



Monthly Notices
of the
President's Message
Everglades
Astronomical Society
Naples, FL
February 1, 2025



Officers: President: Paul Leopold **Treasurer:** Kathy James
Home Page: <https://evergladesastronomicalsociety.org/Home.php>

President's Message

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UPCOMING EAS MEETINGS

As I write this message, I'm packing for the Winter Star Party a gathering of amateur astronomers from all over the eastern United States and Canada. I find myself thinking about the imaging technology that is transforming our hobby. The Seestar S50 imaging system allows the novice to record amazing images of many deep sky objects. Last night at our Collier-Seminole outreach, John Pigman wowed the public and myself with his ZWO 533 color camera. This camera features a cooled sensor which eliminates hot pixels, a problem in many non-cooled systems. With this camera and his 80 mm refractor, he was able to show full color near real time images of the Orion Nebula. I can only imagine what astounding views this camera could provide the user with larger aperture telescopes. I now know what my next equipment investment will be.

At our February meeting, Dr. Mario Motta will provide a presentation on light pollution. Dr. Motta, a retired cardiologist, is a foremost authority on this subject and his talk should be very informative. The meeting will start at 6:30pm and be at the Collier County Library across the parking lot from our normal meeting site.

We will also present a slate of Board of Director candidates (5) that will be voted on during the March meeting. We will briefly review the ballot and voting process during the meeting.

Best regards,
Paul Leopold

Our monthly meetings are the 2nd Tuesday of each month and usually start at 7pm.

February 11, 2025: Time: 6:30 – 8:00 pm

NOTE CHANGE OF LOCATION AND EARLY START TIME

Collier County Library
2385 Orange Blossom Dr, Naples FL

Note: we will have EAS merchandise (t-shirts, etc.) for sale at our February meeting.

Guest Speaker: Dr. Mario Motta, retired Cardiologist, amateur astrophotographer, telescope maker, former board member of Dark Sky International, and renowned expert on Light Pollution will discuss Light Pollution and its impact on health.

March 11, 2025: Time 7:00 – 8:00 pm

North Collier Government Center
2335 Orange Blossom Dr., Naples, FL

Note: **We will vote on the Board of Directors at this meeting**, and have EAS merchandise again available (t-shirts, etc.) for purchase.

Guest Speaker: EAS member Monica Starks is a serial entrepreneur with experience in media, startups, travel, environmental consulting and construction industries. She is the station manager of Jazzy 107.5 and the host of Coastal Confessions which airs each Sunday in southwest Florida.

Monica and is the owner of iShoot Photography Travel agency in Bonita Springs. She is also an avid astrophotographer and will discuss astrophotography during our March meetings.

April 8, 2025: Time 7:00 – 8:00 pm
North Collier Government Center
2335 Orange Blossom Dr., Naples, FL

****All meetings are accessible via ZOOM:
Meeting ID: 349 568 7507
Passcode: telescope

Please do NOT share this info with non-club members.

Big Cypress and Other Viewing

We have the following sungazing/stargazing outreach dates with the public. Please bring your telescope and enjoy sharing the skies with our community. (Sungazing is typically 2pm-4pm):

February 4 @ Lavern Gaynor Elementary in Golden Gate from 5:30 to 7pm

February 22 @ Collier Seminole

March 29 @ Collier Seminole – SOLAR ONLY

Stay up-to-date with weather and viewing opportunities on the GroupMe app.

Collier County Public Schools STEAM EXPO By Bart Thomas

On Saturday January 25th, Collier County Public Schools held the 2025 STEAM EXPO at Aubrey Rogers High School. To promote astronomy, my STEAM booth theme was named “Colors of Light”. All STEAM booths were located in the ARHS gymnasium. There were over 200 participants at our booth.



Bart Thomas with CCPS student

Each participant at our Expo booth made their own spectroscope from a diffraction grating, toilet paper holder, and black masking tape. Special thanks to CCPS students, Love Mica Eugene and Aldina Jean, in helping those participants make their spectroscopes.

