

Southern Maine Astronomers
Club Meeting
March 7, 2024 7:00 p.m.

Attending were members Mark Lasher, Howie Marshall, Dave Crocker, Kevin Kane, Russell Pinizzotto, Greg Thorup, George Bokinsky, Ron Thompson, Paul Schumann, Greg Shanos, Ara Jerahian, Jack Gelfand, Al DiSabatino, Tom O'Conner, Dennis Leiner, Abby Gardner, Roy Reigel, Craig Snapp, Scott Lovejoy, Dean Ostergaard, Mike Simmons, Jeremy Wright, Anne Dobriko, Bob Dodge, Jim Hummer, Dwight Burkard, Chris Parent, Mike Mack, Brad Irish, Jack Flynn, Mark Sprinkle and Rob Burgess and guests Alexander MacDonald, Dave Leiner, Stuart Cotts, Mary Ann Roscoe and two other unidentified persons.

Rob Burgess opened the formal portion of the meeting and welcomed new member Sean Lena and family.

Recent activities by members:

- Dennis Leiner was excited to report his first Ha photo.
- Bob Dodge reported on a new book he just read called **Our Moon** by Rebecca Boyle, a respected science writer. The book is full of interesting detail about the moon and the Apollo missions.
- Rob reported on a new book by Garrett M. Graff called **UFO- The Inside Story of the US Government's Search for Alien Life Here – and Out There**. The book provides an exhaustively detailed account of the personalities involved inside and outside of government and academia addressing the UFO question, the utility and futility of searching, from respected astronomers to wingnuts, the establishment of SETI, the Drake equation, the tension between failing to look for signals and the question of how one would do that. (Note: in news on 3/8/24 the government reported to Congress all sightings were likely explainable with no hard evidence of alien visits.)
- Ron Thompson reported on his eclipse talk to the Falmouth Public Library on 3/5/24. Ron will give at least two more talks at other libraries. Rob spoke to about 60 people on light pollution on 2/14/24 as part of the Midcoast Senior College's Winter Wisdom program. Chris Parent will be providing a talk to the Harrison, ME library about the eclipse and stars. Jon Wallace will be speaking to several school groups in the next month.

Announcements:

- The next meeting on April 4 will feature Dr. Philippe Reekie from the Harvard College Observatory on "Evidence of Life in Extraterrestrial Salts"
- The club will participate with a display table at a Showcase/Mixer of "Women+" in Outside pursuits at the Patagonia Store in Freeport on Friday evening, 3/15/24 at 6-8 pm. Food and refreshments and product giveaways provided. Last year 400 people attended. All are welcome.

- The club sought a gubernatorial proclamation with Dark Sky Maine about International Dark Sky Week, April 2-8. The club hopes to schedule an event or events during the week.

Guest Speaker: Ara Jerahian, director and officer of SMA

Rob introduced Ara and reminded everyone that Ara gave a talk to the club in May, 2020, about the hardware of astrophotography. The talk today was on the use and integration of various pieces of software and how that then permits the aesthetic choices and interpretation by the photographer.

Ara's favorite targets are dark nebulae. He enjoys teasing out the subtleties of dark on dark targets. He explained he processed his images in PixInsight versus other software such as PhotoShop, but believed most image processing software contained similar features. It becomes purely a matter of personal choice. He explained the need to eliminate as many sources of things that could detract from a clean image of the target object. By taking darks, flats and bias frames, and by "dithering," electronic noise and artifacts such as dust motes could be identified, and through software, subtracted, in later processing. Such erasing software could also be used to eliminate satellite trails and cosmic rays. Additional software can be used to eliminate vignetting, heat signatures from electronics within the camera, and shading differentials within the partially processed image (gradient differentials). Ara stated that astro images are linear versus stretched (conventional photography) and it is up to the user, in manipulating histograms of the image signature, to make the adjustments to tease out detail and achieve the artistic interpretation sought. Tools from developers such as Russell Croman's "Noise, Blur and Star Exterminator" all work to modify subtleties in the image and even the reduction in the number and intensity of nearby stars. Finally, various tools of "Spectrometric Photocolor Calibration" allow for use of Gaia color calibration or the Hubbell palette template to affect the final appearance of the image. Ara uses a monochrome camera with red, green, blue and luminance broadband filters to build up the data capture of image acquisition. Ara may use as many as 600 two-minute exposures to achieve his desired data capture. Ara has also imaged targets through narrowband filters of hydrogen alpha, oxygen III and sulphur. The choice of broadband or narrowband filters depends on the target and its characteristics.

It was an amazing trip "behind the curtain" to understand how these images are created. It's a level of amateur astronomy that is not for the faint of heart or for those not technically inclined!

Messier Marathon by Russ Pinizzotto

Russ noted that he has undertaken seven Messier Marathons between Texas and Maine over several decades. He explained the enormous scope of the undertaking in capturing all 110 objects in a single night. One must be prepared with a game plan for catching objects low in the west just

after sunset and those rising in the east just prior to sunrise. Using Stellarium Russ demonstrated the difference in observability of the objects that happens with a small difference in starting date, while always keeping the moon's phase in mind. Russ offered some very practical advice on dressing for a marathon, and especially on the order of how one finds targets which can be very challenging in the case of the 14 galaxies in Leo that are all within about 1 degree of each other.

Russ said that at our latitude in Maine it is virtually impossible to see all 110 objects, with the most problematic being M30, which is low in the west at sunset. Russ developed his own Excel spreadsheet providing the order to observe and record pertinent information about each object that he is happy to share with anyone wanting a copy (zzotto@icloud.com). As if this were not challenging enough Russ stated that some observers undertake the Marathon with no binoculars and no electronic assistance while others undertake the entire operation from memory with no aides at all! He recommended the following sources: www.messier.seds.org/xtra/marathon/marathon.html; Don Macholz's classic "Messier Marathon;" Stephen O'Meara's "The Messier Objects;" and Harvard Pennington's "The Year-Round Messier Marathon Field Guide." King Louis XV called Messier "the ferret of comets." It's ironic he is most well known for all the objects that are not comets!

The meeting concluded about 8:30 p.m.

Rob Burgess
President, SMA