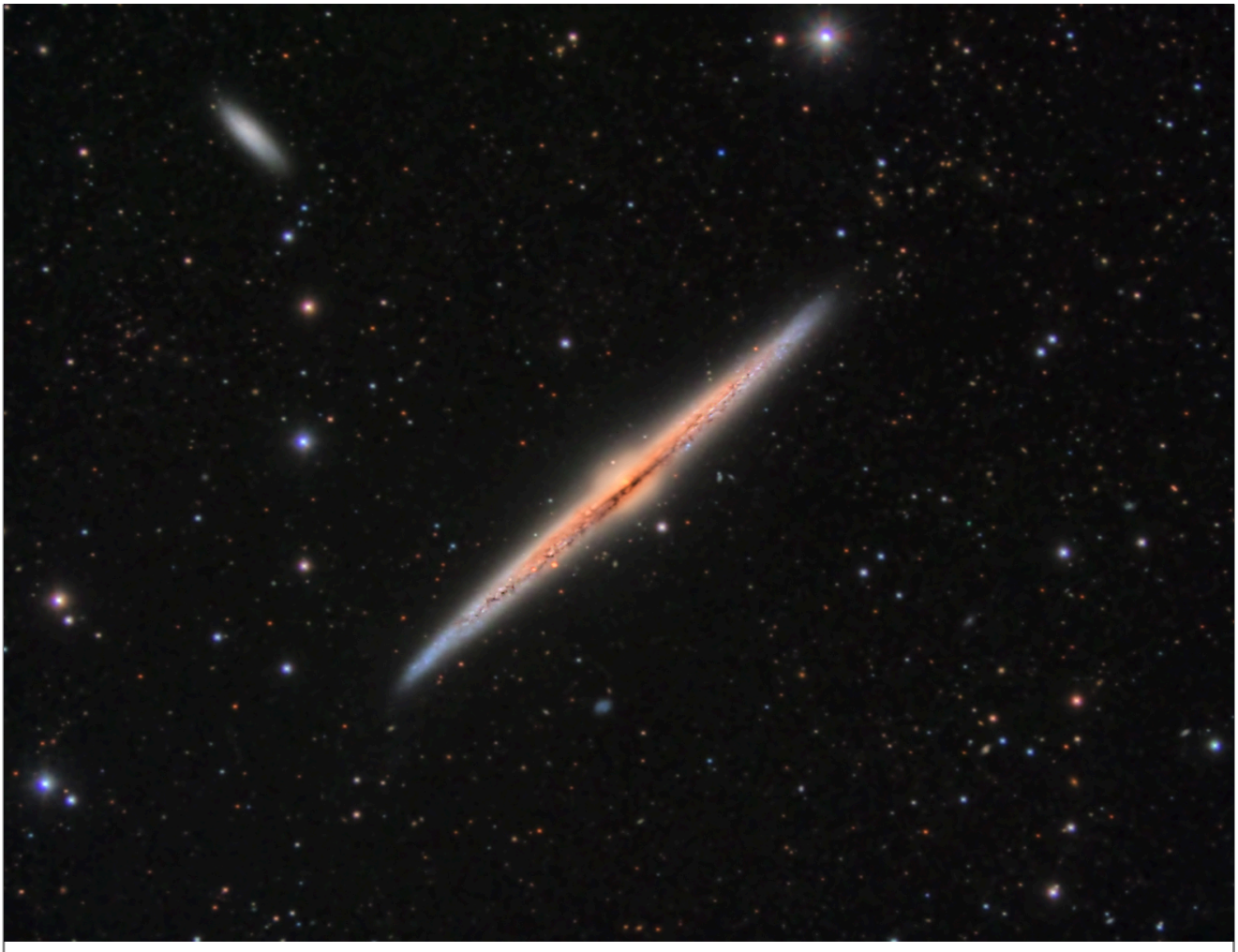
Eugene Astronomical Society
www.eugeneastro.org

Io

August, 2021

PO Box 591 Lowell, OR 97452
www.eugeneastro.org



[1] NGC 4565 - The Needle Galaxy Mark Wetzel

Notes from a (re)learning Astronomer

First, I have to say how amazed I am at the resiliency of this organization during the COVID-19 crisis. Amy's ability to get us together monthly via Zoom and the terrific talks that have been happening are a real treat and something I look forward to every month!

I was a club member (and president) around 25 years ago. I owned a 10" home built Dobsonian then, though as many of you I started finding the stars a passion with a little 60mm refractor before that. I discovered the club and found a true passion. Life and family got in the way for a couple of decades, but opportunity provided me with a return to something I always looked back on and loved.

