Longmont Astronomical Society

February 2025

Three SHs and One NGC
by M. J. Post

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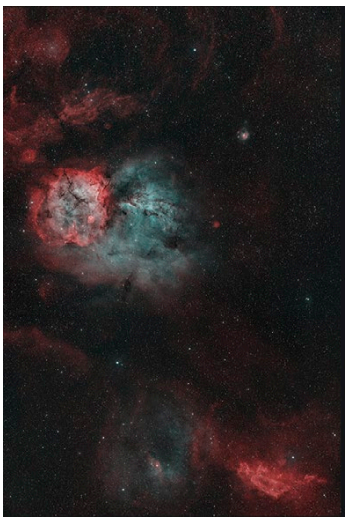
Next LAS Meeting Thursday February 20

The next Longmont Astronomical Society's club meeting will be on Thursday, February 20, 2025, starting at 7:00 pm.

Longtime LAS member, Mike Hotka, will give a presentation about a recent Astronomical League Observing Program he just completed. Mike will talk about some of the activities he performed while completing the Astronomy Before The Telescope Observing Program. More information about what is behind this talk can be found on the League's website at: https://www.astroleague.org/astronomy-before-the-telescope-observing-certificate/

The meeting will be at the First Evangelical Lutheran Church, 803 Third Avenue, Longmont, CO 80501. If you cannot attend the in-person meeting, it will be available on Zoom. Mike will present in person. Video of the meeting will be available on the LAS member portal website https://members.longmontastro.org a couple days after the presentation.



Front Cover "Three SH's and One NGC" by M. J. Post
Amongst the dusty mess in Monoceres, several blue giants cast their bright blue light, resulting in van den Bergh's reflection nebula #16. From DSNM, three hours exposure through CDK14 scope and OSC camera.

Back Cover: IC 348 by Martin Butley

Compare my recent image taken at Starry Meadows (RMSS) with an old image of IC 348 taken from my backyard (see page 14).

Dark skies make a difference.

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 and the webmaster is Mike Hotka. The Longmont Astronomical Society is a 501 c(3), non-profit corporation which was established in 1987.

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.

Contents

Notes for the LAS Meeting on Jan 16 by Vern Raben

Annual elections were held at the LAS Meeting on January 16. The following officers and board members were elected unanimously by voice vote. The appointed positions for 2025 were announced as well.

LAS Officers for 2025
President: Vern Raben
Vice President: Leah Shipley
Secretary: Eileen Hall-McKim
Treasurer: Bruce Lamoreux

LAS Board of Directors for 2025
David Elmore, Gary Garzone, Mike Hotka, and Tally O'Donnell

Appointed Positions for 2025
Webmaster: Mike Hotka
Library Telescope Coord: Bruce Lamoreaux
Pubic Outreach Coord.: Aref Nammari
Newsletter: Vern Raben and Eileen Hall-McKim

Planets in February

Mercury

Mercury is not visible this month.

Venus

Venus is visible in the west after sunset. It is magnitude -4.6 in apparent brightness and increases from 33 arc sec across on the 1st to 50 arc sec across on the 28th.

Mars

Mars is visible in the evening sky in constellation Gemini. It dims from -1.0 to -0.3 magnitude in apparent brightness and decreases in apparent size from 14 arc sec across to 11 arc sec across this month.

Jupiter

Jupiter is in constellation Taurus in the evening sky. It decreases in apparent size from 43 to 39 arc sec across. Its brightness dims from -2.5 to -2.4 magnitude. The following are good times to view the Great Red Spot at mid transit this month:

Feb 2 at 1:13 am alt 22°
Feb 2 at 9:04 pm alt 66°
Feb 4 at 10:43 pm alt 48°
Feb 5 at 6:43 pm alt 69°
Feb 7 at 12:22 am alt 28°
Feb 7 at 8:13 pm alt 70°
Feb 9 at 9:52 pm alt 54°
Feb 10 at 5:44 pm alt 65°
Feb 11 at 1:35 am alt 20°
Feb 11 at 11:31 pm alt 34°
Feb 12 at 7:22 pm alt 73°
Feb 14 at 9:01 pm alt 60°
Feb 16 at 10:40 pm alt 40°
Feb 17 at 6:32 pm alt 73°
Feb 19 at 8:11 pm alt 65°
Feb 21 at 9:50 pm alt 46°
Feb 23 at 11:29 pm alt 26°
Feb 24 at 7:20 pm alt 69°
Feb 26 at 8:59 pm alt 52°
Feb 28 at 10:38 pm alt 32°

Saturn

Saturn is visible in WSW after sunset until about mid month when it will disappear into the bright evening twilight. It is magnitude 1.1 in apparent brightness and the disk is 16 arc sec across.

Uranus

Uranus is visible in the evening eastern sky in constellation Aries; It is magnitude 5.7 in brightness and the disk is 3.6 arc sec across.

Neptune

Neptune is visible low in the WSW evening eastern sky in constellation Pisces; It is magnitude 7.9 in brightness and the disk is 2.2 arc sec across.

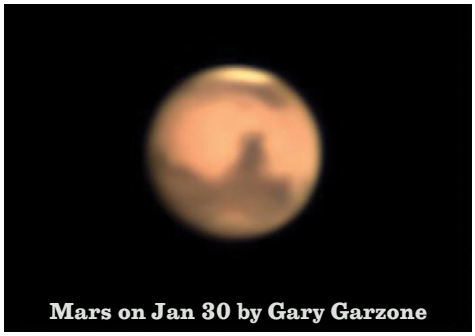
Lunar Phases in February

- First Quarter Feb 5 at 1:03 am
- Full Moon Feb 12 at 6:55 am
- Third Quarter Moon on Feb 20 at 10:34 am
- New Moon on Feb 27 at 5:46 am

Showpiece Objects in February

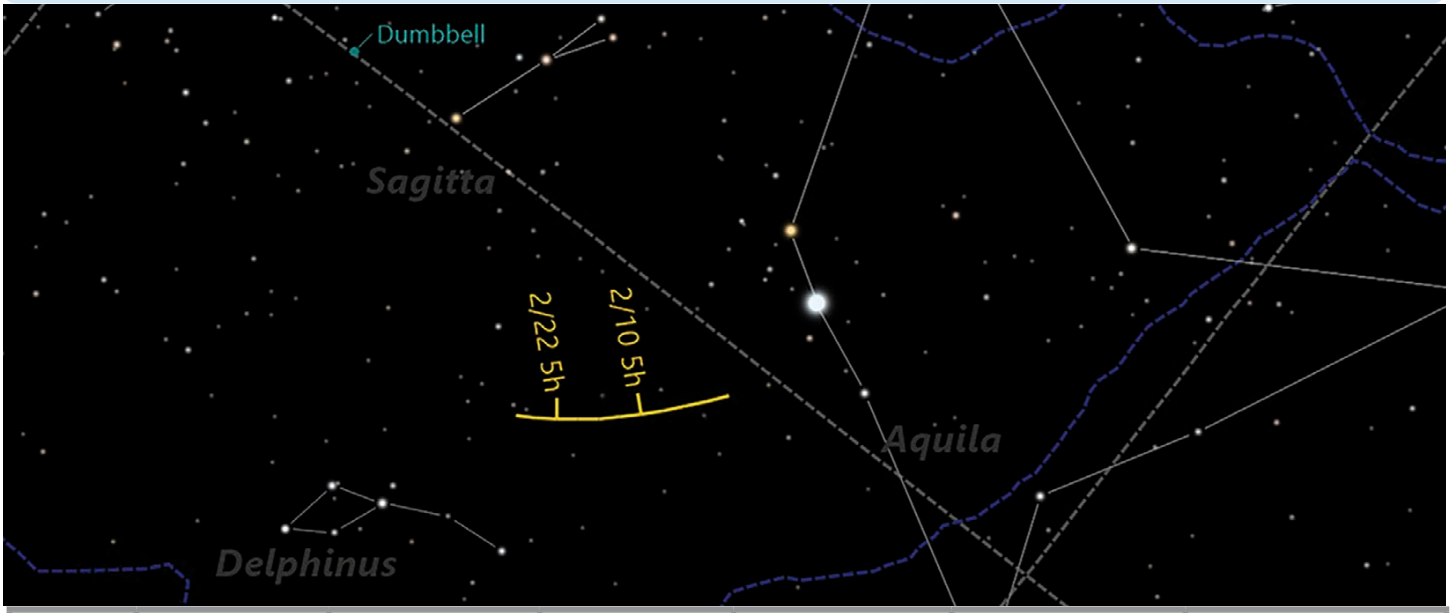
- M31, Andromeda Galaxy in And, mag 4.3
- M81, Bodes Galaxy in UMa mag 7.8
- NGC 281, Pacman Nebula in Cas, mag 7.4
- NGC 7662, Blue Snowball in And, mag 8.6
- NGC 7635, Bubble Nebula in Cas. mag 11
- NGC 1499, California Nebula in Per mag 5
- NGC 2264, Cone Nebula in Mon
- M1, Crab Nebula in Tau mag 8.4
- NGC 2024, Flame Nebula in Ori mag 10
- IC405, Flaming Star Nebula in Aur mag 10
- B 33, Horsehead Nebula in Ori mag 16.5
- NGC 2244, NGC 2239 in Mono mag 4.7
- M101, Pinwheel Galaxy in UMa mag 8.4
- NGC 2237, Rosette Nebula in Mon mag 9
- NGC 1909, Witch Head Nebula in Eri mag 13
- NGC 1435, Cleopatra's Eye in Eri mag 9.4
- IC 418, Spirograph Nebula in Lep mag 9.6
- IC 434, LBN 954 HII region in Ori mag 11
- NGC 891, Outer Limits galaxy in And mag 10.9
- NGC 6946, spiral galaxy in Cep mag 9.8

