

Eugene Astronomical Society



Io

January, 2021



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NGC 1365 [See Page 4]

Mark Wetzel

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Board Members:

Oggie Golub - Randy Beiderwell - Ken Martin -
Jerry Olton**- Our PO Box has changed!****PO Box 591****Lowell, OR 97452**

Annual Club Dues \$25

EAS is a proud member of The
Astronomical League.

January Meeting - Thursday, Jan. 21 7pm

PLEASE NOTE THAT ALL MEETINGS ARE CURRENTLY VIRTUAL

TO BE ANNOUNCED.

We have had some terrific virtual meetings the last few months, thanks to all who have worked to make it happen!

December Meeting

We had a wonderful meeting featuring astrophotographers from around the valley showcasing their photos and explaining the process they use to create their amazing images.

Jerry showed us the 'old days' with imaging the sky with film, then we had many of our favorite astrophotographers show their photos and equipment and walk us through the huge amount of work it takes to turn the raw data into the quality images we all enjoy. As someone who's often floated along the fringes of image editing it's amazing to see the processes and effort that goes into making each image just right, as well as the huge amount of data that can be involved. Thank you to all of the astrophotographers for the terrific display of talent, patience and hard work!

If you get a chance to join us during these fun Zoom meetings I really can't recommend it enough. It isn't the same as our old gatherings, but it's really great to see everyone and enjoy our time together.

You can see the talk on YouTube at:

<https://www.youtube.com/watch?v=WBOruj--Whg>

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

And now for something completely different...

This month Mark Wetzel has provided me with some incredibly high quality images and information about how they were taken and processed. This issue will be dedicated to that information.

Next month, I'll have a review of a new book I received: *The Discovery of the Universe - A History of Astronomy and Observatories* by Carolyn Collins Petersen. I'm working on a couple of other ideas going forward as well, and hope to start returning the monthly 'upcoming events' page as well.

Sunspots AR2794 and 2795



Mark Wetzel

Mark Says:

I set up the C9.25 SCT with my new Televue 2X 2" Powermate to image sunspots AR2794 and 2795. An Astrozap solar filter was used. Using the "lucky" imaging technique, I collected 1000 frames with the red filter for each image using SharpCap Pro. The frames were stacked in Autostakkert3 and the best 10 to 20% of the individual frames were retained. The stacked images were then sharpened with a Wavelet filter in Regisax6 and finished in Photoshop 2021. I used the Shake Reduction sharpening filter and provided color in Photoshop. The sunspots were captured in Gold Canyon, AZ on December 26, 2020.

One challenge for me is achieving good focus with significant atmospheric distortion even in good seeing conditions. I used SharpCap's Focusing Assistant with the Fourier Transform and Brightness contrast methods. I moved the primary mirror out and then through the focus point in steps to generate a curve. I then moved to the optimum focus point at the curve peak or minimum (depending on the algorithm used).

These sunspots are not very active and pose little danger to a mass ejection. As of 12/27, central sunspot (2795) has formed one bridge the size of Mars as shown in the closeup.

Imaging details:

Celestron 9.25" Edge HD SCT

Celestron CGEM II mount

Televue Powermate 2X 2" tele-extender

ZWO ASI 1600MM Pro cooled monochrome camera with Red filter

Astrozap solar filter

Software: SharpCap Pro, Celestron CPWI mount control, Autostakkert3, Registax6, Photoshop 2021

NGC 1365, the Great Barred Spiral Galaxy in Fornax

Casitas de Gila, Gila, NM

October 17, 2020

During my October 2020 astrophotography trip to Casitas de Gila, Gila, New Mexico, I attempted to image NGC 1365, the Great Barred Spiral Galaxy in the constellation Fornax. NGC 1365 is really a southern hemisphere target, so it is at a very low altitude. Not only is there more atmospheric distortion, but there is also a very short time window for imaging. I could only capture Luminance, Red, Green and Blue filter subframes for one night. On other nights, the southern horizon was obscured by smoke from the California wildfires. With limited Luminance data, fine details and faint areas of the arms were not captured. Also, the color data are very noisy and the many emission nebula in the arms are not present.

NGC 1365 is one of the best examples of a barred spiral galaxy with a long bar-shaped core and two sweeping spiral arms. NGC 1365 is about 200,000 light years across and it is 56 million light years from Earth (SkySafari6 Pro).

Imaging details:

Celestron 9.25" Edge HD SCT with off-axis guider

Celestron CGEM II mount

ZWO ASI 1600MM Pro cooled monochrome camera (-100C)

36mm ZWO Luminance, Red, Green and Blue filters

Software: Sequence Generator Pro, PHD2 guiding, Celestron CPWI mount control, PixInsight and Photoshop CC 2021

Luminance 2 min x 40 subframes (80 min), Gain 139, Offset 21, 1x1 binning

Red 2 min x 12 subframes (48 min), Gain 139, Offset 21, 1x1 binning

Green 2 min x 12 subframes (48 min), Gain 139, Offset 21, 1x1 binning

Blue 2 min x 12 subframes (48 min), Gain 139, Offset 21, 1x1 binning



Jupiter-Saturn Conjunction 12/21/20

I set up the C9.25 SCT with my new Televue 2X 2" Powermate to image the great conjunction of Jupiter and Saturn. Using the "lucky" imaging technique, I collected about 500 or 600 frames with the luminance filter for each image using SharpCap Pro. I collected frame sets for exposures optimized for Jupiter, Saturn and three of Jupiter's moons (Ganymede was transiting the planet). The frames were stacked in Autostakkert3 and the best ~ 20% of the individual frames were retained. The stacked images were then sharpened with a Wavelet filter in Registax6 and finished in Photoshop 2121. I used the Shake Reduction sharpening filter and provided color for the Jupiter and Saturn frames in Photoshop. I combined Jupiter, Saturn, and moon images in Photoshop. The conjunction was captured in Gold Canyon, AZ on December 21, 2020 just after sunset.

I had very limited time to image the planets before they dropped below the roof of the house. I was limited to imaging with the luminance filter on my monochrome camera. The resulting images have poor detail. When imaging Jupiter's moons, I found the collimation of the SCT was slightly off. The moons looked like little chevrons. In this latest version, I created a blurred mask of spheres centered over each moon. There were a few pixels present for Saturn's moons Titan and even Rhea, so I included them in the moon reconstruction layer.

For image planning, I used SkySafari6 Pro to determine the best time to image and set the composition using the 2X extender.

Imaging details:

Celestron 9.25" Edge HD SCT

Celestron CGEM II mount

Televue Powermate 2X 2" tele-extender

ZWO ASI 1600MM Pro cooled monochrome camera with Luminance filter

Software: SharpCap Pro, Celestron CPWI mount control, Autostakkert3, Registax6, Photoshop 2021

And Finally

I want to thank all of you for your patience and kind words while I get my feet under me with this newsletter. A special thanks to Mark Wetzel for pretty well writing this issue for me! Finally, one last thanks to the astrophotographers that shared their process with us at the December meeting.

Have a very happy 2021!