



The Eyepiece

SW FL Astronomical Society, Inc.
3236 Forum Blvd #1160
Fort Myers, FL 33905



Editor - Mike Jensen

Hi Everyone!

Is anyone else out there tired of Summer and ready to go back to our beautiful warm Florida weather? I mean, I know this is our payback for living in this beautiful place but it does wear on you after awhile. Especially if there are cloudy skies each night.

The other night I set up my telescope to do some long awaited imaging. Astrospheric said I would only get 5% clouds from 9-10pm so I set up! At 10 pm I heard thunder and saw lightning. I went out and felt a drop or two. I looked up and the skies were indeed dark, from a good ole fashioned Florida thunderstorm. I went in to Flash

mode and started breaking down. I have tarps but just don't trust them with the intensity of a Florida T-Storm. I got broken down just in time as the storm opened up the skies! Ugh! Maybe another night!

So this month I've continued with some cool articles on dark skies and where you can find them in the US. There's some great stuff on the Perseids as well as on Supernovae! And don't forget to read John's AL article. So informative every month! Last month I switched over to the Astronomical Leagues brand of star charts & events. I really like them and I like supporting the AL.

Please take a moment to read the article on the bylaws on page 2 and then read the bylaws.

Thanks!
Mike

Abel 2151 by Dr. Mario Motta

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Solar Eclipse Presentation

Tom Segur will give a presentation detailing two solar eclipses occurring over the next ten months. A solar observing session will also follow the presentation. Event to be held on Aug. 5, 2023 9-10am at Harold Avenue Park in Port Charlotte.

Changing The Bylaws

In late August/September, we will ask you to vote (either by website or by paper ballot) to change our bylaws. Bylaws are the rules by which clubs and organizations like ours govern themselves and ours are pretty old and needed updating. Your Board of Officers along with member Sandeep Dey spent several Zoom sessions, many emails and many reading sessions reading and discussing these updated bylaws.



So, you may ask, what are the big changes?

- We provide definition between a “**business meeting**” and a regular meeting or “gathering”.
A “business meeting” is essentially declared so for the purposes of conducting official club business.
“Official” business are things like spending money, changing the bylaws, voting for officers, setting the cost of dues, etc.
- **Memberships** – Memberships are family memberships. Only one designated person in the family may vote. The board may designate “honorary” members if they would like.
- **Dues** – No more letting your dues slide throughout the year. If they are not paid by March 31, you will be removed from the roster. We’ll remind you of course!
- **Officers** – The officers will be elected to two year terms, offset at the beginning.
- **Financial statements**. Updates will be provided on the website monthly and a full report will be given annually along with an audit.
- **Voting** – members may now vote using the website, or by paper ballot.
- **Budget** – The board will prepare and approve a budget each year and the members will vote to approve it. By doing so, this will allow the board to spend the money designated in the budget. No more monthly approval if it’s in the budget.
- **Quorum** – A quorum is required for every official meeting. Currently it’s 2/3rds of the membership. We have established a new quorum as 50% of the paid members plus one member.

Those are the biggies. We REALLY encourage you to actually read the bylaws by clicking on [THIS LINK](#). Also, if you don’t vote, we will be calling your or emailing you to encourage you to do so. We REALLY need this to happen so please vote early. We’ve decided to begin voting with the August meeting.

[Vote at this link!](#)

Club Officers & Positions

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Monthly Meetings

Our monthly meetings are held on the **first Thursday of each month.**
The meetings begin at 7:00pm.

Each meeting is usually a combined live and Zoom meeting.

The in person meeting is held at:
Calusa Nature Center/Planetarium
3450 Ortiz Ave,
Fort Myers, FL 33905

Each meeting will have the same
Zoom link/meeting ID.

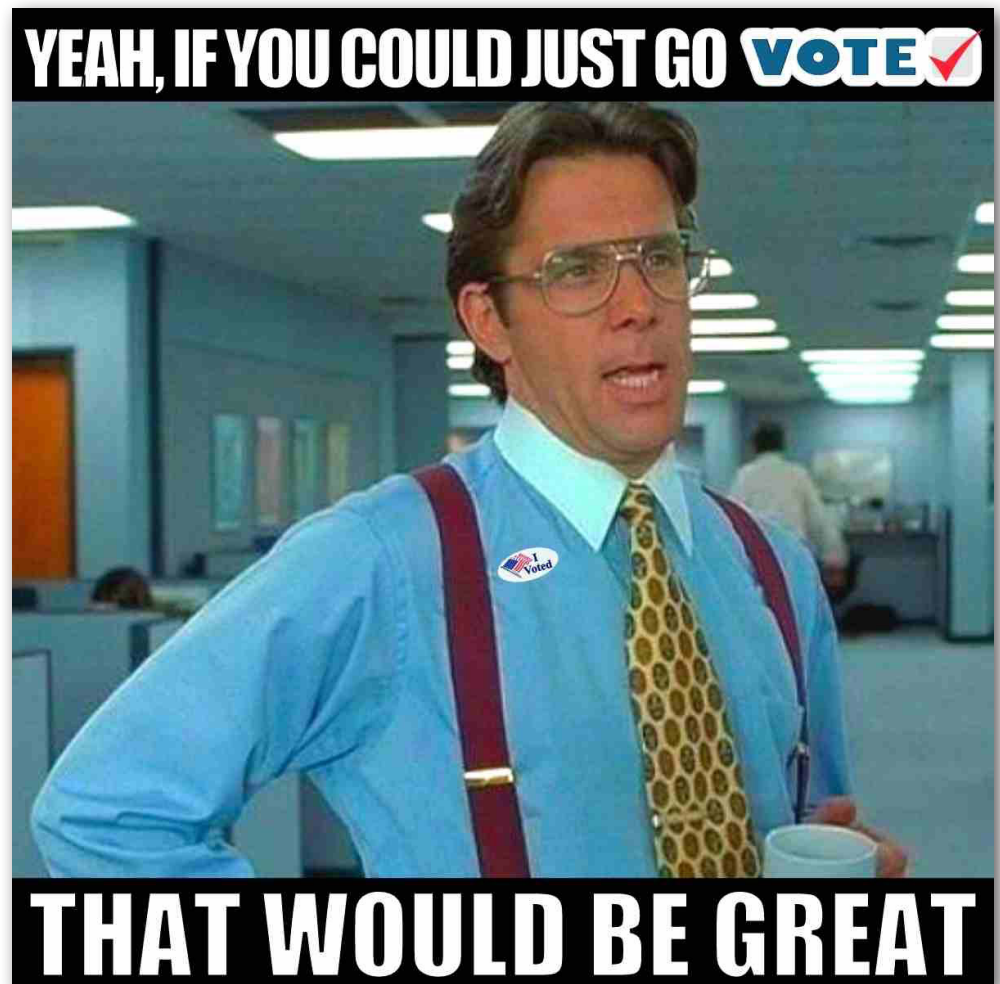
Below are the dates for the meet-
ings of 2023:

August 3, 2023
Sept. 7, 2023
Oct. 5, 2023
Nov. 2, 2023
Dec. 7, 2023 Annual Bus. Mtg

Link to join Zoom meeting:
<https://widener.zoom.us/j/98623448643>

Meeting ID: 986 2344 8643

One tap mobile:
+13052241968,,98623448643#
US (or)
+13126266799,,98623448643#
US



President's Report

Brian Risley

This year is a good year for the Perseid Meteor Shower. It will peak the nights of the 11th to the 13th. With weather being so uncertain and peak being after midnight we are not having an event. If you do go out, please take extra care with mosquito repellants as malaria has been reported not far away in Sarasota County. Observing at FSW in Punta Gorda and Charlotte Solar Observing will be starting up soon.

Please read the article on the By Law change vote that we will be having at the end of August through the September meeting.

We are looking into equipment improvements in order to enhance the Zoom Presentations and meetings. We need a new video projector, laptops for controlling the zoom meeting and a better adjustable camera for in planetarium presentations out to Zoom. These will be major expenses. We will gladly take any donations to help offset these expenses. We are working out the details on just what we need.

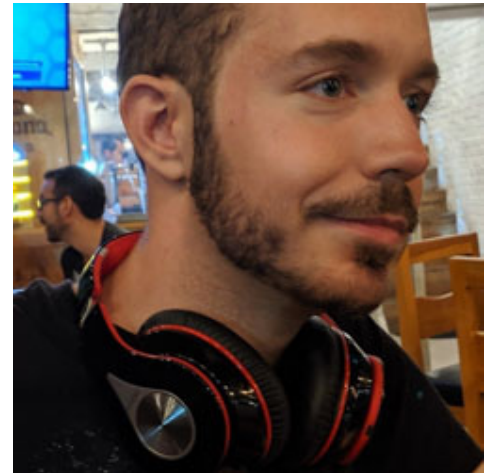
GUEST SPEAKER PRESENTATIONS SERIES

We are excited to announce the initiation of the new "SWFAS Guest Speaker Presentations" series of talks. These will cover astronomical science and space exploration along with practical astronomy and astrophotography talks by various subject matter experts. We are lining up prominent scientists and researchers to explain the science and technology behind the exciting discoveries being made in recent years in astronomy.

The following presentations are already scheduled and we will be firming up talks in 2023 on a month-to-month basis.:

Aug 3, 2023	Roger Lascorz Guiu, IT & Communications Services Directorate, NASA The Artemis Mission
Sept. 7, 2023	Dr. Julie D. Stopar, Senior Staff Scientist, Regional Planetary Facility Lunar geology, LRO, and Artemis Planning
Oct. 5, 2023	Dr. Dave Coulter
Nov. 2, 2023	Dr. Matthew Greenhouse, Project Scientist JWST - NASA Goddard Space Flight Center

August 3, 2023



**Roger Lascorz -
NASA Engineer
The Artemis Mission**

The Astronomical League Report



The Astronomical League

As a member of the Southwest Florida Astronomical Society you are automatically also a member of the Astronomical League, a nationwide affiliation of astronomy clubs. Membership in the AL provides a number of benefits for you including receipt of The Reflector, the AL's quarterly newsletter, use of the Book Service, through which you can buy astronomy related books at a 10% discount. You can also participate in the Astronomical League's Observing Clubs. The Observing Clubs offer encouragement and certificates of accomplishment for demonstrating observing skills with a variety of instruments and objects. These include the Messier Club, Binocular Messier Club, the Herschel 400 Club, the Deep Sky Binocular Club, and many others. To learn more about the Astronomical League and its benefits for you, visit <http://www.astroleague.org>

Reflector Magazine

The latest June 2023 copy of the Reflector magazine is available via the web at <https://www.astroleague.org/reflector>

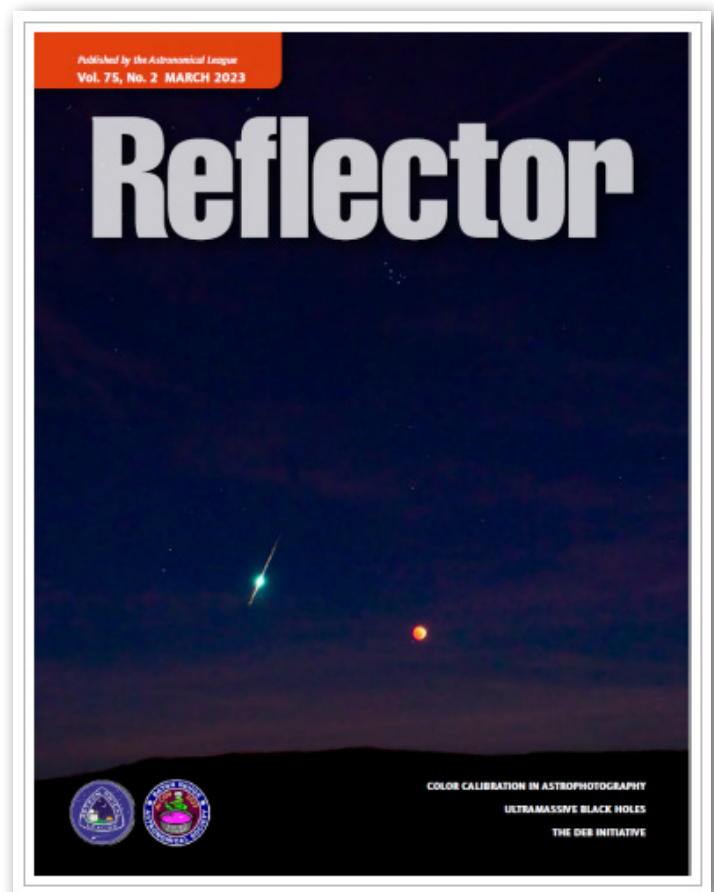
Monthly highlight of the Astronomical League Observing Programs

(Article prepared by SWFAS Astronomical League Coordinator John MacLean)

Last month we covered the Carbon Star and Double Stars observing programs which are both reasonably suited to back-yard observing in light polluted areas. This month we'll cover the two Lunar Observing Programs for which typical light pollution presents no problems at all.

