The Eyepiece

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

2017 Solar Eclipse
by Mike Jensen

Editor - Mike Jensen

Hi Everyone!

I'm writing this Tuesday afternoon. I returned from three disconnected weeks in South America last night at 11pm, so I'm just now getting plugged back in. South America was great! We spent 10 days on a boat in The Galapagos hiking and snorkeling, then eight days on a boat on the Amazon river, each day going out on a boat to search for animals or hiking in the rainforest jungle. The pics and video I took are amazing and I'll be publishing them soon.

We've got a GREAT general member meeting lined up this month with (newly minted Phd.) Dr. David Coulter speaking on Finding The Next Kilonova! Then a planetarium presentation follows. It's titled Gravity Waves!

As we move in to the 4th quarter, we have a lot of club business to take care of. Out of necessity we emailed you to receive permission to purchase some new equipment. Thanks so much!

John has been busy preparing the club budget for next year. We'll need to approve that, as well as approving a slate of board officers, 2024 dues and a few other things.

As always, we're looking for volunteers to help especially with some of our outreach events. These reach a lot of the public and we could use your help. You can sign up for a single event, or for more...

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Take The Member's Survey
We have created a member survey to gain your feedback on a variety of things important to the club. Please take a few minutes to complete it.
Click Here

Observing/Star Party Dates Announced
Info on page 5.

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 meetings of 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

Dear Members,
In order to improve the quality of the recording of our meeting presentations, our system of muting Zoom participants will change. During a presentation, Zoom depends on sound to identify the presenter. As a result, if a participant sneezes or coughs, or any outside noise happens, that person is presented as the speaker in the Zoom video. In order to prevent this from happening, all participants must be "muted". As the host, I will "mute all" during presentations. This will prevent any extraneous noise from interfering with the presentation and a singular video of the presenter will be produced. We see this as an excellent way to improve the quality of our recordings, however, there is a "downside". After the presentation, for the "Q & A", the participant(s) will have to alert the host (me) to "unmute" by raising your hand. I will then send you a request (permission) to "unmute" yourself.
Technical note: If you mute yourself again after being "unmuted" you will have to alert the host again to unmute, since this format is locked for the Zoom session.
Thanks for your understanding, as we try to improve the quality of our presentations.

Tom K

Bylaws Have Been Approved!

Thanks to everyone for getting your vote in!
And thanks to John MacLean for his work in emailing and "nudging" a few of you to get out and vote!

President's Report

Brian Risley - President

Eclipses are upon us. Saturday, October 14 we will experience the partial phases of the Annular Solar Eclipse. There are events being planned at FSW Moore Observatory in Punta Gorda, the Calusa Nature Center Planetarium in Fort Myers and I am considering setting up scopes in Centennial Park in downtown Fort Myers on the west side of the bridge. That same night we will have a star party at Seahawk Park in Cape Coral. On Friday the 13th, the Moore Observatory also has open public viewing.

Friday October 20th from 6pm-9pm the Lee County Parks and Rec is having a Fall Festival at the North Fort Myers Rec Center/Community Park. I will be at that event.

The 21st is International Observe the Moon night and I may set up again for that at Centennial Park.
October 28th is Solar Observing at Bayshore Live Oak Park.

The tentative schedule for the Big Cypress Astronomy nights is: 12/9/23, 1/13/24, 2/10/24, 3/9/24. They also have a Swamp Heritage Festival on 12/2/23 (10am – 3pm) that I am planning on going to.

We have received the new Astronomical League Color 8 page flyers and NSN sent us a number of solar eclipse items/handouts. We will be having voting on the budget coming up along with the election of officers and we need a majority of membership response on those. If you are interested in being an officer, please contact me as we will be looking to get the election information out before the December meeting.

The speaker this month is Dr. Dave Coulter of the Space Telescope Science Institute with a presentation entitled "Finding the Next Kilonova". This will be followed by the planetarium show entitled "Einstein's Gravity Playlist" about gravity waves that are an essential feature of Dr. Coulter's presentation.

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.:

Oct. 5, 2023	Dr. Dave Coulter - **Finding The Next Kilonova** Postdoctoral Researcher (specifically on the Transient Science Team at Space Telescope Science Institute
	Following the talk, a Planetarium show on Gravity Waves!
Nov. 2, 2023	Dr. Matthew Greenhouse, Project Scientist JWST - NASA Goddard Space Flight Center
Dec. 7, 2023	Dr. Olivia Wilkins - **Exploring the Invisible Chemical Universe With Radio Astronomy** NASA Postdoctoral Program Fellow, NASA Goddard Space Flight Center.

Oct. 5, 2023

Dr. David Coulter - Finding The Next Kilonova Oct. 5, 2023

OPEN TO ALL SWFAS MEMBERS AND THE PUBLIC - More Info & Zoom Links at https://theeyepiece.org/

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 benefit s for you, visit http://www.astroleague.org

RASC 2024 Observer's handbooks & Calendars

The Astronomical League announced in late September that the USA Version of the RASC (Royal Astronomical Society of Canada) 2024 Observer's Handbooks and Calendars are available for PRE-ORDER on the League Sales web store at https://store.astroleague.org/ https://store.astroleague.org/index.php?main_page=index&cPath=12

The Astronomical League sells these items each fall at a fantastic price with their members in mind. tock will arrive in typically in November and typically ship in December in time for Christmas.

The League suggests ordering early to ensure availability, as stock will be limited once the order comes in. Clubs may place group orders with versions of the RASC Calendar for 6+ units and for the RASC Handbook for 10+ units, both on the League Sales web store. Free shipping and discounted prices apply.

Reflector Magazine
The latest September 2023 copy of the Reflector magazine was emailed on August 22. It is also 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)
The Astronomical League Caldwell Observing Program
Last month we highlighted the Messier Observing program. This month we'll take a look at the Caldwell Observing program compiled by the late Sir Patrick Moore.

Caldwell Observing Program
As the Astronomical League introduction points out, the Messier list was originally compiled as a list of objects (faint fuzzies) to be avoided while searching for comets. The Caldwell List, on the other hand, was generated as a list of objects to be sought out for their beauty and interest and well worth the effort to go out of one's way (literally in the case of the full list!) to find.

The full Caldwell list contains 109 objects varying in magnitude from 1 to 13. Unlike the Messier list, the Caldwell objects extend well into the southern hemisphere and so to log them all travel to the Southern hemisphere will be required.

However, the Astronomical League provides two levels of awards, one including just 70 objects which will allow observations to remain in the northern hemisphere and the other for the full list.
As is the case for the Messier observing programs, computer guided scopes are not allowed although the aperture requirement is a modest 6 inches.

The Caldwell list is mutually exclusive of the Messier list and is sequenced in order of Declination, North to South. Well known targets in the northern hemisphere include the Cat's Eye Nebula in Draco, the Sword Handle (Double Cluster) in Perseus, the Blinking Nebula and the North American Nebula in Cygnus, the Hyades and the Eskimo Nebula in Gemini.

Southern hemisphere targets include the Coal Sack and the Jewel Box cluster in Crux, The Tarantula Nebula in the Large Magellanic Cloud, and the globular cluster 47 Tucanae.

