The Eyepiece

SW FL Astronomical Society, Inc.
PO Box 100127
Cape Coral FL 33910

M31- The Andromeda Galaxy by John MacLean

March 2022

General Meeting - Thursday March 3rd, 7:30pm Zoom and at the Calusa Planetarium

Astro SIG (Astrophotographers) Meeting Tuesday March 15th, 6:30pm on Zoom

Rotary Park Star Party on Friday 3/4/2022.

Seahawk Park star parties: 3/26/2022, 4/9/2022, 4/30/2022, 5/212022.

Moore Observatory First Fridays Mar 4th Contact Tom Segur

Solar Observing on the 3rd Saturday, contact Tom Segur

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Monthly Meetings

Our monthly meetings are held on the **first Thursday of each month**. **The meetings begin at 7:30pm**.

This month's meeting will be a combined live and Zoom meeting! Masks should be worn if attending in person at the Calusa Planetarium.

MARCH 2022

SUN	MON	TUE	WED	THU	FRI	SAT
		1	2 New Moon ✓	3 General Meeting 7:30 pm	4 Observatory Viewing ✓	5
6	7	8	9	10	11	12
13	14	15 Astro SIG 6:30 pm	16	17	18 Full Moon ✓	19 Solar Observing ✓
20	21	22	23	24	25	26 Seahawk Star Party ✓
27	28	29	30	31		

Each meeting will have its own link/meeting ID (see below).

So, mark your calendar for:

March 3rd, 2022
April 7th, 2022

How to use Zoom.

1. Download the software for smartphone, tablet or computer Click the link sent out for the meeting. Here's the link for our meeting Join Zoom Meeting at: https://widener.zoom.us/j/99168470167

Meeting ID: 991 6847 0167

One tap mobile:
+16465588656,,99168470167#
(or)
+13017158592,,99168470167#

2. Click on window that appears, "Join Zoom Meeting".
3. Then "Join Computer Audio"
4. On entering the meeting, audio is going to be "off" by default. Press down and hold your space bar to talk. Both Brian and the presenter will be unmuted by default. This is being done to cut down on background noise, as it seems to accumulate as our numbers increase.

2022 Dues

If you have not sent in your check for your 2022 dues, please do so upon reading this announcement.

Dues are an affordable $25.

Make check out to:
Southwest Florida
Astronomical Society
PO Box 100127
Cape Coral, Fl 33910

Moore Observatory Dates

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 at least once monthly from September through May, weather permitting.

Mar 4, 2022
Apr 1, 2022
May 6, 2022

Also, the club conducts solar observing on the 3rd Saturday morning of each month. Contact for all observing events is:

Thomas Segur
tsegur479@comcast.net
941-249-8726

President's Report

Brian Risley - SWFAS President

February was a very busy month. Joe Dermody and I were at STEMtastic in downtown Fort Myers on the 12th. We were setup on the sidewalk by the Post Office next to the Calusa Sound Convention Center. Skies were good and we had some sunspots and prominences. Linwood and some other members stopped by. On the 26th we had the Burrowing Owl Festival at Rotary Park. Joe Dermody, John MacLean and I were out there. Pam and Randy Shivak came out with their 6" solar telescope as well. I haven't got an official count, but the attendance was in the thousands. Joe went on down to Big Cypress for their event later that day.

On March 4th, we will again be back at Rotary Park for the public star party. This has been heavily advertised and we can easily expect several hundred or more, so we need members and telescopes. I will be there before sunset. If you need AC power for equipment, let me know. The weather is looking good.

We have a request for the 19th at Rookery Bay Environmental Center in Naples. That is also the night of the next Big Cypress event. This is 1 day after the full moon with moonrise around 9:15

On the 26th we will have another star party out at Seahawk Park in North Cape Coral. Again, we could have a larger crowd that night.
Don't forget the events at FSW Moore Observatory and the Charlotte Park Solar observing.

We need all hands on deck helping with some outreach events coming up.

Please contact me so that you can get details about the event and sign up to help. Most require us to be setup prior to their posted start times and limit vehicle traffic after a certain time.
Contact me at: swfaspres@gmail.com.

Star Parties

These are the dates for the Saturday Night star parties:
3/26/2022, 4/9/2022, 4/30/2022, 5/21/2022.

Rotary Park Star Party on Friday 3/4/2022.

Club Officers & Positions

President/Equipment
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Club Librarian
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Club Historian
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Calusa Nature Center Planetarium Director Heather Preston
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239-275-3435

Report On Big Cypress Ranger Program

By Joe Dermody

BICY was interesting and well worth the drive although the mosquitoes were annoying as hell for about an hour after sunset. I was surprised that it was the first official public event there in two years hosted by rangers. I estimate the public crowd was at least 100 with about 20 amateur astronomers there as the attached photos show. Met a few from the Fort Myers area that might come check out the SWFAS.