Lunar Observing Program

This is the introductory program suited to newcomers,



both young and old. The 100 lunar features selected are broken down into 18 naked-eye (e.g. Maria), 46 binocular, and 36 telescopic targets. Small aperture equipment is entirely appropriate and the listing was validated by the Astronomical League using 7 X 35 binoculars and a 60mm refractor. A tripod is highly recommended for binocular use. The binocular targets include 39 of the most prominent craters. The telescopic targets include craters, mountains, valleys, walls, and various other lunar features. A convenient check list is provided to facilitate recording the observations. Binoculars may be used for any of the naked eye targets and a telescope may be substituted for all binocular targets. The laminated Moon Map by Sky Publishing is recommended as a low cost, good lunar map. This is available for various telescope orientations.

Lunar II Observing Program

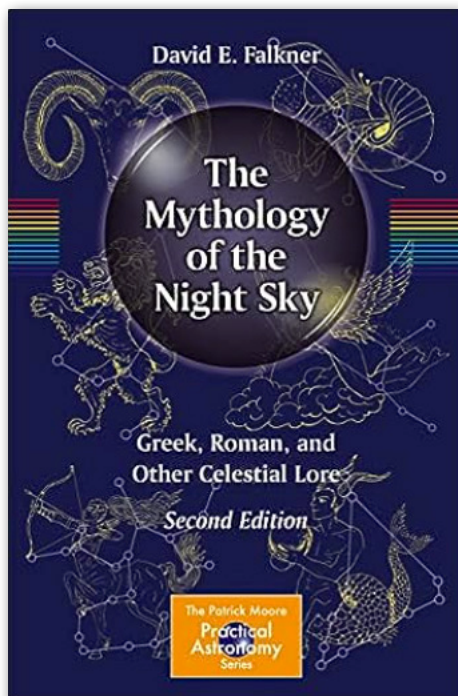
This program builds on the Lunar Observing Program and is designed for the more experienced observer. The observations are designed to help members improve their observing skills and expand their knowledge of the visible lunar surface. Again, a minimum of 100 observations are required. 67 targets must be observed and described with the additional targets

requiring sketches as well. Some observations require the same feature being observed under different lighting conditions. In addition to standard lunar features, various landing sites for Apollo and Luna missions are included. Often times viewers at star parties ask about whether lunar landing sites can be pointed out and having a knowledge of the general areas where various missions took place can certainly be helpful in this regard. Finally, observations of lunar eclipses and occultations are also included. In order to obtain a certificate and pin, successful completion of the Lunar Observing Program is a prerequisite.

The late Patrick Moore was a confirmed "lunatic". Completing the two Lunar Observing programs will help anyone to begin following in Patrick's footsteps and gain thorough familiarity with the Moon's topography.



Lunar image by Mike Jensen



Lunar Observing Resources. The Astronomical League does not provide specific reading recommendations but the following two books provide very good information on the Moon including descriptions of the features covered by the two lunar observing programs:

Patrick Moore on the Moon
The Moon in Close-up, John Wilkinson
Astronomy Series, 2010

Cassell Illustrated, 2001
Patrick Moore's Practical

The Night Sky Network



This article is distributed by NASA Night Sky Network. The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.gov to find local clubs, events, and more!



Super Blue Sturgeon Moon Vivian White

On August 1st, catch a **full Moon** rising in the east just 30 minutes after sunset. We are seeing the entire sunlit side of the Moon as it is nearly (but not quite) in line with the Sun and Earth. The Farmers' Almanac calls this month's Moon the "Sturgeon Moon", for the time of year when this giant fish was once abundant in the Great Lakes. Cultures around the world give full Moons special names, often related to growing seasons or celebrations.

As the Moon rises later and later each night, the bright sunlit part appears to get smaller or "wane" - we call this a waning **gibbous Moon**. About a week later, on August 8th, we see only one half of the Moon alight. At this phase, the Moon rises around midnight and sets around noon. Have you ever seen the Moon in the daytime? You may notice this phase towards the southwest in the morning sky. Hold up a ball or egg beside it and see how the Sun lights up the same part.

By August 16th, the Moon has gone through its crescent phase and is now only showing its dark side towards the Earth. Did you know the **dark side** and the **far side** of the Moon are different? The Moon always shows the same face towards Earth due to the gravitational pull of Earth, so the far side of the Moon was only viewed by humans for the first time in 1968 with the Apollo 8 mission. However, the dark side is pointed at us almost all the time. As the Moon orbits the Earth, the sunlit side changes slowly until the full dark side is facing us during a **new Moon**. When the Moon is just a small crescent, you can sometimes even see the light of an **Earth-shine** reflecting off Earth and lighting up the dark side of the Moon faintly.



Then as the Moon reappears, making a waxing (or growing) crescent Moon, best seen in the afternoons. By the time it reaches the first quarter on August 24th, we see the other half of the Moon lit up. At this point, the Moon passes through Earth's orbit and marks the spot where the Earth was just 3 hours prior. It takes the Earth about 3 hours to move the distance between the Moon and Earth.

The Moon on August 30th is referred to as a **blue**

Image of waning crescent Moon shown next to a ball on a stick that is lit by the Sun on the same side as the Moon, with trees and a blue sky in the background. Try this with an egg or any round object when you see the Moon during the day! Credit: Vivian White



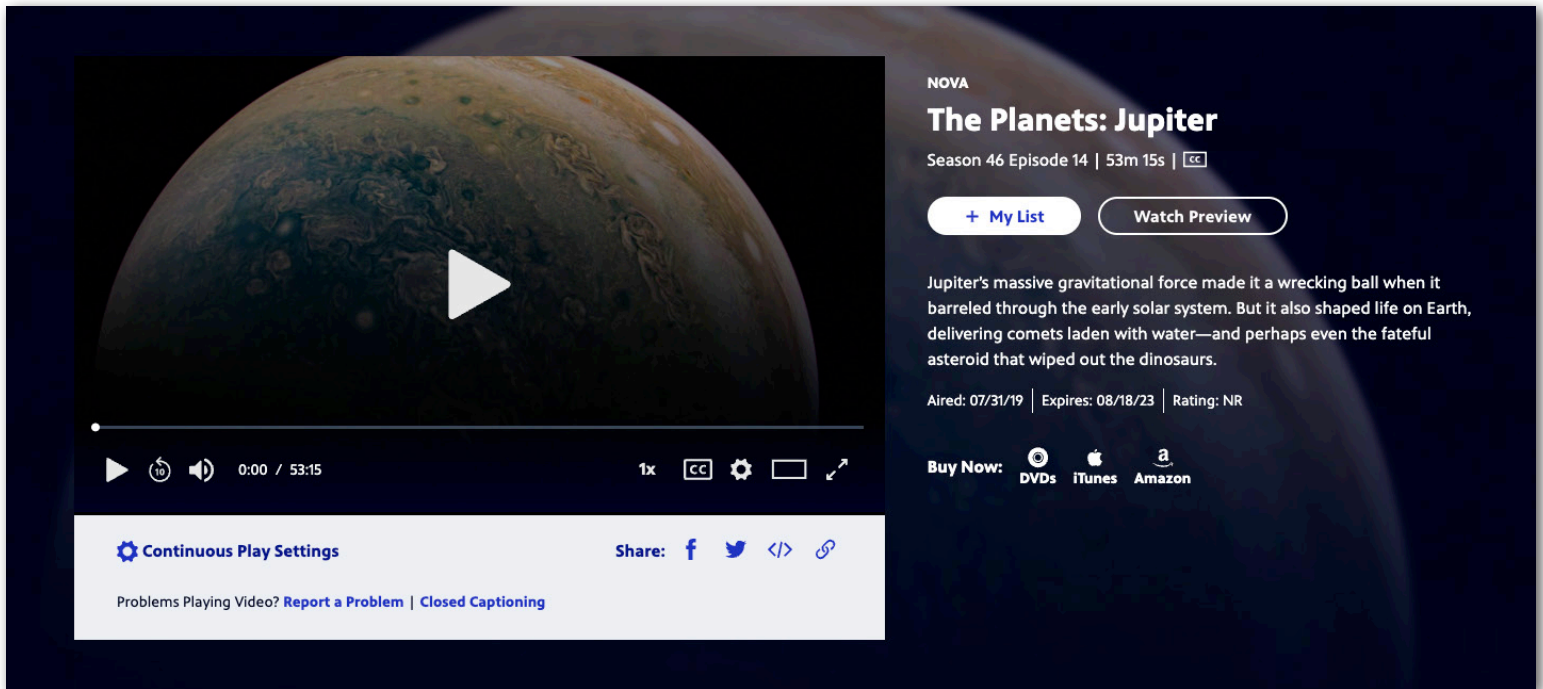
Earthshine as seen from the International Space Station with the sun just set - Astronaut Photograph ISS028-E-20073 was taken on July 31, 2011, and is provided by the ISS Crew Earth Observations Facility and the Earth Science and Remote Sensing Unit, Johnson Space Center

moon. Blue moons are not actually blue in color of course; it refers to the second full Moon in any month. Since it takes 29.5 days to complete the cycle from full to new and back to full, most months will see only one. But occasionally, you'll fit two into one month, hence the phrase "once in a blue moon." We see a blue moon about once every 3 years on average - next in May 2026. In addition, this full Moon appears larger in the sky than any other full Moon this year - an unofficial **supermoon**. A supermoon appears larger than average because it is closer in its slightly elliptical orbit. The difference in apparent size between the smallest and largest full Moon is about the size difference between a quarter and a nickel. Even at its largest, you can always cover the whole Moon with your pinky extended at arm's length.

Follow the Moon with us this month and keep a Moon journal if you like - you may be surprised what you discover! moon.nasa.gov/moon-observation

Great Shows Our Members Recommend

Who doesn't love a great PBS documentary? This one recommended by John MacLean talks about the planets of our solar system and Jupiter in particular. Click on the image to watch. PBS membership may be required.



NOVA
The Planets: Jupiter
 Season 46 Episode 14 | 53m 15s | [CC](#)

[+ My List](#) [Watch Preview](#)

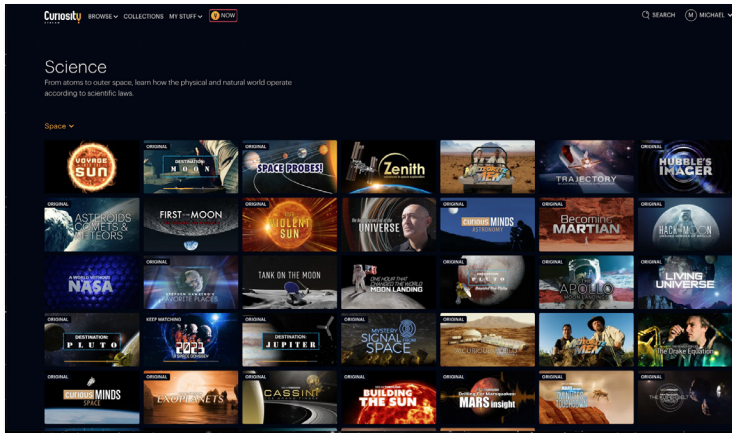
Jupiter's massive gravitational force made it a wrecking ball when it barreled through the early solar system. But it also shaped life on Earth, delivering comets laden with water—and perhaps even the fateful asteroid that wiped out the dinosaurs.

Aired: 07/31/19 | Expires: 08/18/23 | Rating: NR

Buy Now: [DVDs](#) [iTunes](#) [Amazon](#)

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Curiosity Stream - Recommended by Mike Jensen. I signed up for Curiosity (\$3.95/month) during my recovery from my most recent knee surgery. So affordable and great new content all the time!



UNKNOWN, Cosmic Time Machine - Recommended by Mike Jensen. This is a new documentary on Netflix. It's about the creation, building, launch and deployment of the James Webb Space Telescope. This is a great pic for astrophotographers!

ABOUT THE ASTRO SIG

Every month we get together on a Zoom call with a pretty loose agenda and manage to have an absolute blast talking about Astrophotography. I hope you'll join us if you're interested in Astrophotography.

IMAGING TRIPS TO BIG CYPRESS

Big Cypress National Park is about a 75 minute drive from Ft. Myers and it is probably one of the darkest areas in the state of Florida. We have a great place to set up and frequently meet astrophotographers and observers from other parts of the state.

The best way to stay tuned in to our impromptu field trips is to get on our Astro SIG Google Groups email list. [Contact Mike Jensen.](#)

Astro Sig Schedule 2023

All Meetings at 6:30pm

August 15th
September 19th
October 17th
November 21st
December 19th

The Astrophotography SIG

Our Astro SIG group is really growing in strength. From a meeting perspective, we are small, but our email list is about 40 and of those about 10 consistently contribute images for use on our website and in the newsletter. I truly believe that some of our images are unequalled in quality.

