The High Desert Observer

September 2021

This Month's Meeting - September 24, 2021

Meeting will be virtual via Zoom®
Friday, September 24th at 7 p.m.

Speaker for the Month - Dr. Will Grundy

What the New Horizons Mission Taught Us About Pluto

Dr. Grundy does spectroscopic, thermal, and imaging observations of outer Solar System bodies using numerous large ground- and space-based telescopes including Hubble, Keck, Gemini, DCT, IRTF, and MMT. He is involved in projects to discover Kuiper belt binaries and to determine their mutual orbits and masses, using the Hubble Space Telescope, as well as laser guide star adaptive optics techniques at Keck and Gemini observatories.

Dr. Grundy is co-investigator on NASA's New Horizons mission that encountered the Pluto system in 2015 and the Kuiper belt object Arrokoth in 2019. He heads the mission's surface composition science theme team.

Astronomical Society of Las Cruces

In This Issue

Coming Events

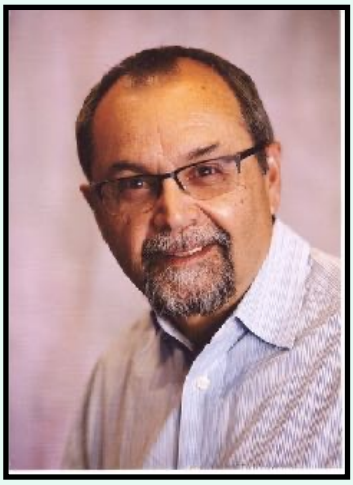
Monthly, on an evening close to the first-quarter moon, ASLC hosts a public "MoonGaze" observing session currently at the Plaza de Las Cruces. We also hold occasional special evening sessions at Tombaugh Observatory on the NMSU campus.

Also monthly, the ASLC welcomes public viewing at the Leasburg Dam State Park Observatory located just 20 miles north of Las Cruces. Our 16-inch Meade LX200 telescope at this site is used to observe under rather dark skies.

Keep updated on the dates, times, and locations through this link with additional information available at our website www.aslc-nm.org as well as our Facebook page.

Masthead Image: M82 & M81 Galaxies in Ursa Major - courtesy of ASLC Member Jeff Johnson

From the Desk of Ed Montes ASLC President



Our in-person, out-in-the-public outreach programs are beginning to gain traction again. On Saturday, Sept.11 our outreach chair, Stephen Wood, led a troop of members on our most successful MoonGaze since we started trying to do them again in June. It was also, based on my feeble memory, the best attended MoonGaze I've ever participated in since joining the club 8 years ago. The two factors that primed this success were clearer skies than we've had in a while and a great new location: the Plaza de Las Cruces downtown on Main Street. The activity was lively with skateboarders, strollers, couples taking romantic walks, slightly beery passers-by, and curiosity seekers of all sorts. There were sufficient oohs and aahs to warm the cockles of any astronomer's heart; the craters of the moon, the bands and moons of Jupiter, and of course the rings of Saturn elicited all the reactions we could have hoped for. It was definitely a successful outing. I think that MoonGaze has found a new home.

I believe that our Leasburg outreach will be successful too. Perhaps not in the same numbers, but in our luck with clear skies. If we are, in fact, at the tail end, or even completely out, of the monsoon season, then we can anticipate clearer skies from here on out. (I hope I haven't cursed us, we'll see.) So, if nature cooperates, then it's up to us to drum up business, i.e., attendees, for the events. The next Leasburg outing is scheduled for Oct. 2. If you can, please attend, it's always nice to have as many club members there as possible. The 16-inch SCT in the observatory shows some really amazing views. We also have an 11-inch SCT that we set up. Various members bring their own equipment, so we wind up having lots of scopes. It's good to have knowledgeable astronomy folks, preferably with laser pointers, helping guide people through the skies. Also, please tell people about it. We have a built-in population from the campers who are at the park, but it's good to try to get more folks out and looking at the stars. So, if your friends are looking for something to do, or someplace to take their kids, tell them about out star party at Leasburg.

