis. The double star known as **T CrB** will dramatically brighten for a few weeks this summer or fall and its location is identified below.



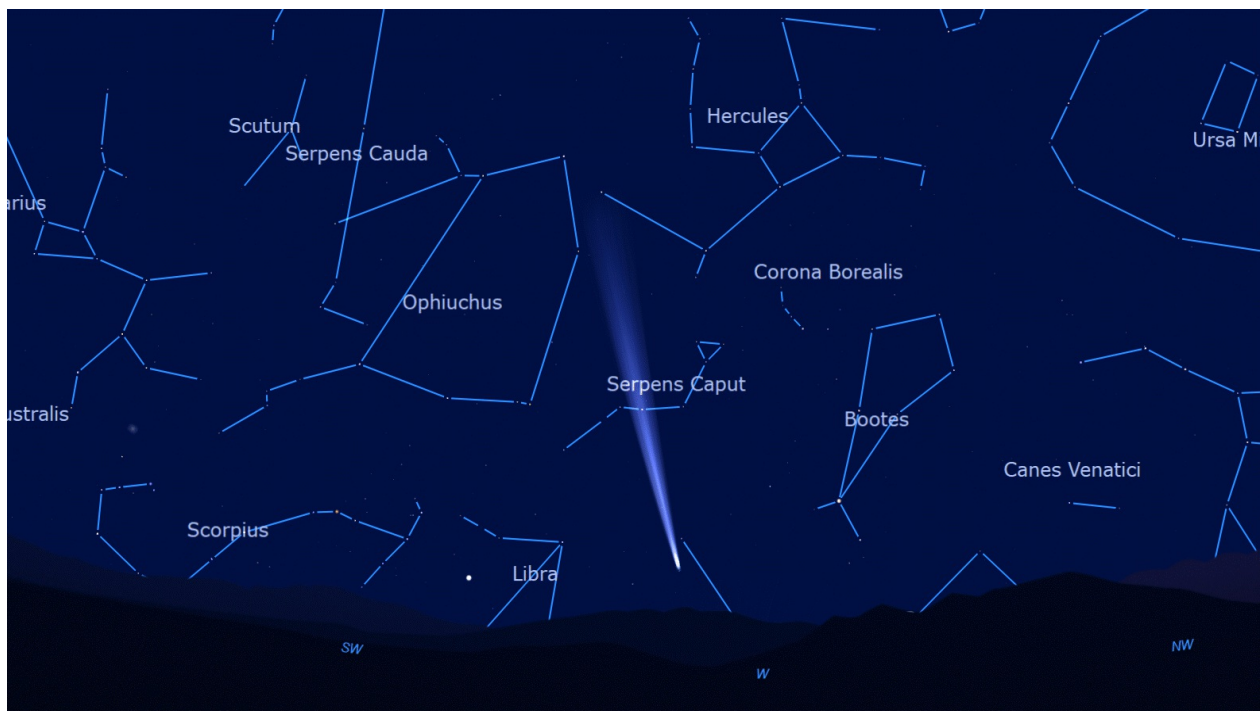
I've rotated the map to show how these constellations will look during October evenings. Face northwest when using this chart

## COMETS

# UPDATE: COMET TSUCHINSHAN-ATLAS MIGHT OUTSHINE PREDICTIONS

BY: BOB KING | SEPTEMBER 12, 2024 | 6

Most of the time, news outlets will declare incoming comets with words like “THE COMET OF THE CENTURY” or “THE SKY WILL BE SET ABLAZE WITH THE NEXT COMET, ARMAGEDDON IS POSSIBLE!” But when outlets like NASA or Sky and Telescope predict that a comet might put on a good show, I notice. Comets are basically like ‘dirty snowballs’ and a big one can be barely visible while a small comet can put on a good show. Comet Tsuchinshan-Atlas has been watched by amateur and professional astronomers for at least a year. The comet was first noticed in January 2023, by the Tsuchinshan Observatory in China, and later independently detected by Nasa’s Asteroid Terrestrial-impact Last Alert System (ATLAS). Below are simulations by the planetarium program **The Sky**, showing where to look (but not it’s appearance) on the evening of October 13.



By then, it will have already made it’s swing around the sun as is returning to deep space, probably never to return.



Notice how the tail gets shorter as the comet moved to the east. It’s both getting farther away from us and the solar heat, which heats the comet’s nucleus (dirty snowball), producing the tail is weaker.



