

LONGMONT ASTRONOMICAL SOCIETY

MARCH 2021

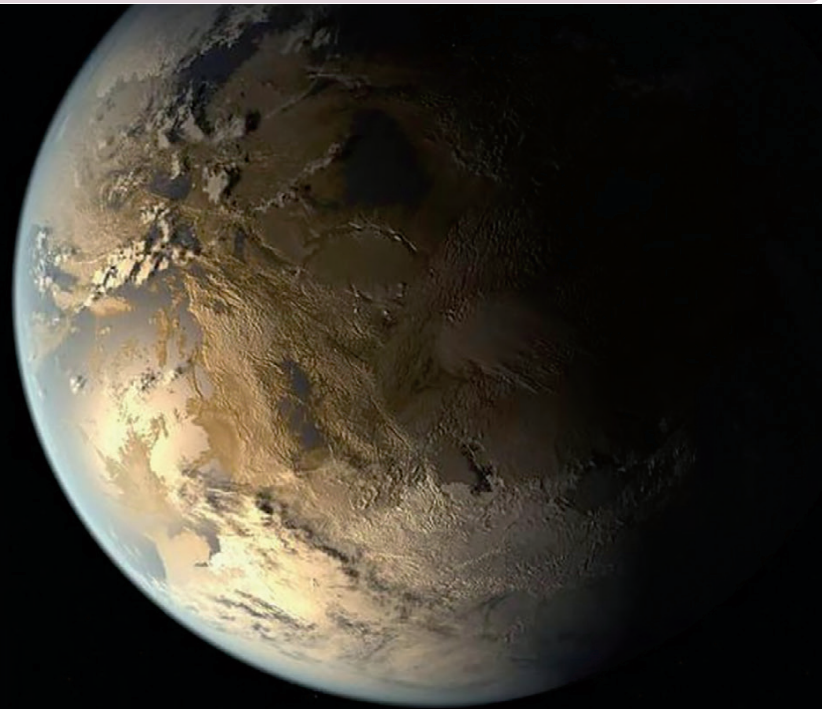
ROSETTE NEBULA BY M. J. POST

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All These Worlds: The Exoplanet Revolution

by Dr. Dan Durda, South West Research Institute on March 18 7 pm

For generations we've wondered whether we are alone in the Universe. Thanks in large part to space missions like Kepler, we now know that we live in a galaxy full of diverse planetary systems. Not only are we detecting planets around thousands of other stars, we are beginning to characterize them as well, revealing the vast stage for the play of life in the Universe.



Dr. Daniel D. Durda is with the Southwest Research Institute in Boulder. He has more than twenty-five years of experience researching asteroids, Vulcanoids, Kuiper belt comets, and interplanetary dust, including airborne astronomical observations from high-performance jet aircraft. He is an active pilot with time logged in over a dozen types of aircraft and has more than 110 minutes of time conducting experiments on NASA's zero-gravity KC-135 aircraft. He has co-authored a book, published numerous articles popularizing planetary science and human exploration of space, and has appeared in more than 70 television science documentaries. Dan is an experienced cave diver and participates in underwater cave rescue and recovery missions.

About LAS

The Longmont Astronomical Society Newsletter ISSN 2641-8886 (web) and ISSN 2641-8908 (print) is published monthly by the Longmont Astronomical Society, P. O. Box 806, Longmont, Colorado. Newsletter Editor is Vern Raben. Our website URL is <https://www.longmontastro.org>. The Longmont Astronomical Society is a 501 c(3), non-profit corporation which was established in 1987. Our main goal is to promote local amateur astronomy. This is accomplished through regular monthly meetings, star parties and public observing sessions. Regular meetings are held every month (except December) on the third Thursday.

A broad spectrum of topics are covered at the meetings and include such things as deep sky observing, planetary imaging, narrow band imaging, equipment discussions and demonstrations just to name a few. These subjects are presented by both club members as well as special guests who are professional astronomers or experts in a particular field.



The Longmont Astronomical Society is affiliated with the Astronomical League (<https://www.astroleague.org>). The Astronomical League is an umbrella organization of amateur astronomy societies in the United States.



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2021 LAS Officers and Board Members

- Stephen Garretson, President
- M. J. Post, Vice President
- Sven Schmidt, Secretary
- Bruce Lamoreaux, Treasurer

Board Members:

- Mike Hotka, Gary Garzone,
- Brian Kimball, David Elmore,
- Vern Raben

Appointed Positions 2021

- Paul Kammermeier, Webmaster
- Vern Raben, Newsletter Editor

Solar System Highlights for March 2021



Image Credit: Brian Kimball

Third Quarter: Feb. 4 at 6:31 pm

New Moon: Mar. 13 at 3:22 am

First Quarter: Mar. 21 at 8:42 am

Full Moon: Mar. 28 at 12:49 pm

Planets

Mercury

Mercury is not visible with naked eye this month.