Although I have never been interested in astronomy imaging, I was totally "blown away" by the UniStellar eV-scope 2 someone was demonstrating at BICY. The resolution, contrast and quality of the high definition OLED "fixed eyepiece" (made by Nikon) was so sharp and clear that the images actually looked "three dimensional"! Set up could not have been easier, just level the tripod and turn it on. Of course it has built-in GPS and the "plate solving" software only took seconds to work. The scope quickly and accurately found objects including my personal favorite NGC-4565 (aka the "Needle Galaxy") that was only 12 degrees above the horizon. It immediately starts stacking images that were initially impressive and got better minute by minute. It corrects automatically for field rotation and automatically saves each 'final' image (if you want it to) when you move on to another object. The deep sky objects we observed were all seriously impressive despite far less than optimal skies. It's probably not a good planetary scope (except possibly for Jupiter?) and of course we didn't observe the moon. Maybe a built in barlow or barlows would make it into a good planetary and a better lunar scope? I also wonder if it would be any good for solar imaging? I will not soon forget just how clear and detailed NGC-891 looked, that's what 'sold me' on this telescope. This scope would be perfect for a public "Messier Marathon". When this scope first appeared on the market a few years ago I thought it was a "really dumb idea" but seeing it in operation has changed my mind. If UniStellar ever offers a six inch or larger and/or a later generation version, I just might have to get one. The guy demonstrating it had two iPads, using one to control the scope which can simultaneously share images live (via the telescope's Wi-Fi) to up to ten devices including smartphones, tablets, laptops or even newer TVs. I can see where it would be a lot of fun at public events because you wouldn't have to teach people how to use an eyepiece and/or focus. Best of all, no one has to touch the telescope or wait in line with impatient children! Forgive me if you already know about this product but here is a weblink: https://unistellaroptics.com/evscope2-en-us/

Astrophotography (SIG)
Special Interest Group

Join Our New Astrophotography Special Interest Group (SIG) – Mike Jensen, Group Lead

REGULAR MEETINGS
Regular meetings have been set for the 3rd Tuesday of each month at 6:30 on Zoom
The next meeting is Tuesday March 16th at 6:30.

https://us02web.zoom.us/j/81077794455?pwd=MHJVL2VvZGZRK3JyM-1d5QVJiZE1TUT09

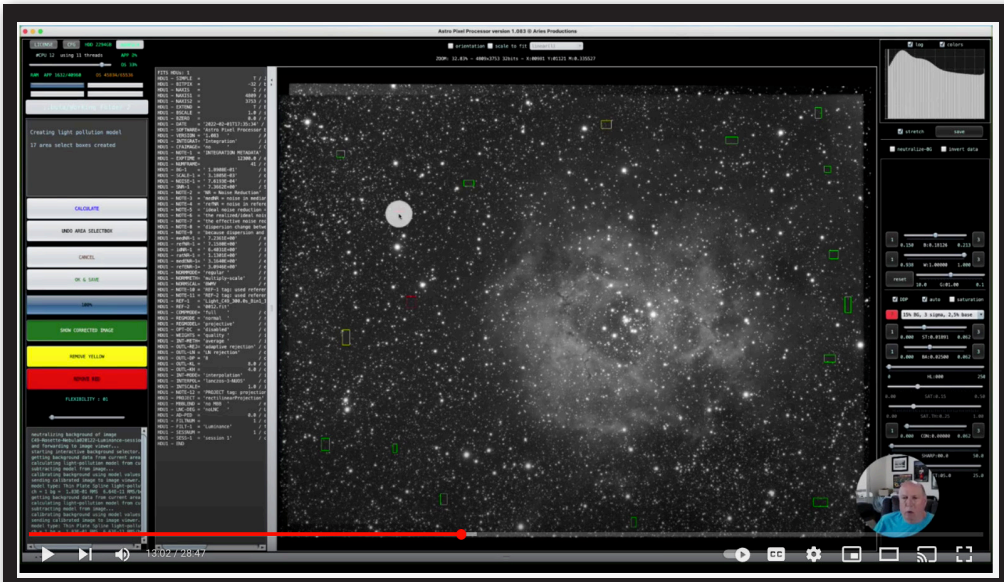
Meeting ID: 810 7779 4455
Passcode: Phot@S!G

As the leader of the Astro SIG group one of the things I'm most happy and proud about is seeing the progress our group is making in this hobby that most of us admit is absolutely insane!

In any given week we can share info on the details of setup for a Star Adventurer to the drifting issues of a go to mount. We ask each questions on new gear and how to use the newest, leading edge technology in astrophotography. We help each other find the gear we're looking for and then how to connect it.

Astrophotography is probably one of the hardest hobbies to learn. There are so many ways to do it from wide field with a DSLR/Mirrorless camera to Deep Sky with a dedicated astro camera. There are upteen special softwares to "stack" the images and many others to continue processing.

Processing Astro Photos in APP



Check out Mike's tutorial on Astro Pixel Processor. Click on the image above. This video is about 30 minutes and is pretty much a "soup to nuts" instruction on how to load your shots, process, stretch and finish your image.