One of our biggest outreach events is Renaissance Faire. I mentioned it last month, and I'm bringing it

August ASLC MoonGaze at Plaza de Las Cruces

up again just to keep it on everyone's radar. It is planned for Nov. 6th and 7th this year. Although there is a core of members who participate every year, all club members are invited and encouraged to participate by staffing the booth for a few hours. We usually have a couple of white light scopes with solar filters observing sunspots, an h-alpha scope for prominences, another looking at the moon if it's out, and perhaps even one on any daytime planets. We will put together a booth staffing schedule, including set-up, and tear-down, so please consider participating.

Check out the club's Facebook page. Chuck Sterling has done a great job populating it with his astrophotos and we have begun posting more news from the world of astronomy including info about meteor showers and the latest discoveries and theories. We are also posting info about club events. Between the club's website the club's Facebook page and our groups.io discussions, we are trying to expand our internet coverage.

Thanks to Stephen Wood for posting the information about the Eldorado Star Party. It's coming up on Nov 1-6 (hmm, conflicts with Ren Faire) and will be held X-Bar Ranch near Sonora, TX. It looks like TSP is in for some competition. Well, the more star parties the better.

Our next Zoom meeting is on Sept 24th. Our Tombaugh Speaker this month will be our own Dr. Will Grundy of Lowell Observatory. He will discuss what we learned about Pluto from the New Horizons mission. I definitely want to hear what he has to say.

That's it for now. Clear skies!

The Astronomical Society of Las Cruces (ASLC) is dedicated to expanding public awareness and understanding of the wonders of the universe. ASLC holds frequent observing sessions and star parties, providing opportunities to work on Society and public educational projects. Members receive electronic delivery of The High Desert Observer, our monthly newsletter, plus membership in the Astronomical League including their quarterly publication, Reflector, available in either paper or digital format. ASLC members are also entitled to a discount on a subscription to Sky and Telescope magazine. Annual Individual Dues are $36; Family $42; Student (Full Time) $24. Dues are payable in January and partial year prorated for new members. Please contact our Treasurer, Patricia Conley, treasurer@aslc-nm.org for further information.

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Featured Article:

Weird Ways to Observe the Moon

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 https://nightsky.jpl.nasa.gov/ to find local clubs, events, and more.

By David Prosper

International Observe the Moon Night is on October 16 this year – but you can observe the Moon whenever it's up, day or night! While binoculars and telescopes certainly reveal incredible details of our neighbor's surface, bringing out dark seas, bright craters, and numerous odd fissures and cracks, these tools are not the only way to observe details about our Moon. There are more ways to Observe the Moon than you might expect, just using common household materials.

Put on a pair of sunglasses, especially polarized sunglasses! You may think this is a joke, but the point of polarized sunglasses is to dramatically reduce glare, and so they allow your eyes to pick out some lunar details! Surprisingly, wearing sunglasses even helps during daytime observations of the Moon.

One unlikely tool is the humble plastic bottle cap! John Goss from the Roanoke Valley Astronomical Society shared these directions on how to make your own bottle cap lunar viewer, which was suggested to him by Fred Schaaf many years ago as a way to also view the thin crescent of Venus when close to the Sun:

"The full Moon is very bright, so much that details are overwhelmed by the glare. Here is an easy way to see more! Start by drilling a 1/16-inch (1.5 mm) diameter hole in a plastic soft drink bottle cap. Make sure it is an unobstructed, round hole. Now look through the hole at the bright Moon. The image brightness will be much dimmer than normal – over 90% dimmer – reducing or eliminating any lunar glare. The image should also be much sharper because the bottle cap blocks light from entering the outer portion of your pupil, where imperfections of the eye's curving optical path likely lie." Many report seeing a startling amount of lunar detail!