The awards for successful completion of either program consist of a certificate and a pin including a picture of two of Sir Patrick's favorite objects, the Cat's Eye Nebula and the Tarantula Nebula.

Port Charlotte/Punta Gorda Observing Dates Announced

Night Sky Observing At Moore Observatory & Solar Observing In PG & PC

Our Observatory Team opens up the Moore Observatory at FSW Charlotte Campus (26000 Airport Road, Punta Gorda) on the second Friday of each month. Observation sessions typically begin about 30-45 minutes after it is dark enough to see the stars and continue as long as stargazers linger. Prior to complete darkness, visitors can not be admitted into the observatory as the equipment needs to be setup and aligned with the stars each time but early arrivers are welcome to enjoy views of the lake and the scenery of the campus from the lakeside picnic tables. The public sessions are free and held weather permitting.

Here is the schedule for 2023/24:

- Oct 13, 2023
- Nov 10, 2023
- Dec 8, 2023
- Jan 12, 2024
- Feb 9, 2024
- Mar 8, 2024
- Apr 12, 2024
- May 10, 2024

Our observing team also sets up solar telescopes on the 4th Saturday of the month (from 9am - Noon) to look at the Sun, looking for solar flares, prominences and other solar phenomena. All events are in Port Charlotte or Punta Gorda.

Solar Observing/Park

Oct 28, 2023	Bayshore Live Oak
Nov, 25 ,2023	Gilchrist
Dec 23, 2023	Ponce deLeon
Jan 27, 2024	Bayshore Live Oak
Feb 24, 2024	Gilchrist
Mar 23, 2024	Ponce deLeon
Apr 27, 2024	Bayshore Live Oak
May 25, 2024	Gilchrist

Annular Solar Eclipse Oct. 14 - What's an Annular Eclipse?

RING OF FIRE!

Combined from Time and Date, NASA, Great American Eclipse.

The Saturday, Oct. 14, 2023, annular solar eclipse will cross North, Central, and South America. It will be visible in parts of the United States, Mexico, and many countries in South and Central America.

In the U.S., the annular solar eclipse begins in Oregon at 9:13 a.m. PDT and ends in Texas at 12:03 p.m. CDT.

An annular solar eclipse happens when the Moon covers the Sun's center, leaving the Sun's visible outer edges to form a "ring of fire" or annulus around the Moon.

Moon Casts a Shadow
Solar eclipses happen when the New Moon casts a shadow on Earth.

The Moon's shadow is not big enough to engulf the entire planet, so the shadow is always limited to a certain area (see map illustrations below). This area changes during the eclipse because the Moon and Earth are in constant motion: Earth continuously rotates around its axis while it orbits the Sun, and the Moon orbits Earth.

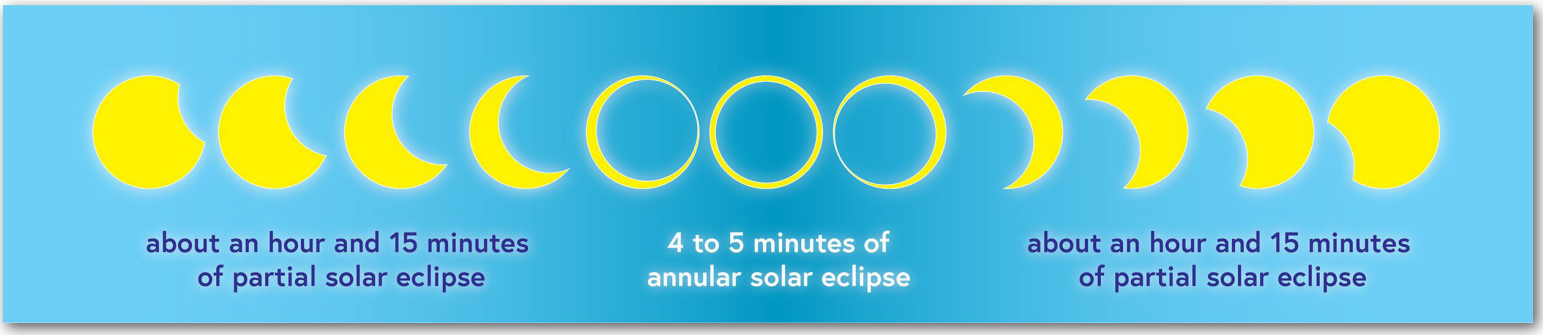
Solar eclipses are only visible from within the area where the shadow falls, and the closer you are to the center of the shadow's path, the bigger the eclipse looks.

Annular Means Ring-Shaped
The name "annular" comes from the Latin word for ring, "annulus." These eclipses are named for their darkest, or maximum, point even if it only lasts less than a second. If the characteristic ring of fire is visible from even just one location, the whole eclipse is called an annular solar eclipse.

However, in most places and for most of the duration, an annular eclipse looks like a partial solar eclipse. This is also the case for total solar eclipses and for the rare hybrid solar eclipses which have an annular maximum point in some locations and a total maximum point in other locations.

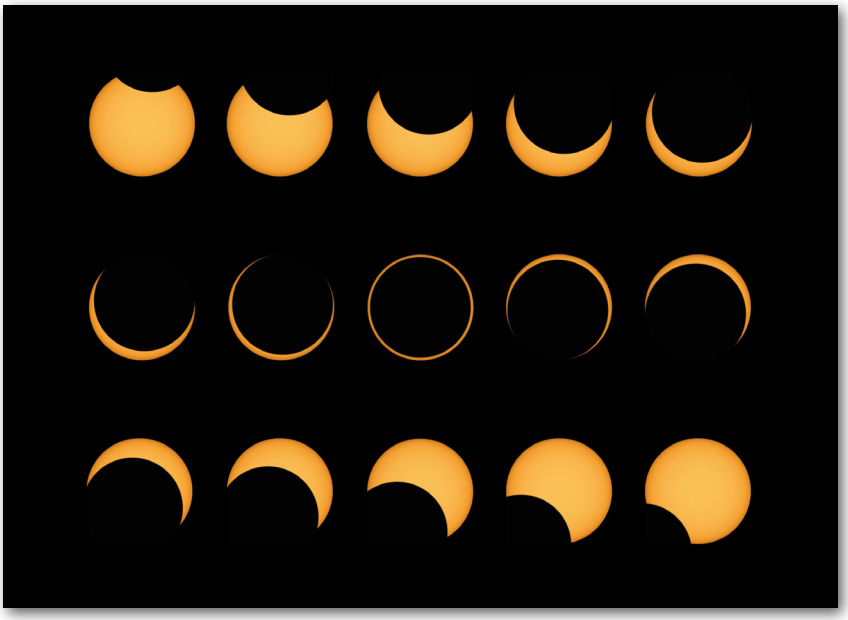
When Do They Happen?
Annular solar eclipses can only take place when:

It is New Moon.



At the same time, the Moon is at (or very near) a lunar node, so the Earth, the Moon, and the Sun are aligned in a straight (or nearly straight) line.
The Moon is near its farthest point from Earth, called apogee, so the outer edge of the Sun remains visible as a ring of sunlight.
1. Why Not Every New Moon?
Solar eclipses are relatively rare. For any solar eclipse to take place, it has to be around New Moon, when the Sun and Earth are aligned on opposite sides of the Moon. Normally, the New Moon is invisible from Earth. The only time we can see it is during solar eclipses, silhouetted against the Sun.

