

Eugene Astronomical Society



# Io

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www.eugeneastro.org



NGC 3628: The Hamburger Galaxy [1]

Mark Wetzel

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Board Members:

Oggie Golub - Randy Beiderwell - Ken Martin -  
Jerry Oltion

**- Our PO Box has changed!**

**PO Box 591**

**Lowell, OR 97452**

Annual Club Dues \$25

EAS is a proud member of The  
Astronomical League.

# April Meeting - Thursday, Apr. 15 7pm

PLEASE NOTE THAT ALL MEETINGS ARE CURRENTLY VIRTUAL

## To Be Announced

## March Meeting

### Sky Safari - Presented by Jerry Oltion

SkySafari has become one of the most popular planetarium programs among amateur astronomers, for good reason. It's a beautiful, incredibly useful, and insanely powerful tool for exploring the night sky. One of the things it isn't, however, is intuitive. The program is so packed with features that even experienced users continue to find new functions long after they've become familiar with the more basic ones.

Jerry put on a great presentation, really showing some of the amazing capabilities of Sky Safari as well as showing us many of the 'hidden' shortcuts to quickly get the most out of the application. I know that I learned a lot from this presentation! Sky Safari is incredibly powerful, and with Jerry's descriptions and guides through the app, I believe he made it even easier and faster to use.

You can see the meeting video at:

<https://youtu.be/VZmDtpWaeg>

## 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](mailto:bruce@busymind.net)



The Moon - Feb 28th [2]

Alan Gillespie

## Book Recommendation:

### The Discovery of the Universe

by Carolyn Collins Petersen

*The Discovery of the Universe: A History of Astronomy and Observatories* (published 2019 by Amberley Publishing) is a wide ranging book covering astronomy and astronomers from pre-history to the current day. Through eight chapters the author digs deep into the science being pursued by astronomers and physicists today, as well as discussing the history of observatories and telescopes.

The first chapter goes into the basics of what science is being done and how telescopes and observatories of many different types are used. It covers a lot of ground, with a focus on how new instruments and special equipment from space telescopes and more are used and how they fit together in modern research.

The second chapter goes into early astronomy and how it was used for navigation, seasonal events such as times to plant or to hold religious festivals, to astrology and the influence early astronomers had with their cultures and leaders. It also covers early telescopes and their use. Galileo, Tycho Brahe, Huygens, Kepler and Newton are of course mentioned here and discussed, with their advances in telescope designs and their use.

Each chapter following continues the story to the present day and beyond, including the stories of many of the great telescopes of the 19th and 20th centuries, then on to space-based telescopes and unusual instruments designed to detect neutrinos and gravitational waves.

The book finishes with a discussion of planned and dreamed-of future instruments and finally with a chapter dedicated to amateur astronomy, education and popular culture. Here there is a fair reference guide to public observatories and online resources.

I've found the book really enjoyable, though I'm still working my way through it. It's become my favorite late-night read recently. I can recommend it for a good general guide to astronomical research and its history. You can purchase it through a book store or as a Kindle or the Apple Books store if you prefer a digital version. I personally enjoy the hardcover book itself, as the photographs tend to be fuzzy and undersized in the digital version.

## Member Astrophotography in this issue

[1] NGC3628 - Mark Wetzel

Florence and Linslaw Point, Oregon

March 25 – April 13, 2020

NGC 3628, the Hamburger Galaxy, was captured with broadband filters, Luminance, Red, Green and Blue. This edge-on galaxy is located in the constellation Leo. NGC 3628, M65 and M66 form the Leo Triplet, three gravitationally interacting galaxies. NGC 3628 is fainter than its companions, which is why Charles Messier missed it. It is about 35 million light years from Earth and is about 113,000 light years across (SkySafari Pro). There is a faint tidal tail of stars in the upper left part of the frame, likely caused by gravitational interactions with M65 and M66. The disk is also highly distorted from these interactions and perhaps from a past merger with another galaxy. There is also a small companion galaxy below the center of NGC 3628.

Since the 2021 galaxy season is beginning and Western Oregon has been suffering endless cloudy and rainy nights, I reprocessed the 2020 data in Pixinsight using my new workflow for handling RGB color and luminance images separately. The image really needs much more luminance and some more R, G and B subframes in order to bring out the elusive tidal tail.

### Imaging details:

Celestron 9.25" Edge HD SCT

Celestron 0.7x focal reducer

Celestron off-axis guider with ZWO ASI174MM mini guide camera

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 2021

Luminance 2 min x 90 subframes (180 min), Gain 139, Offset 21, 1x1 binning

Red 3 min x 35 subframes (105 min), Gain 200, Offset 30, 1x1 binning

Green 3 min x 40 subframes (120 min), Gain 200, Offset 30, 1x1 binning

Blue 3 min x 33 subframes (99 min), Gain 200, Offset 30, 1x1 binning

### 2] The Moon - Alan Gillespie

This image was taken about 30.5 hours after the full moon. Frames 0547 (06:38 am) thru 0729 (06:45 am) were shot at 1/30 second plus or minus 1/2 stop at ISO100 using my Canon SL1 on EAS's Vixen ED80 scope. I set my camera to shoot 10 sets of bracketed exposures. I refocused between each set of 30 exposures.

For post processing, I used DxO to convert CR2 frames to Tiffs. Then I used Affinity Photo's Focus Merge to stack the sharpest pixels. Then I used ImPPG to sharpen the image. And finally I used Photoshop CS2 to layer (Luminosity) the sharpened ImPPG over the Tiff from Affinity Photo (that still had the color data). After that I applied a simple levels adjustment and cropped the image to 5x7.