Venus

Venus is not visible with naked eye this month.

Mars

Mars is visible high in the southwestern evening sky in Taurus. It decreases in brightness from 0.9 magnitude to 1.3 on the 31st. Its apparent size decreases from 6.4 to 5.3 arc sec across.

Jupiter

Jupiter appears low in the southeast before dawn after March 4 in constellation Capricornus. It is magnitude -2 in brightness and the disk is 34 arc sec across.

Saturn

Saturn is visible low in the southeastern morning sky in constellation Capricornus; it is magnitude +0.7 in brightness and the disk is 17 arc sec across.

Uranus

Uranus may be seen just below Mars in the evening sky in constellation Aries. It is magnitude +5.8 in brightness and its disk is 3.4 arc sec across.

Neptune

Neptune is not visible this month.

Possible Star Party Targets

Moon - March 19 at Lunation 6

- Crater Aristoteles
- Crater Eudoxus
- Theophilus: characterized by terraced walls, flat floor, and central mountain peaks; impact melt around exterior to the north
- Cyrillus, & Catharina
- Maurolycius: central peaks are so tall they are lit long before the floor

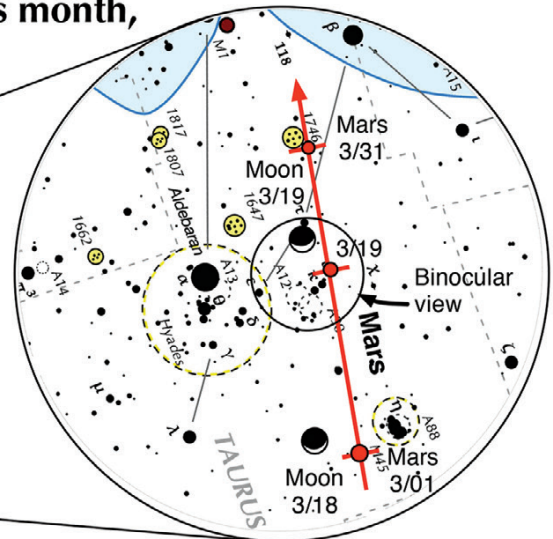
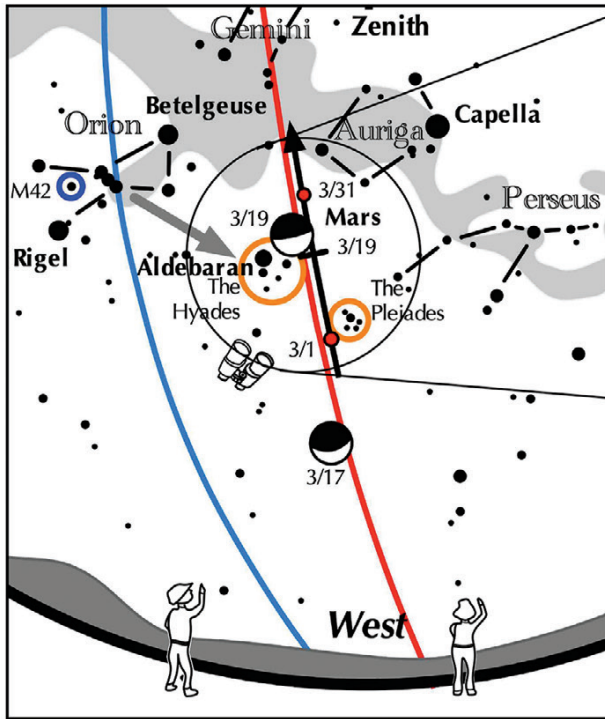
Nebula

- M42
- Horse Head
- Flame
- Rosette Nebula
- Ghost of Jupiter NGC 3242
- Crab Nebula M1
- M76 Little dumbbell

Galaxies

- Leo Triplet
- M81 and M82 Bodes Galaxy
- Pinwheel Galaxy M101
- Whale Galaxy NGC 4631
- Whirlpool Galaxy M51
- Needle Galaxy NGC 4565
- Blackeye Galaxy 64
- Sombrero Galaxy M104
- Markarians Chain

If you can observe only one celestial event this month,
view this one:



The Scene: Crescent Moon and Mars slide between the Hyades and Pleiades

In the early evening just as darkness settles from March 1 through March 20, look low in the west-northwest for a fascinating celestial interplay.