## All Month

If you happen to find yourself in a place far from city lights, you might just catch sight of the faint reflection of dust particles known as the **Zodiacal Light**. It appears as a faint cone or triangle of light rising from the eastern horizon in the morning or the western horizon in the evening. The sky must be completely dark (no twilight) to see the faint glow.

I took this picture from New Mexico in 2019

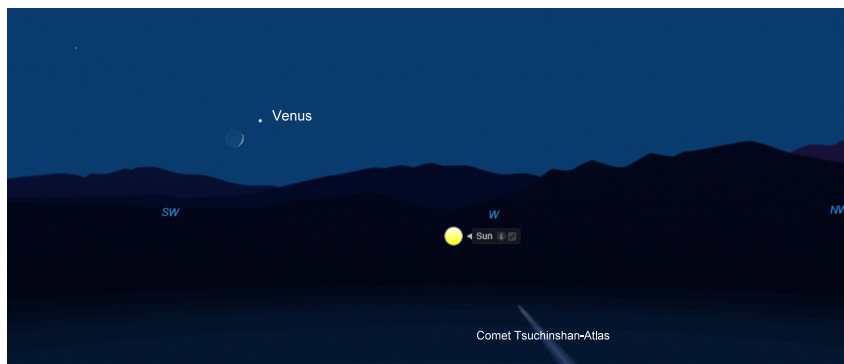


According to the website, EarthSky,

The zodiacal light is most visible around the [equinoxes](#). That's because the light follows the [ecliptic](#), or pathway of the sun, moon and planets. And the ecliptic makes its most extreme angles with the horizon around the equinoxes. It makes its steepest angle on spring evenings (autumn mornings). It makes its narrowest angle on autumn evenings (spring mornings).

## October 5

Just as it is getting dark, look low in the southwest to catch the pretty sight of Venus and the Moon setting about 4 degrees from each other. I've put in the location of the already-set Sun. Below the Sun you can see where Comet Tsuchinshan-Atlas as it's rounding the bend around the Sun.



## October 7

This evening check out how close together the Moon and the star Antares have gotten! This is an illusion of perspective caused by our perspective.



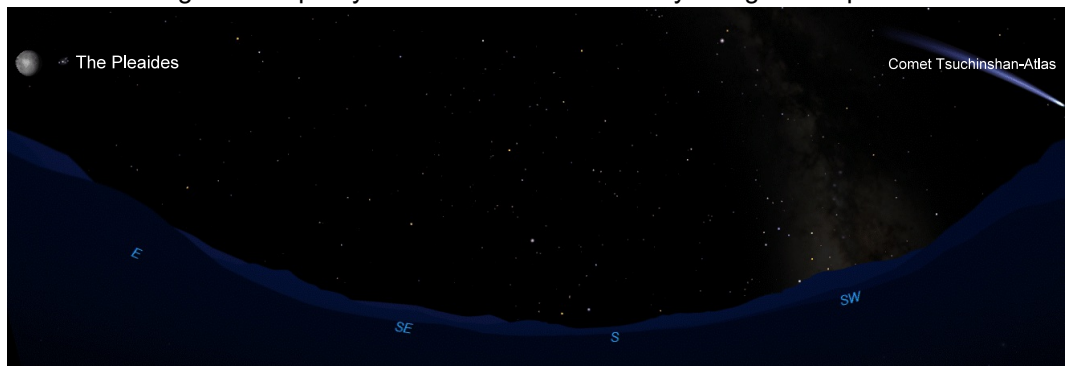
## October 14

If you can tear yourself away from admiring (the hopefully) bright Comet Tsuchinshan-Atlas, you might wonder what that bright star is to the right of the Moon. It's Saturn!



**October 17**

If you are still admiring Comet Tsuchinshan-Atlas by about 9:15 turn around and catch the Moon rising with the pretty Pleiades star cluster. Only 4 degrees separates them.



**October 20-21**

It's time for the annual Orionid Meteor Shower. This is one of the better showers of the year. Fewer meteors, but they are often bright. As usual, I recommend getting up super early, 2:30AM or so to see this event. The Moon will be in the gibbous phase, so it will make counting 'shooting stars' a little harder.



**October 25**

This evening check out how Venus appears just 3 degrees to the upper right of the star Antares.