Jupiter on Jan 30 by Gary Garzone



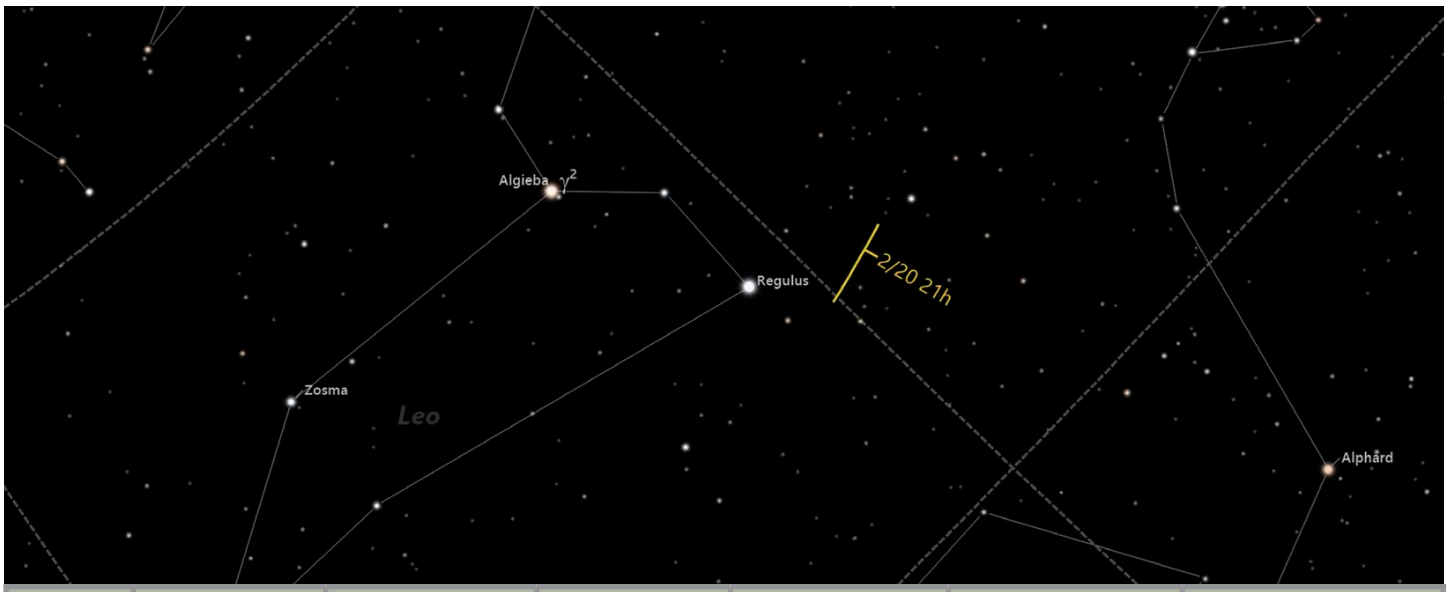
Mars on Jan 30 by Gary Garzone

Comet C/2023 A3 (Tsuchinshan-ATLAS)

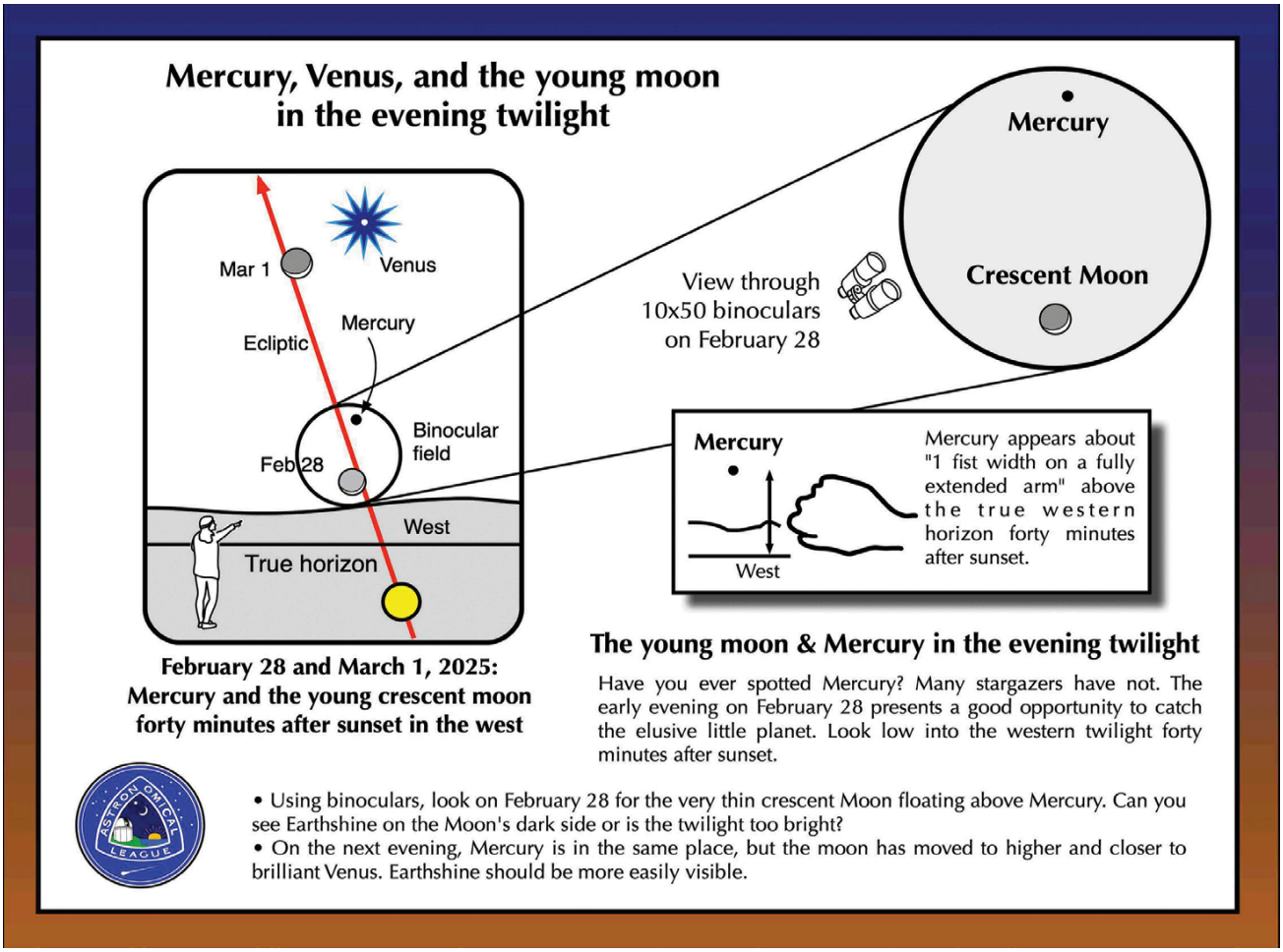


Date	Optimal time	RA	Dec	Constellation	Magnitude	Size (arc min)
Feb 1	5:47 am	20h08m20.9s	+09°46'17"	Aquila	11.2	1.4
Feb 8	5:37 am	20h12m39.2s	+10°40'30"	Aquila	11.4	1.4
Feb 15	5:28 am	20h16m29.3s	+11°38'09"	Delphinus	11.5	1.4
Feb 22	5:17 am	20h19m48.9s	+12°39'07"	Delphinus	11.6	1.3
Feb 28	5:08 am	20h22m13.7s	+13°33'53"	Delphinus	11.7	1.3