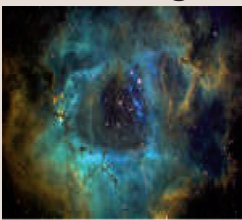
- Mars, far dimmer than it was last October, still shines noticeably in the west. For much of March, it slides between the Pleiades and Hyades star clusters.
- On March 8, Mars lies between the two clusters.
- On March 18, the crescent Moon full with earthshine hangs magically next to the Pleiades.
- On March 19, the crescent Moon joins the Red Planet by moving near the bright star Aldebaran.



West-northwest
90 minutes after sunset on
March 1 – 20

Newsletter Archives

10 Years Ago - Mar. 2011



The Rosette Nebula
by LAS member Brian Kimball
Longmont Astronomical Society Newsletter
March 2011

Open forum presentations at the Mar. 17, 2011 meeting at IHop. Vern will talk about lessons learned from the first all sky camera project and discuss a proposal for all sky camera #2.

20 Years Ago - Mar. 2001



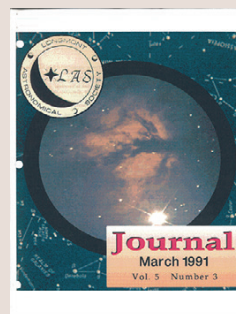
VP Gary Garzone mentioned that he met Larry Combs with NOAA Space Environment Laboratory to arrange a meeting at that facility in April.

Andrew Planck brought his astro-labes for a show and tell.

Stephanie Fawcett gave a presentation about a couple of class projects. 'She a built a spectrograph and took spectra for stars

Vega and Capella. She included handouts for those wishing to make a similar instrument. Her other project was observing short period eclipse binaries with an ST8 camera on the Sommers-Bausch 24 inch cassegrain telescope.

30 Years Ago - Mar. 1991



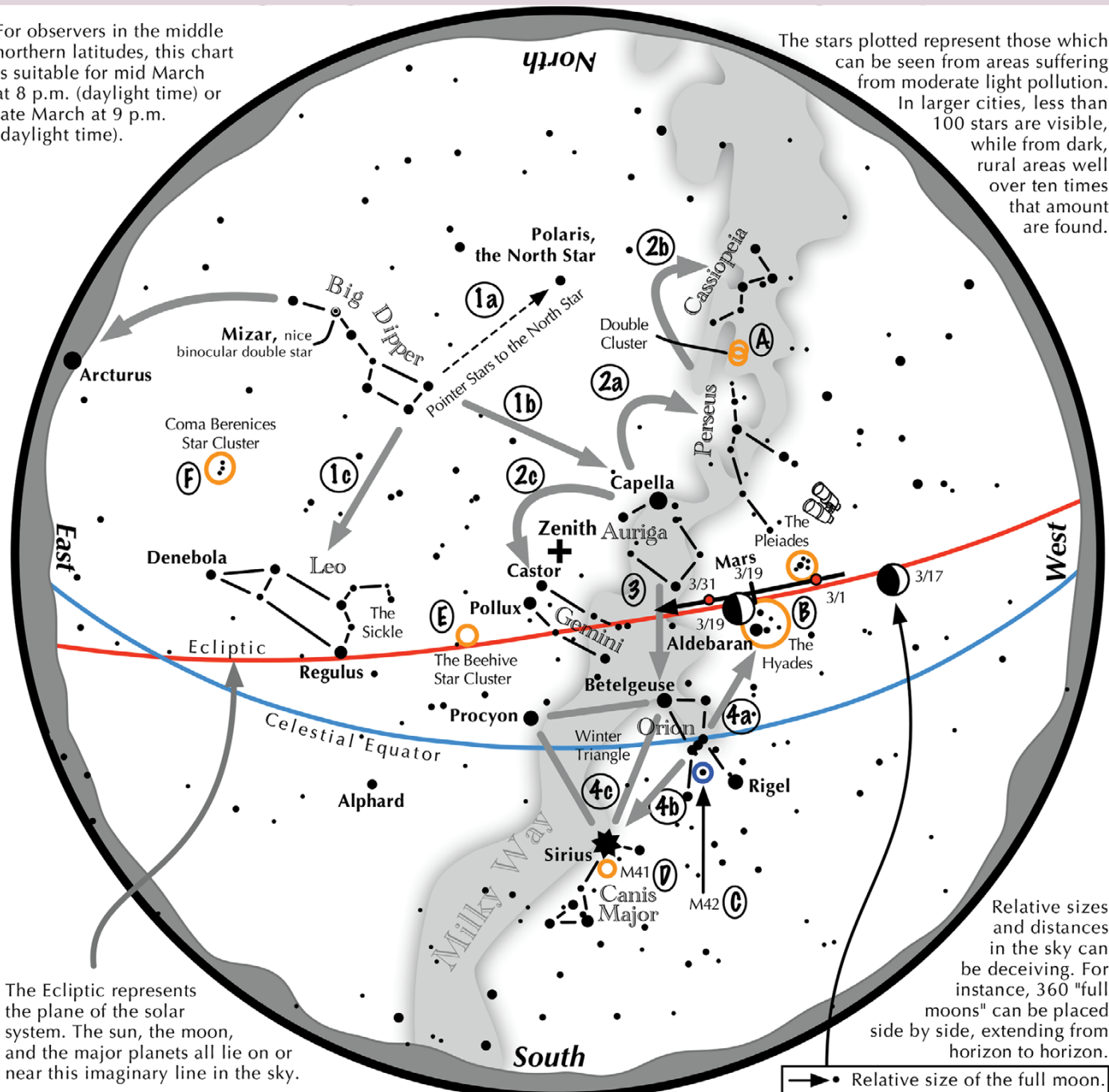
VP Steve Albers chaired the meeting with 26 members present. LAS discussed whether they wanted to continue to be members of the Astronomical League. Steve discussed an upcoming grazing occultation on Mar. 20. Dave Street noted recent solar activity and possible aurora. LAS still has 10 seats reserved for a solar