Many of our group are out imaging almost every possible night and reporting the results on our email group.

I am especially proud at the way our group shares lessons learned and methods taken to get the best out of their gear and the best images. Please see our images beginning on the next page.

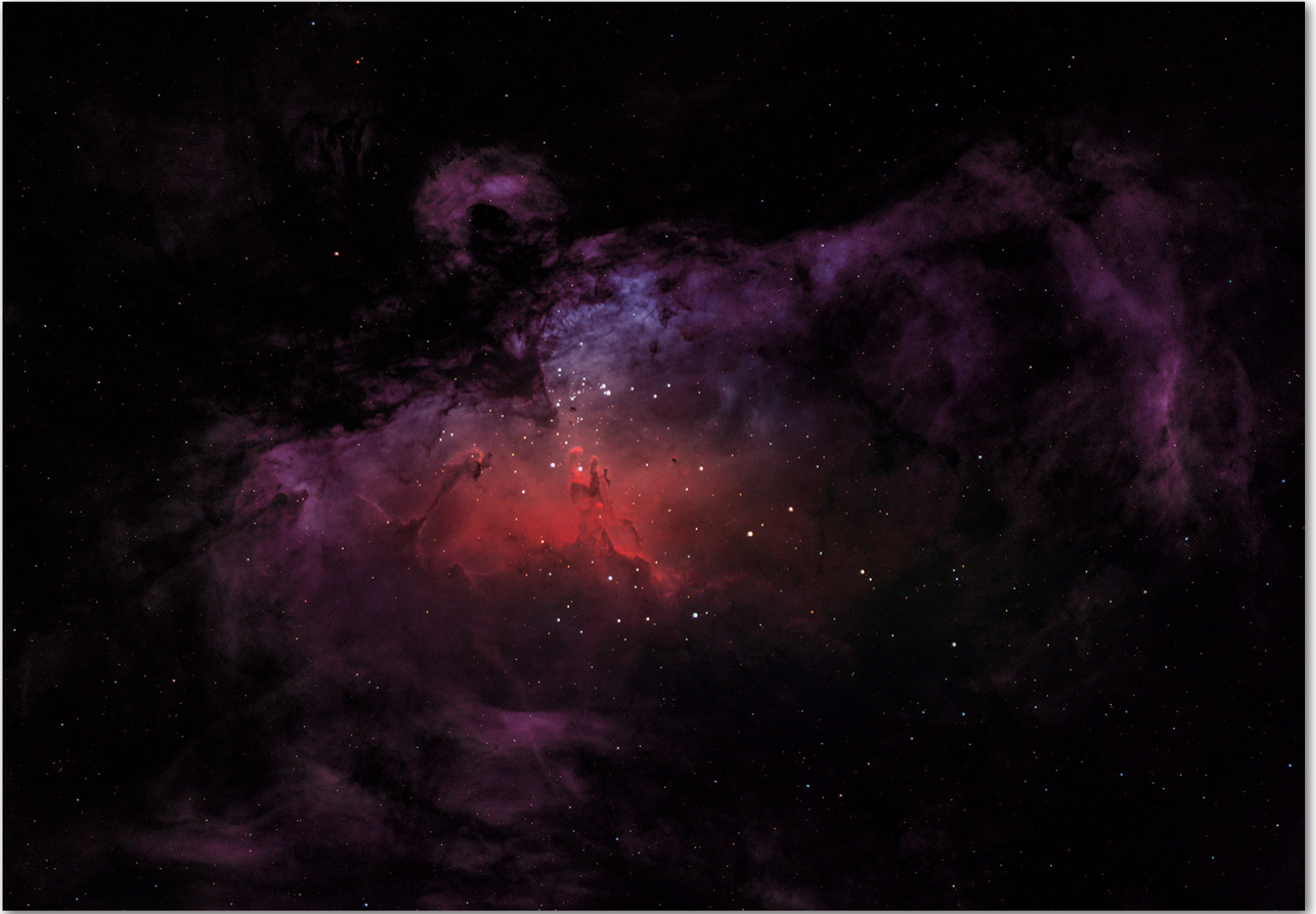
ASTRO SIG MEETING ZOOM LINK

<https://us02web.zoom.us/j/81077794455?pwd=eGpxalRET1BPckdEcmt-JQ290WU5jdz09>

Meeting ID: 810 7779 4455
Passcode: Phot@S!G23



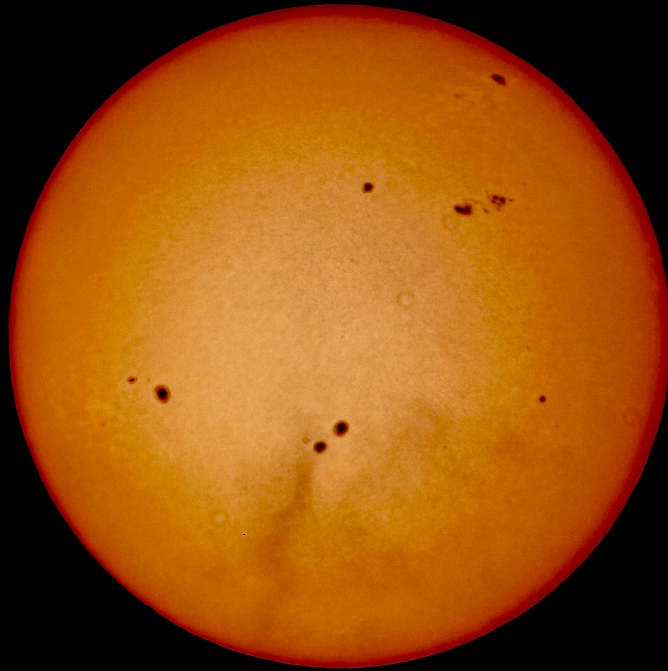
If you missed July's program presentation due to the Internet outage at the Planetarium, Mike has [recorded it and placed it on YouTube.](#)



M16 - The Eagle Nebula & The Pillars of Creation by Mike Jensen

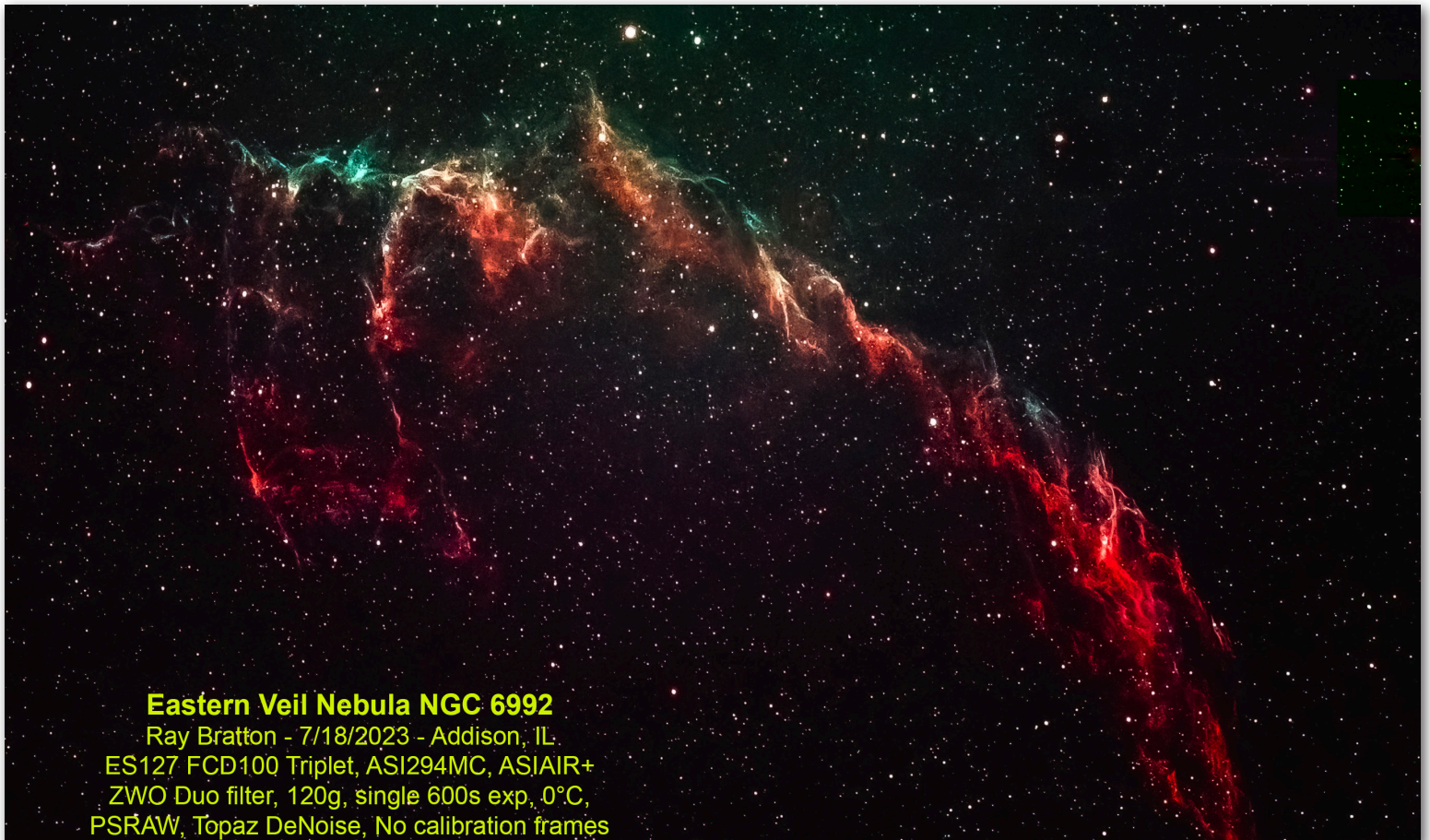
Taking advantage of a rare three nights in a row in June, Mike pointed toward a long desired target, M16. With RGB imaged stars this image is a composite of SHO filters mixed with several others to get the desired effect.

“For many images I aim for the iconic view and colors of a target, but for some (like this one) I like to get a bit creative. I mean, this thing is 7,000 light years away and we’re not really sure what color it is so let’s imagine, says Mike.”



SUNSPOTS - Ray Bratton

Addison, IL 7/22/2023 11:57 am CDT
C90 Astro, F11, 1000mm, ISO100,1/400s,
Canon EOS 70D, C90 Glass Solar Filter,
PSRAW, Topaz DeNoise



Eastern Veil Nebula NGC 6992

Ray Bratton - 7/18/2023 - Addison, IL
ES127 FCD100 Triplet, ASI294MC, ASIAIR+
ZWO Duo filter, 120g, single 600s exp, 0°C,
PSRAW, Topaz DeNoise, No calibration frames



Eastern Veil Nebula NGC 6992
Ray Bratton - 7/18/2023 - Addison, IL
ES127 FCD100 Triplet, ASI294MC, ASIAIR+
ZWO Duo Band filter, 120g, 3 exp 600s,
30m, 0°C, PSRAW, APP



Western Veil Nebula NGC 6960
Ray Bratton - 7/21/2023 - Addison, IL
ES127 FCD100 Triplet, ASI294MC, ASIAIR+
ZWO Duo Band filter, 120g, 5 exp 600s,
50m, 0°C, PSRAW, APP, Topaz DeNoise



M8 by John Udart

The Lagoon Nebula, also known as Messier 8, is a colossal interstellar cloud located in the constellation Sagittarius. This breathtaking emission nebula is estimated to reside at a distance of approximately 4,000 to 6,000 light-years away from our planet. At its center, a structure known as the Hourglass Nebula can be seen in addition to a number of Bok globules (dark, collapsing clouds of protostellar material). When viewed from Earth, M8 spans an impressive area of 90 x 40 arcminutes, which is approximately twice the size of the full moon.

Gear: William Optics GT71 at 336mm, ASI533MC Pro, EQ6-R Pro. The total integration time for the image was 2 hours and 24 minutes (48x180s) and processed using PixInsight.



Solar Eclipse by John Udart

I was going through my photo archives and found an image from May 20, 2012. I was living in Fargo, ND at the time and managed to get a pretty decent photo of a solar eclipse around sunset. It was taken with my almost new Canon T3i and the Canon 300mm prime.



M27 by Dick Cogswell

M27 is also called The Dumbbell Nebula. The Dumbbell Nebula is a planetary nebula in the constellation Vulpecula, at a distance of about 1360 light-years. It was the first such nebula to be discovered, by Charles Messier in 1764.

Radius: 1.44 light years

Distance to Earth: 1,360 light years

Magnitude: 7.5

Age: 9,807 years

Next Page

Vertically positioned for viewability

Abel 2151 by Dr. Mario Motta

Abel 2151, the Hercules cluster, there are about 200 galaxies in this 16x24 arc minute field taken with my 32 inch scope. This cluster is 500MLY away, and has 4 interacting galaxy pairs. I labeled the largest of the galaxies.