Comet 29P/Schwassmann-Wachmann



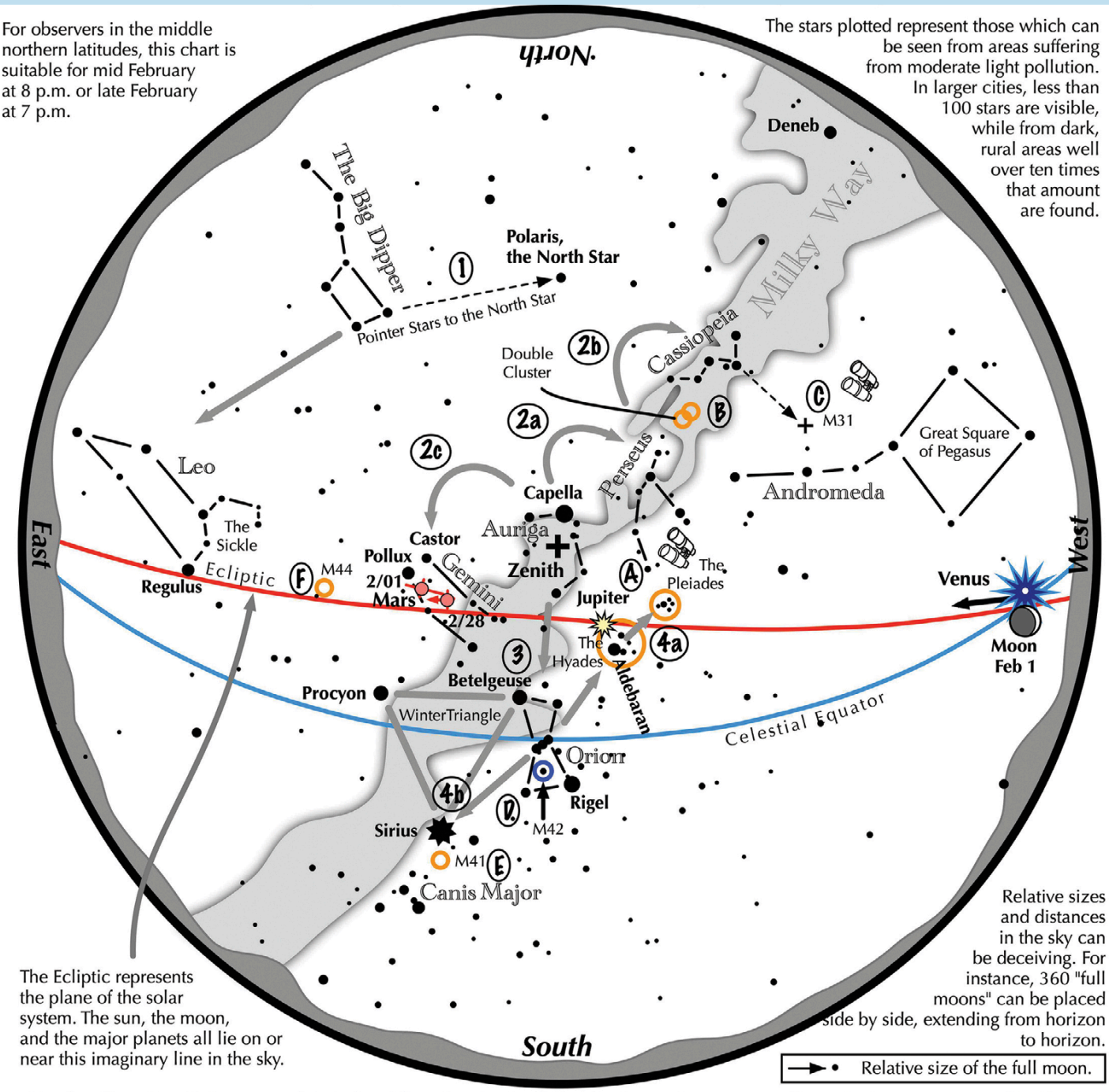
Date	Optimal time	RA	Dec	Constellation	Magnitude	Size (arc min)
Feb 1	1:11 am	10h01m47.0s	+09°10'50"	Leo	11.4	4.1
Feb 7	3:54 am	09h59m03.8s	+09°20'25"	Leo	11.4	4.2
Feb 15	09:01 pm	09h55m32.0s	+09°33'25	Leo	11.4	4.2
Feb 22	11:39 pm	09h52m16.7s	+09°45'49"	Leo	11.4	4.2
Feb 28	11:12 pm	09h49m37.4s	+09°56'08"	Leo	11.4	4.1



Navigating the mid-February Night Sky by John Goss

For observers in the middle northern latitudes, this chart is suitable for mid February at 8 p.m. or late February at 7 p.m.

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 February night sky: Simply start with what you know or with what you can easily find.

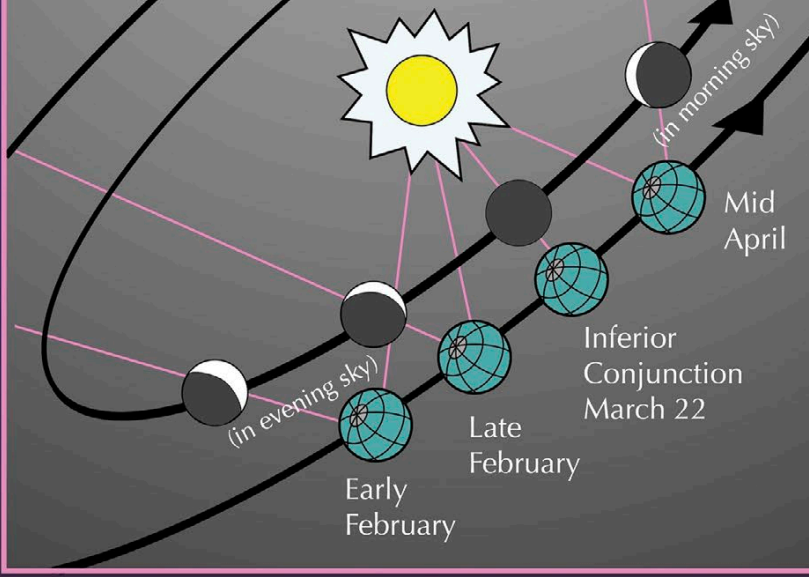
1. Above the northeast horizon rises the Big Dipper. Draw a line from its two end bowl stars upwards to the North Star.
2. Face south. Overhead twinkles the bright star Capella in Auriga. Jump northwestward along the Milky Way first to Perseus, then to the "W" of Cassiopeia. Next jump southeastward from 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, a member of the Winter Triangle.

Binocular Highlights

A: Examine the stars of two naked eye star clusters, the Pleiades and the Hyades.
B: Between the "W" of Cassiopeia and Perseus lies the Double Cluster.
C: The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval.
D: M42 in Orion is a star forming nebula. **E:** Look south of Sirius for the star cluster M41. **F:** M44, a star cluster barely visible to the naked eye, lies southeast of Pollux.