I prepared a demonstration showing students what the continuous spectrum should look like in their spectroscope. I used a slide projector, a slide that had a small slit (covered with aluminum foil) and a 600lines/mm diffraction grating in front of the light. The spectrum is clearly shown below.



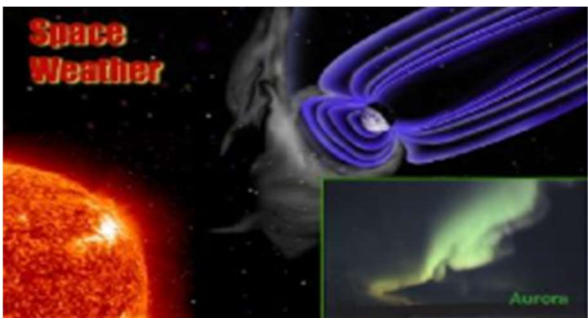
Continuous Spectrum

The students used their spectroscope to see the full color spectrum when pointing their spectroscope at white light (incandescent bulb).



Students using the spectroscopes

Next, I showed the participants a colorless gas in a discharge tube. The students could see that the gas would light up when electrified. I then showed the students the recent photos and posters of our atmosphere lighting up from solar particles exciting the air molecules around the earth. I had the May 10, 2024 aurora photo from Ft. Lauderdale displayed. Each participant was given a holographic post card that I received from NASA Goddard. The card shows the progression of the particles coming off the sun interacting with our magnetic field and producing aurora.



NASA space weather holographic postcard

I demonstrated how aurora would be produced using a 16-inch earth globe with velcroed remote control LED lights placed between 60-70 North and South latitudes (Aurora Borealis and Australis). I had the ability to change LED colors with the remote emphasizing the colors produced by atmospheric air molecules at different altitudes. The air blast from a yellow or black “airzooka” represented the particles

coming off the sun. I had those students, that wanted to participate, face me in front of the earth, while I blasted them with air (solar particles) from about six feet away. Their expressions were priceless.



Aurora demonstration

NOAA had also sent me space weather materials to distribute to students. I gave all participants a NOAA SWFO-L1 sticker. This satellite, which will monitor the sun including space weather, is scheduled to launch in September 2025. I gave each student a NOAA solar fact sheet.

“Space Junk” By Rich Sherman

In recent years, we have come to learn about the increasing amounts of plastic waste floating in our oceans. Renowned conservationist Sir David Attenborough wrote:

“I think, because the oceans are so vast and because they are so mysterious, there is a sense that somehow, they are untouchable, and that what we do on land cannot really alter them in any meaningful way. Not true, sadly.... And, of course, once [plastic] is in the sea, it doesn't really break down properly – it remains there for decades or even centuries. So unless we get to grips with this quickly, we will soon find our oceans completely dominated by plastic. It's a prospect that hardly bears thinking about.”

In our ever-connected world, upwards of 30,000 additional communications satellites are expected to be launched in the coming years. There has never

been a better time to watch rocket launches from Cape Canaveral. For example, between January 27, 2025 and January 30, 2025, there were three scheduled rocket launches in four days.

But what about the total cost? I began my post-MBA career working for a company that was reselling low-earth orbit (LEO) satellite communication services several decades ago. I learned quickly that LEOs fall out of the sky after a few years. If all goes well, they burn up in the atmosphere.

As Starlink launches more and more...and more satellites, did you ever wonder how long they “live”?

Approximately five years.

And so debris falls back to earth and gets burned up in our “vast” and “untouchable” atmosphere, to borrow some words from Attenborough’s quote.

But what is the cost of this debris? While Starlink pockets the cash, who pays for the clean-up?

Fortunately, we have a huge atmosphere to protect us. But wait—is this true? I recently began reading “Our Moon,” published in 2024 and written by Rebecca Boyle (\$21.73 on Amazon). She writes on page 4:

“Even from orbit, Earth looks and feels like home. Astronauts report that staring down on our planet is one of the most exhilarating things about being in space. We belong here. Earth’s razor-thin atmosphere, cloud tendrils, green-carpeted continents, and deep ocean blues beckon us.”