We have a monthly meeting to share our images, triumphs and setbacks. You never know what rabbit hole we will go down.

I tell you all of this to invite you to join us. If you've been in the club, or circling around, trying to decide what to do, shoot me an email at info@jensenone.com, or call me at 913-304-0495 and let's talk.

I hope you can join us!

Astro SIG Target of the Month

M49 - The Rosette Nebula

This image was shot for five nights in late January/early February. It was shot with Luminance, Red, Green, Blue and Hydrogen Alpha filters.

The cluster and nebula lie at a distance of 5,000 light-years from Earth and measure roughly 130 light years in diameter. The radiation from the young stars excites the atoms in the nebula, causing them to emit radiation themselves producing the emission nebula we see. The mass of the nebula is estimated to be around 10,000 solar masses. A survey of the nebula with the Chandra X-ray Observatory has revealed the presence of numerous new-born stars inside optical Rosette Nebula and studded within a dense molecular cloud. Altogether, approximately 2500 young stars lie in this star-forming complex, including massive O-type stars.

Each image was shot for 300 seconds (5 minutes). I shot the Luminance filter at almost double to the other filters to bring out the intensity of the stars.

My Next Target

We're in a bit of transition from visibility of nebulae to galaxies. So, given that, I'll be working on galaxies. Should be fun!

Astro SIG Awesome Photo

IC 434 - The Horsehead & Flame Nebula by Bobbi Hansen

This stack was 357 lights plus flats, darks ans bias.
Sky-Watcher Star Adventurer 2.0
Olympus EM1Mark3
300mm lens
F4 / 15 sec / ISO 1000

Astro SIG Awesome Photo

The Dolphin Nebula S2-308
by Linwood Ferguson

The Dolphin Nebula has the name of "Sharpeless" 2-308. With a little imagination "Dolphin" is much more descriptive. It is about 5200 light years away in Canis Major, and almost twice the width of the full moon. Here it is shown in Ha and Oiii (most of the head is Oiii). The nebula is created by the star near the center of the head (not the brightest one at the edge). This image has 170 subs of Ha at 300s and 260 of Oiii at 300s for a total of about 35 hours. I also took a few Sii but there was no visible structures at that wavelength. The image was created with R=Ha, G=(Ha*2 + Oiii)/3, B=Oiii. I worked quite a bit to de-emphasize the surrounding stars, reducing their size in the synthetic luminance (from Ha + Oiii) before the Luminance combine, but even afterwards I applied a slight gaussian blur to make the tiny stars less prominent.

While I did not get many colors, it did preserve the texture nicely. This represents 168 x 300s of Ha, 142 x 300s of Sii, and 133 x 300s of Oiii. The Oiii did not provide much detail. That's a total of about 37 hours. I got LRGB also but discarded it as not terribly helpful.

Astrophotography Targets for March

March is the beginning of galaxy season! In its trek around the sun the Earth's nightside sometimes faces the disk of our galaxy. When that happens we see the band of the Milky Way high above us. But as the Milky Way dips towards the horizon, we see what lies beyond our little metropolis of stars—and that means galaxies of all kinds.

The Milky Way still covers much of the night sky in March, so my list of favorite objects for the month only includes nine galaxies. It is just an appetizer for a full galaxy course that will happen in April and May.

Beginner Galaxies

Two of the most beautiful galaxies in the sky begin their appearance in March. M81 and M82 are perfect objects for beginners. M81 is bright enough to be captured at almost any skill level. M82 is a bit harder, but well worth attempting. If you have a small enough telescope (or a large format camera) try to capture both galaxies in the same frame.

Intermediate Galaxies

NGC 2903 is bright (at least as galaxies go) and it is just bad luck that Messier missed it when compiling his catalog. You will need a lot of exposure time to bring out its wispy arms. NGC 2683 is a beautiful edge-on galaxy in Lynx. But my favorite in this group is probably NGC 2841 which has such tight arms that they almost look like grooves on a record. Resolution is key for bringing out the detail in this spiral.

object	type	location	mag	size	skill
M81 Bode's Galaxy	sg	UMa 9H 55.6m +69°04'	6.9	21' × 10'	Beginner
M82	sg	UMa 9H 55.8m +69°41'	8.4	9' × 4'	Beginner
NGC 2683	sg	Lyn 8H 52.7m +33°25'	10.6	9.3' × 2.2'	Intermediate
NGC 2841	sg	UMa 9H 22.0m +50°58'	9.3	8.1'	Intermediate
NGC 2903	sg	Leo 9H 32.2m +21°30'	8.9	12.6' × 6.6'	Intermediate
Arp 245	sg	Hya 9H 45.7m -14°20'	11.9	4.1'	Advanced
NGC 2613	sg	Pyx 8H 33.4m -22°58'	10.4	7.2'	Advanced
NGC 2654	sg	UMa 8H 49.2m +60°13'	11.8	4.3'	Advanced
NGC 2775	sg	Cnc 9H 10.3m +7°02'	10.3	4.5'	Advanced

Advanced Galaxies

NGC 2613 is the easiest of the "advanced" galaxies. It is bright enough and large enough to be a little more forgiving than the others. An 8" or larger telescope should be sufficient. Nevertheless, you will want a lot of exposure time and precise tracking.