M16 The Pillars of Creation by Dr. Mario Motta

These pillars are deep within M16 AKA The Eagle Nebula shot by a HUGE 32" home made telescope by Mario.

Opposite Page

Luna, The Moon of Earth by Linwood Ferguson

I tried something last night that did not work well at all, but it was informative so I thought I would share. I was waiting for my target to rise (and then for some easterly clouds to clear) so I decided to image the moon. I had done that several times in the past, but just taking a bunch of Luminance shots and manually picking one that looked good. Last night I took 50 each of Red, Green and Blue (rotating through them so the moon's motion would provide some dither -- the moon was drifting for reasons a bit unclear since I was at a lunar rate, though in retrospect I wonder if I did a slew and it reset; not sure).

Anyway, got 150 decent shots and then just assumed there was a good way to align and stack them. Oh was I wrong... you can stack and align in programs (e.g. AutoStakkert) but only mono OR color, not separate RGB stacks.

So doing each color separately gave me three nice stacks but those would not align - even if you tried manually



everything had color halos as the stacks were not the same, they was likely local distortion in each. I finally used a tool in Pixinsight called FFTRegistration to align them, and got three stacks from integration that more or less aligned, and got a color image. The detail was fair, I think partly because I used all images instead of only good ones. So I returned to AutoStakkert and just ignored that they were separate files and aligned them together as a mono image.

If you want to see the full resolution they are here on astrobin:

Mono: <https://www.astrobin.com/full/sdna3r/0/>

Color: <https://www.astrobin.com/full/pja857/0/>

5 Expensive Astrophotographer Beginner Mistakes

From Photographing Space:
<https://www.photographingspace.com/5-expensive-beginner-mistakes/>

Are you thinking deep-sky astrophotography is where you want to point your camera? Maybe you are ready to start attaching your DSLR or smartphone or point-and-shoot camera to your telescope to get those Hubble-like images of the cosmos! Slow down a bit, and remember to do your homework – because imaging deep-space objects is a definite step up in the learning curve, and it has its frustrations. Luckily, we've all been through it, so we can help!



You're going to make mistakes, a lot of them. But, only if you're human. So, if you're a robot, you can stop reading now.

Humans: these "expensive" mistakes you'll make are not only costly on your pocket, they also rob you of precious imaging time! But don't despair because making mistakes is all part of the learning process, and some things are best learned by screwing up.

To help you save a little time (and money), we've come up with a list of five of the most common mistakes we or others have made on the road as beginner astrophotographers, so maybe you won't have to!

Mistake #1:

Investing money instead of time

The telescope doesn't make the photo, the photographer does.

Spending your hard-earned cash on the best optics and camera gear will never guarantee you great photos. Ever. In fact, nothing will guarantee that! We've seen (and created) some AMAZING images created with very modest equipment! Most often, the more the mount and telescope costs, the more skills it requires to use properly.

Without the due diligence of learning proper telescope and mount setup like mastering polar alignment, and adequate post-processing techniques, you won't be successful. As hard as it may be to keep yourself from buying 'just that one last thing' – know that the time you put into this hobby is a far better investment than your cash.

Now, we're not saying you can produce images with the same quality as you can with high-end optics, but just know you need the skills to create good images with ANY optics, regardless of sticker price. Throwing money at

the problem does absolutely no good in astrophotography!

For example, the best mount and telescope combo are most often completely worthless without mastering the following:

- Operating and setting up the mount and telescope
- Polar alignment
- Collimation of the optics (in some cases)
- Learning the night sky – successfully finding the celestial objects you want to photograph
- Camera connection and operation – and software if you're shooting tethered, as you should be
- Image acquisition – which settings work best for your location, equipment, and target
- Post-processing skills – you must learn to make what mostly looks like nothing...look like something amazing!

What don't you need when starting out? Consider the following only when you have a handle on all the steps above, and face the real truth – owning more equipment will not make you a better astrophotographer, just a poorer one!

Avoid purchasing

- Filters – light pollution, narrowband, etc.
- Guide camera and guide scope – Yes, guiding will improve your images greatly, but don't look towards guiding as the solution until you are able to polar align your mount successfully!
- Lots of eyepieces – you'll rarely use them if you're just looking to create images
- Dew shields and dew heaters – Depending on your location, you may not need anything for dew control

Things you should spend money on

- A good mount, it's important to think ahead. (read mistake #3 below – buying the wrong mount!)
- An adequate telescope / lens for your area of imaging interest. Again – this does not have to be top of the line.

Things you can get for free

- Acquisition software for camera control
- Support and advice from other astrophotographers – we're surprisingly helpful for being sleep deprived!
- Stacking and post processing software (Editor's Note: Most software packages offer some sort of a trial, usually 7 days or 30 days etc. My experience is that the totally free software packages usually aren't worth taking the time to learn them.)

Mistake #2:

Unrealistic expectations

This goes hand-in-hand with being informed (which is your time invested). You must accept the fact that right off the bat you're going to be spending a lot of hours outside without seeing any results. Any. But, it will still be fun – that's the learning curve.

Adding to that, the first images you capture will not exactly (or at all...) resemble the awe-inspiring photos that got you into this hobby in the first place. Do not be deterred by this! Even the great Astro Masters started somewhere. We all did!

Your first images may well look like a blob with some fuzzy white dots around it. But the beauty of that is they are YOURS – you took that photograph and you know the time it required to get, and hopefully you're now learning there is nowhere to go but up.

Editor's Note: Read John Udart's article in last month's newsletter. Some great insight on the first 18 months.

**Mistake #3:*****Buying the wrong gear***

The mount

If you're interested in capturing nice round stars (you are...), your choice of mount is of the greatest importance. The telescope mount is actually quite a bit more important than your choice of telescope or lens.

There are a variety of telescope mounts available (alt/az, fork, GEM, etc.), but the German Equatorial Mount (GEM, or equatorial mount) is best suited for astrophotography. GEMs combat the earth's rotation in the simplest manner, to keep a telescope fixed on an object in the sky. This makes GEMs capable of tracking the object through the course of your imaging session with the greatest ease and accuracy, without distortion.

This is where you really want to think ahead – don't get the smallest and cheapest mount. Get the best you can afford. You'll thank us later!

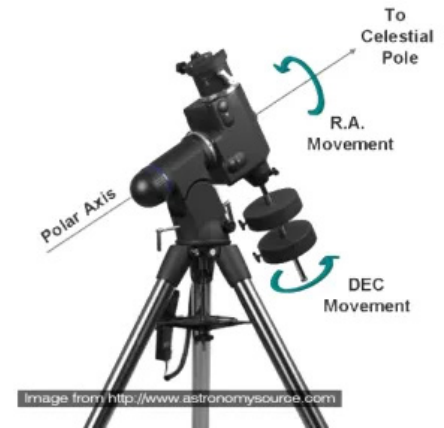
The telescope

You don't even need a telescope. Seriously. We shoot all the time with our telescope mount and a standard DSLR camera lens, because some deep-space objects are just that big.

However, if you want to capture some great images of farther-away and smaller objects, you'll need a telescope. So, think about what you like, what you want to photograph. There aren't many telescopes that are a jack-of-all trades, and those are usually very expensive. So many astrophotographers rather have an assortment! Some scopes favor planets and the moon, some favor nebulae and galaxies. Do your research!

The camera

Don't jump into an expensive astronomical CCD camera right away. Again, you need to define what your goal is. Not to mention they are harder to use. We highly recommend starting out with a decent DSLR that isn't just for astrophotography – a crop-sensor camera is oftentimes best for telescopic use because of vignetting issues. If you already have one, just buy a mount and don't even bother with anything else right away! And yes – you can align your mount with just a DSLR and lens just fine, we do it all the time.



Mistake #4:***Poor planning for a shoot***

This robs you of time, a lot of it! If you're making special effort to get out of town to escape light pollution, this is especially of importance! So many times we've gotten to our location, or even have the telescope all set up, great polar alignment, everything dialed in...then spend WAY too much precious time trying to figure out WHAT we're going to image, and sometimes not being able to finish a target before it's not dark anymore!

The best way to avoid this is to know the sky where you live. Remember those steps above we said you needed to master? This is why that's important. Knowing your sky will help you know what targets you will be able to successfully shoot at what times of year.

Go out with a plan – and since we can look into the future with our special planetarium applications like Stellarium, PhotoPills, SkyGuide, Sky Safari, etc., the cloudy nights never have to be boring.

Mistake #5:***Setting up in the dark***

Last, and least wordy – don't wait until dark to set up your gear. At least at first. It's really annoying, and slow, and just don't do it.

The first many times you use your telescope and mount, you're not going remember where this or that cable goes, and what the balance points are, and were the focus point for the camera was, and then you drop something and lose it because it's dark and waste time with your torch (I can say torch because I live in SA now!) trying to find it.

Not to mention, setting up your scope will take even the best of us the good part of an hour, regardless of the amount of light. So wasting the darkness is just a bad idea!

**About The Author****Cory Schmitz**

Co-founder of PhotographingSpace.com, co-owner of several telescopes and mounts, too many cameras, and not enough hard drives, Cory is an American expat living in South Africa with his wife, Tanja Schmitz.

Wanna say thanks?

Like this article enough to buy the author a drink? (a small donation of \$1-\$20)

[Yes, I want to buy him a drink!](#)

Bortle 1: The Best Skies in the World for Astrophotography

From PetaPixel, Full Article: <https://petapixel.com/2023/07/13/bortle-1-the-best-skies-in-the-world-for-astrophotography/>

To fully reveal the real colors of the night skies, you need to find good dark skies. The best sky quality for [astrophotography](#) is found in locations classified as Bortle Class 1 on the Bortle scale, which measures night sky brightness.

A Bortle 1 sky has a sky quality meter (SQM) reading of 21.99 to 22, meaning it among the least light-polluted places on Earth. Under Bortle 1 skies, you can capture celestial waveforms that are visible due to the Earth's atmosphere and deep space objects — things like aurora, zodiacal light, and airglow.

Imagine standing under a sky so pristine, so untouched by light pollution, that the stars shine with unparalleled brilliance. This celestial haven is known as a Bortle 1 sky, where the sky quality reaches its zenith. In this article, we will delve into the enchanting realm of Bortle 1 skies, exploring the deep-sky objects (DSOs) and celestial waveforms that are visible to the naked eye in this exceptional astronomical environment.



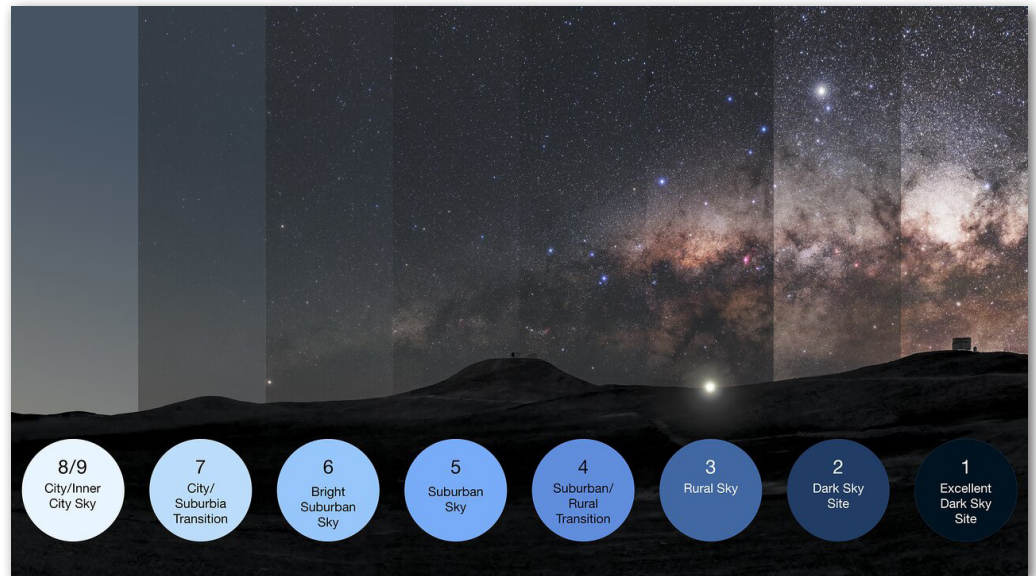
is

A sky quality meter (SQM) is one way to measure the darkness of a night sky. Image by Lamiot and licensed under CC BY-SA 3.0.

The Quality of a Bortle 1 Sky

The Bortle Scale, developed by John E. Bortle, is a widely used system for classifying the darkness of the night sky. It ranges from Class 1 (the darkest) to Class 9 (the most light-polluted). A Bortle 1 sky signifies an area with minimal light pollution, often found in remote regions, far from urban centers.