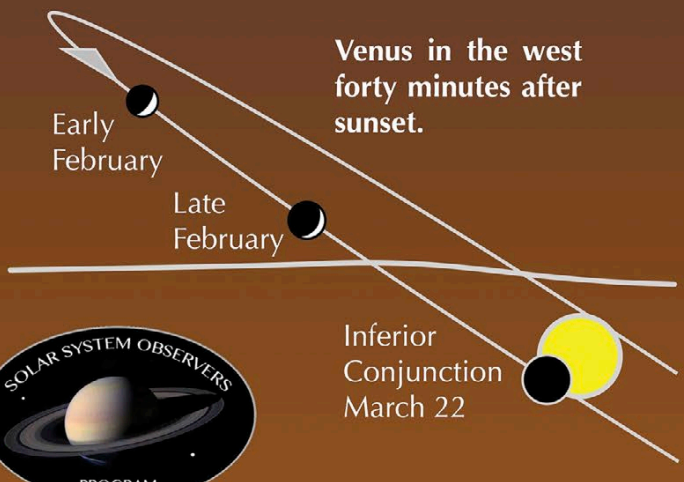
Astronomical League *www.astroleague.org/outreach; duplication is allowed and encouraged for all free distribution.*

Now is the time to observe the crescent of Venus



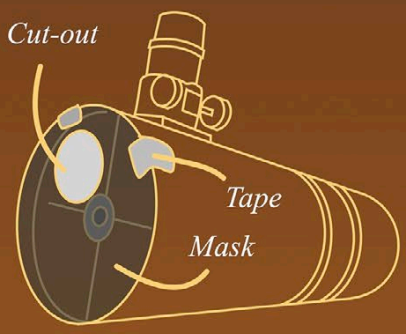
February and early March are great times to observe the planet through binoculars and a telescope

The view through a telescope changes quickly in just six weeks.
As the Venus - Earth gap narrows, Venus becomes a thinner, but wider crescent.



Venus in the west forty minutes after sunset.

If you use a reflector or SCT, placing an off-centered cut-out mask over the optical tube entrance helps give a sharper view.



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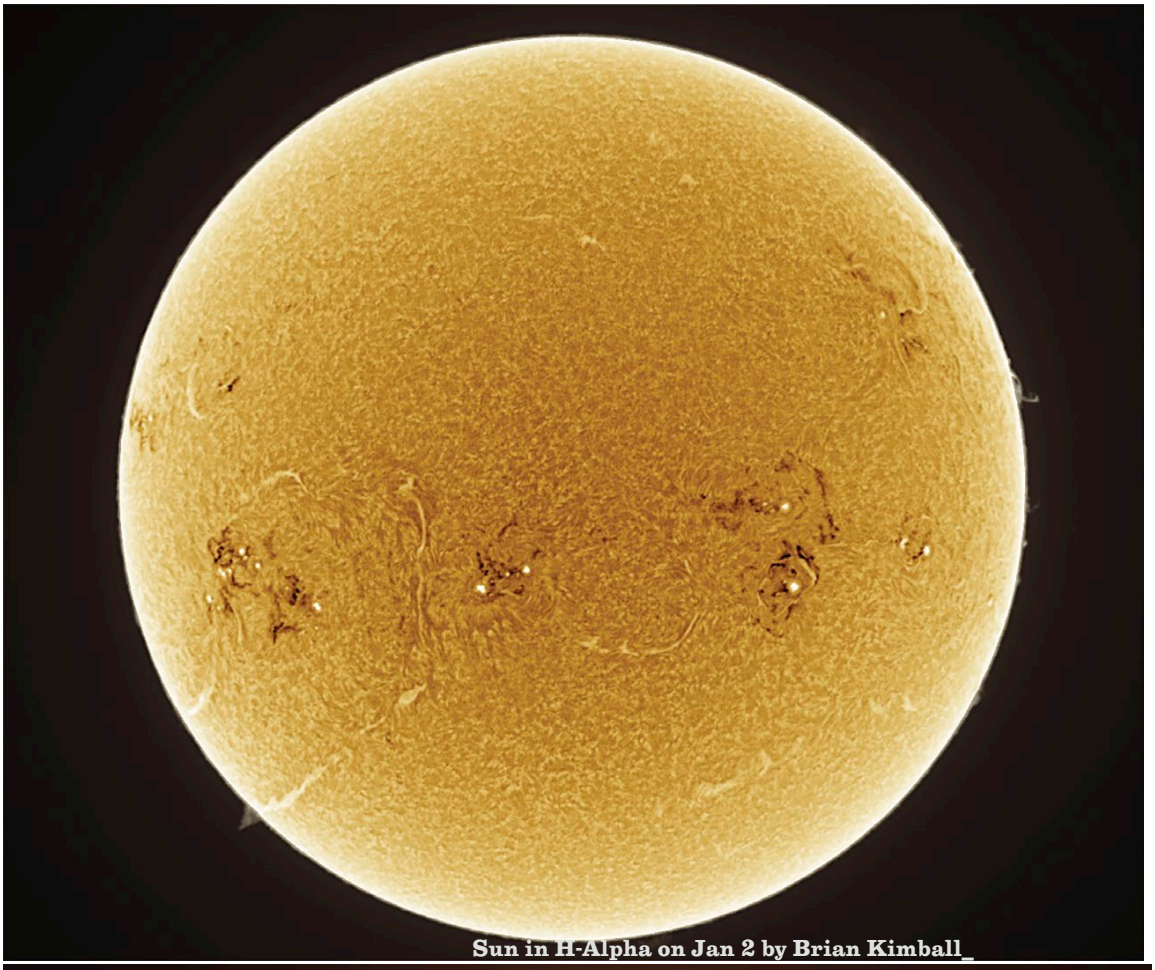
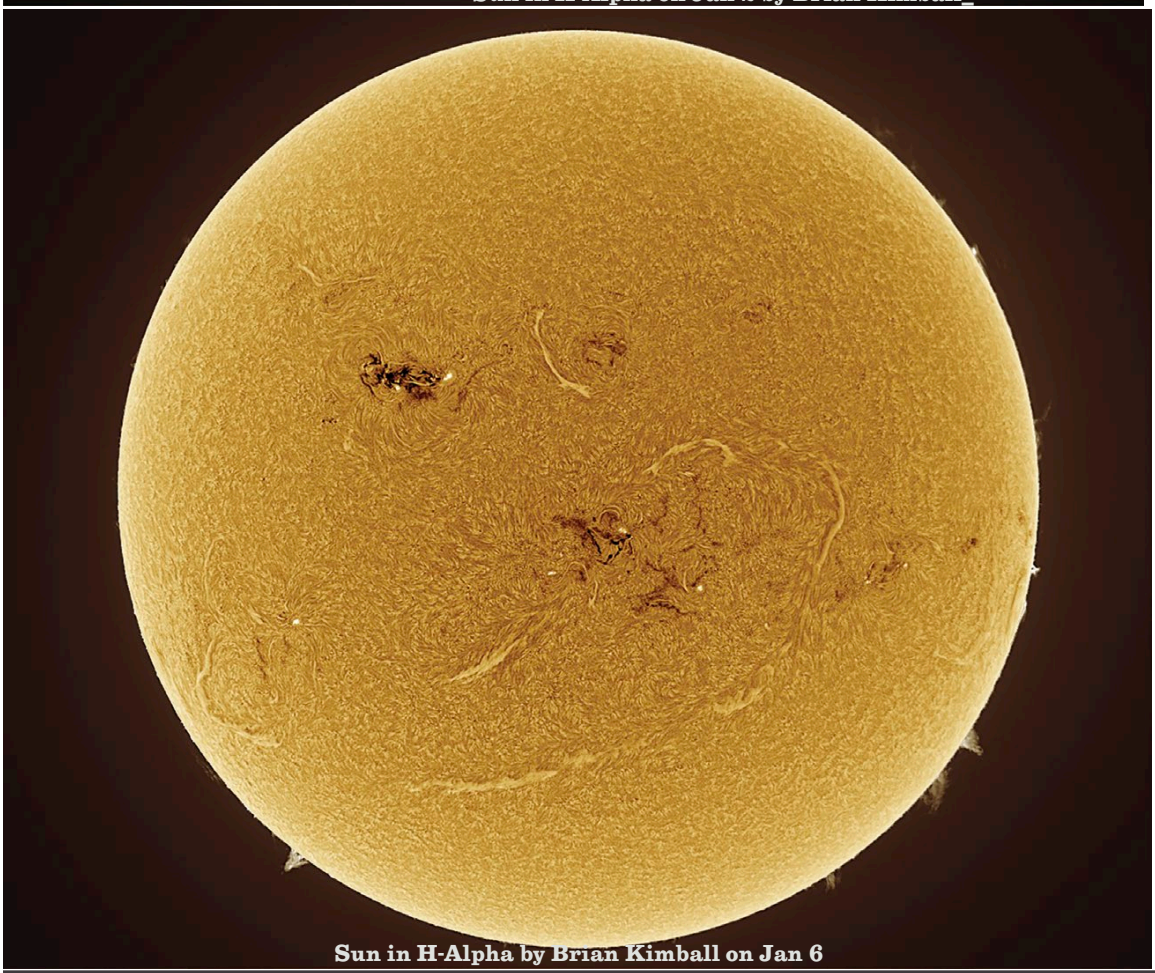
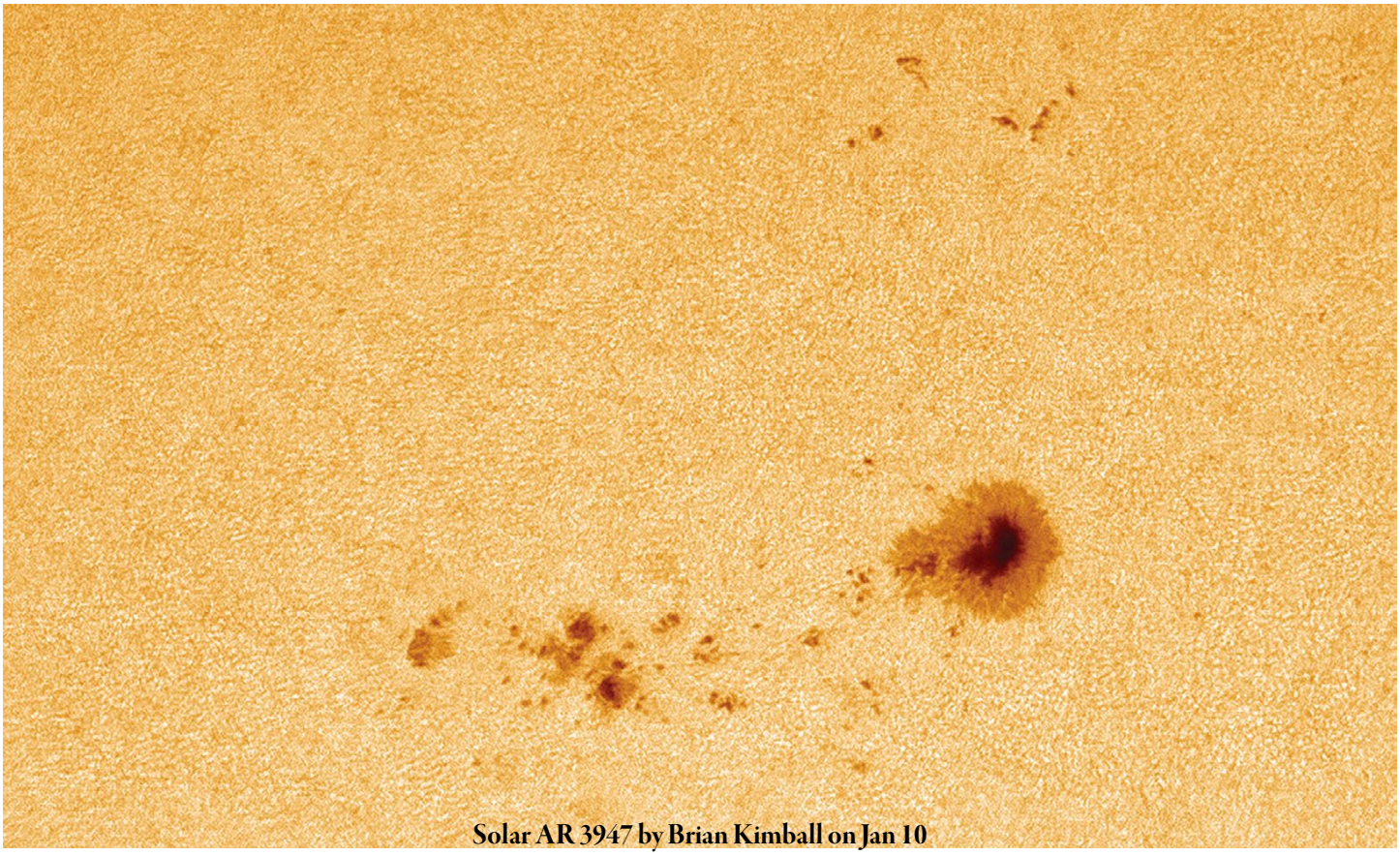