You can project the Moon! Have you heard of a "Sun Funnel"? It's a way to safely view the Sun by projecting the image from an eyepiece to fabric stretched across a funnel mounted on top. It's easy to make at home, too – directions are here: bit.ly/sunfunnel. Depending on your equipment, a Sun Funnel can view the Moon as well as the Sun– a full Moon gives off more than enough light to project from even relatively small telescopes. Large telescopes will project the full Moon and its phases, with varying levels of detail; while not as crisp as direct eyepiece viewing, it's still an

Sun Funnels in action! Starting clockwise from the bottom left, a standalone Sun Funnel; attached to a small refractor to observe the transit of Mercury in 2019; attached to a large telescope in preparation for evening lunar observing; projection of the Moon on a funnel from a medium-size scope (5 inches).

impressive sight! You can also mount your smartphone or tablet to your eyepiece for a similar Moon-viewing experience, but the funnel doesn't need batteries.

Of course, you can join folks in person or online for a celebration of our Moon on October 16, with International Observe the Moon Night – find details at moon.nasa.gov/observe. NASA has big plans for a return to the Moon with the Artemis program, and you can find the latest news on their upcoming lunar explorations at nasa.gov.

Safety tip: NEVER use a large telescope with a Sun Funnel to observe the Sun, as they are designed to project the Sun using small telescopes only. Some eager astronomers have melted their Sun Funnels, and parts of their own telescopes, by pointing them at the Sun - large telescopes create far too much heat, sometimes within seconds! However, large instruments are safe and ideal for projecting the much dimmer Moon. Small telescopes can't gather enough light to decently project the Moon, but larger scopes will reveal more detail.

Minutes of August 2021 Meeting

John McCullough - Secretary

Tim Kostelecky, Vice-President, Astronomical Society of Las Cruces (ASLC, the Society), called the August 2021 meeting to order at 7:05 pm on 27 August 2021. He welcomed attendees to tonight's meeting via ZOOM. Eighteen (18) attendees were signed in for the start of the meeting.

Tim welcomed the group and noted that Ed Montes, ASLC President, was not present because of a scheduling conflict with another event. He also announced that the minutes from the July 2021 meeting (thanks to John McCullough, Secretary) were published in the August issue of the Society newsletter, the High Desert Observer (HDO). Tim asked if there were any required additions, deletions, or corrections to the minutes as submitted. None being offered, a motion to accept the July 2021 minutes as published was offered. There being no objections, the motion was passed by acclamation.

Tim introduced tonight's speaker, Dr. Alex Woronow.

Presentation:

Tonight's Tombaugh Series speaker was ASLC's own Alex Woronow. Alex received an A.B. degree in Astronomy from UCBerkeley, an M.S. in geology from the University of Houston (U of H), and a Ph.D. from Harvard University. He's been with the faculty of University of Arizona's Planetary Sciences Department and the geosciences faculty at U of H. Alex's astroimage processing interest focuses on extracting maximum information (detail) from images utilizing artificial intelligence and statistical tools in addition to more traditional approaches.

Alex's topic was "The Stellina Telescope—A Brave New World!". A new generation of amateur telescopes is upon us: Enter the Stellina! The automation of the Stellina telescope surpasses any previous or other current telescopes in a plethora of dimensions, from an entree into DSO astronomy to a capable image platform. Developed and manufactured by Vaonis, a French company, Alex purchased his about 3-1/2 months ago. This is his report on his experiences to date.

Set it down wherever you want; the Stellina is light, compact, and portable. Insert a battery, turn it on, and it obtains its latitude and longitude, points upward, focuses, takes a sky image, and plate solves to orient itself to the sky—all hands-off. Select a target, and it slews to it, centers the target and checks the focus, and then begins imaging without the aid of add-on software. The stacked image updates real-time after onboard subframe QC, calibration, and stacking and transmits its stretched image to connected smartphones and tablets—up to 20 of them simultaneously—again without the assistance of an attached computer and software. The Stellina provides a Wi-Fi network. The master smart device selects the targets, composes the field of view (fov) and other administrative tasks. Alex has connected a portable monitor to mirror one of the connected devices, making this rig ideal for star-party/out-reach sharing. In addition, the Stellina can save the "raw" subs in FITS format for processing later, or it can create a 16bit TIFF of its stacked result without interrupting the image updates to connected devices.