Back then, my focus was on club stuff - mostly public star parties and educational outreach. Rick Kang, Frank Sczepanski, and many others and I spent countless nights out showing students, scouts and the general public the sites through whatever telescopes we could cobble together. I went to a couple of Oregon Star Parties, which was my deepest dive into dark-sky astronomy.

Now, with COVID, things have changed. I've found a true love of going out to those darker skies around the area (Linslaw being my favorite so far) and exploring the sky with my telescope. I've been very fortunate to be there with Jerry, Andy, Mark and more, that have helped me see things that I would never have thought possible. Just learning the ropes, I spend time just looking around, trying to find my way around the sky again. Of course, going from city lights to a site like these, I often find myself lost, but even there I get to just sweep the sky, marveling at the beautiful stars that float past my eyepiece.

I just wanted to thank everyone in this club for sticking together through thick and thin. I look forward to the day we are able to meet in person again, but until then, we still have the stars.

Do you have something for the newsletter?

If you have an article, photo, meeting notes, stories, etc. that you would like to share with the members, please contact me, I'd be happy to add them to the newsletter. If you have photos you would like to submit, I'm trying to include more information about the process and equipment used.

Astrophotographers: I want to offer these pages as a way to not only show off your terrific photos, but to provide us with information on how they are taken and processed. Seeing the amount of work that goes into these amazing images is always fascinating, and makes us appreciate them even more!

Bruce Sackett - bruce@busymind.net

Our PO Box has changed!
PO Box 591
Lowell, OR 97452

Annual Club Dues $25

EAS is a proud member of The Astronomical League.

From the Secretaries Desk by Randy Beiderwell

This year the Astronomical League celebrates it's 75 Anniversary! The League is celebrating with a FREE 3-day virtual convention August 19-21. There are a LOT of amazing door prizes for registered participants. EAS is donating a brand new, almost first off the production line, Orion PRO Lanthanum Zoom 8-24mm eyepiece as an example of awesome door prizes.

AUGUST 19-21, 2021

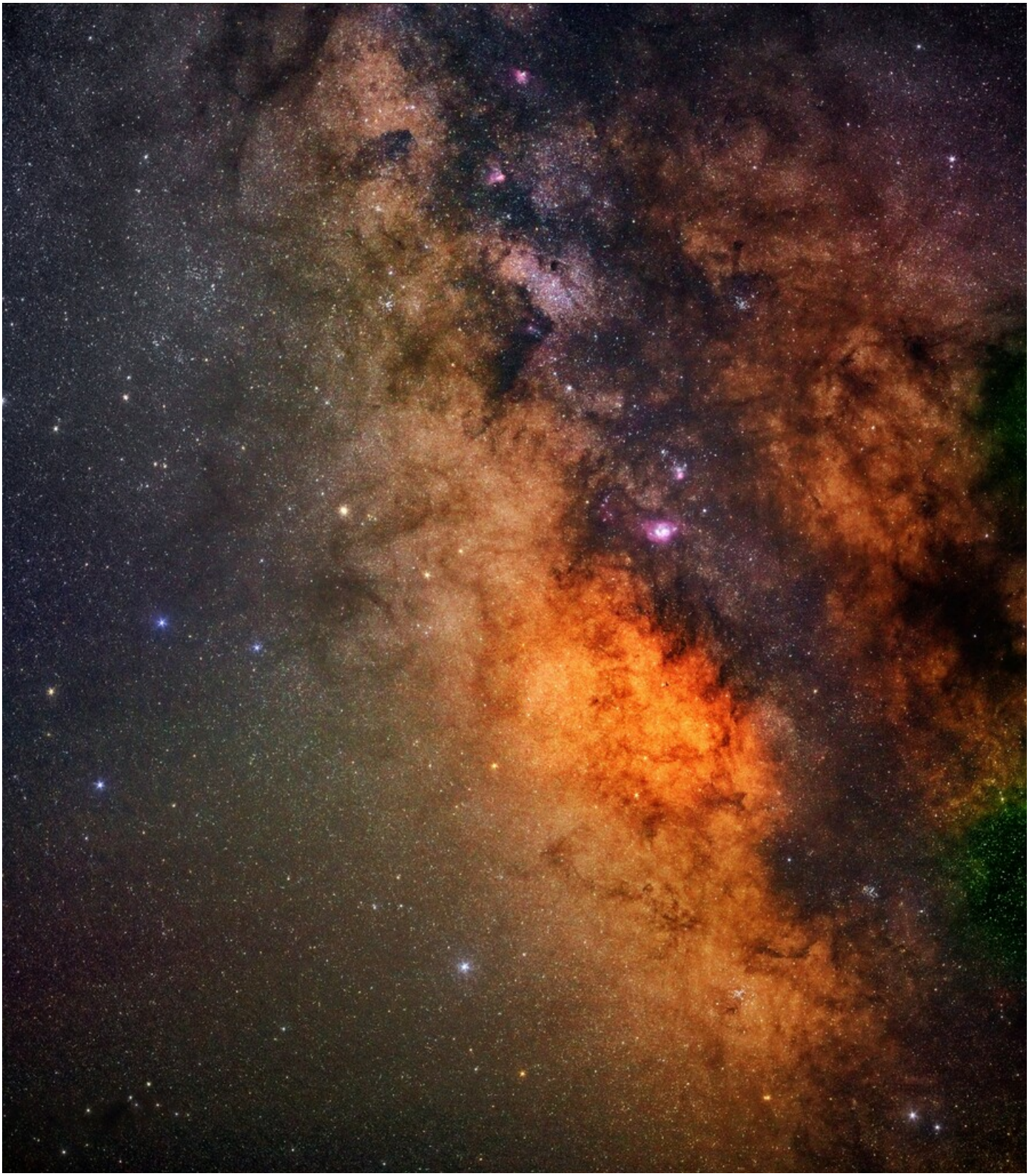
Registration for our virtual convention is now open at the following link. IT'S FREE!! The convention features virtual tours, professional and youth speakers, a Slooh presentation, all 2020 and 2021 youth and general award presentations, over $3,000 in door prizes donated by our member clubs, our League business meeting, an international star party, and a keynote address by Dr. Jocelyn Bell Burnell, discoverer of pulsars. To be eligible, you must register your name and email address. It only takes a minute to do, and League membership is not required.