Wait, what? “Razor-thin” atmosphere??? So I went to NASA’s website and saw this: (<https://www.grc.nasa.gov/www/k-12/airplane/atmosphere.html>):

“The Earth’s atmosphere is an extremely thin sheet of air extending from the surface of the Earth to the edge of space. The Earth is a sphere with a roughly 8,000-mile diameter; the thickness of the atmosphere is about 60 miles. In this picture, taken from a spacecraft orbiting at 200 miles above the surface, we can see the atmosphere as the thin blue band between the surface and the blackness of space. If the

Earth were the size of a basketball, the thickness of the atmosphere could be modeled by a thin sheet of plastic wrapped around the ball.”



Source: NASA.gov

It is no wonder that satellite debris has already begun crashing down to Earth. Leaving aside for a moment the scientists who believe these bright LEO satellites now make it difficult to identify dangerous asteroids that could hit Earth, we now have man-made space debris hitting the ground.

On January 11, BBC published an article on a very large piece of space junk—suspected to be from a European rocket launch back in 2008 and not a satellite—that landed in Kenya. BBC wrote:

“In fact, a massive round metal object had plummeted from above landing on farmland near a dry riverbed - and it was piping hot.”

The article went on to say:

“NASA estimates there are more than 6,000 tonnes of space debris in orbit at the moment.”

Digging a bit more, Science News wrote on November 22, 2024 (<https://www.sciencenews.org/article/satellite-space-junk-havoc-stratosphere>):

“Earth’s space junk may be wreaking havoc on the stratosphere....The dying satellites, it turns out, don’t just wink out into the ether. Each one leaves a bit of itself behind.”

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And then:

“The satellites’ fiery death throes, along with a steep rise in the number of rocket launches, are adding a glut of ozone-destroying and climate-altering pollutants to the stratosphere, researchers say. What that means for the planet’s atmospheric chemistry — including its ultraviolet light–shielding ozone layer — isn’t yet clear. But scientists are racing to find out. ‘The launches are growing so quickly,’ says Daniel Murphy, an atmospheric scientist at the National Oceanographic and Atmospheric Administration’s Chemical Sciences Laboratory in Boulder, Colo. ‘In the last couple of years, there have been roughly 500 re-entry events per year, and people are talking about 10,000 in the not-too-distant future. That’s about one an hour. So we’d like to understand the implications as soon as possible.’”

So here we are again at the dawn of a new age—the era of space colonialism. It seems to me that the benefits are known and the profits are easily counted, but the long-term financial, health, environmental and safety costs are mostly unknowns. It is ironic that we may be repeating past mistakes by a factor of two: we are again hoping that an unlimited natural resource—which turns out to be a “razor-thin” atmosphere—will swallow our man-made debris; and, when it fails, we are hoping the “vast-but-now-not-so-vast oceans” will save us, rather than falling on our villages, houses, or schools. I am reminded of the old line “hope is not a strategy.”

I will end with a quote from the Christian Science Monitor published September 23, 2023 (<https://www.csmonitor.com/USA/2011/0923/Fallin-g-satellite-10-times-space-junk-has-crashed-into-Earth/March-2011-Russian-rocket-piece-lands-in-Colorado>):

“Falling satellite trackers at NASA say [the satellite debris] will hit Friday night or Saturday morning and has a small chance of crashing in the US.”

This warning may be all too common over the next few years.