Alex said it's exciting to watch the first 10-second sub appear, maybe with a faint ghost of the target and a few stars. The Stellina tracks the target and adjusts its image derotator; the second, third, and fourth subs roll in, and the target begins to show its shape and stars brighten. A few more subs, and target and star colors become clearer; details beginning to appear within the nebula or galaxy. It's an engaging and exciting experience studying the current image and anticipating the next update.

Stellina is available now (there is a wait list) for a mere $3999. Its little brother, Vespera, should be available in the spring of 2022 for about $1499.

A question and answer session followed Alex's presentation.

Officer/Committee Reports:

Treasurer:

Trish Conley, Treasurer, reported on the status of the Society's accounts. The Society had a positive balance of $645 before paying various bills. This is thanks to extra donations from members. Tim asked about the status of the annual audit; Trish replied the audit won't be performed until after completion of the fiscal year.

Outreach:

Stephen Wood, program coordinator, reported that several outreach events have been attempted but have had weather issues. There will be another MoonGaze at the Downtown Plaza in two weeks on 11 September. Directions are on the web site.

The Observatory at Leasburg Dam State Park (LDSP):

Steve Barkes reported he continues working to acquire laptops to support the Observatory. Warranty support is a concern.

Nominating Committee:

Tim Kostelecky, committee chair, reported the committee continues to work on a slate of candidates for 2022. Candidates will be announced at the September meeting.

Meetings/Presentations:

An astronomer from the Lowell Observatory in Flagstaff, AZ, will speak at the September meeting. Society officers continue to work with staff at Good Samaritan Village (GSV) to resume inperson meetings. Other community groups have resumed inperson meetings at GSV but have continued to abide by social distancing and mask requirements and/or vaccination status verification. No progress to report on the Society's efforts.

Old Business:

No additional old business was considered.

New Business:

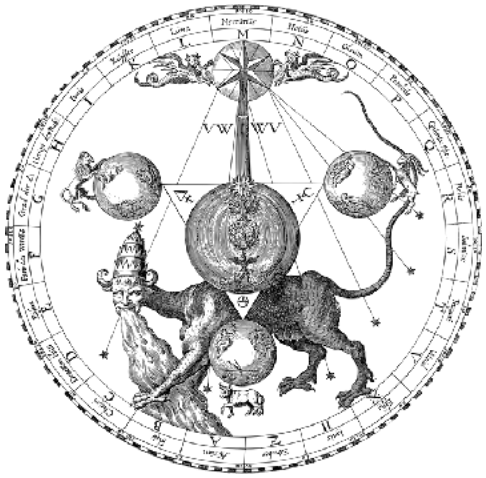
Society website – Thanks to Rich Richins for updating the calendar and images.

FaceBook – Rich is also trying to enhance posting accessibility. Gary Starkweather said he is setting up live streaming via a Facebook and may be able to tie-in to either the ASLC website or FaceBook page.

OkieTex 2021 Star Party – The star party is planned for 01-09 October. Deadline for registration will be soon.