https://www.alconvirtual.org

I invite you to check it out. Even if you only have an hour or so you should be able to learn a lot and have fun!

EAS Welcomes New Members

Roger Hamilton and new "family membership" Deborah and Henry LaClair! We look forward to meeting you hopefully very soon. If you have any questions or need club help please don't hesitate to reach out.



[2] The Heart of the Milky Way from McKenzie Pass Alan Gillespie

August Meeting - August 19, 2021

PLEASE NOTE THAT ALL MEETINGS ARE CURRENTLY VIRTUAL

To be announced

July Meeting

Neutrino Astronomy

or

Why Spend Time and Big Bucks Looking for (nearly) Massless Subatomic Particles that Hardly Ever Interact with Ordinary Matter??*

Bernie Bopp

Presentation to the Eugene Astronomical Society, July 2021

Neutrino astronomy is BIG astronomy. The telescopes are HUGE – cubic kilometers in volume – and require thousands of detectors. Neutrino telescopes must be located in places where they never see photons from the night sky – all of them are buried kilometers below the surface of the Earth in deep mines or even embedded deep in the Antarctic ice. Of course this means they are frightfully expensive to build and operate. And all of this is done to detect dozens of neutrinos, ghostlike subatomic particles that are electrically neutral, with uncertain mass probably no more than a millionth the mass of the electron. In this talk I'll try to explain why neutrinos are so interesting and important to our understanding of nuclear reactions in stars, supernovae, and even dark matter and galaxy formation. As a special bonus, neutrinos will be readily available throughout this entire talk, with no charge, either monetary or electrical!**

*Special EAS Award for most bloated presentation title

**Extra special EAS Award for worst pun in an abstract

The video for this meeting can be found at:

https://youtu.be/yKPxvycF65g

[3] NGC 6946 - The Fireworks Galaxy Mark Wetzel

Member Astrophotography in this issue

[1] NGC 4565 - The Needle Galaxy by Mark Wetzel

I started this project in Oregon and While I had great anticipation for capturing the Needle Galaxy, the results were disappointing. The final image lacks good sharpness, and the bright core is dull and diffuse. There was one likely culprit leading to the failure: unrelenting wind in Oregon and Nevada. I kept about 60% of the data.

NGC 4565, the Needle Galaxy, is an edge-on spiral of The Needle Galaxy is a popular deep sky object for astrophotographers. It is a galaxy that Charles Messier and contributors to his catalog should have found but missed. William Herschel discovered it in 1785. NGC 4565 is a large galaxy, about 192 kly in diameter. It has a bright core and a pronounced central bulge. The galaxy is about 39 Mly away (SkySafari Pro 6).

Member Astrophotography in this issue (cont.)