With sufficient aperture and careful tracking you should be able to capture some of the more challenging galaxies on this list. NGC 2775 (also known as Caldwell 48) is a smaller version of NGC 2841 while NGC 2654 is a smaller version of NGC 2683.

Arp 245 consists of two interacting galaxies (NGC 2292 & 2993). You will need a great deal of resolution and exposure time to adequately bring out the faint trails connecting the two galaxies. The results are worth it.

Astronomical League

March 2022 Astronomical League Section for Newsletter

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

Reflector Magazine

You should have received an email from the Astronomical League linking to your digital copy of the March 2022 Quarterly Reflector magazine on around February 21, You can also directly access copies via the web at https://www.astroleague.org/reflector

Monthly highlight of the Astronomical League Observing Programs
Foundations of Imaging Observing Program

We are concluding our SWFAS survey of the League's Observing Programs with an overview of the new Imaging Observing Program: Foundations of Imaging Observing Program | The Astronomical League (astroleague.org)

Amateur astronomers take images for three main purposes or objectives:
- To create Artistic images (non-linear data),
- To aid in Observing things that are beyond the range of the human eye (linear or nonlinear data),
- To collect Scientific Data that extends the bounds of astronomical knowledge (linear data).

The Fundamentals of Imaging Program is designed to give the participant a chance to experience all three of these different purposes with a wide range of targets.

Imaging Targets
Participants have an opportunity for exploring a wide range of targets covering the following:
- Constellations & Asterisms
- Nightscapes (e.g. Milky Way)
- Meteors
- Lunar & Solar
- Stars (binary, variable, nova)
- Planets
- Deep Sky
- Comets & asteroids
- Eclipses & Occultations

Equipment

Ranges from DSLR with wide field optics to dedicated CCD/CMOS astrophotography cameras mounted utilizing tracked and guided mounts.

Imaging Activities

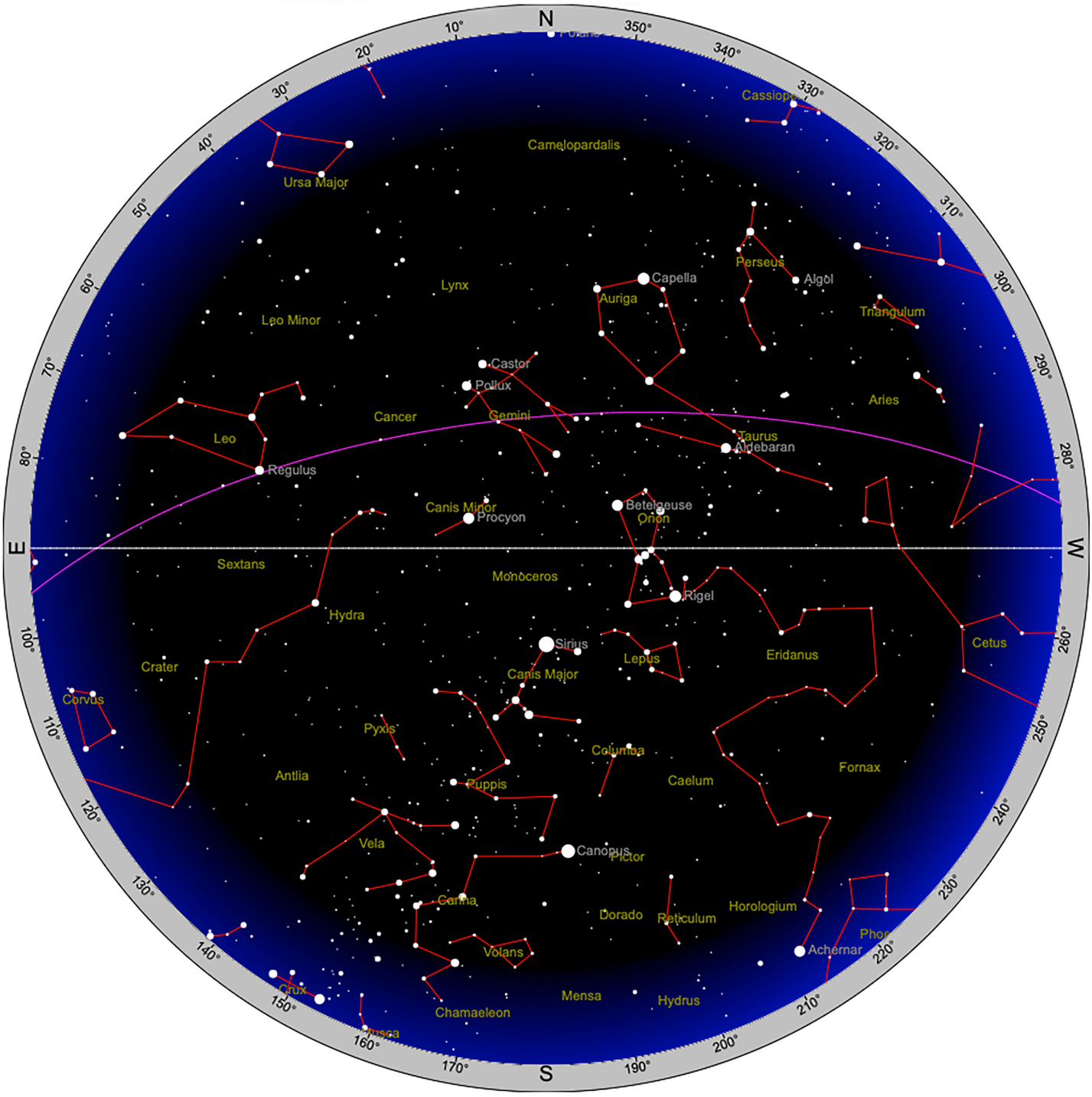
Solar System (Minimum of 27 images required)
Imaging examples include:
- Entire solar disk including sunspots (white light or hydrogen-alpha filters)
- Any seven of the lunar features covered in the Lunar or Lunar II program
- Two of Saturn, Mars, Venus
- Jupiter including the GRS
- Jupiter including an occultation
- Dwarf planets Pluto and Ceres twice over a 1-2 month period
- A comet over 1 – 2 nights
- Additional optional targets include solar and lunar eclipses, nightscapes, lunar occultations