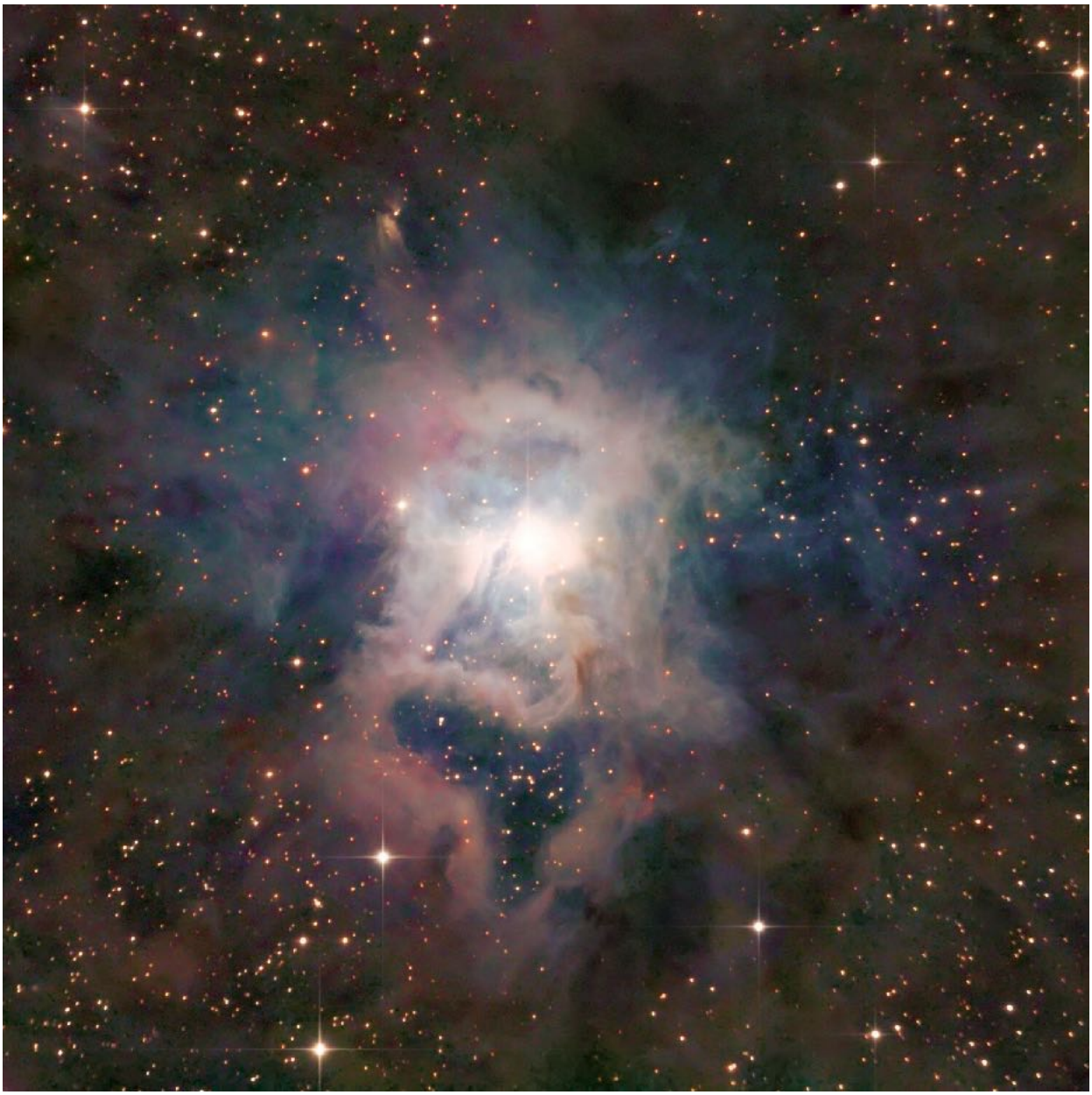
Virtual ALCon 2021 – Trish Conley attended several of the sessions on-line and even won a $250 gift card door prize. Sessions are still available. She also has Astronomical League (AL) calendars for $12 each. Contact her if you are interested in obtaining one.

No additional new business was offered for consideration.