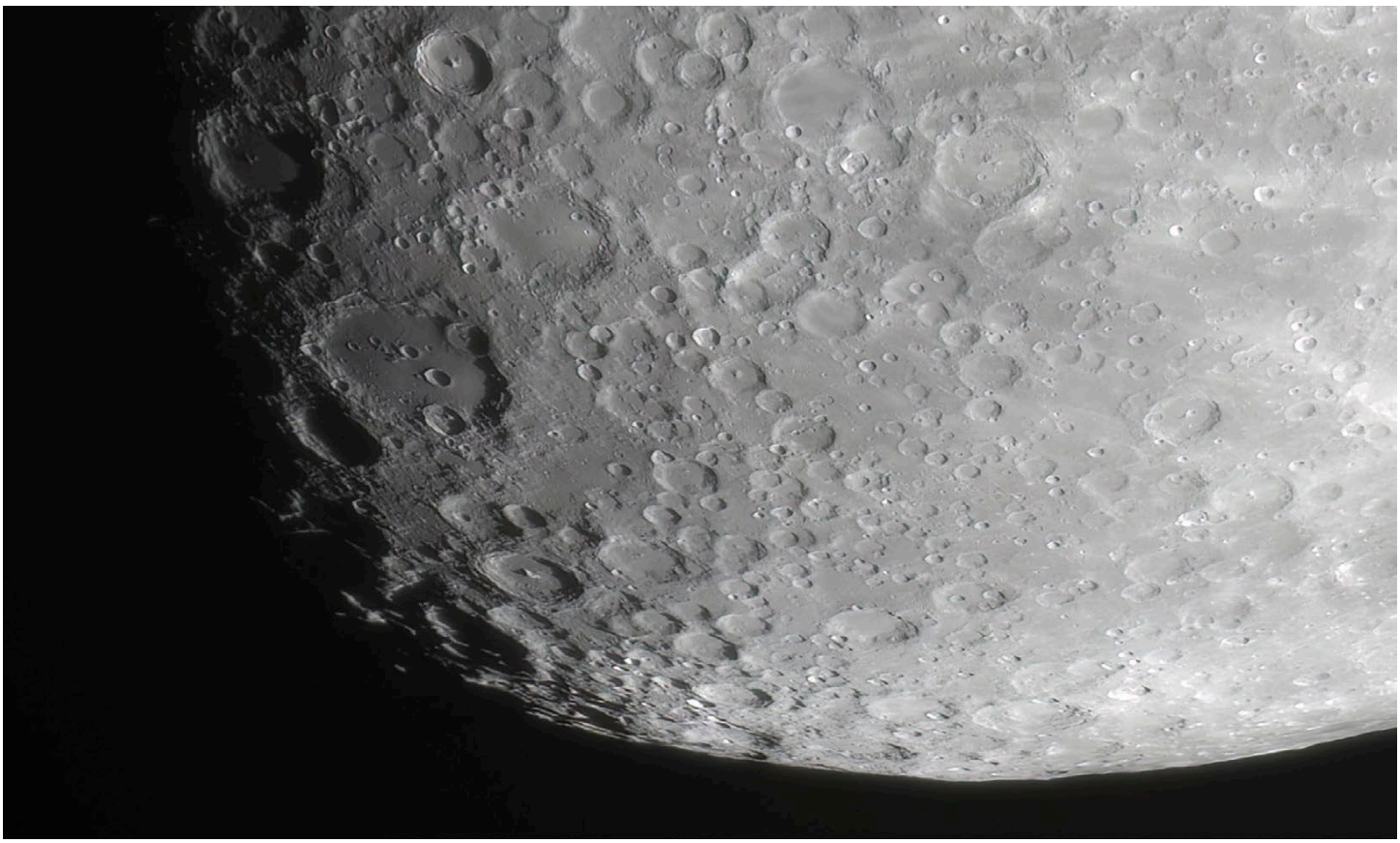
Sun in H-Alpha on Jan 2 by Brian Kimball_