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- Texas Star Party (90 mins. SW of Dallas): 4/24/2025 to 4/27/2025, more info at <https://texasstarparty.org/>
- Grand Canyon Star Party (Grand Canyon N.P.): 6/21-6/28/2025, more info at <https://www.nps.gov/grca/planyourvisit/grand-canyon-star-party.htm>
- ASTROCON (as advertised in your *Reflector* magazine) at Bryce Canyon National Park, 6/25/2025-6/28/2025, more info at www.Astrocon2025.org.
- Green Bank Star Quest (West VA): 6/25/2025-6/28/2025, more info at <https://greenbankstarquest.org/>
- Stellafane (Vermont): first week in August, more info at <https://stellafane.org/convention/>

Articles of Interest

How Pluto Captured Its Giant Moon:
<https://www.cnn.com/2025/01/10/science/pluto-charon-kiss-capture-collision/index.html>

A very interesting interactive site about the Moon:
<https://ciechanow.ski/moon/>

BBC Says Night Sky Tourism Tops 2025 Travel Trends
<https://www.bbc.com/travel/article/20250106-the-seven-travel-trends-that-will-shape-2025>

Mining Old Data from NASA’s Voyager 2 Solves Several Uranus Mysteries
<https://www.nasa.gov/missions/voyager-program/voyager-2/mining-old-data-from-nasas-voyager-2-solves-several-uranus-mysteries/>