2. Close to Lunar Nodes
Illustration of lunar nodes with Sun, Earth, and Moon
Lunar nodes are the locations where the Moon crosses the Earth's orbital plane.



So why isn't there an eclipse every night there is a New Moon? This is because the New Moon also has to be close to a lunar node.

The plane of the Moon's orbital path around Earth is inclined at an angle of approximately 5° in relation to Earth's orbital plane around the Sun—the ecliptic. The points where the 2 orbital planes meet are called lunar nodes. When the Sun and the Moon are close enough to a lunar node to form a perfect or almost perfect line with Earth, we are in the eclipse season, which lasts around 34.5 days. In every eclipse season, there are 2 to 3 eclipses, and at least 1 of these is always a solar eclipse; at the most 2.

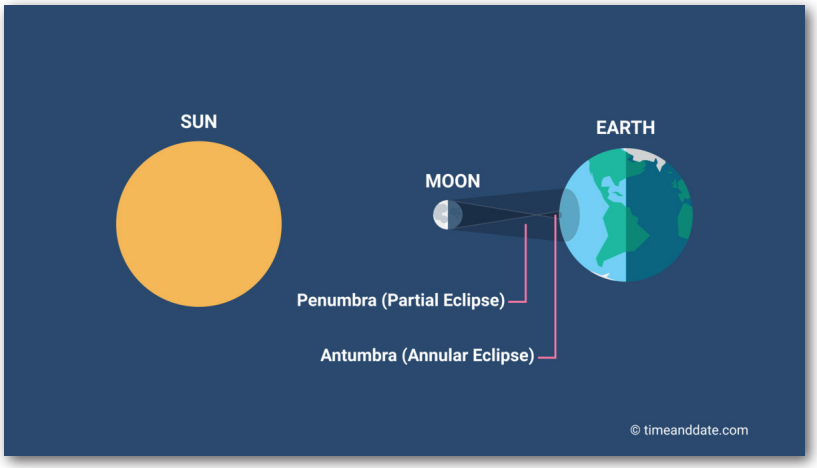
3. Moon Is Far from Earth
Throughout every lunar month, the distance between our planet and the Moon varies because the shape of the Moon's orbit around Earth is elliptical, rather than circular.

The reason we can see the glowing outer edge of the Sun at the maximum point of an annular eclipse is that it happens while the Moon is near its farthest point from Earth, called apogee, when the Moon is smaller than the Sun when viewed from Earth.

What if the Moon is near perigee?

The Moon's Antumbra
Annular solar eclipse illustration with positions of Earth, Moon, and Sun in space
Solar eclipses are caused by the Moon casting shadows on Earth. There are 3 different types of shadow that the New Moon can cast on Earth: the umbra, the penumbra, and the antumbra.

To see annularity, you must be in a location where the Moon casts the antumbra. At the maximum point, the width of the annular path is typically around 150 km (93 mi) although this can vary considerably. If you're at the center of this zone, you will see the annularity's maximum point as a perfect ring of fire. In other areas of annularity, where the Moon is not perfectly centered on the Sun, the ring has varying width.



If you're at the edge of the annularity path, you may see a broken ring of fire and–for a brief moment–a phenomenon called Baily's beads, which are little bead-like blobs of light at the edge of the Moon. These happen because gaps in the mountains and valleys on the Moon's surface allow sunlight to pass through in some places, but not in others.

Why are there 3 shadows?

There are 5 distinct stages of an annular solar eclipse:

1st contact—partial eclipse begins: The Moon's silhouette starts becoming visible in front of the Sun's disk. The Sun looks as if a bite has been taken from it.
2nd contact—full eclipse, or annularity, starts: The ring of fire appears. For a few seconds just as the annularity begins, Baily's beads, which look like beads of light, can sometimes be seen at the edge of the Moon's silhouette.
Maximum eclipse: The Moon covers the center of the Sun's disk.
3rd contact—annularity ends: The Moon starts moving away from the disk of the Sun. Once again, Baily's beads may be visible along the Moon's leading edge.
4th contact—partial eclipse ends: The Moon stops overlapping the Sun's disk. The eclipse ends at this stage.
How Long Does it Last?
Annular eclipses can last over 3 hours in locations where annularity is visible. From start to finish, the total duration of annular eclipses can be over 6 hours but not in a single location. The annularity, when only a ring of fire is visible in the sky, can range from less than a second to over 12 minutes.

Protect Your Eyes!
Never look at the Sun, eclipsed or otherwise, without proper eye protection, like eclipse glasses. The Sun's rays can burn the retinas in the eyes leading to permanent damage or even blindness.

A safe way to watch a solar eclipse is to wear protective eclipse glasses or to project an image of the eclipsed Sun using a pinhole projector.

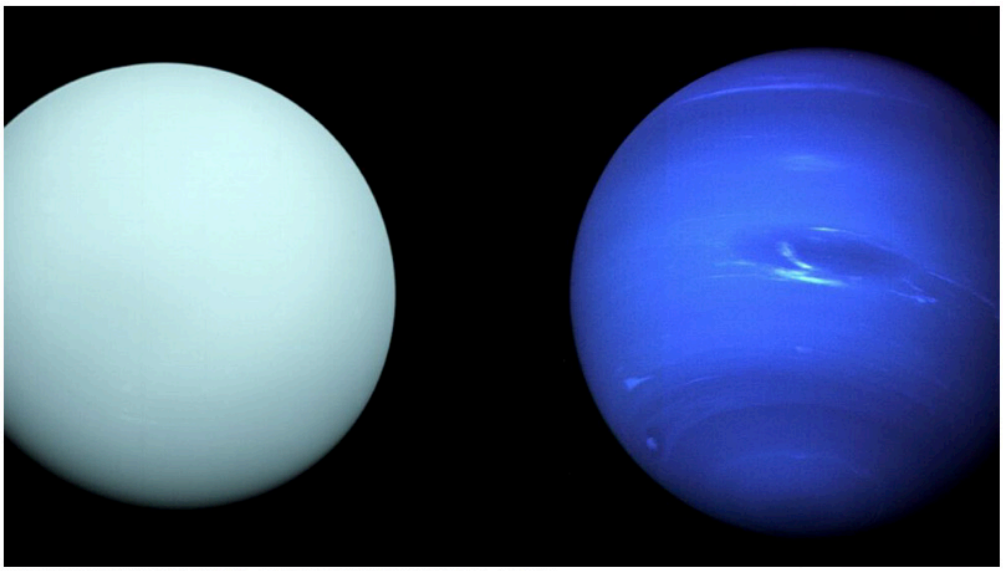
Earth's Distance to Sun
Earth's orbit around the Sun is also elliptical, which means that there is 1 point of the path when Earth is at its closest point to the Sun (perihelion) and 1 point when it is furthest away (aphelion). Earth's distance to the Sun also sometimes affects the type of eclipse, the duration of the eclipse, exactly how much of the Sun's disk will

NASA to take new images of Uranus and Neptune, asking amateurs to observe too

From ABC News: By Mary Kekatos

NASA is asking amateur astronomers to help the agency study the ice giants Uranus and Neptune.
Next month, NASA will be observing the two planets via its New Horizons spacecraft, originally designed to explore Pluto and the Kuiper Belt, a disc of icy bodies beyond the orbit of Neptune and often a source of comets.