Imaging details:

Celestron 9.25" Edge HD SCT

Celestron 0.7x Focal Reducer (FL = 1645mm, f/7)

Celestron off-axis guider with a ZWO ASI 174MM mini guide camera

Celestron CGEM II mount

ZWO ASI 1600MM Pro cooled monochrome camera (-15C)

ZWO 36mm Luminance, Red, Green and Blue filters

Software: Sequence Generator Pro, ASTAP plate solving, PHD2 guiding,
Celestron CPWI mount control,
SharpCap Pro polar alignment,
PixInsight and Photoshop CC 2021

Luminance 2 min x 97 subframes (194 min), Gain 139, Offset 21, 1x1 binning

Red 4 min x 27 subframes (104 min), Gain 139, Offset 21, 1x1 binning

Green 4 min x 24 subframes (96 min), Gain 139, Offset 21, 1x1 binning

Blue 4 min x 30 subframes (120 min), Gain 139, Offset 21, 1x1 binning

---

[2] Heart of the Milky Way from McKenzie Pass by Alan Gillespie

Heart of the Milky Way

A two panel mosaic shot from McKenzie Pass at 1:00am on Sunday 7/11/21.

Nifty Fifty Olympus Lens on Canon SL1 on Meade (CG-1?) motorized tripod.

Each panel composed of 93 exposures of 30 seconds each at F4 and ISO 3200.

Processed with Raw Therapee, Deep Sky Stacker, RNC Color Stretch, Image Composite Editor, Photoshop CS2, Affinity Photo, StarNet++, and Windows Photo Gallery.

How many objects can you identify?

Member Astrophotography in this issue (cont.)

[3] NGC 6946 - The Fireworks Galaxy by Mark Wetzel

Baker, NV and Linslaw Point, Walton, OR

June 10-11 and July 4, 2021

This project was done during a mount I started to image NGC 6946, the Fireworks Galaxy, over two nights in Baker Nevada. After fighting the wind with the Needle Galaxy as the first target, NGC 6946 was high in the sky as the second target for each night. The wind did subside late, and the seeing and transparency were above average. In July, I captured more subframes in Walton, Oregon. This included an insufficient amount of hydrogen-a narrowband data. I also came up short on Luminance data, something to be rectified in future outings. I combined Ha and Lum as well as Ha and Red using the new Combine function in PixInsight's PixelMath tool. The Oregon imaging session was the first test of my new Losmandy G11 mount and a QHY Polemaster camera. I used SharpCap Pro's polar alignment tool with the Polemaster. SharpCap's polar alignment tool is very easy to use, and I obtained an alignment in about five minutes with an error of less than 3 arc minutes as measured by PHD2's Guiding Assistant. The Losmandy G11 mount performed very well with a PHD2 guiding RMS (standard deviation) between 0.4 and 0.6. Again, seeing and transparency were good and the G11 was more tolerant of light wind than the CGEM II.

NGC 6946 is a spiral galaxy of type SAB. It is located on the border between the constellations Cygnus and Cepheus. Its arms have prolific star forming regions with many emission nebulae. It is not understood why this galaxy is so active. However, there may have been a recent accretion of a rich gas cloud providing fuel for the fireworks. The Fireworks Galaxy is also photogenic because sits behind a rich Milky Way star field in Cygnus. NGC 6946 may be a remote member of our Local group of galaxies. The galaxy is between 22 and 29 Mly from Earth, and it is almost 73 kly in diameter (Stellarium and SkySafari Pro 6).

Imaging details:

Celestron 9.25" Edge HD SCT

Celestron 0.7x Focal Reducer (FL = 1645mm, f/7)

Celestron off-axis guider with a ZWO ASI 174MM mini guide camera

Celestron CGEM II mount (Nevada) and Losmandy G11 mount (Linslaw)

ZWO ASI 1600MM Pro cooled monochrome camera (-15oC)

ZWO 36mm Luminance, Red, Green and Blue filtersPixInsight and Photoshop CC 2021

Member Astrophotography in this issue (cont.)

Software: Sequence Generator Pro, ASTAP plate solving, PHD2 guiding,
Celestron CPWI mount control and Losmandy Gemini ASCOM mount control,
SharpCap Pro polar alignment,
PixInsight and Photoshop CC 2021

Luminance 2 min x 37 subframes (74 min), Gain 139, Offset 21, 1x1 binning

Red 4 min x 34 subframes (136 min), Gain 139, Offset 21, 1x1 binning

Green 4 min x 34 subframes (136 min), Gain 139, Offset 21, 1x1 binning

Blue 4 min x 35 subframes (140 min), Gain 139, Offset 21, 1x1 binning

Hydrogen-a 10 min x 9 subframes (90 min), Gain 139, Offset 21, 1x1 binning