Sun in H-Alpha by Brian Kimball on Jan 6



Solar AR 3947 by Brian Kimball on Jan 10



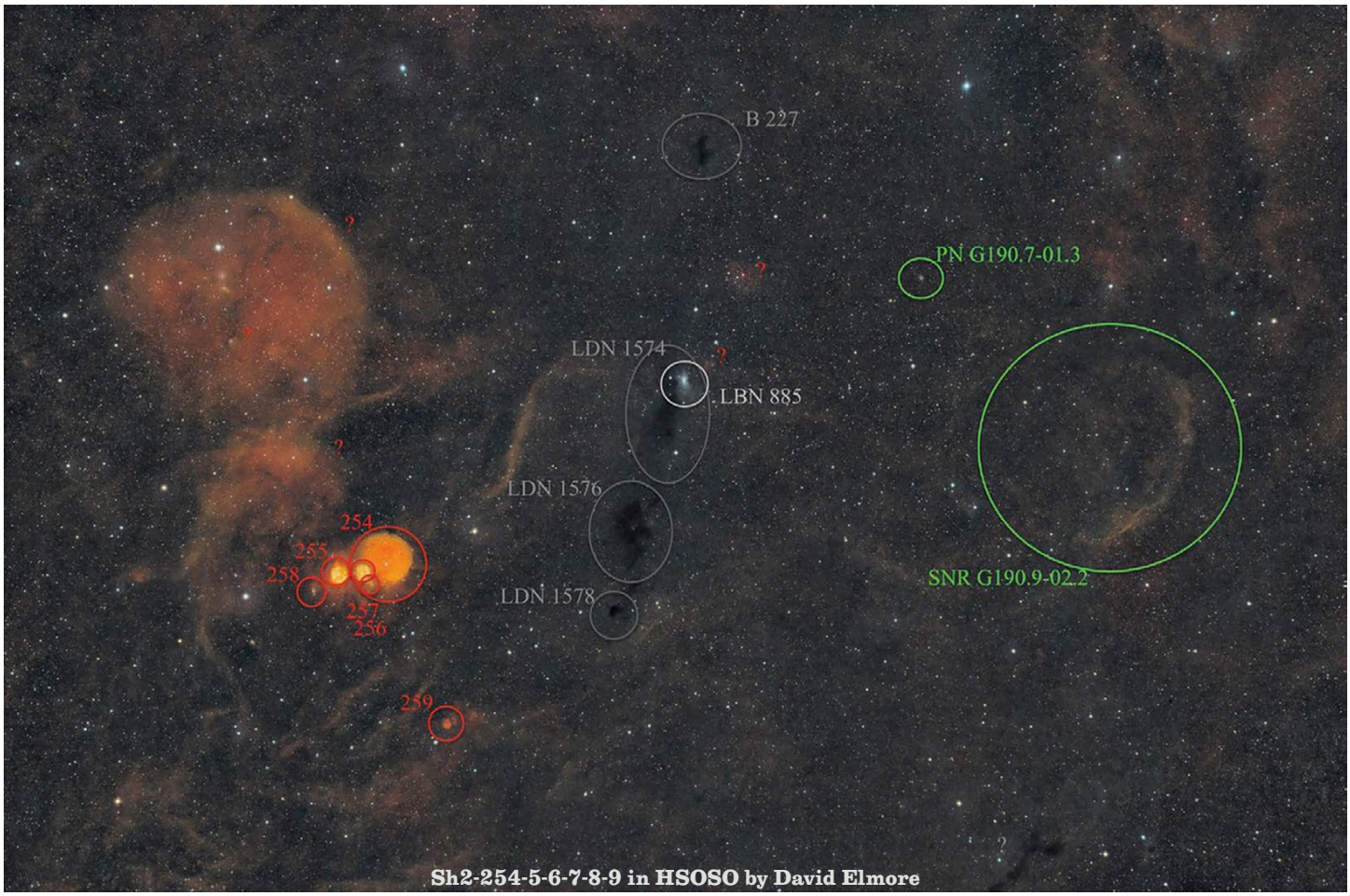
Lunar crater Clavius on Jan 10 by Brian Kimball

SH 2-24809 in HSOSO by David Elmore on Jan 2

Sh2-248 is a supernova remnant from a star that exploded leaving behind a neutron star. Called the Jellyfish Nebula, this object is 5000 light years distant and the supernova was first seen on Earth 30,000 years ago. It left behind an Earth-sized neutron star. At the other end of stellar lives, Sh2-249 is a region associated with new star formation.

This is a narrowband rendering with Hydrogen-alpha red, Oxygen III cyan, and Sulfur II yellow. The Jellyfish Nebula is one region of the sky that shines brightly in Sulfur II often excited into emission by shock fronts as can be caused by a supernova explosion.

7 hours 40 minutes total exposure. Borg107FL refractor. ASI6200MM camera. Chroma 3nm filters. From my little remotely controlled observatory at Dark Sky New Mexico.



This region in the Milky Way located near the tip of Orion's upraised club has a number of interesting objects. My photographic objective was to add Sharpless 2-259 to my collection with the Borg107FL refractor but it is always tempting to center the field to capture a number of other nebulae.

Red circles indicate Sharpless catalogue entries. All are about 7200 light years distant except for 259, which is 27000. All these objects are star forming regions containing at least one hot star emitting UV radiation that strips electrons off Hydrogen atoms and result in mostly red light being emitted as electrons are re-captured and descend through energy states including the transition emitting H-alpha.

Then there is a supernova remnant and planetary nebula in green.
Several dark clouds, Barnard 227 and Beverly Lynds Dark Nebulae 1574, 1576 and 1578.

Lynds Bright Nebula 885 is blueish. This bright nebula looks like it should be an entry in the van den Bergh reflection nebula catalogue.

Question marks indicate objects that are not identified in Stellarium though some research would probably come up with some identifier. One is in the middle of the unidentified Hydrogen emission region. It looks like a young star plowing through the interstellar medium creating a shock front.

This is narrowband with red as Hydrogen alpha+Sulfur II, green Oxygen III + Sulfur II, and blue as Oxygen III. From my little observatory at Dark Sky New Mexico under dubious conditions of high winds and cirrus drifting past all night. 5 hours 20 minutes of sort of usable exposures the night of 25/26 January 2025.

NGC 2244, Rosette Nebula by Jim Pollock on Jan 18

IC 348 on Jan 4 by Martin Butley (from Longmont)

IC 348 by Martin Butley Jan 4 (from RMSS)

Here is an old image of IC 348 taken from my backyard compared with my recent image taken at Starry Meadows (RMSS)

Dark skies make a difference.

NGC 1097 in HRGB by MJ Post on Jan 18

Discovered by William Herschel in 1790, this barred spiral has been studied extensively. Its central super massive black hole (140 solar masses) is consuming material at a prodigious rate, causing this galaxy to be classified as Seyfert. We can actually see the bright central rings of star formation that is 5000 l.y. in diameter, spawned by the influx of material into the black hole. Caldwell put this galaxy on his list as #67. It is 45 million light years distant.

Also of interest is the dwarf companion galaxy NGC 1097a that is causing disruptions in one of the spiral arms, and tidal tails. I wish we could look at an edge-on view to see if those disruptions are out of plane, as in the other galaxy image I posted today (NGC 1532).

CDK14 scope at DSNM. Three hours time on target through lots of atmosphere (DEC ~ -30 degrees), luminance filter, ASI 6200MC camera. FOV about 30 x 20 arc min.

NGC 1532 in HRGB by MJ Post on Jan 18

I like this example of a larger galaxy (NGC 1532) interacting with its smaller dwarf companion (NGC 1531). Because of the nearly edge-on orientation of 1532, we see almost in 3-D how the dwarf is distorting a spiral arm of its larger neighbor. NGC 1532 is almost identical in size to our Milky Way, and it is 50 M.l.y. distant in the constellation of Eridanus. It was discovered in 1826 by James Dunlop and is also known as Haley's Coronet.

Three recent supernovae have occurred here - two in 2016 (Type 1c and Type II) and one in 1981 (Type unknown).

It took two months to gather enough data for this image because it lies at -32 degrees DEC. That means it only pops above the walls of our DSNM roll-off observatory for about 45 minutes each night, and total atmosphere loading was 2.1 - 2.4. Three hours total exposure with CDK 14 scope through luminance filter onto ASI 6200MC camera. I did add ~ 1 hour of H-alpha data to the RGB image, but without noticeable effect. FOV is about 32 x 22 arc min.

NGC 1042 by MJ Post on Jan 20

The most photogenic galaxy here is the face-on spiral NGC 1042, but the group is named after the elliptical NGC 1052. Top center is NGC 1047 while top right is NGC 1035. It is thought that they all have been interacting with one another over the past 1 billion years. Distances are about 55-70 M.l.y. from us.