Working with the Hubble Space Telescope, New Horizons plans to capture images of Uranus and Neptune in color. Because the spacecraft has passed the orbit of both planets, the images will be taken from "behind," which should provide some data regarding the atmosphere on both planets.


In these photos released by NASA, Uranus and Neptune are shown. (NASA)

Even though NASA is working with some of the most advanced tools in the world, the agency says having multiple instruments aimed at Uranus and Neptune could help "augment" the mission.
"By combining the information New Horizons collects in space with data from telescopes on Earth, we can supplement and even strengthen our models to uncover the mysteries swirling in the atmospheres of Uranus and Neptune," said Alan Stern, principal investigator of the New Horizons mission, in a statement.
"Even from amateur astronomer telescopes as small as 16 inches, these complementary observations can be extremely important," the statement continued.

NASA said it will make the Hubble images of Uranus and Neptune publicly available at the end of September. The New Horizons images will likely be received at the end of 2023, at which point they will also be made available.

Amateur observers are being asked to share their images, as well as the details they identified, on Facebook or X, the platform formerly known as Twitter, with the #NHIceGiants.
The images are important, especially because only one spacecraft has ever visited Uranus and Neptune.
In January 1986, NASA's Voyager 2 reached Uranus after traveling 1.8 billion miles over nine years. It took three years for Voyager 2 to pass Neptune as it made its way out of the solar system.

Planetary scientists have studied planets such as Mars intensely due to its proximity to Earth, but some have argued that more resources need to be poured into studying the more distant planets.

Dr. Kathleen Mandt, a planetary scientist at Johns Hopkins University's Applied Physics Laboratory, published an article in the journal Science earlier this year calling for a probe dedicated to studying the ice giants, exploring "how Uranus formed; how much it migrated after formation; the planet's interior structure, atmosphere, magnetosphere, and ring system; and whether any moons have or once had subsurface liquid water oceans."

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

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 unequaled 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 our of there 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=eGpxalRET1BPckdEcmtJQ290WU5jdz09

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

The Cygnus Wall by Don Bishop

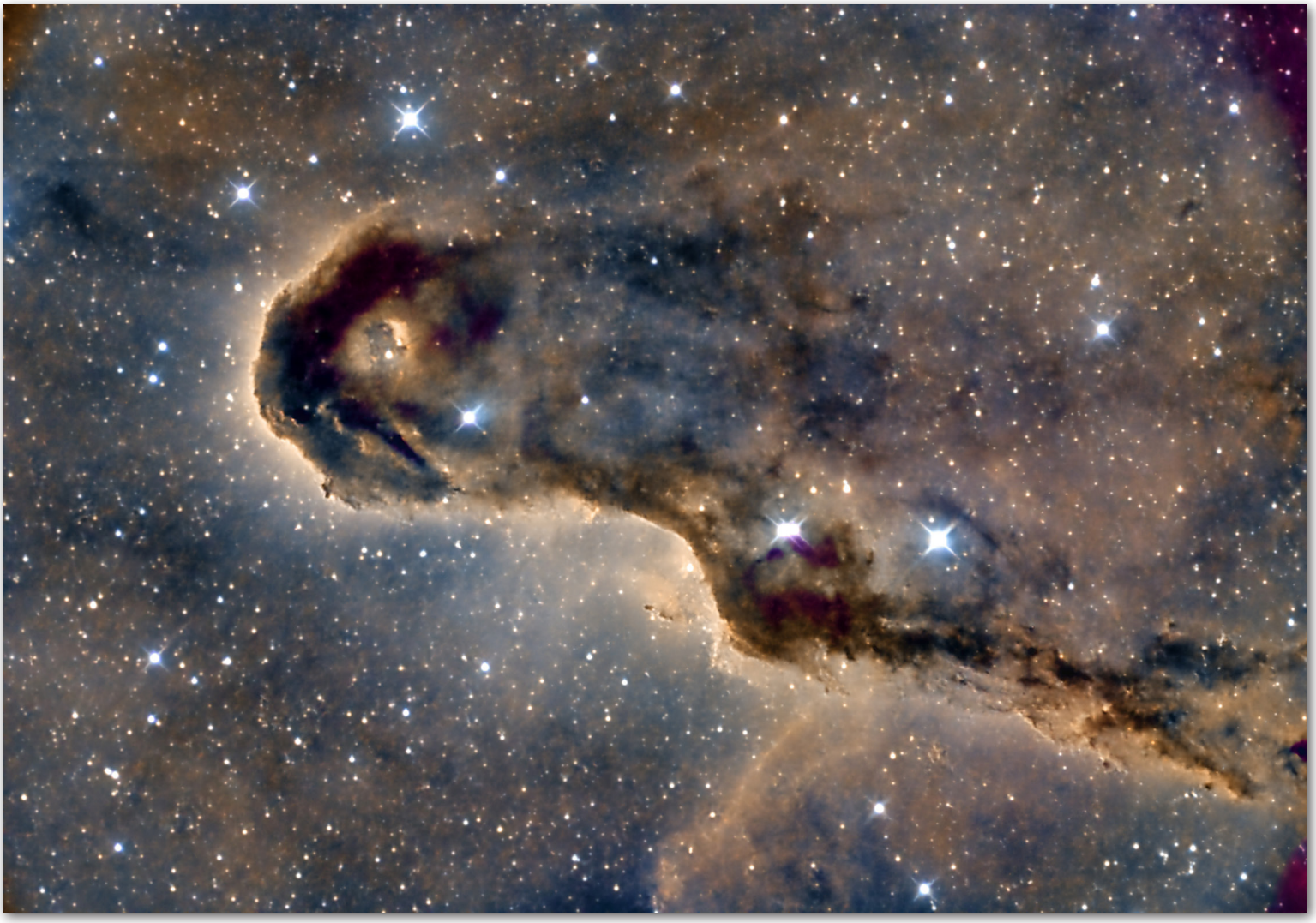
The Cygnus Wall is in the North American Nebula, NGC7000 which is thought to be 2,590 light years away. I shot this in Kanab, Utah under Bortle 1/2 skies over two nights. I imaged for just under 10 hours in LRG-BR+Ha and OIII but finally chose to process it in HOO only. The OIII filter had a problem with the bright stars but I decided to leave the halos as they are.

M101 by Don Bishop

Here is M101, the pinwheel Galaxy with the remnants of the supernova SN 2023ixf. It was imaged with my Stellarvue SVX-102T-R at 714mm and an ASI2600MM-P mono camera and LRGBR+ and Ha filters.