Deep Sky Objects (Minimum 25 images)
- Must include at least two of the following types:
o Open Clusters
o Globular Clusters
o Dark Nebulae
o Galaxies
- Bright Nebulae to include at least one of the following:
o Star forming regions
o Reflection nebulae
o Planetary nebulae
o Supernova remnants
- Must include both M42 and M31. M42 must include the Trapezium not overexposed along with associated wispy nebulosity. M31 must clearly show the dust lanes, proper color, and a not-overblown core.
- Optional targets include 5 double-stars from the Double Star Program where the separation angles must be measured, 2 Variable stars from the AAVSO index using photometry to measure brightness over time.

Imaging Criteria
Include:
- In-focus, round stars with no excessive bloat
- No distracting artifacts including noise, bloat, highlight clipping, collimation errors, etc.
- Accurate colors as allowed by the equipment and be free of gradients
- Use of tools like eXcalibrator, G2V, and the Pixinsight Photometric Calibration Tool is encouraged

If you would like to join in and participate in these imaging activities, please contact Mike Jensen.

Sky Chart - March 2022



Planet Positions

Click on the graphic above to go to Time and Date for a great simulation of the rotation of the constellations and the rising/setting of the planets. The chart below is set for Sept. 1st but can be programmed for any date and time. The chart can also be found at this link on Heavens Above.