The elliptical has a much-studied super-massive black hole at its center - 154 million solar masses. Notably, it is rotating very rapidly and displays a strong magnetic field (2.6 Tesla), which should interest Marty (he owns a few).

William Herschel discovered NGC 1052 in 1785 but somehow he missed its neighbor NGC 1042. That spiral was discovered by American astronomer Lewis Swift one hundred years later, in 1885. If you look closely, there are many other background galaxies.

NGC 1055 and M77 two panel mosaic on Jan 24

M77 by MJ Post on Jan 24

Horsehead and Flame Nebula by Jim Pollock on Jan 17

Comet C/2024 G3 ATLAS by Paul Robinson on Jan 14

Jan 13 was comet ATLAS's perihelion, reaching magnitude (estimated) around -3 or so. I had to try for it in daylight.

At work on the north side of our 2-story building I had the perfect sun shield allowing me to set up my 25x100 binos and Nikon D750 with 200 mm lens.

Try as I did, I could not find it in the binos, or see it in my camera. So I took many shots just upper left of sun, hoping for the best.

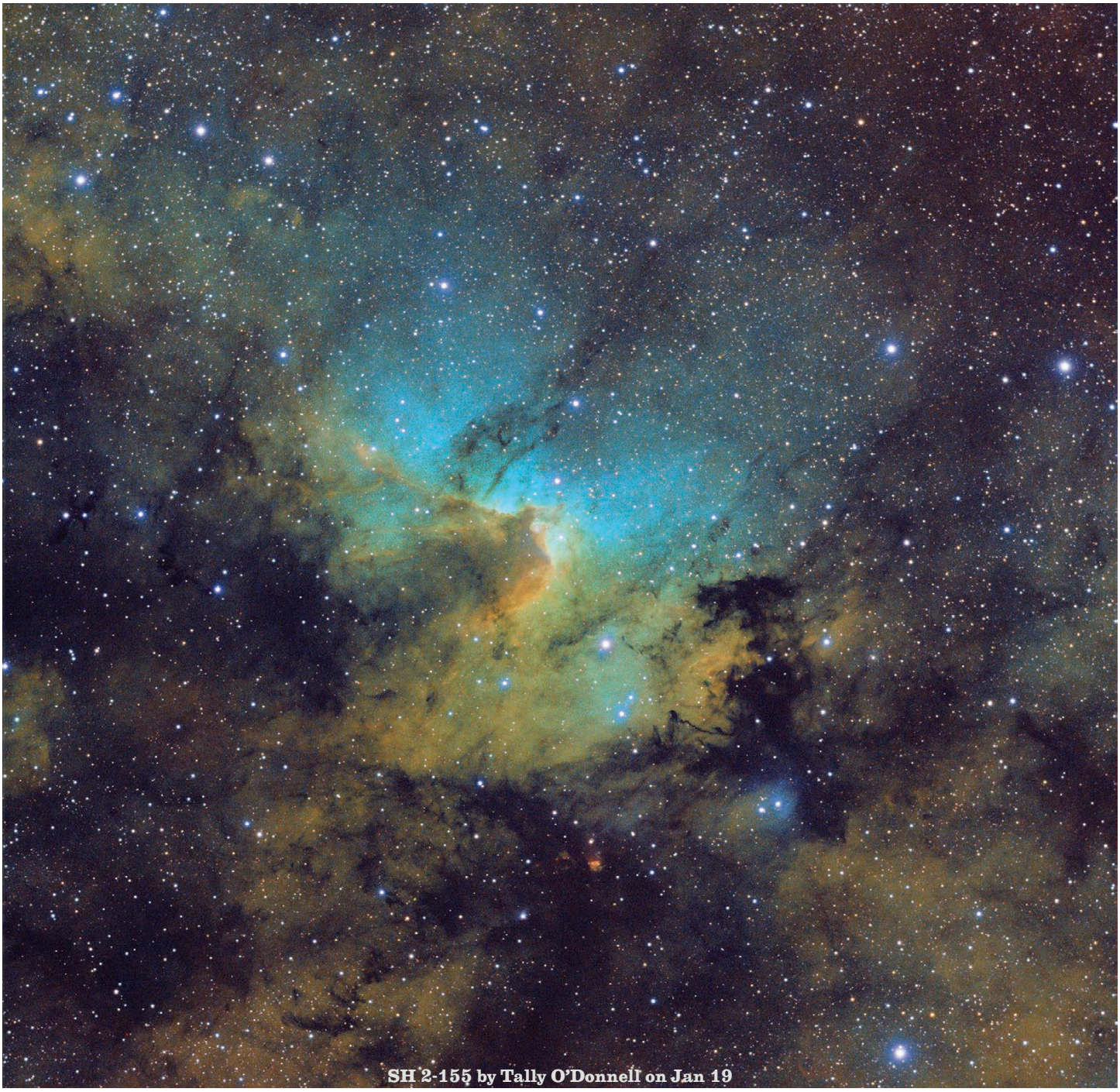
At home I did some enhancing of photos and, finally, there it was, in repeated frames!

The pic on the left (10:46 am!) is a stack of 8 frames (1/1000s, ISO 100 (never thought I'd use such settings on a comet!)) stacked manually in CCDStack 2.
Then color neutralized and auto field flattened and contrast enhanced.

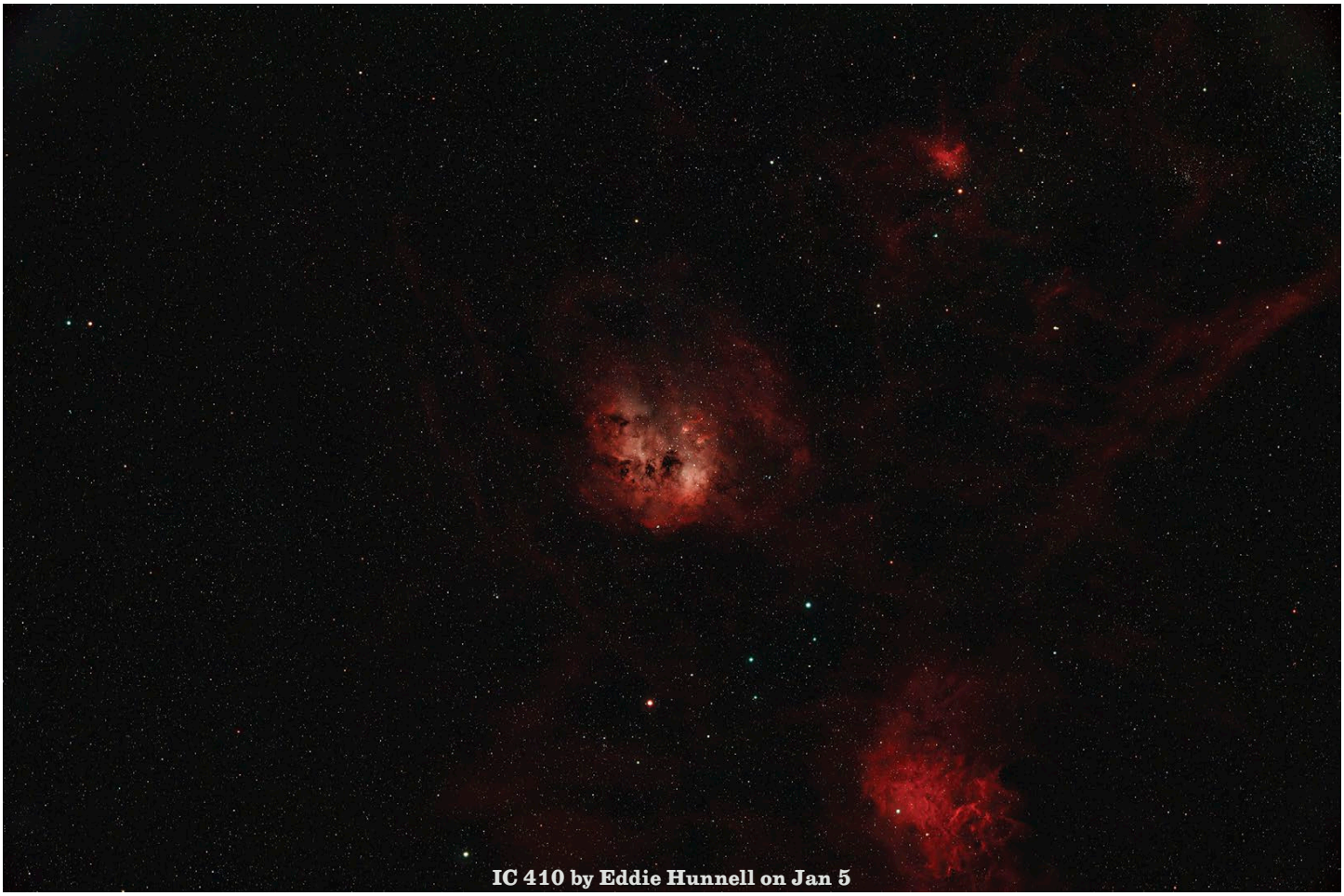
On Wednesday Jan 15, I succeeded in getting an image of the comet at 3:53 pm, putting the sun behind my neighbor's house and aiming near the sun with my Nikon at 200mm.
I had to enhance images to see the comet on some of them, and then stack them to get rid of noise, just as I did on Monday morning. Also converted to gray scale and used auto flatten in CCDStack 2.
Today's pic seems to show more tail. 12x1/1000s at ISO 100.