eclipse in Hawaii. Bob Ross gave a presentation on the constellation Camelopardalis. Jenifer Getson talked about lunar crater Plato. Dave Street talked about constellation Gemini. Steve Albers gave a slide show about the major astronomical events over the last 20 years.

Navigating the mid March Night Sky by John Goss

For observers in the middle northern latitudes, this chart is suitable for mid March at 8 p.m. (daylight time) or late March at 9 p.m. (daylight time).

The stars plotted represent those which can be seen from areas suffering from moderate light pollution. In larger cities, less than 100 stars are visible, while from dark, rural areas well over ten times that amount are found.



The Ecliptic represents the plane of the solar system. The sun, the moon, and the major planets all lie on or near this imaginary line in the sky.

Relative sizes and distances in the sky can be deceiving. For instance, 360 "full moons" can be placed side by side, extending from horizon to horizon.

→ • Relative size of the full moon.

Navigating the March night sky: Simply start with what you know or with what you can easily find.

- 1 Above the northeast horizon rises the Big Dipper. Draw a line from its two end bowl stars upwards to the North Star. Its top bowl stars point west to Capella in Auriga, nearly overhead. Leo reclines below the Dipper's bowl.
- 2 From Capella jump northwestward along the Milky Way to Perseus, then to the "W" of Cassiopeia. Next jump southeastward from Capella to the twin stars of Castor and Pollux in Gemini.
- 3 Directly south of Capella stands the constellation of Orion with its three Belt Stars, its bright red star Betelgeuse, and its bright blue-white star Rigel.
- 4 Use Orion's three Belt stars to point northwest to the red star Aldebaran and the Hyades star cluster, then to the Pleiades star cluster. Travel southeast from the Belt stars to the brightest star in the night sky, Sirius. It is a member of the Winter Triangle.