Mars Perseverance Rover Images at :
<https://mars.nasa.gov/mars2020/multimedia/raw-images/image-of-the-week/>

Sisters Becomes the Second International Dark Sky Community in Oregon:

<https://darksky.org/news/sisters-becomes-the-second-international-dark-sky-community-in-oregon/>

ASTRO IMAGES FROM EAS MEMBERS:

For inclusion in future newsletters, please send your images to Rich at RJSherman@hotmail.com. Please include at a minimum:

- the name and/or catalog number of the object (e.g., “M33” or “Triangulum Galaxy”)
- the location where you took the image
- the date of the image
- the telescope you used to take the image

Additional information such as the camera, the number of frames, the filter you used, the number of exposures, and the length of each exposure are also very welcome.



The Rosette Nebula, NGC2244 by Ted Wolfe
Atacama Desert, Chile
8-hour LRGB with 12.5" PlaneWave astrograph
ZWO ASI 6200 camera



The Orion Nebula, M42 by Robyn Pritchard
Big Cypress, FL, January 4, 2025
Seestar S50



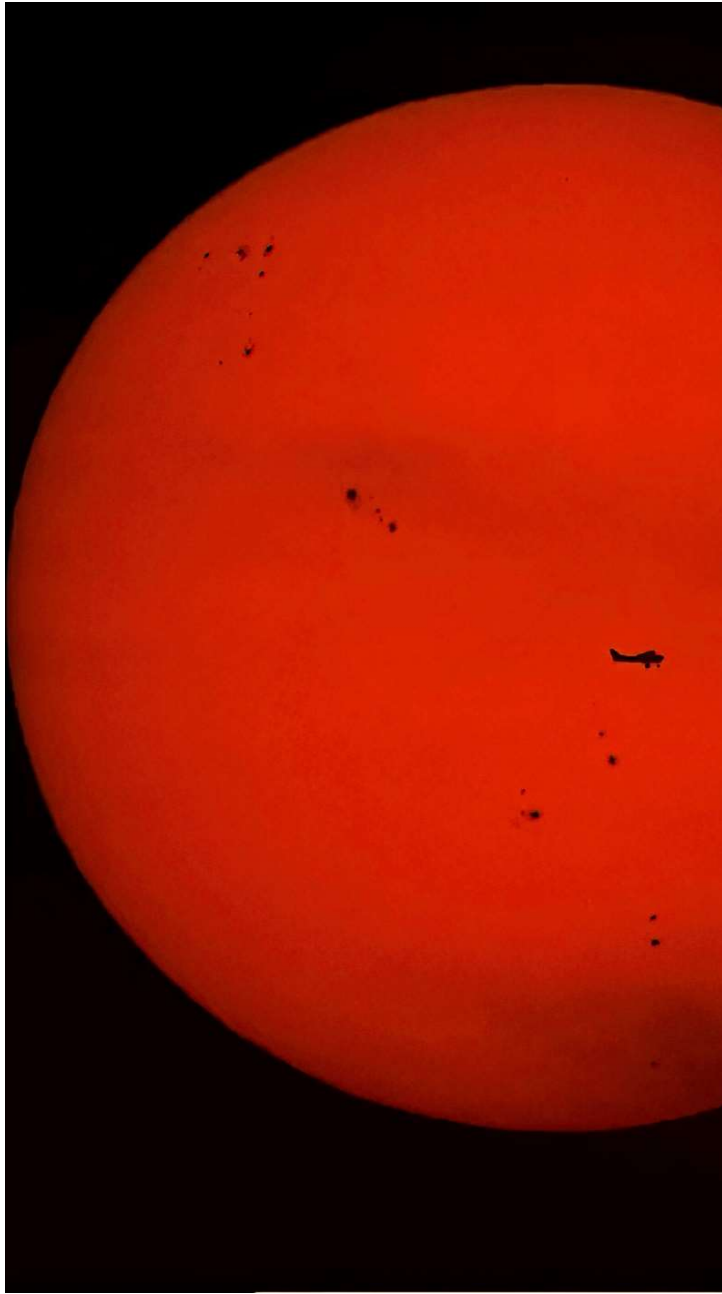
The Flaming Star Nebula (IC 405) by Robyn Pritchard
Big Cypress, FL, January 4, 2025
Seestar S50