In such pristine conditions, the naked eye is capable of discerning intricate details of celestial wonders that are otherwise obscured by light pollution.



Finding a Bortle 1 Location

If you'd like to see if there's a Bortle 1 location near you in the United States, GO ASTRONOMY has a [great list of Bortle 1 sites in the US](#).

ClearDarkSky also offers a handy Light Pollution Map you can use to browse for dark skies near you anywhere in the world.

Deep-Sky Objects Visible to the Naked Eye

The Milky Way

In a Bortle 1 sky, the Milky Way reveals itself in all its grandeur. Its soft band of light stretches across the night sky, sprinkled with countless stars, nebulae, and clusters. Gazing upward, you will witness a captivating tapestry of cosmic dust and celestial jewels.



Milky Way Arch Panorama Above Mono Lake (Bortle 1)
Canon EOS Ra | Ioptron Sky Guider Tracker | By [Roi Levi](#)

Andromeda Galaxy (M31)

One of the most breathtaking sights in a Bortle 1 sky is the Andromeda Galaxy, our nearest spiral galactic neighbor. Spanning over six times the size of the full moon, this majestic galaxy appears as faint, elongated blur of light. With patience and a keen eye, one can perceive its core and perhaps even trace the spiral arms.



Andromeda Galaxy (M31) ZWO 2600MC | Red Cat |
Skywatcher Tracker | By [Roi Levi](#)

FULL LIST OF ALL BORTLE 1 LOCATIONS IN THE US

NAME	STATE		
Boswell Bay Beaches MPA	Alaska	Buffalo Camp	Montana
Buskin River State SRA	Alaska	Flathead NF	Montana
Chilkat Bald Eagle Preserve	Alaska	Hell Creek	Montana
Denali NP	Alaska	Painted Rocks SP	Montana
Fielding Lake SRA	Alaska	Samuel McKelvie NF	Nebraska
Lake Louise SRA	Alaska	Valentine NWR	Nebraska
Liberty Falls SRA	Alaska	Berlin-Ichthyosaur SP	Nevada
Matanuska Glacier SRA	Alaska	Black Rock Desert	Nevada
Porcupine Creek SRA	Alaska	Great Basin NP	Nevada
Security Bay MPA	Alaska	Sheldon Antelope Refuge	Nevada
Shuyak Island	Alaska	Wild Horse Reservoir SRA	Nevada
Squirrel Creek SRA	Alaska	Umbagog Lake SP	New Hampshire
Wood-Tikchik SP	Alaska	Clayton Lake SP park	New Mexico
Grand Canyon NP	Arizona	Cosmic Campground	New Mexico
Bodie SP	California	Gila NF	New Mexico
Death Valley NP	California	Sumner Lake	New Mexico
Lassen Volcanic NP	California	Black Mesa SP	Oklahoma
Modoc NF	California	Bates SP	Oregon
Sinkyone Wilderness	California	Chandler State Wayside Park	Oregon
Smithe Redwoods	California	Fort Rock SNA	Oregon
Yosemite NP	California	Golden & Silver Falls SRA	Oregon
Dinosaur NM	Colorado	Goose Lake SRA	Oregon
Lone Mesa	Colorado	Ochoco NF	Oregon
Manuka SP	Hawaii	Wallowa-Whitman NF	Oregon
Mauna Kea	Hawaii	Black Hills NF	South Dakota
Nez Perce NF	Idaho	Big Bend NP	Texas
Payette NF	Idaho	Anasazi State Park Museum	Utah
Salmon Challis NF	Idaho	Canyonlands NP	Utah
Coastal Rivers	Maine	Capitol Reef NP	Utah
Muskallonge Lake SP	Michigan	Goblin Valley SP	Utah
Judge Magney SP	Minnesota	Goosenecks SP	Utah
		Otter Creek Reservoir	Utah
		Medicine Bow NF	Wyoming
		Yellowstone NP	Wyoming

Celestial Waveforms

Apart from the DSOs, a Bortle 1 sky allows observers to witness various celestial waveforms with the naked eye. These transient phenomena occur naturally in the Earth's atmosphere and space. Here are a few examples: Aurora Borealis and Aurora Australis: The captivating light shows known as the Northern and Southern Lights, respectively, occur when charged particles from the Sun interact with Earth's magnetosphere. In a Bortle 1 sky, these ethereal displays of shimmering colors dance across the horizon, leaving spectators in awe of their ever-changing patterns.

Zodiacal Light

This faint, cone-shaped glow is caused by sunlight scattered off interplanetary dust in the plane of our solar system. In a Bortle 1 sky, during the right conditions and at the right time of year, the zodiacal light becomes visible shortly after sunset or before dawn, extending upwards from the western or eastern horizon.



Victor Lima – Aurora and Milky Way Vesterhorn Hofn (Bortle 1) Canon 6Da | EF 16-35mm f/2.8L II

Airglow

Airglow is a faint emission of light caused by various chemical reactions in Earth's upper atmosphere. In a Bortle 1 sky, this phenomenon can manifest as a subtle, diffused glow that adds a mystical ambiance to the night sky.

The wonders of a Bortle 1 sky are truly remarkable. With minimal light pollution, the naked eye can witness the grandeur of deep-sky objects and experience the captivating celestial waveforms that grace our night sky. Whether it's the intricate details of distant galaxies or the ephemeral dance of the Northern Lights, a Bortle 1 sky offers a window into the vastness and beauty of the universe.

Image to the right

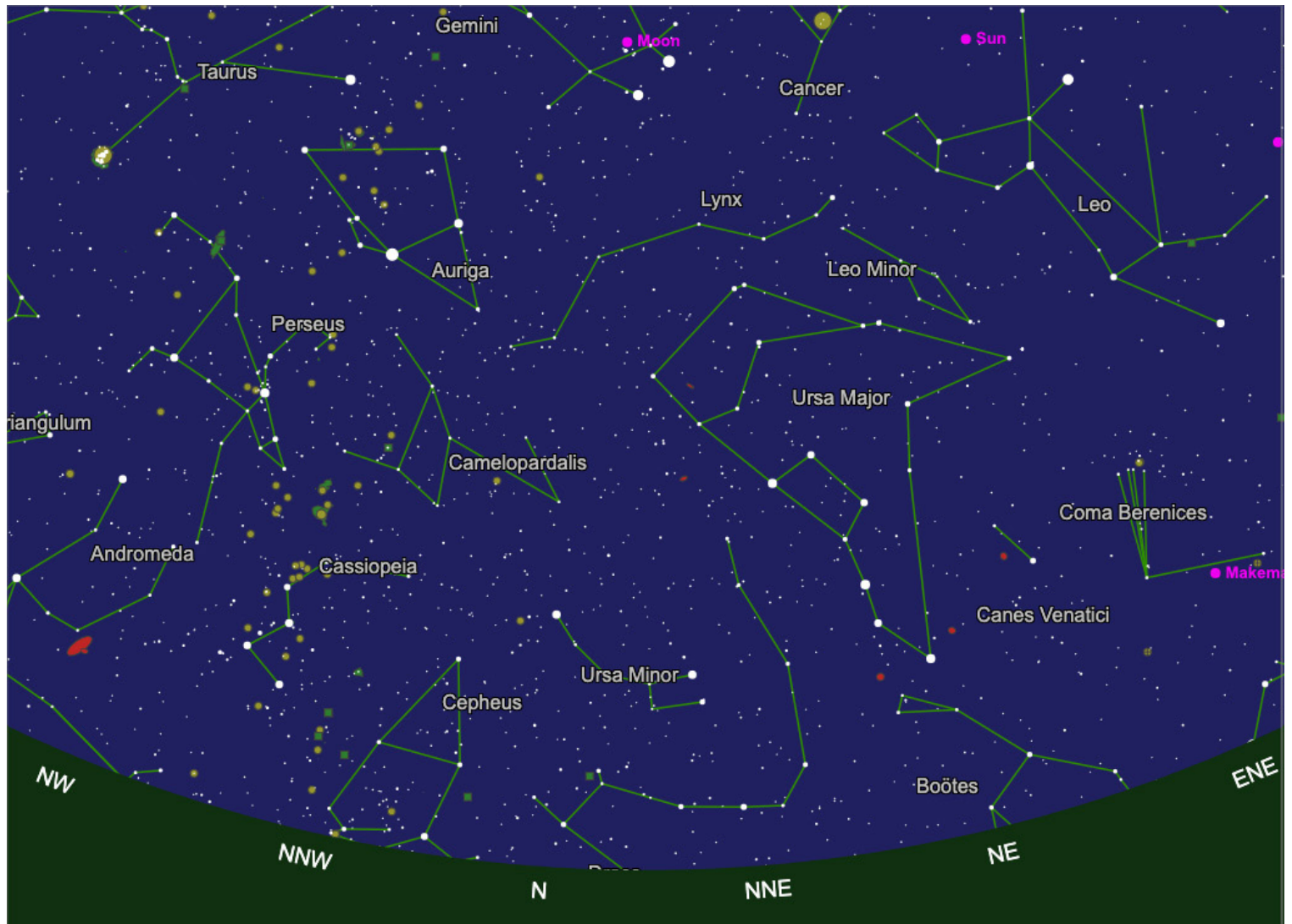
Airglow & Milky Way Tail

Canon Eos Ra | Sigma Art 28mm |

MonoLake USA | Bortle 1



Perseid Meteor Shower 2023



The Perseid meteor shower (also known as the Perseids) greets stargazers every year from mid-July to late August. This year the shower will peak around Aug. 13, 2023, according to skywatching site In The Sky.

2023 will be a good year for the Perseids as the moon will only be 10% illuminated.

The Perseids are caused by Earth passing through debris — bits of ice and rock — left behind by Comet Swift-Tuttle which last passed close to Earth in 1992. The Perseids peak when Earth passes through the densest and dustiest area on Aug. 11-12. Years without moonlight see higher rates of meteors per hour, and in outburst years (such as in 2016) the rate can be between 150-200 meteors an hour.

On a more normal year you can expect to see up to 100 meteors per hour at the shower's peak, according to NASA.

Last year, the Perseids were affected by the full moon illuminating the sky and washing out fainter meteors. However, this year it will provide minimal disturbance to the meteor shower as it will only be 10% illuminated during the time of the peak.

A typical Perseid meteoroid (which is what they're called while in space) moves at 133,200 mph (214,365 kph) when it hits Earth's atmosphere (and then they are called meteors). Most of the Perseids are tiny, about the size

of a sand grain. Almost none of the fragments hit the ground, but if one does, it's called a meteorite.

Peak temperatures for Perseids are more than 3,000 degrees Fahrenheit (1,650 Celsius) as each fragment travels through the atmosphere and both compresses and heats the air in front of it. Most of the fragments are visible when they are about 60 miles (97 kilometers) from the ground.

This beloved, annual sky spectacle is caused by the comet Swift-Tuttle.

Swift-Tuttle was discovered independently by two astronomers, Lewis Swift and Horace Tuttle, in 1862. When it last made a pass by Earth in 1992, it was too faint to be seen with the naked eye. The next pass, in 2126, could make it a naked-eye comet similar in brightness to the 1997 Hale-Bopp comet — providing that predictions are correct.

Comet Swift-Tuttle is the largest object known to repeatedly pass by Earth; its nucleus is about 16 miles (26 kilometers) wide. It last passed near Earth during its orbit around the sun in 1992, and the next time will be in 2126.

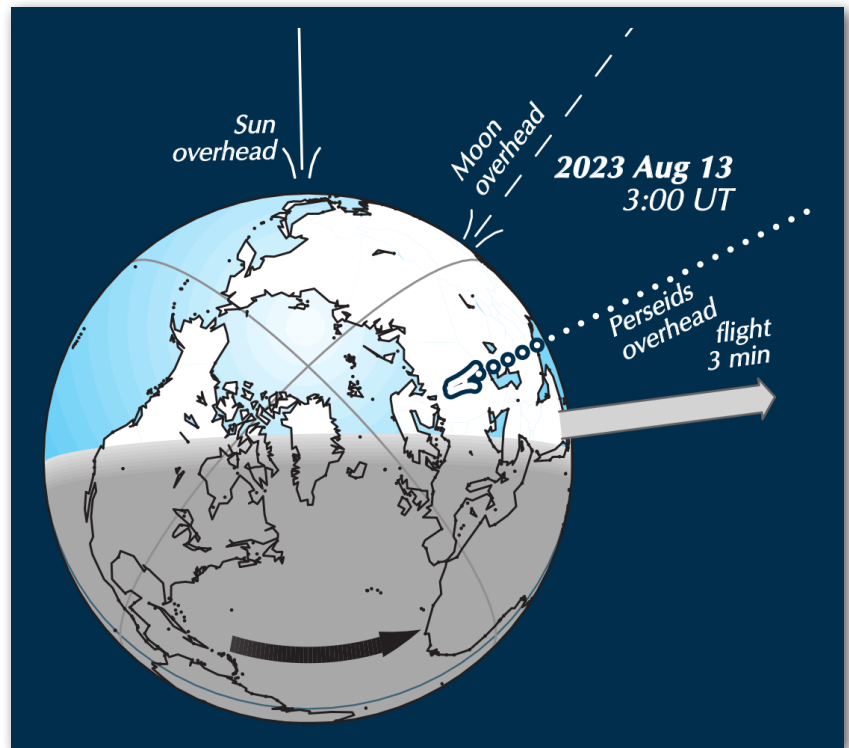
When you sit back to watch a meteor shower, you're actually seeing the pieces of comet debris heat up as they enter the atmosphere and burn up in a bright burst of light, streaking a vivid path across the sky as they travel at 37 miles (59 kilometers) per second, according to NASA.