Binocular Highlights

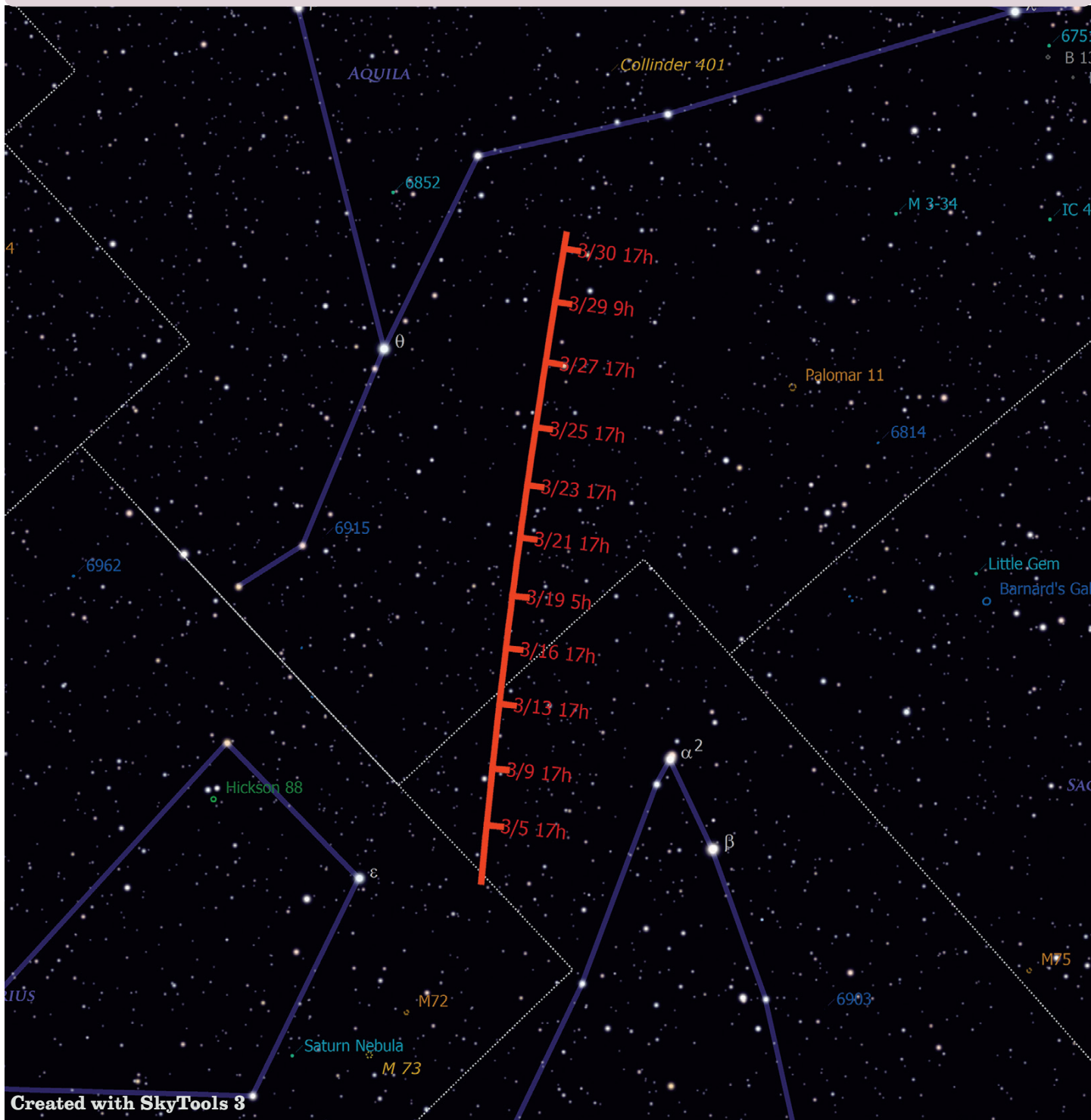
A: Between the "W" of Cassiopeia and Perseus lies the Double Cluster. **B:** Examine the stars of the Pleiades and Hyades, two naked eye star clusters. **C:** M42 in Orion is a star forming nebula. **D:** Look south of Sirius for the star cluster M41. **E:** M44, a star cluster barely visible to the naked eye, lies to the southeast of Pollux. **F:** Look high in the east for the loose star cluster of Coma Berenices.



Astronomical League www.astroleague.org/outreach; duplication is allowed and encouraged for all free distribution.

Comets in March

C/2020 R4 (ATLAS)



Created with SkyTools 3

| Date | Optimal time | RA | Dec | Brightness | Size (arc min) | Constellation |
|---------|--------------|-------------|------------|------------|----------------|---------------|
| Mar. 1 | 5:23 am | 20h39m40.3s | -11°17'33" | 7.8 | 5.1 | Capricornus |
| Mar. 8 | 5:08 am | 20h32m48.8s | -09°51'04" | 7.6 | 5.6 | Capricornus |
| Mar. 15 | 5:53 am | 20h24m06.1s | -08°02'16" | 7.5 | 6.4 | Aquila |
| Mar. 22 | 5:39 am | 20h12m18.7s | -05°37'51" | 7.3 | 7.4 | Aquila |
| Mar. 31 | 5:20 am | 19h48m38.0s | -00°58'19" | 6.9 | 9.5 | Aquila |

Minutes for Feb. 18, 2021 Meeting

by Sven Schmidt, LAS Secretary

Longmont Astronomical Society February 2021 Meeting Thursday, Feb. 18, 2021

I. Call to Order

M.J. calls the Zoom meeting to order at 7:00 PM.

Officers attending are M.J. Post (Vice President), Bruce Lamoreaux (Treasurer), Sven Schmidt (Secretary). President Stephen Garretson is excused. Board Members-at-large: Mike Hotka, Gary Garzone, Brian Kimball, Tally O'Donnell, Vern Raben.

II. New Members and Visitors

New members are Leonard Sitongia and Kevin O'Brian. No visitors.