The Moon, by Henri Troch
Big Cypress, FL, January 4, 2025
Nikon D7500 and Nikon 18-200mm lens



Mars Occultation by John Pigman
January 13, 2025



Flying to the Moon, by Rich Sherman
Estero, FL, December 2024
Seestar S50



Mars Occultation by Henri Troch
Naples, FL, January 13, 2025
Nikon D7500, Nikon 200-500mm @750mm, ISO 200, 1/800s.



From the Rosette to the Christmas Tree cluster by Chuck Pavlich
Tigard, OR, January, 2025
ASI 1600 camera, Canon 100mm lens at f/4
6 hours of imaging with the Astrodon HA, OIII, and SII filters



Jupiter by Chuck Pavlick

Tak FSQ106 scope with 2.5 Powermate and 2x Barlow

ASI224 color camera

Best 30% of 3,000 frames

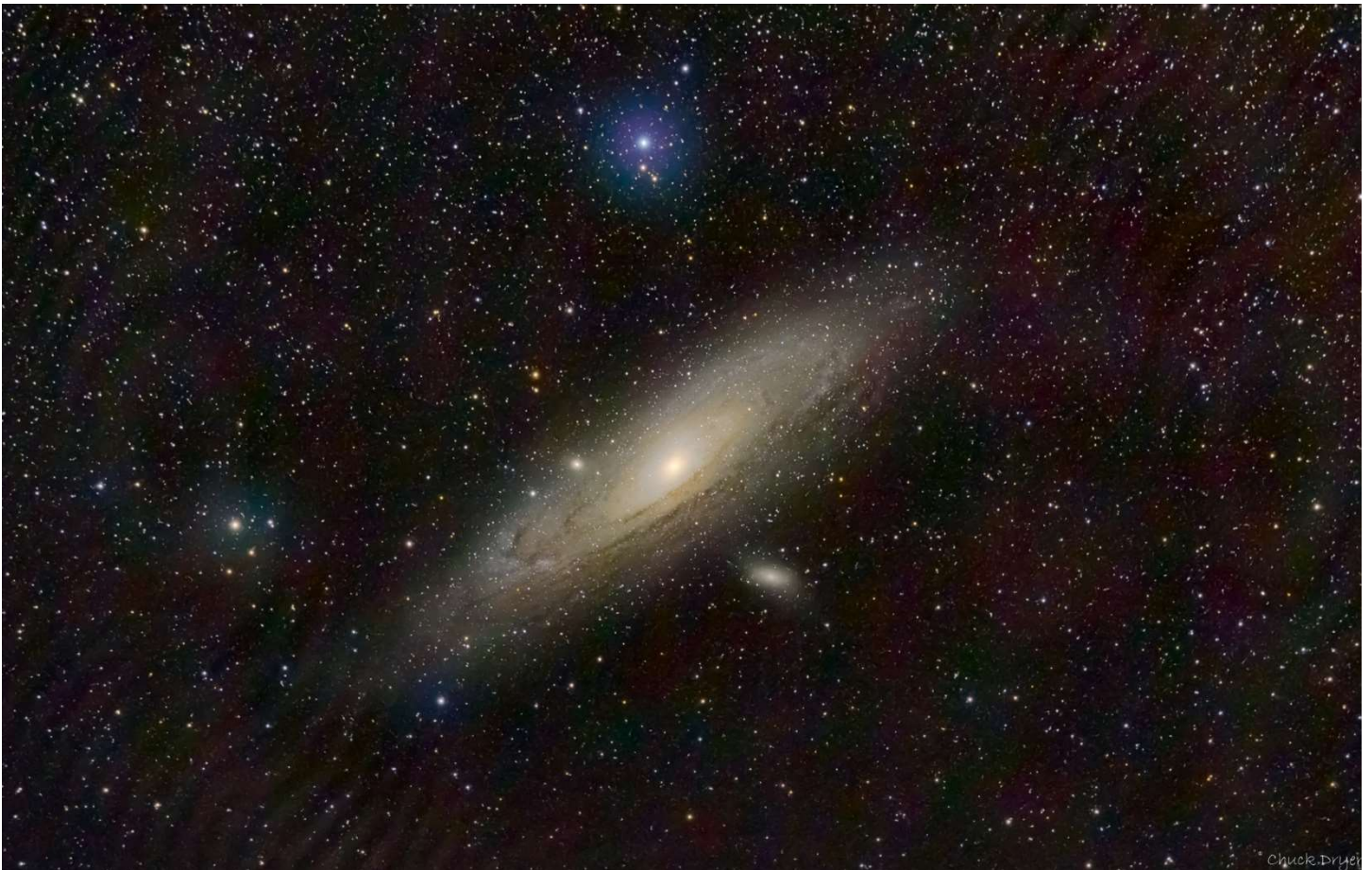
Autostakkert, Registax and Affinity Photo software