	Mercury	Venus	Mars	Jupiter	Saturn	Uranus	Neptune	Pluto
Right ascension	$21^h\ 33^m\ 8.1^s$	$19^h\ 55^m\ 34.5^s$	$20^h\ 0^m\ 38.5^s$	$23^h\ 3^m\ 29.3^s$	$21^h\ 26^m\ 8.6^s$	$2^h\ 36^m\ 7.9^s$	$23^h\ 33^m\ 8.7^s$	$20^h\ 0^m\ 1.4^s$
Declination	-16° 17' 5"	-16° 49' 8"	-21° 26' 6"	-7° 6' 0"	-16° 1' 34"	14° 52' 23"	-4° 7' 10"	-22° 26' 38"
Range (AU)	1.182	0.550	1.978	5.972	10.803	20.215	30.897	35.164
Elongation from Sun	22.6°	45.4°	45.0°	1.7°	24.1°	58.4°	9.4°	45.4°
Brightness	-0.1	-4.4	1.2	-1.9	0.8	5.8	8.0	14.4
Equatorial Diameter	5.69"	30.34"	4.73"	33.01"	15.38"	3.49"	2.21"	0.09"
Phase Angle	55.1°	101.7°	28.8°	0.3°	2.3°	2.5°	0.3°	1.2°
Constellation	Capricornus	Sagittarius	Sagittarius	Aquarius	Capricornus	Aries	Aquarius	Sagittarius
Meridian transit	10:46	09:09	09:15	12:18	10:41	15:50	12:47	09:15
Rises	04:46	03:10	03:15	06:19	04:42	09:51	06:49	03:16
Sets	16:47	15:09	15:14	18:17	16:40	21:50	18:47	15:14
Altitude	-47.3°	-67.2°	-62.9°	-27.1°	-49.0°	24.9°	-19.9°	-62.2°
Azimuth	245.6°	221.8°	216.6°	262.0°	245.1°	286.4°	265.6°	214.9°
Inferior Conjunction	2022-Jan-23 2022-May-21	2022-Jan-09 2023-Aug-13	-	-	-	-	-	-
Opposition	-	-	2020-Oct-13 2022-Dec-08	2021-Aug-20 2022-Sep-26	2021-Aug-02 2022-Aug-14	2021-Nov-04 2022-Nov-09	2021-Sep-14 2022-Sep-16	2021-Jul-17 2022-Jul-20
Superior Conjunction	2021-Nov-29 2022-Apr-02	2021-Mar-26 2022-Oct-22	2021-Oct-08 2023-Nov-18	2021-Jan-29 2022-Mar-05	2022-Feb-04 2023-Feb-16	2021-Apr-30 2022-May-05	2021-Mar-11 2022-Mar-13	2022-Jan-16 2023-Jan-18
Max. eastern elongation	2022-Jan-07 2022-Apr-29	2021-Oct-29 2023-Jun-04	-	-	-	-	-	-
Max. western elongation	2022-Feb-16 2022-Jun-16	2020-Aug-13 2022-Mar-20	-	-	-	-	-	-
Perihelion	2022-Jan-15 2022-Apr-13	2022-Jan-23 2022-Sep-04	2020-Aug-03 2022-Jun-21	2011-Mar-17 2023-Jan-20	2003-Jul-26 2032-Nov-28	1966-May-22 2050-Aug-17	1876-Aug-26 2042-Sep-03	1989-Sep-05 2237-Sep-15
Aphelion	2022-Feb-28 2022-May-27	2021-Oct-03 2022-May-15	2021-Jul-13 2023-May-30	2017-Feb-17 2028-Dec-28	2018-Apr-17 2047-Jul-15	2009-Feb-27 2092-Nov-23	1959-Jul-17 2125-Dec-01	1866-Jun-04 2114-Feb-19

The Night Sky Network

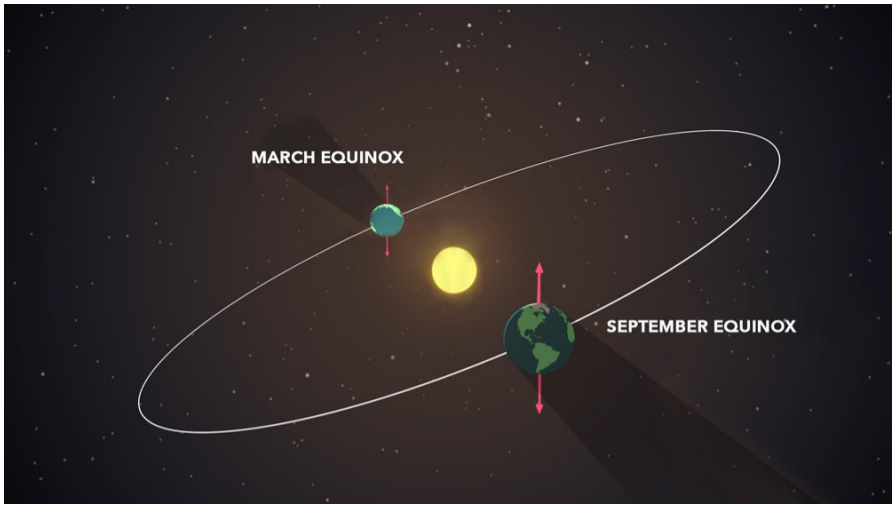
This article is distributed by NASA Night Sky Network
The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.gov to find local clubs, events, and more!

Embracing the Equinox
David Prosper

Depending on your locale, equinoxes can be seen as harbingers of longer nights and gloomy weather, or promising beacons of nicer temperatures and more sunlight. Observing and predicting equinoxes is one of the earliest skills in humanity's astronomical toolkit. Many ancient observatories around the world observed equinoxes along with the more pronounced solstices. These days, you don't need your own observatory to know when an equinox occurs, since you'll see it marked on your calendar twice a year! The word "equinox" originates from Latin, and translates to **equal (equi-) night (-nox)**. But what exactly is an equinox?