III. Main Presentation

John W. Briggs, A Walking Tour Of Optical History – Artifacts and Anecdotes from the Astronomical Lyceum



View John's presentation on Vimeo at <https://vimeo.com/451287860/e8c9ac6db3>



The main presentation was followed by “[What's Up: February 2021](#)” Skywatching Tips from NASA.

This was followed by video of Perseverance's Mars entry, sky crane and landing in a stunning 4K animation YouTube: <https://www.youtube.com/watch?v=c9RFi-To9TFM>



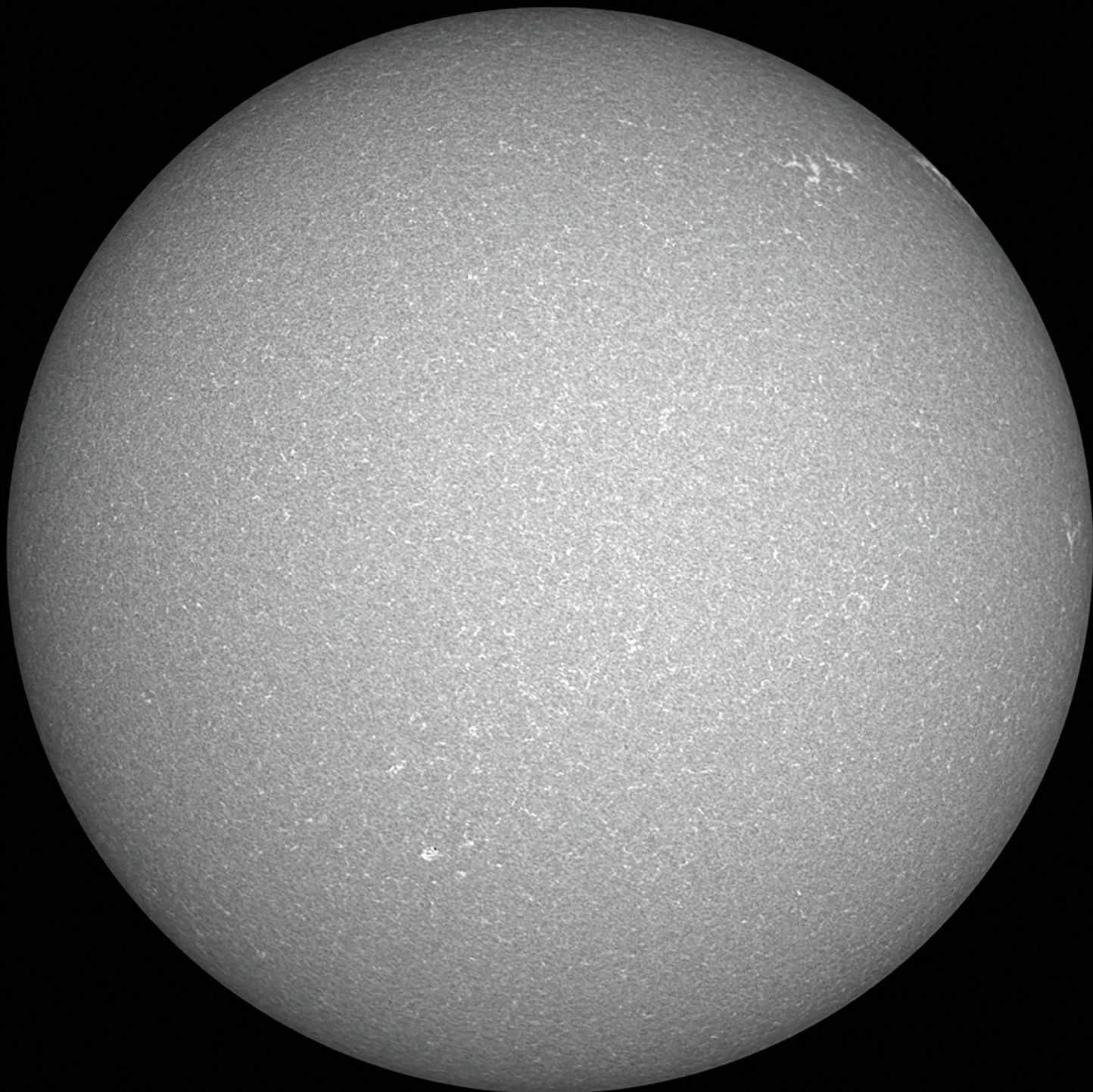
IV. Financial Report - Brice Lamoreaux

Main Checking Account - ~\$8,900
2-Year Savings Account - ~\$8,100
Telescope Fund - ~\$1,100
Petty Cash - \$50.18
Total Assets - ~\$18,100