Meteor showers are named after the constellation from which the meteors appear to emanate. From Earth's perspective, the Perseids appear to come approximately from the direction of the Northern Hemisphere constellation Perseus.

You can see the Perseid meteor shower best in the Northern Hemisphere and down to the mid-southern latitudes, and all you need to catch the show is darkness, somewhere comfortable to sit and a bit of patience.

To find the Perseid meteor shower, it's a good idea to look for the point in the sky where they appear to originate from, this is known as the radiant. According to NASA, the Perseids' radiant is in the Perseus constellation. Though Perseus isn't the easiest to find, it conveniently follows the brighter and more distinctive constellation Cassiopeia across the night sky. The meteor shower gets its name from the constellation it radiates from, the constellation is not the source of the meteors.

To best see the Perseids, go to the darkest possible location and lean back and relax. You don't need any telescopes or binoculars as the secret is to take in as much sky as possible and allow about 30 minutes for your eyes to adjust to the dark.



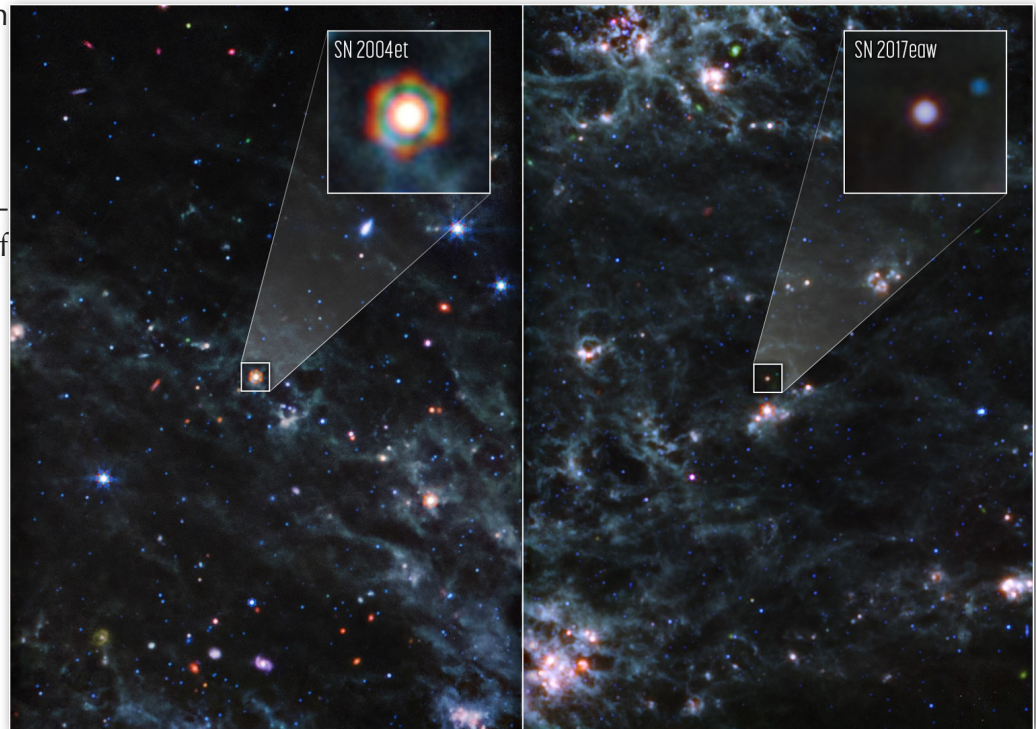
Supernovae

From [UniverseToday](#)

Supernovae are the Source of Dust in Early Galaxies

Every now and then there's an interesting discovery that helps us fill in a gap in our understanding of the universe. In the case of this latest discovery, we now have confirmation of a process we've long assumed, but have had little direct evidence for. It all has to do with cosmic dust.

According to the standard model of cosmology, all the elements of the universe with the exception of hydrogen and helium (and some traces of lithium and such) formed not in the big bang, but in astrophysical processes. Cosmic radiation, stellar collisions, and supernovae. The elements that make up us in particular, such as carbon, nitrogen, and oxygen, were formed in that last one. So we've assumed.



We've known for a while that these elements are fused in the hearts of large stars, and we know that when stars explode they cast off elements into interstellar space. But one of the things we haven't known is whether supernovae are the main source of interstellar dust.

Dust plays a central role not only as a source of heavier elements but also in the formation of planets around young stars. Without dust, planets such as Earth would be much less likely to form. Since dust can be found in supernova remnants, it makes sense to assume that supernovae create dust. But it could also be the case that supernovae mostly cast off molecular gas, which then coalesces to dust through some process we don't understand. We didn't really have evidence either way.

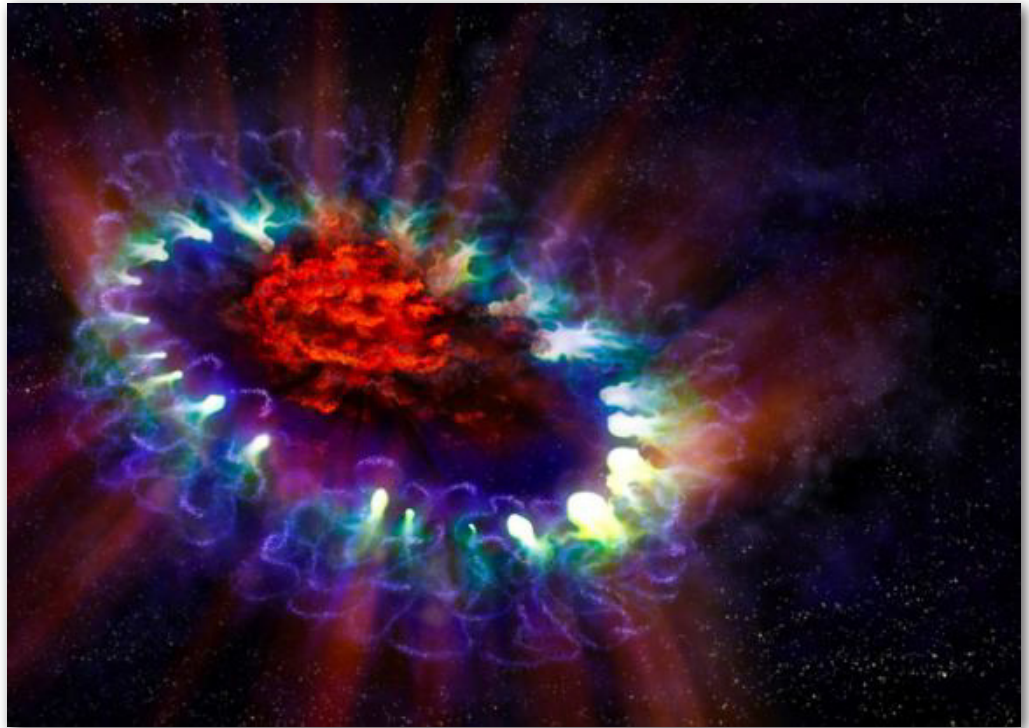
Then in 2014, the Atacama Large Millimeter/submillimeter Array (ALMA) observed copious amounts of dust in the supernova remnant 1987A. This confirmed that supernovae are a significant source of interstellar dust. So astronomers assumed the same process occurred in the early universe. As the first supernovae occurred in the cosmos, they created a source of dust out of which stars and planetary systems could form. This would explain why young galaxies are often dusty with a high rate of star formation.

But we hadn't directly observed this process in the early universe until now. Using data from the James Webb Space Telescope (JWST), a team observed high quantities of dust in the remnants of two supernovae, SN 2004et and SN 2017eaw. In the case of 2004et, the team observed 5,000 Earth-masses worth of dust. Given how young these supernova remnants are, it demonstrates how quickly supernovae can seed dust into a galaxy, and how they can contribute large quantities to interstellar space. So we can now be confident that supernovae did in fact seed early galaxies with dust.

In the future, the team hopes to study what galactic dust can teach us about the supernovae that created it. In the case of SN 2004et and SN 2017eaw, both are Type II supernovae, also known as core-collapse supernovae.

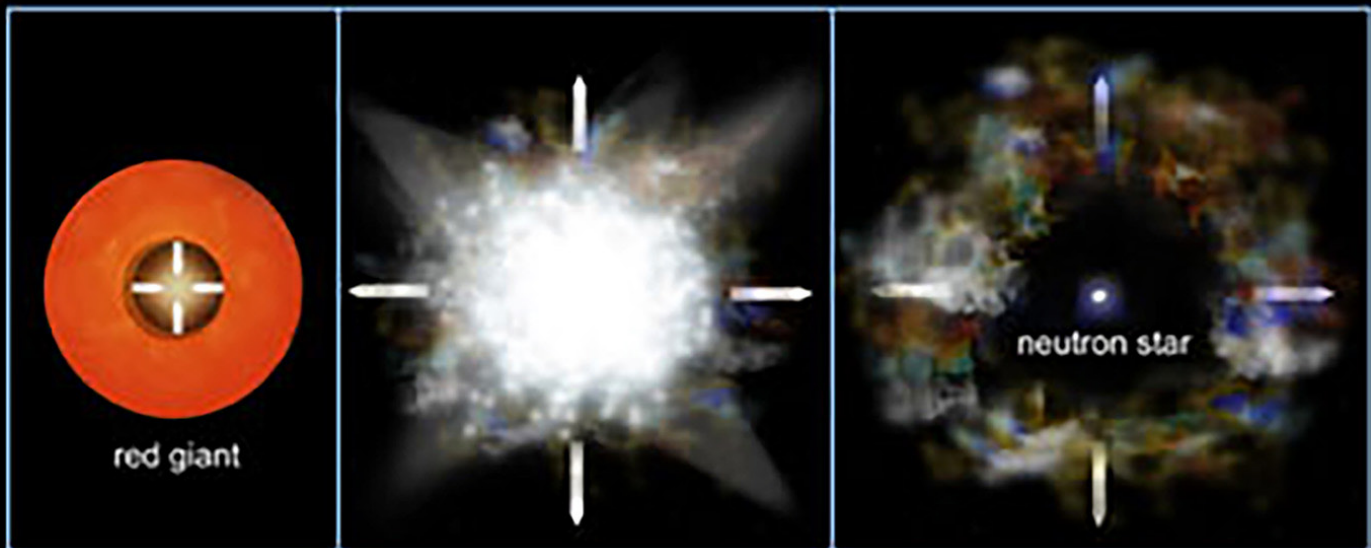
Because we saw them explode, we have a good idea of what their chemical composition was. By comparing this to the composition of their dust, astronomers will have a better understanding of how variations in supernova origins can lead to variations in dust composition. And that will further advance our understanding of how early galaxies evolved.

Reference: Shahbandeh, Melissa, et al. "[JWST observations of dust reservoirs in type IIP supernovae 2004et and 2017eaw.](#)" Monthly Notices of the Royal Astronomical Society 523.4 (2023): 6048-6060.