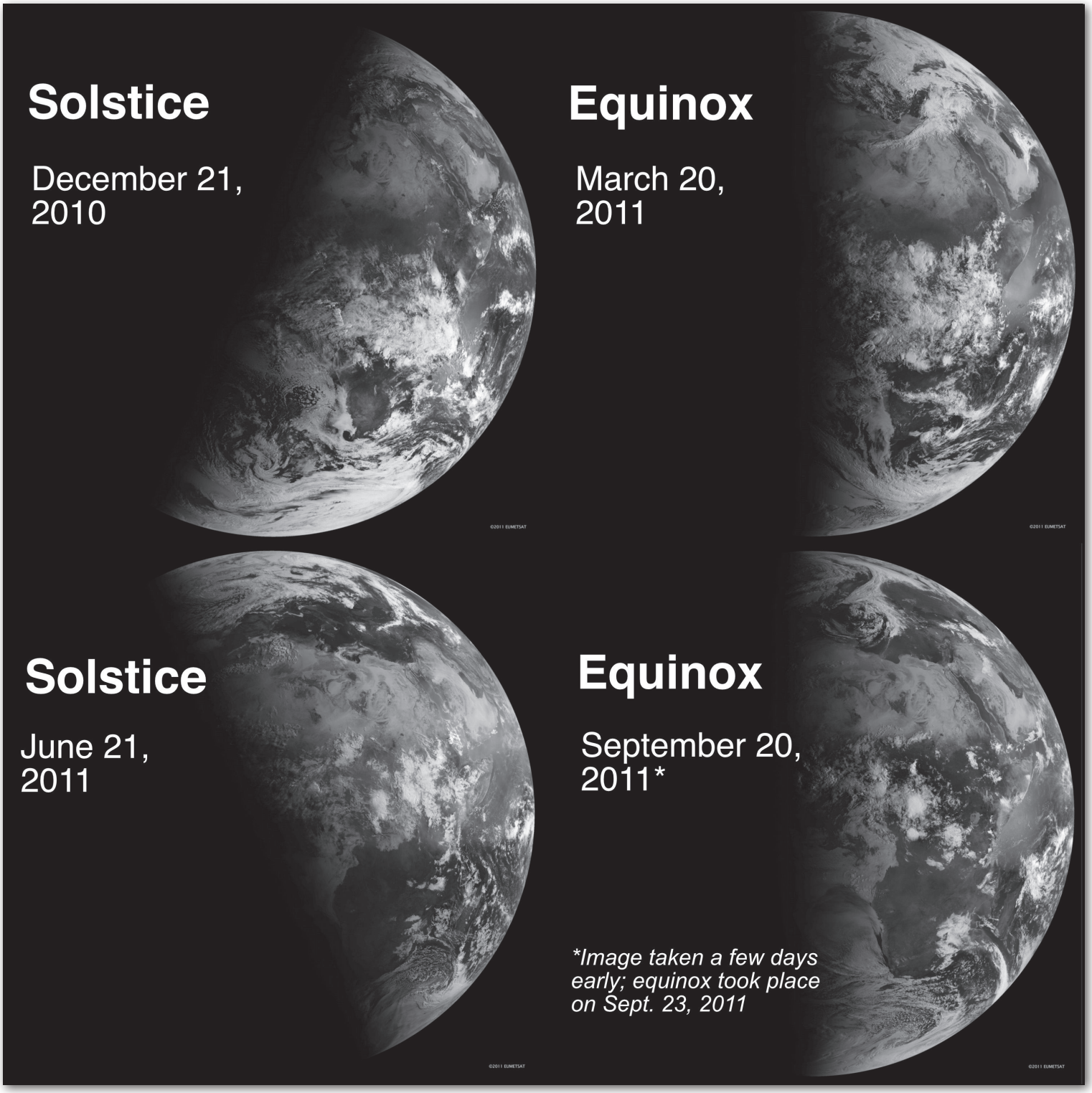
An **equinox** occurs twice every year, in March and September. In 2022, the equinoxes will occur on March 20, at exactly 15:33 UTC (or 11:33 am EDT), and again on September 23, at 01:04 UTC (or September 22 at 9:04 pm EDT). The equinox marks the exact moment when the center of the Sun crosses the plane of our planet's equator. The day of an equinox, observers at the equator will see the Sun directly overhead at noon. After the March equinox, observers anywhere on Earth will see the Sun's path in the sky continue its movement further north every day until the June solstice, after which it begins traveling south. The Sun crosses the equatorial plane again during the September equinox, and continues traveling south until the December solstice, when it heads back north once again. This movement is why some refer to the March equinox as the **northward equinox**, and the September equinox as the **southward equinox**.

Our Sun shines equally on both the Northern and Southern Hemispheres during equinoxes, which is why they are the only times of the year when the Earth's North and South Poles are simultaneously lit by sunlight. Notably, the length of day and night on the equinox aren't precisely equal; the date for that split depends on your latitude, and may occur a few days earlier or later than the equinox itself. The complicating factors? Our Sun and atmosphere! The Sun itself is a sphere and not a point light source, so its edge is refracted by our atmosphere as it rises and sets, which adds several minutes of light to every day. The Sun doesn't neatly wink on and off at sunrise and sunset like a light bulb, and so there isn't a perfect split of day and night on the equinox - but it's very close.



This (not to scale) image shows how our planet receives equal amounts of sunlight during equinoxes.