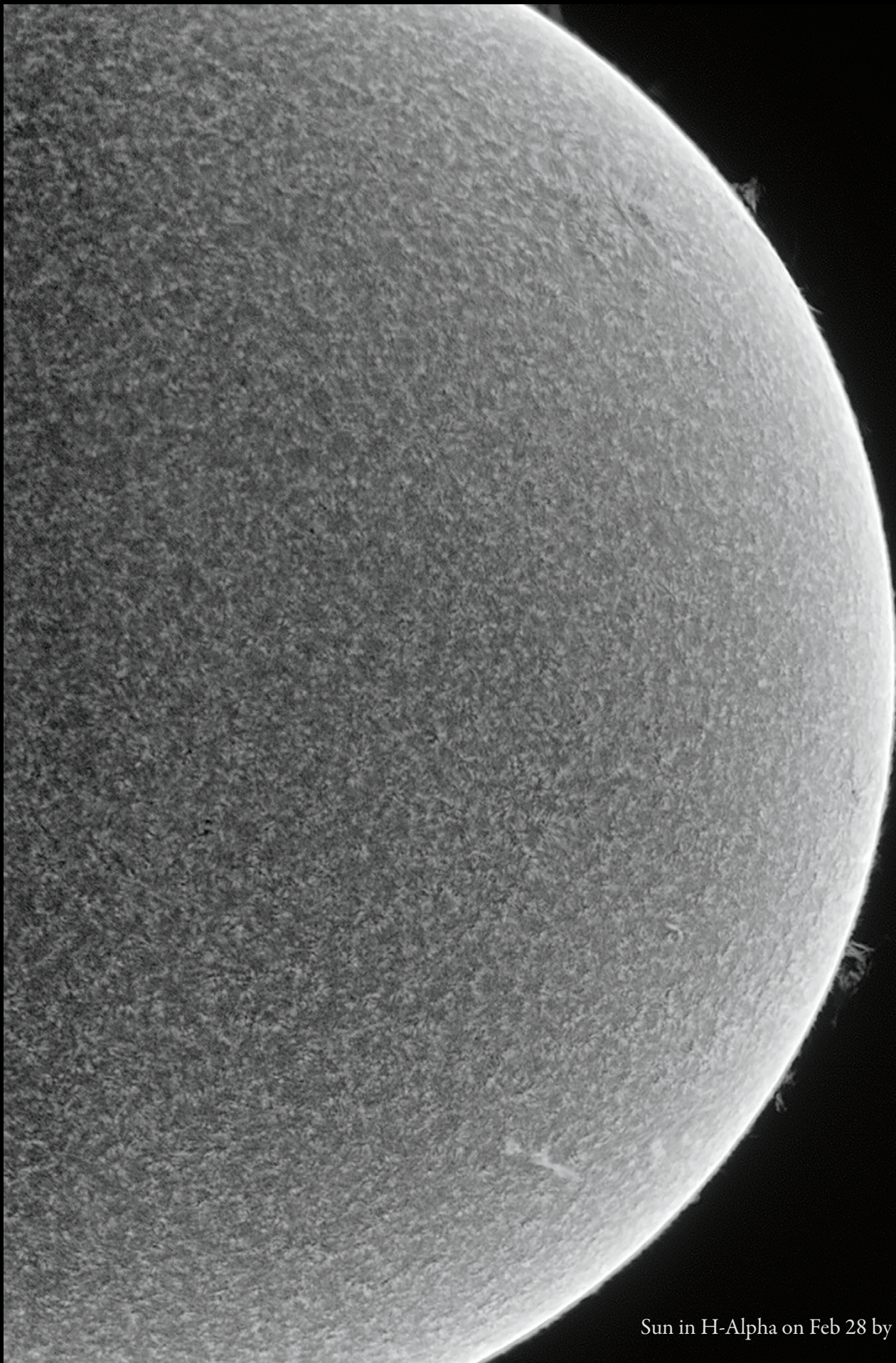
V. Old Business

A test LAS Virtual Zoom Star Party will be on Monday, Feb. 22, 7:30pm, weather permitting

Member Images from February 2021



Sun in Calcium K on Feb 28 by Brian Kimball



Sun in H-Alpha on Feb 28 by Brian Kimball



Gary Garzon - New Equipment Sky-Watcher -Star Adventurer Pro





M 63



IC434 "Horsehead Nebula" by Gary Garzone on Feb. 20

IC 434



Great Orion Nebula by Rolando Garcia on Feb. 6





Messier 51 "Whirlpool Galaxy" by Gary Garzone on Feb. 10



Messier 3 Globula Cluster by Gary Garzone on Feb. 28



Witch's Head by Jim Pollack on Feb. 6



M101 Pinwheel Galaxy by Jim Pollock



M42 "Great Orion Nebula" by Jim Pollock on Feb. 6



NGC 1931 by M. J. Post on Feb. 12



LDN 1584 by M. J. Post on Feb. 3.