Artist view of dust around SN 1987A.
Credit: Alexandra Angelich (NRAO/AUI/NSF)

Birth of a Neutron Star and Supernova Remnant (not to scale)



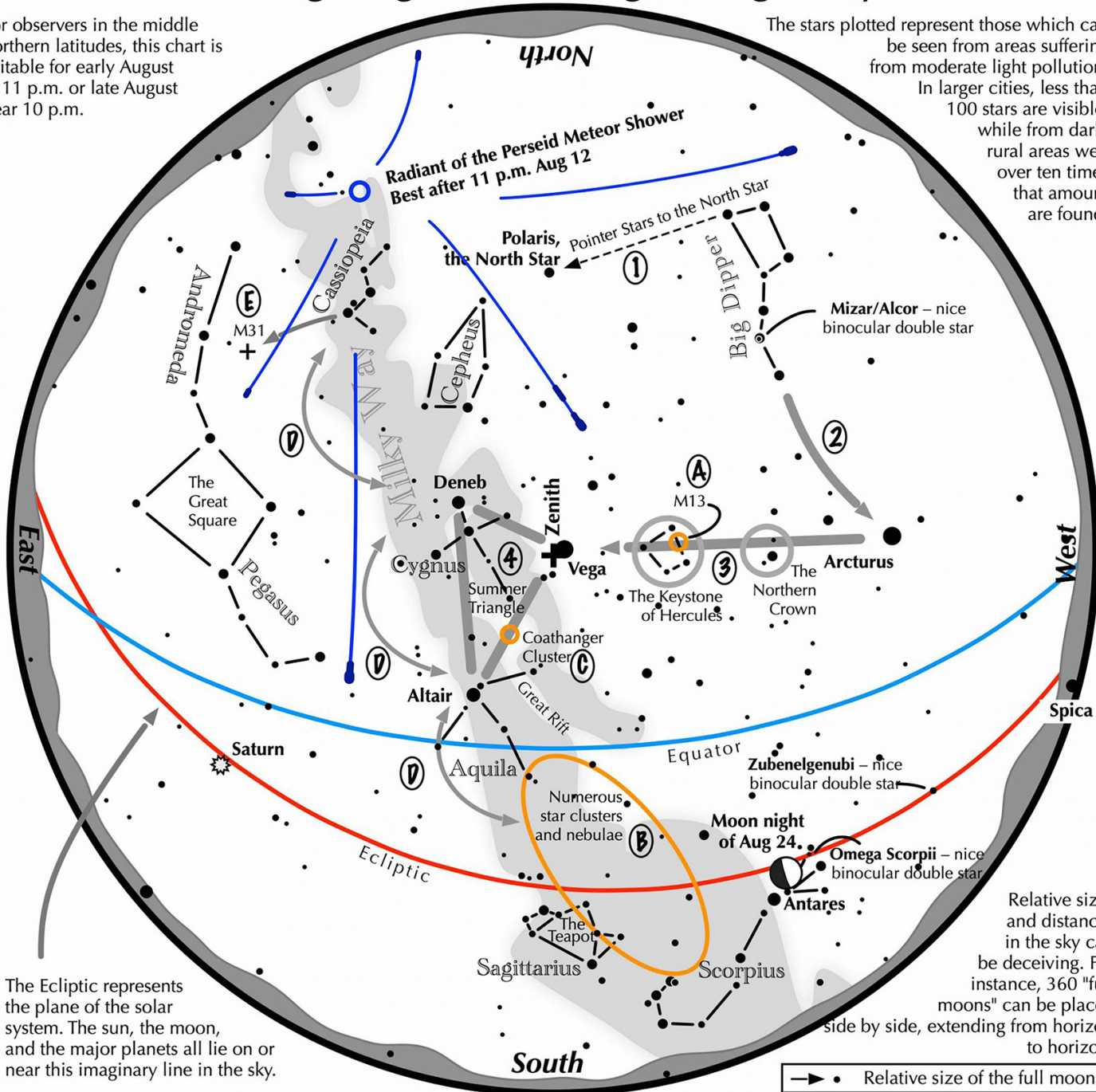
Core Implosion → Supernova Explosion → Supernova Remnant

Sky Chart

Navigating the mid August Night Sky

For observers in the middle northern latitudes, this chart is suitable for early August at 11 p.m. or late August near 10 p.m.

The stars plotted represent those which can be seen from areas suffering from moderate light pollution. In larger cities, less than 100 stars are visible, while from dark, rural areas well over ten times that amount are found.



The Ecliptic represents the plane of the solar system. The sun, the moon, and the major planets all lie on or near this imaginary line in the sky.

Relative sizes and distances in the sky can be deceiving. For instance, 360 "full moons" can be placed side by side, extending from horizon to horizon.

→ • Relative size of the full moon.

Navigating the mid August night sky: Simply start with what you know or with what you can easily find.

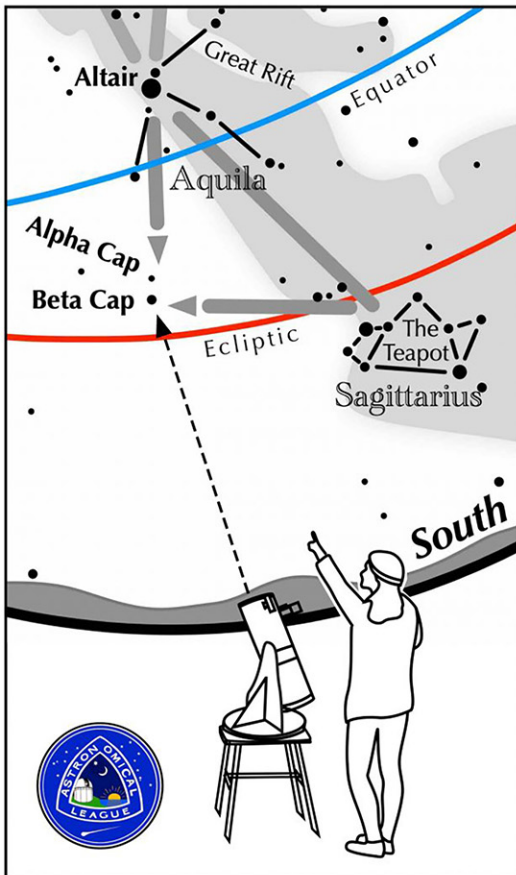
- 1 Extend a line north from the two stars at the tip of the Big Dipper's bowl. It passes by Polaris, the North Star.
- 2 Follow the arc of the Dipper's handle. It intersects Arcturus, the brightest star in the June evening sky.
- 3 To the northeast of Arcturus shines another star of the same brightness, Vega. Draw a line from Arcturus to Vega. It first meets "The Northern Crown," then the "Keystone of Hercules." A dark sky is needed to see these two dim stellar configurations.
- 4 High in the East lies the summer triangle stars of Vega, Altair, and Deneb.

Binocular Highlights

- A:** On the western side of the Keystone glows the Great Hercules Cluster.
- B:** Between the bright stars Antares and Altair, hides an area containing many star clusters and nebulae.
- C:** 40% of the way between Altair and Vega, twinkles the "Coathanger," a group of stars outlining a coathanger.
- D:** Sweep along the Milky Way for an astounding number of faint glows and dark bays, including the Great Rift.
- E:** The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval.



ASTRONOMICAL LEAGUE Double Star Activity



Other Suns: Beta Capricorni

How to find Beta Capricorni on an August evening

Find bright Altair, the southeastern member of the Summer Triangle. Then locate the "Teapot" asterism of Sagittarius. Use them to form a right triangle with Beta Capricorni being the right angle vertex.

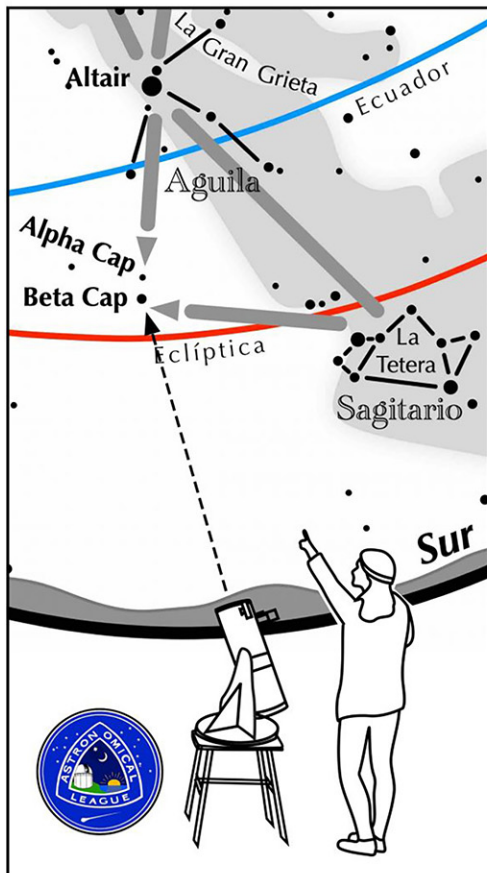
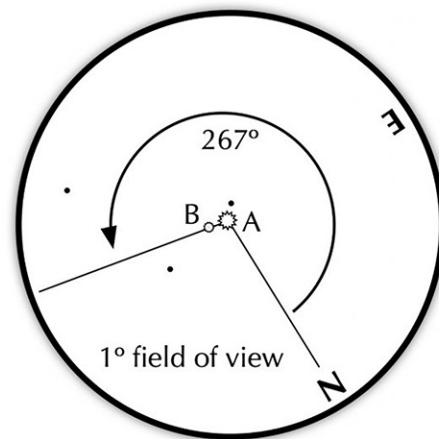
Suggested magnification: >10x
Suggested aperture: >2 inches

Beta Capricorni

A-B separation: 207 sec
A magnitude: 3.2
B magnitude: 6.1
Position Angle: 267°
A & B colors:
orange, white



Good binocular object!



Otros Soles: Beta Capricorni

Cómo encontrar Beta Capricorni en una tarde de Agosto

Encuentra al brillante Altair, el miembro del sureste del Triángulo de Verano. Luego ubique el asterismo "Tetera" de Sagitario. Úsalos para formar un triángulo rectángulo con Beta Capricorni como vértice del ángulo recto.

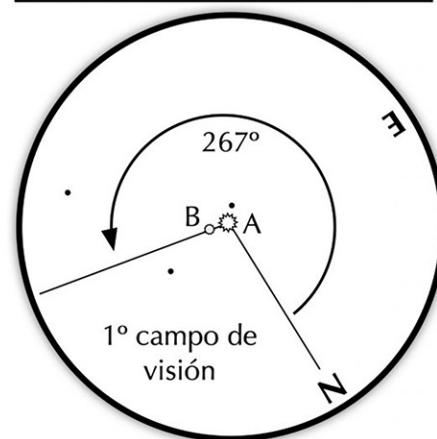
Ampliación sugerida: >10x,
Apertura sugerida: >50 mm

Beta Capricorni

A-B separación: 207 sec
A magnitud: 3.2
B magnitud: 6.1
PA: 267°
A & B color:
naranja, blanca



Buena estrella doble para binoculares!



What's Up, Doc? †

August 2023 (Eastern Daylight Time)

Dr. Aaron B. Clevenson, Observatory Director, Insuperity Observatory

This document presents those objects are visible this next month for many Astronomical League Observing Programs. If you are working on a more advanced program, I assume you are tracking where your objects are all the time. It concentrates on the common and starter level programs. This is based on 9 PM Eastern Daylight Time at about 39° North Latitude (Washington DC).

Naked-Eye Clubs

Meteors – any night, any time, anywhere, the darker the sky the better.

<u>Shower</u>	<u>Duration</u>	<u>Maximum</u>	<u>Type</u>
Southern Delta Aquarids	7/21 to 8/23	7/30 after midnight	MAJOR (ZHR: 16)
Perseids	7/13 to 8/26	8/13 @ midnight to 3 AM	MAJOR (ZHR: 100)
Orionids	8/25 to 11/19	10/22 after midnight	MAJOR (ZHR: 15)
Alpha Capricornids	7/8 to 8/10	8/1 & 8/2	Moderate (ZHR: 5)
Aurigids	8/29 to 9/4	9/1	Moderate (ZHR: 6)
Kappa Cygnids	8/6 to 8/31	8/17	minor (ZHR: 3)
July Pegasids	6/30 to 8/3	7/10	weak (ZHR: < 2)
Eta Eridanids	7/31 to 8/17	8/5	weak (ZHR: < 2)
Beta Perseids	7/24 to 8/20	8/7	weak (ZHR: < 2)
Northern Delta Aquarids	8/8 to 9/1	8/20	weak (ZHR: < 2)
August Gamma Cepheids	8/22 to 9/1	8/28	weak (ZHR: < 2)

Constellation Hunter, Northern Skies (and some Southern Skies) – any night, any time, anywhere, the darker the sky the better.

Last Chance this cycle: Ursa Major, Leo Minor, Coma Berenices, Virgo.

Transit: Ursa Minor, Draco, Hercules, Corona Borealis, Serpens, Ophiuchus, Scorpion.

New arrivals: Lacerta, Cygnus, Pegasus, Capricornus, Sagittarius.

Binocular Clubs

Binocular Messier – Monthly highlights include:

Easy – 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15, 16, 17, 18, 22, 23, 24, 25, 27, 29, 39, 52, 55, 92, 103.

Medium – 14, 19, 28, 40, 49, 53, 62, 63, 64, 80, 81, 82, 83, 94.

Hard – 9, 26, 51, 54, 56, 71, 75, 97, 101, 104, 106.

Big Binoculars – 58, 59, 60, 61, 69, 70, 72, 84, 85, 86, 87, 88, 89, 90, 99, 100, 102, 107, 108, 109.

Deep Sky Binocular – Monthly highlights include (by Astronomical League numbers):

1, 3, 4, 5, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60.

The Astronomical League now offers a total of 9 Binocular Certifications. They include the Solar System and Lunar.