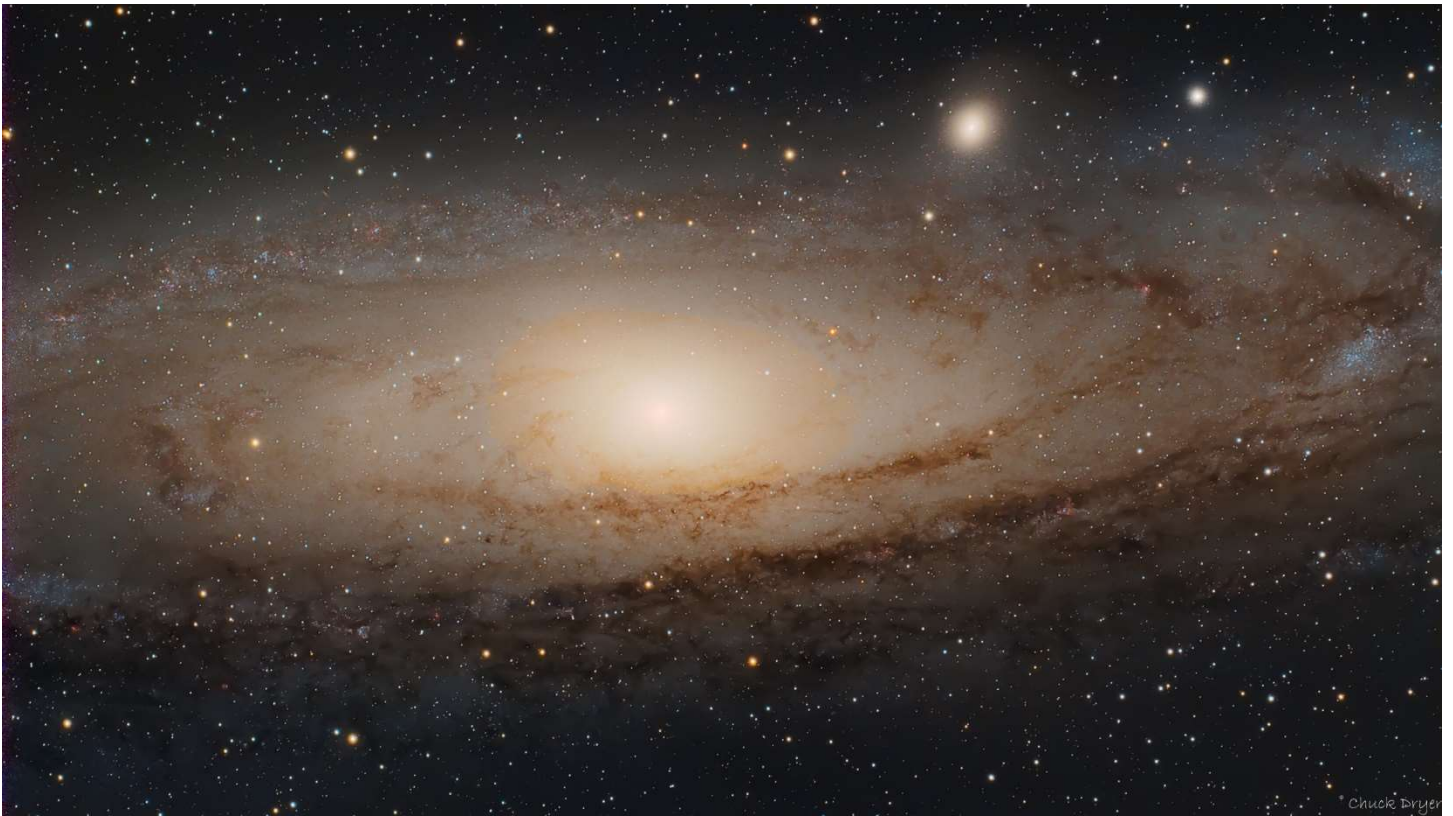
Dolphin Head Nebula (Sh 2-308) by Armando Merlo
Starry Ranch, Okeechobee FL, January 3, 2025
A combination of 100 x 2 min. subs with a C11HD at F/2
Hyperstar VIII lens
ASI2600MC camera



The Moon by Chuck Dryer
Naples, FL on January 10, 2025
Canon R7 & RF100-500mm lens at 500mm
SkyGuider Pro tracking mount
Exposure 1/750 sec at ISO800 and F/11
Best 63 of 212 frames



Andromeda (M31) by Chuck Dryer
Big Cypress on January 3, 2025
Canon R6 & RF100-500mm lens at 324mm
SkyGuider Pro tracking mount
Exposure 30 sec, ISO/Gain ISO6400, Aperture F/7.1,
Best 100 of 122 frames
Processed in Siril and Photoshop



Andromeda (M31) by Chuck Dryer
Big Cypress, FL on January 4, 2025
ASI294MC Pro camera, OTA AT115mm
iOptron GEM40 mount, Guided
180 sec frames at gain of 125
Best 60 of 62 frames
Processed in Siril and Photoshop



Orion Nebula (M42) by Chuck Dryer
Big Cypress, FL on January 4, 2025
Canon R6 & RF100-500mm lens at 324mm
SkyGuider Pro tracking mount
30 sec. exposures at ISO6400 and F/7.1
Best 58 of 66 frames
Processed in Siril and Photoshop



Witches Head Nebula (IC2118) by Chuck Dryer
Big Cypress, FL on January 3, 2025
ASI294MC Pro camera, OTA AT115mm
iOptron GEM40 mount, Guided
300 sec. frame with gain 125
Best 14 of 16 frames
Processed in Siril and Photoshop