Milky Way by Don Bishop

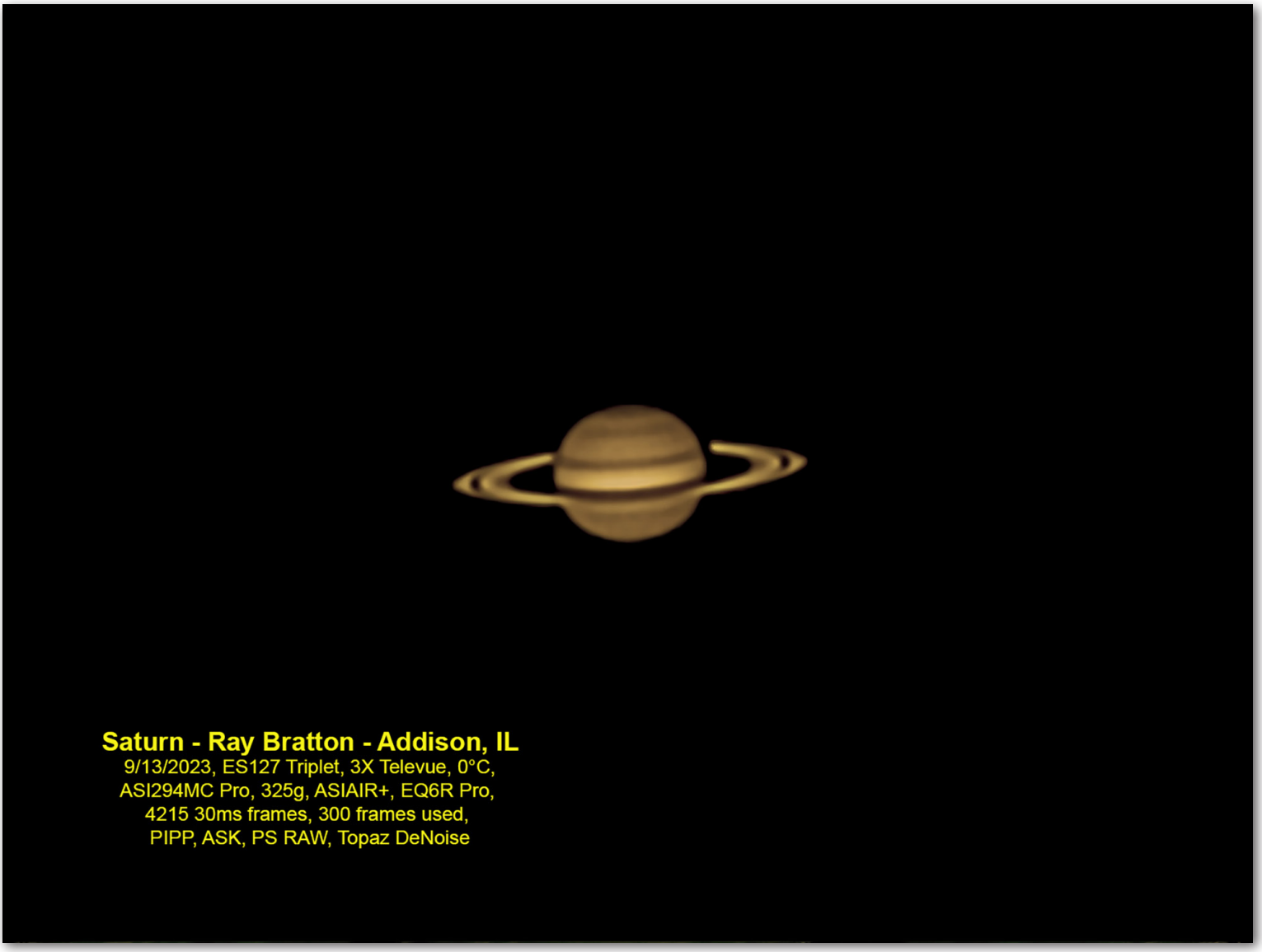
Milky Way taken in Kanab, Utah. The are each a single 15 second exposure taken with a Sony Mirrorless a7R3 camera and a 12-24mm super wide angle zoom lens.



Elephant trunk (VdB142) by Mario Motta
Brand/Type of Telescope/Lens: 32 inch F6.5 (5600mm)
Mount: home made equatorial
Exposures:

about 3 hours imaging, NB filters

Processing Software: Pixinsight



Saturn by Ray Bratton

Brand/Type of Telescope/Lens: Explore Scientific ES127 FCD Triplet
Mount: EQ6R Pro
Exposures:
Shot 4215 30ms frames in AVI, PIPP reduced to 1200, AutoStakkert reduced to 300

Processing Software: PIPP, AutoStakkert, RegiStax 6, Photoshop RAW, & Topaz DeNoise

M31 Mosaic byScott Cruzen

Brand/Type of Telescope/Lens: AstroTech 80mm F6 EDT Triplet Refractor
Mount: Skywatcher EQ6-R Pro
Exposures:

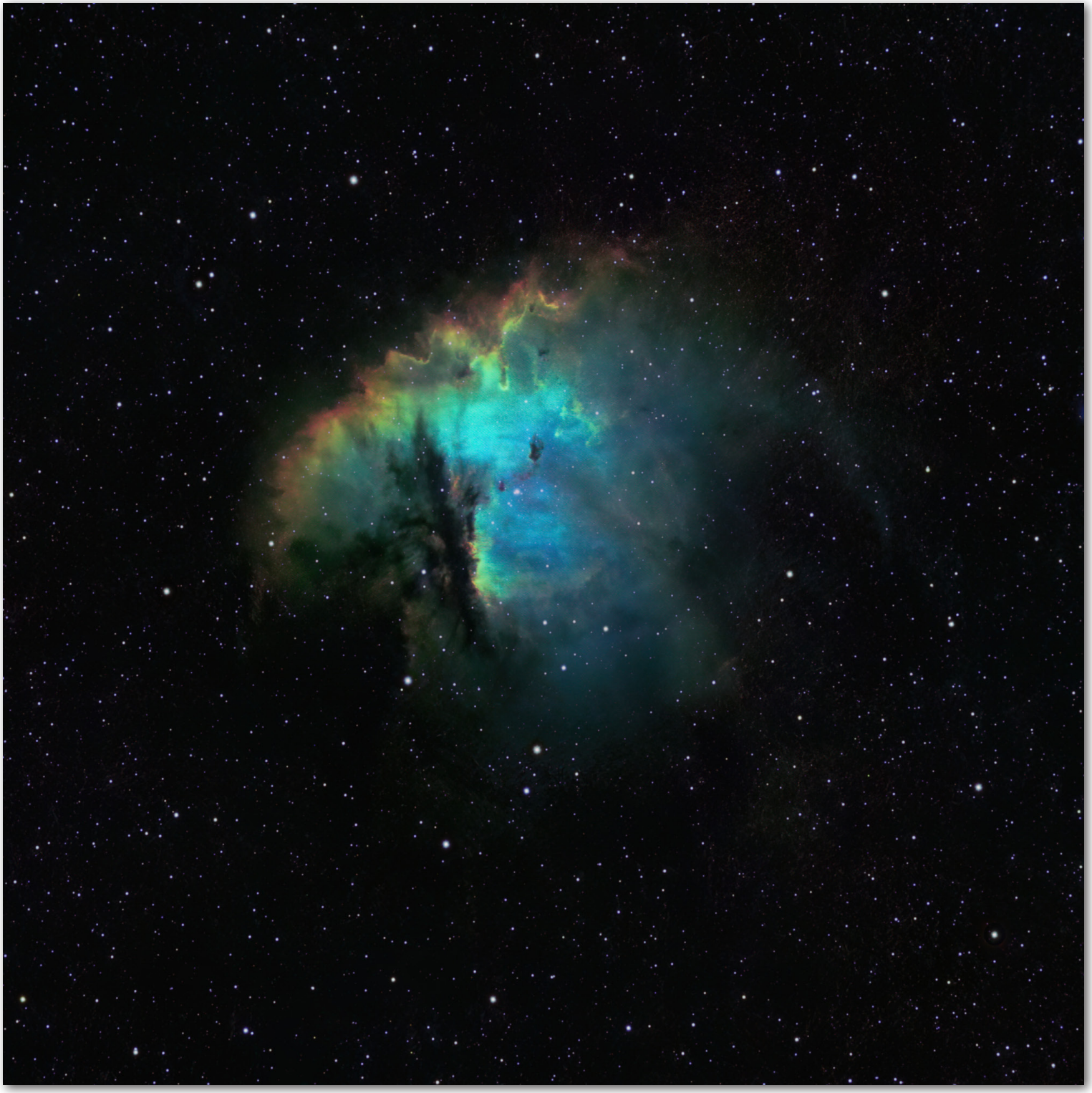
250 two-minute exposures for each of 2 panels
Optolong UV/IR filter
ASI533MC Pro OSC Camera
ASIAIR Plus