Equinoxes are associated with the changing seasons. In March, Northern Hemisphere observers welcome the longer, warmer days heralded by their **vernal**, or spring, equinox, but Southern Hemisphere observers note the shorter days – and longer, cooler nights - signaled by their **autumnal,** or fall, equinox. Come September, the reverse is true. Discover the reasons for the seasons, and much more, with NASA at nasa.gov



Scenes of Earth from orbit from season to season, as viewed by EUMETSAT. Notice how the terminator - the line between day and night - touches both the North and South Poles in the equinox images. See how the shadow is lopsided for each solstice, too: sunlight pours over the Northern Hemisphere for the June solstice, while the sunlight dramatically favors the Southern Hemisphere for the December solstice.
Source: bit.ly/earthequinox Images: NASA/Robert Simmon

Minutes of the Southwest Florida Astronomical Society – January 6, 2022

The regular monthly business meeting of the Southwest Florida Astronomical Society, held via Zoom conference, was called to order at 7:36pm by president Brian Risley. There were 22 participants.
The December star party at Seahawk Park was successful.

Dan Dannenhauer reported that the annual audit went well. A report will be in the next newsletter.
Phil Jansen donated a laptop computer to the club.

It is time to pay the annual $500 fee to the Nature Center for use of the Planetarium. Tom Klein made a motion, seconded by John MacLean to authorize the payment. The motion passed.

The annual Florida Corporation registration fee is also due. Ray Bratton made a motion, seconded by Ed Sidor, to authorize payment. The motion passed.

Mike McCauley announced the Nature Center is starting a new guest speaker series beginning March 9 at 7pm.
Planetarium renovations are still planned, but materials delays are slowing the progress.
The January 8 Seahawk Park star party is canceled due to CoViD.
Big Cypress events are pending.

The astrophotography Special Interest Group is going well. Contact Mike Jensen for information.
Tom Segur reported the Charlotte County December solar observing event went well, with multiple sunspots visible. A Bayshore Live Oak Park event is scheduled for Saturday, January 15. The new telescope for the FSW observatory came in ahead of schedule and has been set up. Tom is very pleased with the results. A public event will be held January 7 with limited numbers at a time, and mask recommended.

Joe Dermody viewed the recent solar eclipse from Antarctica and will present a program in the future.
Tom Segur made a motion, seconded by John MacLean to approve the December 2021 meeting minutes as contained in the newsletter. The motion passed.

Treasurer John MacLean presented the Treasurer's report indicating a December closing balance of $3074.66. Dues came in and the PO Box fee went out. Ed Sidor made a motion, seconded by Mike McCauley, to approve the report. The motion passed.

Astronomical League coordinator John MacLean reported our information is up to date.
Equipment coordinator Brian Risley reported the Nexstar is checked out, the other scopes are available for checkout.

Mike Jensen reported he is working on getting the website domain transferred.
Several new images were shared by members of the Astrophotography SIG.
The business meeting adjourned at 8:19pm.

Alex Bratton presented the program on digital astronomy that was delayed by Internet connection issues last month.

The meeting ended at 8:51pm.
Submitted by Don Palmer, secretary.

Minutes of the Southwest Florida Astronomical Society – February 3, 2022

The regular monthly business meeting of the Southwest Florida Astronomical Society, held in the Calusa Nature Center Planetarium and via Zoom conference, was called to order at 7:36pm by president Brian Risley. There were 18 present in the Planetarium, and 13 Zoom participants. There were 3 new members/visitors. In response to a new member's question about dark sky sites, a discussion was held regarding Kissimmee Prairie State Park and Big Cypress National Preserve.

Upcoming events listed in the printed agenda were discussed. The March 26 Seahawk Park Star Party will have media publicity.

Mike Jensen reported that Big Cypress is expecting to resume public events soon.

There is a request for an event at the Rookery Bay Environmental Learning Center in southern Collier County on March 19.

Mike Jensen reported the Astrophotography Special Interest Group has about 25 members, of which 12 are active. Contact Mike if interested in participating.

Tom Segur reported on Charlotte County events. Last month's events were very good, the new telescope worked well. There is a public event tomorrow night at the Moore Observatory. The solar observing 2 weeks ago had an active Sun, and the next solar observing session is in 2 weeks at Gilchrist Park.

Send any photos or articles for the newsletter to Mike Jensen.

The January minutes will be e-mailed or published in the next newsletter.

Treasurer John MacLean presented the Treasurer's report indicating a January closing balance of $3002.18. The annual State registration fee of around $60 will be paid in February. Sean Dey made a motion, seconded by Dan Dannenhauer, to approve the report. The motion passed.

Librarian Maria Berni reminded us when you finish with a book you have checked out be sure to return it.
Equipment coordinator Brian Risley reported the Nexstar 6 is checked out, some scopes are being held for public events, and some others are available for checkout.

Website Coordinator Mike Jensen reported he has full access to the domain and is fully running the site.
Program Coordinator Mike McCauley reported the March program is open.
Astronomical League coordinator John MacLean reported our records are updated.
The business meeting concluded at 8:10pm.

Joe Dermody presented a program on his recent trip to Antarctica for the solar eclipse, and included a presentation he recorded by Bob King on meteors
The meeting ended at 9:21pm.
Submitted by Don Palmer, secretary.