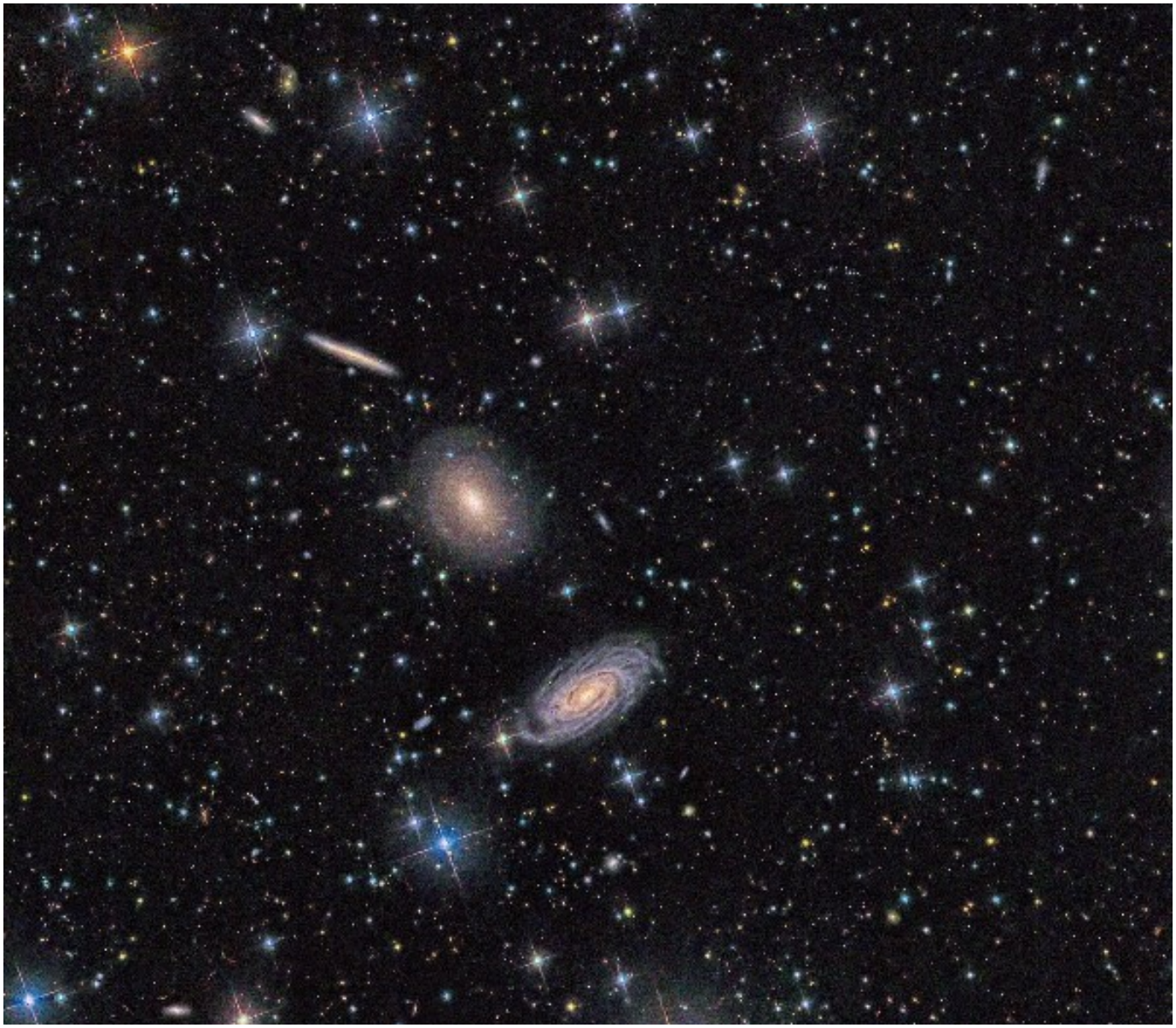
Member Images

NGC 7023 “Iris Nebula” in Cepheus - Mike Sherick



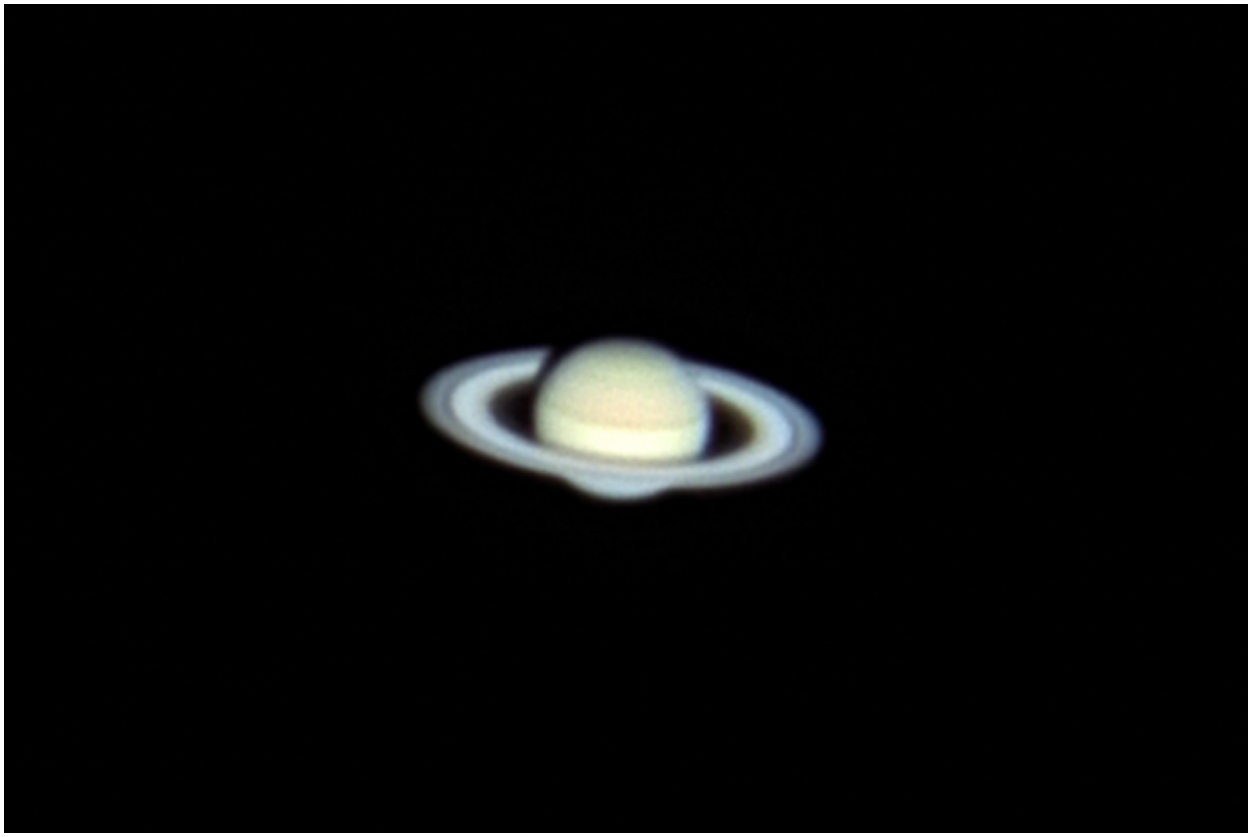
Iris Nebula NGC 7023 in LRGB. Image data: 50 x 300s Luminance 1x1; 12 x 300s each RGB binned 2x2. I pushed the processing a bit to give the image a bit of an "iridescent" quality.

NGC 5976, 5981, 5982, 5985; Galaxies in Draco - Alex Woronow



Draco is kind of a game preserve for galaxies, as this field of view illustrates. The three most prominent galaxies in this image all lie at about 100M light-years from us.

Saturn & Jupiter - Jeff Johnson



Saturn: New configuration! - still with the 150mm Mak-Cas and very happy with the result. Not using a dedicated planetary camera - instead, using another new point and shoot I purchased.