Other Clubs

Messier

In addition to those listed under Binocular Messier, check out: 21, 57, 73, 91, 98.

Caldwell

1, 2, 3, 4, 6, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 26, 27, 29, 30, 32, 33, 34, 35, 36, 37, 38, 42, 45, 47, 52, 55, 57, 66, 68, 69, 75, 76, 78, 81, 82.

Double Star (by Astronomical League numbers):

1, 4, 7, 9, 10, 12, 13, 14, 15, 17, 18, 22, 26, 29, 31, 35, 36, 37, 38, 39, 41, 43, 44, 45, 46, 47, 48, 50, 51, 52, 54, 56, 57, 58, 60, 62, 63, 64, 66, 67, 68, 69, 70, 71, 72, 74, 84, 86, 87, 88, 90, 91, 93, 94, 96, 97.

Other Clubs (of the Solar System)

Solar System – These are the tasks that can be done this month:

Sun – Any clear day is a good time to get those sunspots.

Sunset is 2003 mid-month.

Venus, Jupiter, and Uranus are too close to the Sun or are morning objects.

Moon:

The Maria requirement can be done any time the moon is visible. Look before 8/8, and after 8/22 for the fullest views.

The Highlands requirement can be done at the same time.

The Crater Ages requirement is best done on 8/21 or 8/22.

The Scarps requirement is best done on 8/23.

Occultations occur all the time, the bright ones can be found on the internet. Objects disappear on the East side of the moon.

Mercury is in Leo and sets at 2123 at mid-month.

Mars is in Leo and sets at 2240 at mid-month.

Asteroids – Course Plotting and Measuring Movement requirements can be done at any time on any asteroid.

Ceres is in Virgo and is up all evening mid-month.

Saturn is in Aquarius and rises at 2255 at mid-month. All requirements can be done when Saturn is visible: markings, moons, etc.

Neptune is in Pisces and rises at 2334 mid-month.

Pluto is in Sagittarius and is up all evening mid-month.

Lunar

Key timings are indicated below:

New, 8/15 4 days, 8/19 7 days, 8/22 10 days, 8/25 14 days, 8/29

Old moon in new moons arms – before 0038 on 8/19, ~10 % illuminated. (72 hr > New)

New moon in old moons arms – after 0038 on 8/13, ~10 % illuminated. (72 hr < New)

Waxing Crescent – before 0038 on 8/18, ~4 % illuminated. (48 hr > New)

Waning Crescent – after 0038 on 8/14, ~4 % illuminated. (48 hr < New)

Astronomical Events this Month:

- 8/2 – Lunar Perigee
- 8/6 – Jupiter at Western Quadrature
- 8/8 – Eta Eridanids Meteor Shower
- 8/9 – Mercury at Greatest Eastern Elongation
- 8/9 – Mercury at Dichotomy
- 8/13 – Perseid Meteor Shower
- 8/13 – Venus at Inferior Conjunction
- 8/15 – Uranus at Western Quadrature
- 8/16 – Lunar Apogee
- 8/17 – Kappa Cygnids Meteor Shower
- 8/22 – Mercury is Stationary
- 8/27 – Saturn at Opposition
- 8/28 – Uranus is Stationary
- 8/30 – Lunar Perigee

* - Although these clubs are not detailed in this “What’s Up Doc?” handout, you can get information on many of their objects by using the “What’s Up Tonight, Doc?” spreadsheet (version 4.1). To get your copy, talk to the Doc, Aaron Clevenson, by sending an email to aaron@clevenson.org. It is also available on the club website.

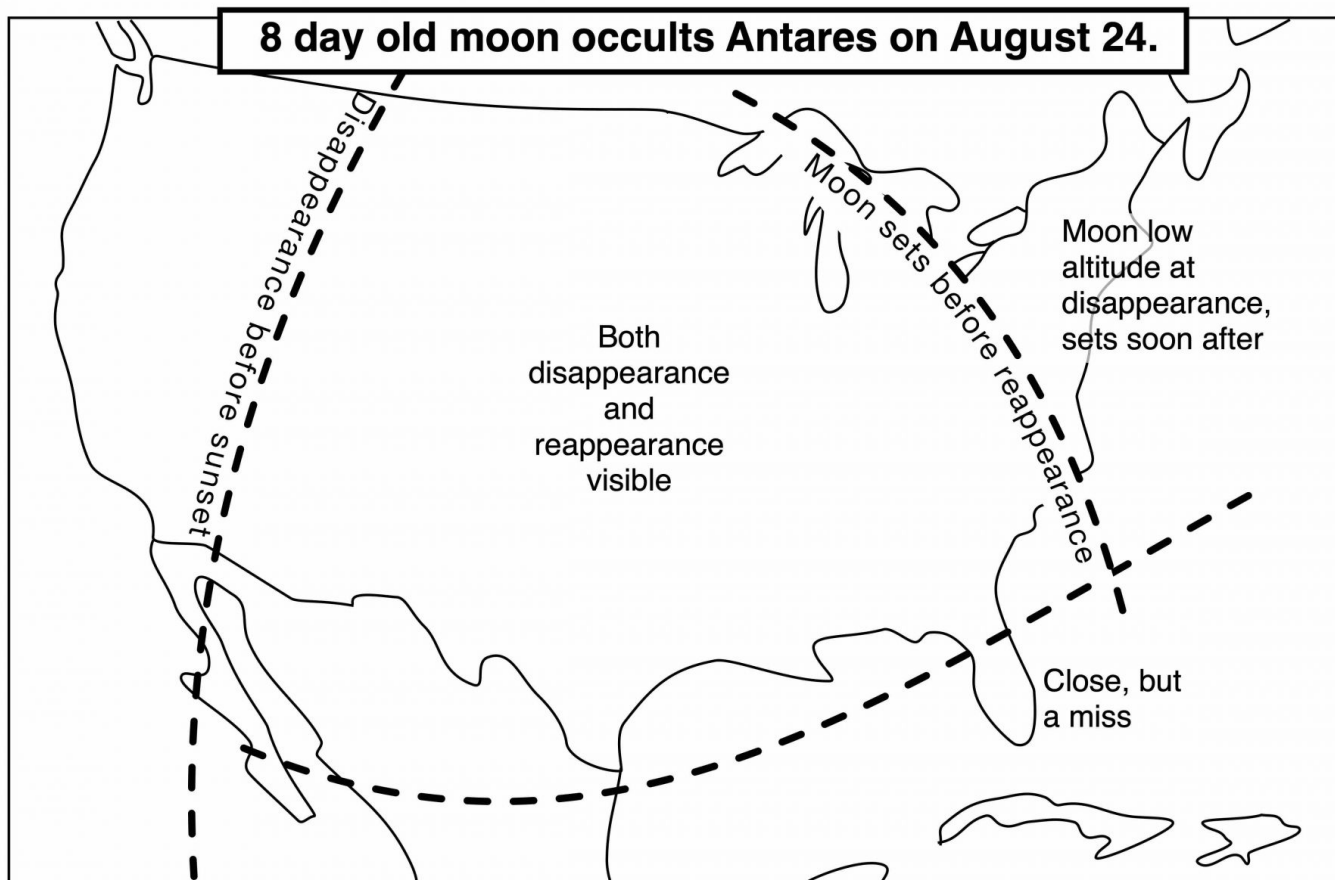
† - “What’s Up Doc?” is used with permission from Warner Bros. Entertainment Inc.

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Inspirity Observatory, 2505 S. Houston Avenue, Humble, TX: www.humbleisd.net/observatory

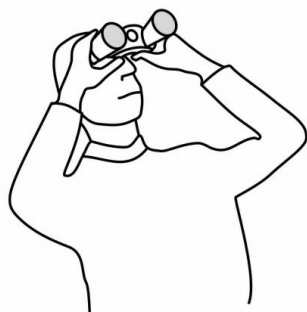
A.

If you can see only one celestial event this August, see this one.

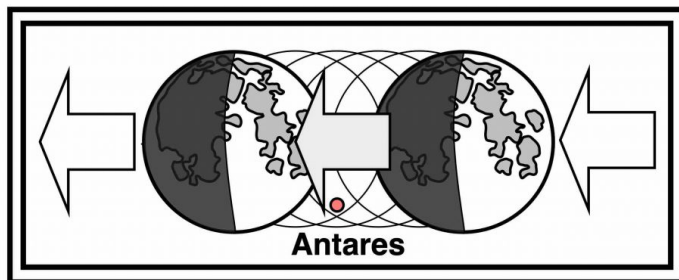


The full occultation event on Aug. 24 of Antares by the moon occurs for the central part of the US. Both coasts will not see the complete event. For disappearance and reappearance times in your area, visit the International Occultation Timing Association webpage:

<http://lunar-occultations.com/iota/bstar/0824zc2366.htm>



Start looking in the southwest shortly after sunset on August 24. Watch the moon slowly approach Antares, then suddenly block it. Binoculars will give better view.



Occultations demonstrate the moon's eastward orbital motion as Earth's rotation causes it to move in a westward arc across the night sky.

Meeting Minutes

Southwest Florida Astronomical Society Member Minutes
July 6, 2023 Calusa Nature Center Planetarium (no Zoom)

President Brian Risley called the meeting to order at exactly 7:00 PM stating that the Planetarium's Internet service has not been functioning for a week and he only was advised of such moments ago. Brian stated that he emailed all to let them know. Brian then introduced our Vice President Michael Jensen as our guest speaker.

Mike Jensen is the Astrophotography SIG Leader and Vice President of SWFAS. His topic "Wow, You must have a really good camera"!! What makes an astrophotographer tick? And Mike covered it all. Existing photographers want to get into astronomy or visual astronomers want to expand on their observations. Mike stated that there are various approaches to astrophotography including wide field stationary camera and wide field deep sky-tracker. Solar/Planetary or deep sky as it takes 15 levels of knowledge or communication abilities to be effective. In summary, it takes money to obtain the proper equipment, a personal relationship with the night sky, an ability to share data with others, and an enjoyment of interacting with like-minded people. Mike advised that his presentation is available on line and that Linwood Ferguson was very helpful with his knowledge and photos in crafting such. Questions were asked and fully answered by Mike. He received a heartfelt applause.

Brian then asked for new attendees to introduce themselves. Robert said that he and his daughter Jennifer were attending because his daughter wants to study astronomy in College, both Mike and Brian said encouraging words to foster Jennifer's ambitions. Inez was another newbie and stated that she was here to see exactly what SWFAS was all about and would let us know later. Ave/Eva was absent and hopefully she will be able to contact these folks in the future.

Review Outreach Events:

President Brian Risley advised that he attended and was guest speaker on July 5th "Big Cypress- Education Training/Observing meeting. "Steam in the Park" with many handouts, flags, kids stuff and a similar Ranger program event. There were about a dozen people in attendance for this 1 and 1/2 hour presentation. Brian said that around August 12th there will be the Perseid s meteor shower and viewing would be best down at the Big Cypress, although visible in most places.

Upcoming Outreach Events: Suspended until October

Officer and Committee Reports:

President: Brian Risley advised that he had glued the projectors parts together more than once and could not get any positive results. Both Mike and John said that we must do something to obtain computers and projectors at a level needed of our association. Brian said we need a minimum of 4K with 2,000 ANSI Lumens. No question the equipment is needed, so Brian and Tom Klein are reviewing the products and will report back to the officers. A separate officers meeting will be necessary before the August membership meeting.

Vice President: Mike Jensen said that he would develop a ballot form for members to utilize on line for the vote on the by-law changes. Once done the officers will review and John MacLean will email all members asking for their participation.

Secretary: Dan Dannenhauer asked for a motion to move his minutes outlined in the newsletter. Linwood Ferguson asked that such minutes be amended to show President Brian Risley's name as Brian and not Brain OR have Brian change his name to Brain. All laughed and Sandeep Dey seconded the motion as amended. Motion

passed unanimously.

Treasurer: John MacLean passed on the SWFAS financial data stating that such was approved by the officers and is available to members for review. John did advise that the annual \$100 membership renewal for IDA is due and asked for a motion to pay such. Sandeep Dey so moved and Mike Jensen seconded. Motion passed unanimously. John then advised that the amendments to the By-Laws are ready for a vote and reiterated what Mike Jensen had stated. John will send out the ballot to all members who can go on line to view the By-laws. We must have at least 66 members reply to the affirmative by September. John said, even if we have to call members, we will get this done.

Program Committee Coordinator: John MacLean advised that an Engineer from NASA will be our guest speaker in August regarding Lunar Geology and that we have guest speakers for all remaining meetings of the year. President Risley thanked John for his hard work.

Astronomical League Coordinator: John MacLean advised that the July data will be sent. No other action needed.

All other committees stated no report. Mike Jensen moved that the meeting be adjourned, seconded by Sandeep Dey. Risley passed unanimously at 9PM.