Processing Software: SiriL/SiriLic, GIMP, DarkTable, HUGIN, Topaz

Wizard Nebula NGC7380 SHO by Scott Cruzen
Brand/Type of Telescope/Lens: AstroTech 80mm F6 EDT Triplet Refractor
Mount: Skywatcher EQ6-R Pro
Exposures:

151 x 300 sec Ha & OIII 7nm dual narrow band filter
109 x 300 sec SII 7nm filter

Processing Software: SiriL/SiriLic, GIMP, DarkTable, Topaz



Pac-Man Nebula NGC281 in SHO by Scott Cruzen
Brand/Type of Telescope/Lens: AstroTech 80mm F6 EDT Triplet Refractor
Mount: SkyWatcher EQ6-R Pro
Exposures:

107 x 300 sec exposures Ha and OIII with 7nm dual narrow band filter
98 x 300 sec exposures SII with 7nm filter
ASIAIR Plus

Processing Software: SiriL/SiriLic, GIMP, DarkTable, Topaz

Dark Cloud hangs over the Wizard by Linwood Ferguson
Brand/Type of Telescope/Lens: Stellarvue SVX152T
Mount: AP1100AE
Exposures:
Chroma Blue 50 mm: 32×60 (gain: 100.00) f/8 -5°C bin 1×1
Chroma Green 50 mm: 33×60 (gain: 100.00) f/8 -5°C bin 1×1
Chroma H-alpha 5nm Bandpass 50 mm: 146×300 (gain: 100.00) f/8 -5°C bin 1×1
Chroma OIII 5nm Bandpass 50 mm: 86×300 (gain: 100.00) f/8 -10°C bin 1×1
Chroma OIII 5nm Bandpass 50 mm: 63×300 (gain: 100.00) f/8 -5°C bin 1×1
Chroma Red 50 mm: 34×60 (gain: 100.00) f/8 -5°C bin 1×1
Chroma SII 5nm Bandpass 50 mm: 148×300 (gain: 100.00) f/8 -5°C bin 1×1

Integration: 38h 34
Astrobin link for more details: https://www.astrobin.com/eh36it/0/

Northern Lights over Harbor Springs Michigan by Steven Sandor
Brand/Type of Telescope/Lens: Pentax K10 DSLR with Pentax 18-55 wide angle lens at 26mm, f/4, 1600 ISO, 30 sec exposure
Mount: Camera tripod, non moving
Exposures:

One exposure, no filters

Processing Software: No post processing

Central Core of the Lion Head Nebula, SH2-132 by Scott Cruzen
Brand/Type of Telescope/Lens: Astronomics Astro-Tech 80mm EDT APO refractor 480mm FL
Mount: Skywatcher EQ6-R Pro Equatorial
Exposures:
67 x 300 Sec
7nM Ha/OIII Dual Narrow Band Filter
7nM SII Filter
ASI533MC Pro OSC Cameral
ASIAIR Plus Controller

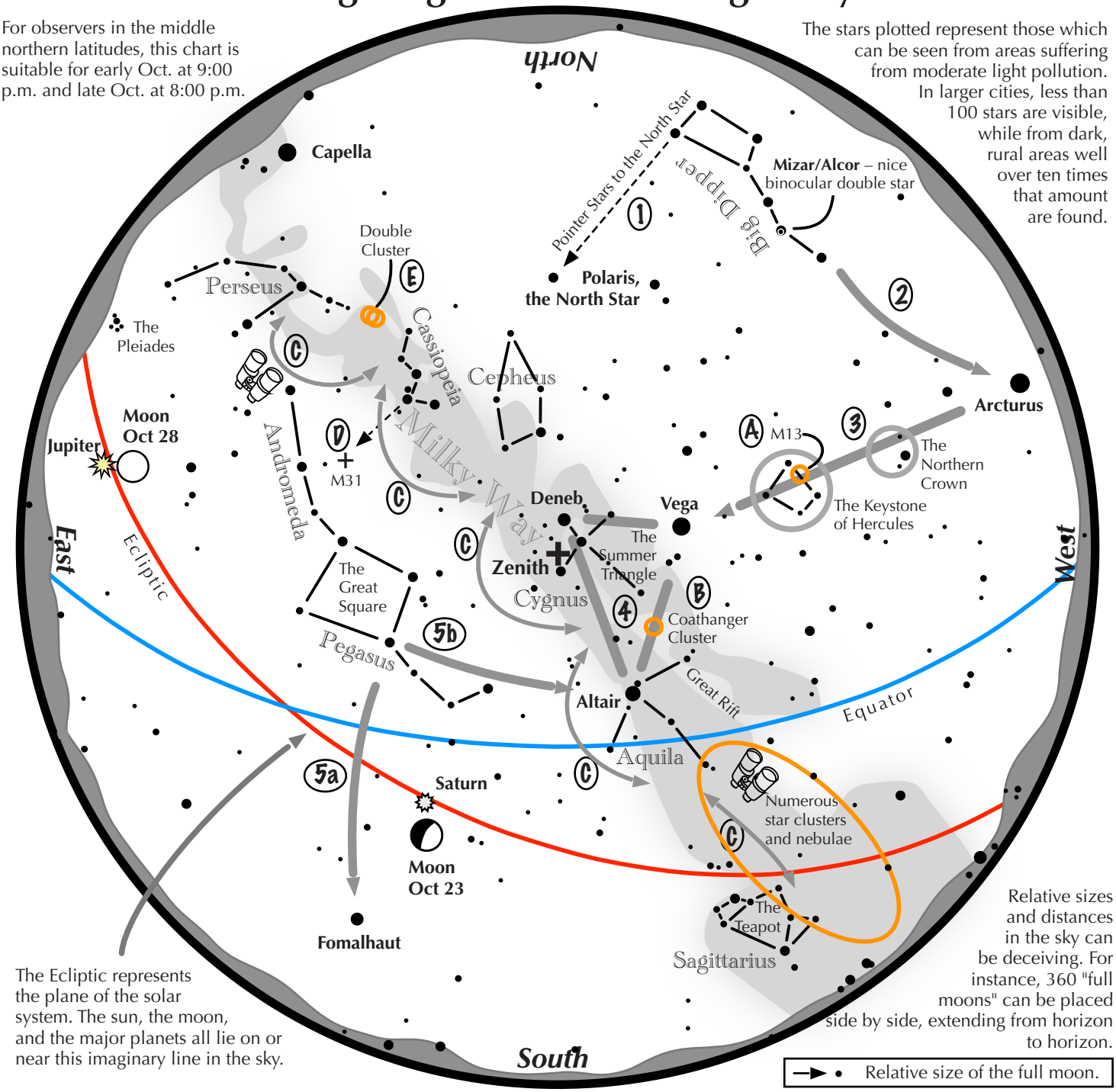
Processing Software: SiriL/SiriLic, GIMP, DarkTable, Topaz

Sky Chart

Navigating the October Night Sky

For observers in the middle northern latitudes, this chart is suitable for early Oct. at 9:00 p.m. and late Oct. at 8:00 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.