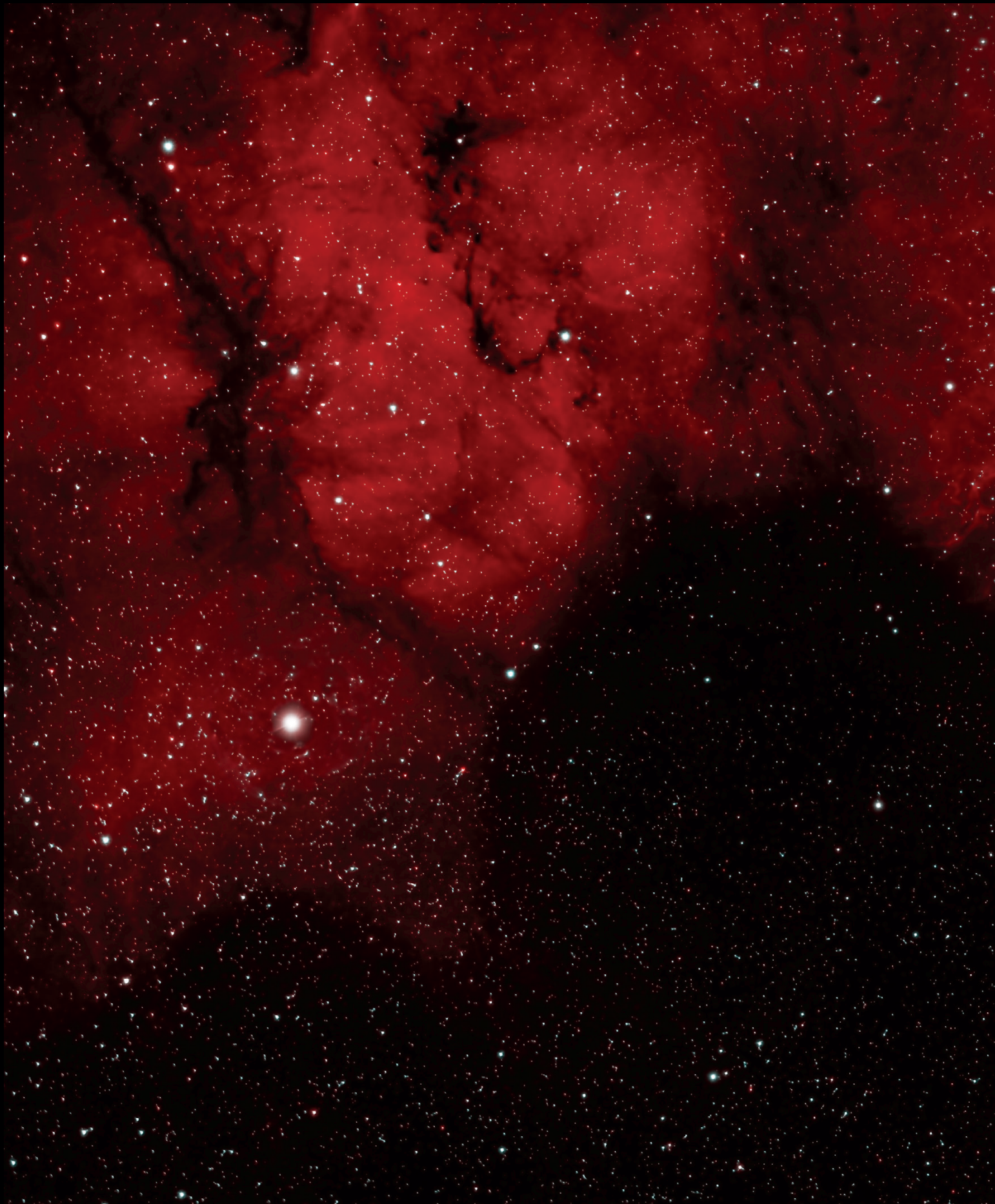
NGC 1333 by M. J. Post on Feb. 7



Purgathofer-Weinberger 1 Planetary Nebula in Lynx by M. J. Post on Feb. 9



NGC 1499 by Rolando Garcia on Feb. 6



Jellyfish Nebula by M. J. Post on Feb. 25



LONGMONT ASTRONOMICAL SOCIETY
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