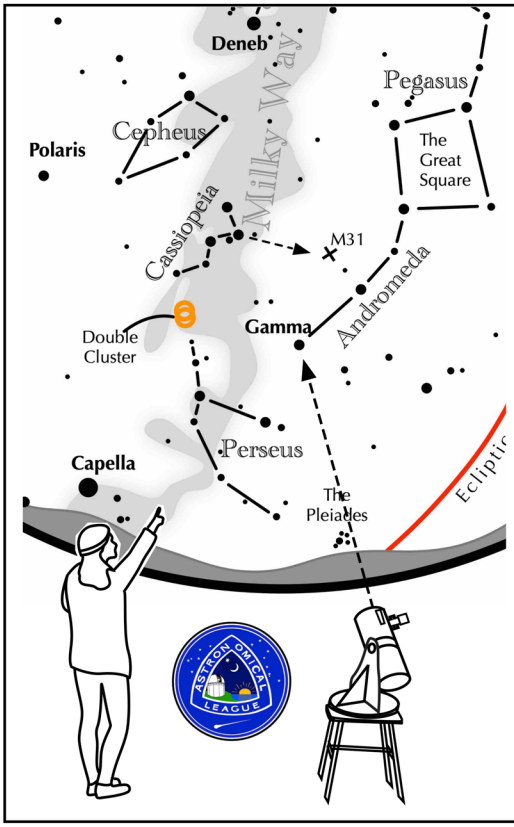
Navigating the October night sky: Simply start with what you know or with what you can easily find.

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 early October 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. Nearly overhead lie the summer triangle stars of Vega, Altair, and Deneb.
5. High in the east are the four moderately bright stars of the Great Square. Its two southern stars point west to Altair. Its two western stars point south to Fomalhaut.

Binocular Highlights

A: On the western side of the Keystone glows the Great Hercules Cluster, a ball of 500,000 stars. **B:** 40% of the way between Altair and Vega, twinkles the "Coathanger," a group of stars outlining a coathanger. **C:** Sweep along the Milky Way for an astounding number of fuzzy star clusters and nebulae amid many faint glows and dark bays, including the Great Rift. **D:** The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval. **E:** Between the "W" of Cassiopeia and Perseus lies the Double Cluster.

ASTRONOMICAL LEAGUE Double Star Activity



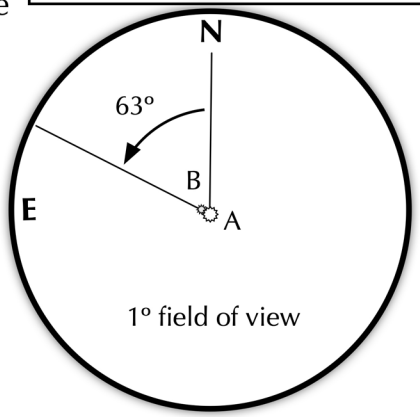
Other Suns: Gamma Andromedae

How to find Gamma Andromedae on an October evening

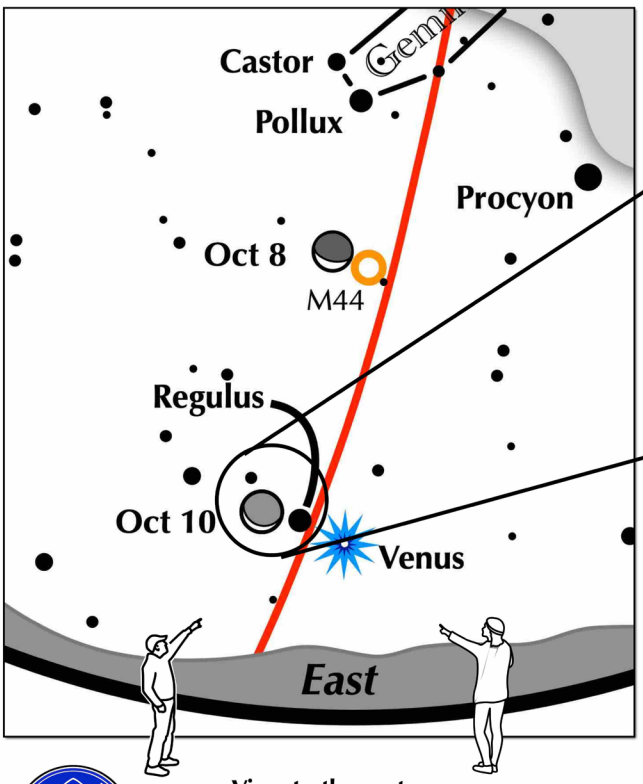
Face northeast. Find the Great Square and the curve of stars extending to the lower left. This is Andromeda. Gamma is the third star on the string and is as bright as the major stars of the Big Dipper. From the "W" of Cassiopeia, Gamma lies to the lower right.

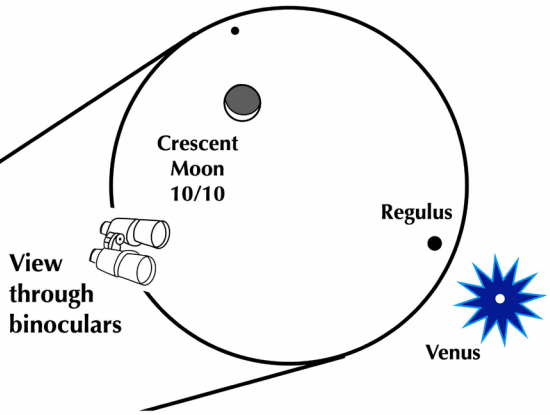
Suggested magnification: 40x
Suggested aperture: >2 inches

Gamma Andromedae
A-B separation: 9.7 sec
A magnitude: 2.3
B magnitude: 5.0
Position Angle: 63°
A & B colors:
orange, blue



In the early morning on October 10, try this challenge:





View to the east on October 10 90 minutes before sunrise

Crescent moon meets Venus and Regulus

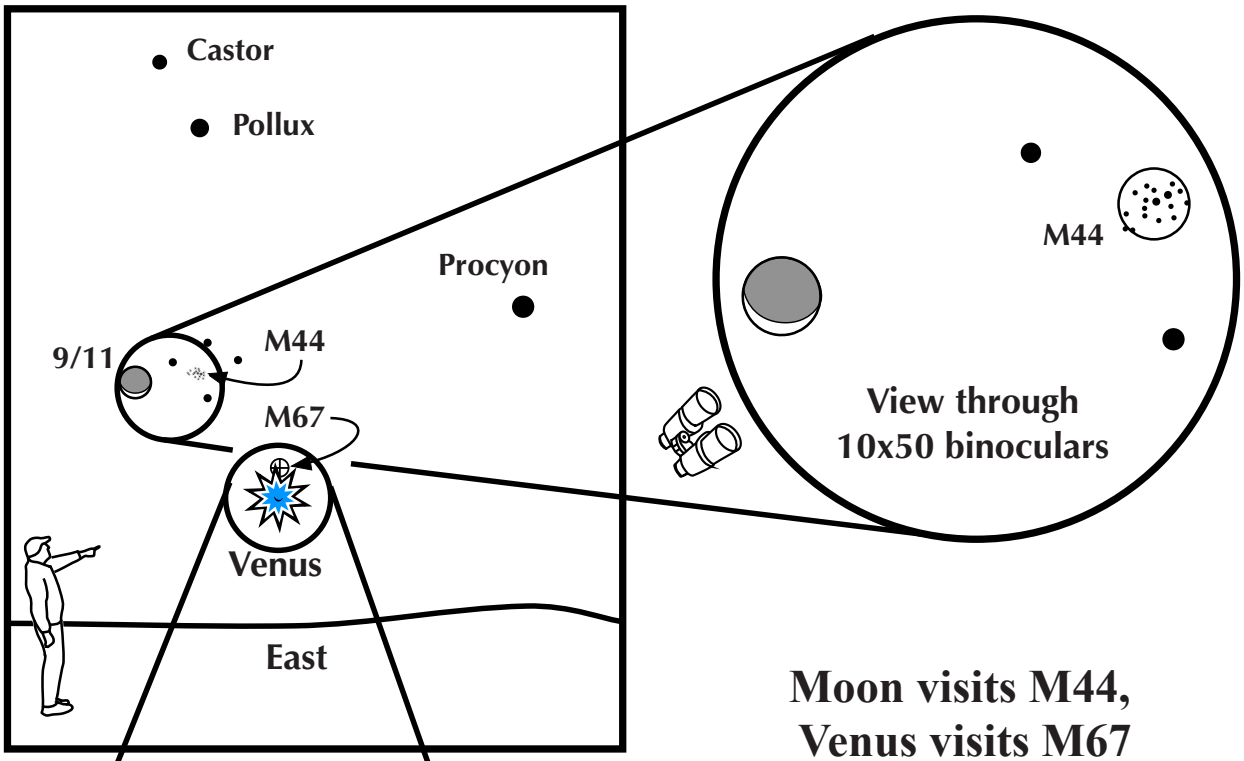
On the morning of October 10, the crescent moon, glowing full with earthshine, floats left of brilliant Venus. Look 90 minutes before sunrise.

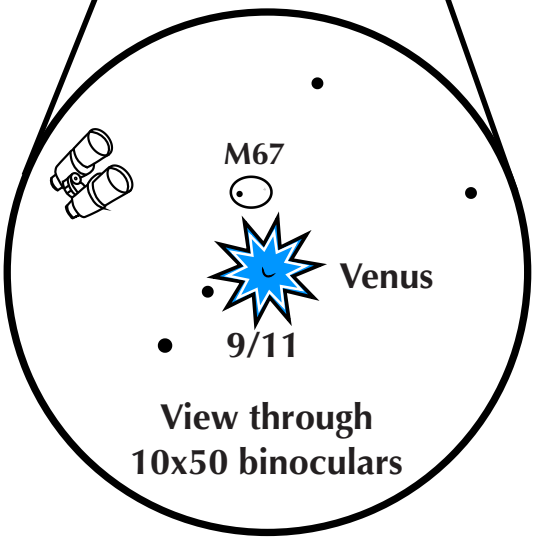
Between them, shines Leo's brightest star, Regulus.

Two mornings earlier a thicker crescent moon was near M44, the Beehive star cluster.

The meeting of the crescent moon and Venus also occurs on the mornings of November 9 when the moon nearly covers Venus, and of December 9.

If you can see only one celestial event in the morning this September, see this one.

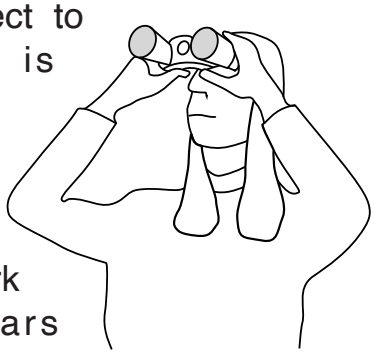




Moon visits M44, Venus visits M67

On the morning of Sep 11, look to the east 90 minutes before sunrise.

- The crescent moon, full with earthshine, glows left of M44, the Beehive cluster.
- M44 can easily be seen in binoculars.
- The dazzling object to their lower right is Venus.
- Just above Venus lies another star cluster, M67. If viewed from a dark location, binoculars should reveal its fuzzy presence.
- If the binoculars are securely mounted, the tiny crescent of Venus should be barely discerned amid the planet's glare.



Meeting Minutes

Minutes for the meeting of the southwest Astronomical Society for correct September 7 2023 - Taken by Tom Klein.

The meeting came to order at 7:00 PM. There were 14 people on Zoom, and 10 present at the Planetarium.

The first presentation on lunar geology was presented by Dr. Julie Stapar.

At about 7:50 a second Presentation on the future of lunar exploration was presented by Heather. Those at the Planetarium saw a full screen version of the film on the dome.

At about 8:40 the business meeting commenced. Brian listed the upcoming events:

FSW Observing starts Sept 8th . (Second Friday of each month.)

Seahawk Park Star Party on September 16th

Astronomical League's Astronomy Day is Sept 23rd, which coincides with Charlotte Solar Observing at Ponce de Leon Park.

October Events:

October 14th is the Annual Solar Eclipse. Tom Segur talked about how FSW is planning an event in Punta Gorda.

We would like to hold something in the Fort Myers area if I can get some volunteers.

Seahawk Park Star Party on the 14th.

October 21st is International Observe the Moon Night. Brian further mentioned that in the past people set up telescopes to look at the moon and use moon maps to identify lunar objects.

International Astronomy Day is Oct 28th and that coincides with

Charlotte Solar Observing at Bayshore Live Oak Park.

The Officers Report:

- Mike Jensen is out of the country for the next few weeks.
- The minutes of last month's meeting were in the newsletter. A motion to accept the minutes was forwarded by Tom Klein and seconded by Linwood, A show of hands passed it.
- The Treasurers' Report from John MacLean is on the club website.
- Brian mentioned the new projector, with its greatly improved brightness and resolution. He also mentioned the new zoom camera that greatly improves our ability to focus on live presenters at the Planetarium.
- Tom Segur mentioned that the website, in regard to Friday night observing at the FSW Observatory, says "the third Friday", but should be changed to "the second Friday". Brian said he would try to have Mike Jensen correct it before he leaves.

The meeting was adjourned at 9:00.