Again, attempts to see it in the big binos did not work.

Comet C2024 G3-ATLAS by Paul Robinson on Jan 15



This is an SHO image of Sharpless 155 in Cepheus from New Mexico and is 8 total hours of integration.



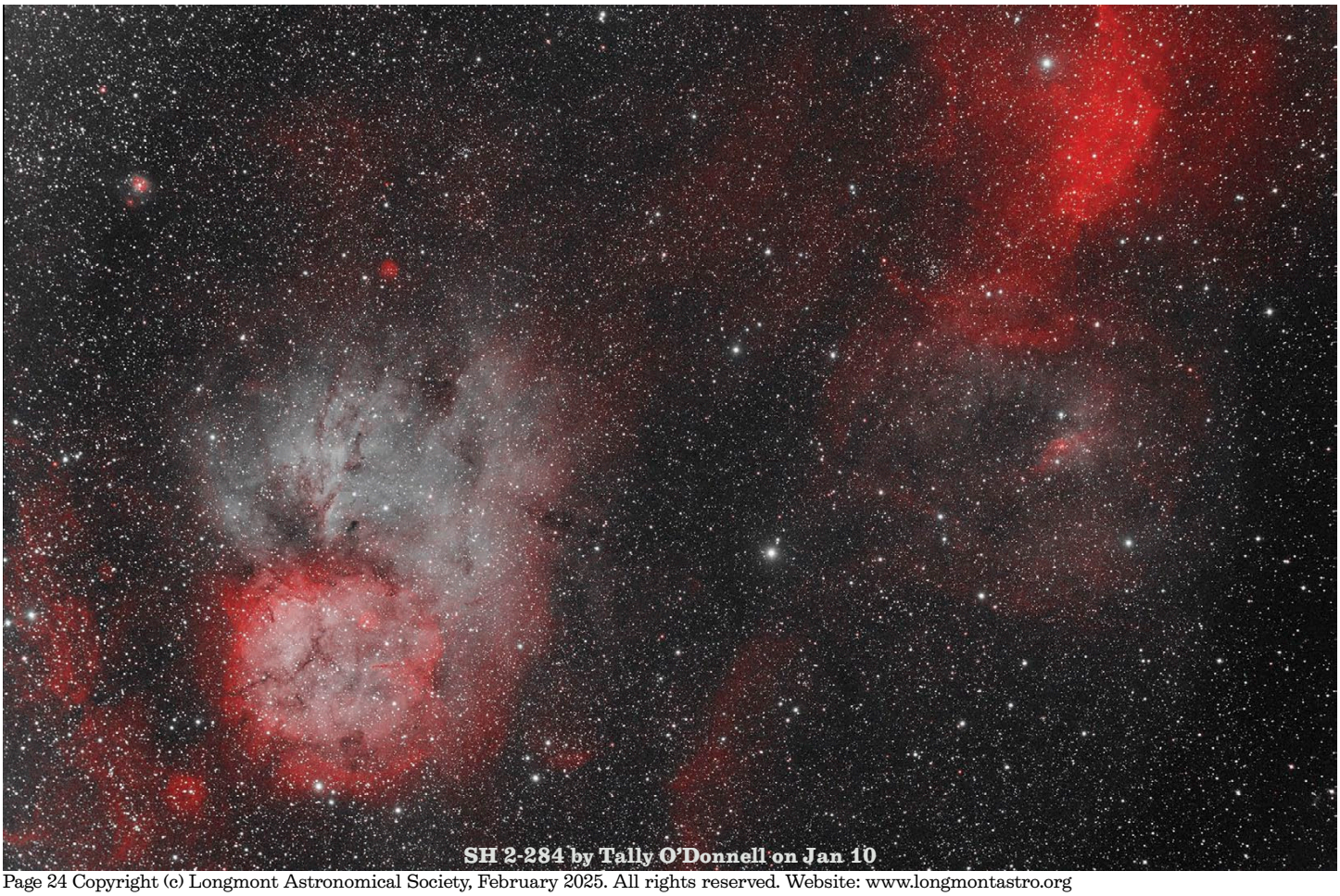
IC 410 by Eddie Hunnell on Jan 5

NGC 1097 by Eddie Hunnell on Jan 25

Abel 7 in HOO by MJ Post on Jan 1

NGC 2207 by MJ Post on Jan 15

SH 2-280 in H-Alpha by Stephen Garretson on Jan 6



SH 2-284 by Tally O'Donnell on Jan 10

Newsletter Archives by Eileen Hall-McKim

30 Years Ago February 1995

President Tom Peck opened the meeting on January 19, 1995

- 1994 ALCOR Dan Cochran gave out several Messier awards. Members receiving the AL awards were Randy Cunningham, Andrew Planck and Bob Michael. Bob also received the AL Messier binocular and deep sky awards. Congratulations to all of You!
- Secretary treasurer report was given by Bob Ross. We have $541.31 in the bank. We voted to eliminate check copies with our monthly bank statement to avoid a $2.00 per month service fee. We then had the LAS mail call.
- Bob Spohn suggested that we move the LAS annual banquet to January as to avoid the holidays. The membership voted to accept January as the new month for the event.
- Dorothy Pillmore gave an excellent presentation featuring slides of several solar eclipses over the years. She also showed a neat video from the November 1994 eclipse in South America. Thanks Dorothy for a excellent presentation!
- The February 16th meeting of the LAS speaker will be Tom Bisque. Tom is one of the "Bisque brothers" that operate Software Bisque. This company markets some fine astronomy software known as "TheSky". Tom will discuss remote telescope imaging, using CCD's, image processing, etc. Just your typical high tech stuff!
- The editor would like to report some possible concerns on the local light pollution front. Following information from Longmont City Line, Jan. 1995: " The Longmont electric department will begin installing street lighting along local residential streets as part of a new citywide program. This 14 yr. program will target about 37 miles of local residential streets that are only lit with unmetered porch lights. The lights will have a decorative appearance and be mounted at 11-14 ft on black fiberglass poles. To solicit public input regarding the type of lighting to be used the City has installed two demonstration lighting systems, one with 100w bulbs and one 35w bulbs. The pubic is instructed to evaluate the systems and cast a "vote" with the City electric department.

20 Years Ago February 2005

Meeting called to order by President, Gary Garzone
LAS is going strong these days! We have lots in the planning for upcoming months.

- LAS Star Party in Sterling in April, new moon weekend
- Ray Warren is working on some more door prized or give-aways for the Sterling Party
- Andrew Planck Star party for kids in Calwood by Jamestown is June 3rd. I plan to bring the 30-inch for two nights if weather is good. New moon weekend, we will see if we can get a group up there in June from LAS
- Astronomy day in March at the Longmont Mall
- ALCOR report by Bob Spohn: Formed the club in 1987 as an observing club. Talked about the Astronomical League and observing programs. Dedicated to helping club doing Messier certificate, all 110 objects! Will present on Messier object every month, and dedicate Flanders star parties to helping you find your Messier objects! Dedicated to club members getting their certificate. Train your eye how to do good observations, manual observations, star hopping using your charts. Another program, Double star program a hoot! 100 double-stars, two types: line of sight or "real" gravitationally bound double stars. Incredible range of sizes, colors, distance of separation.
- Telescope report by Lee Pierson: Back working with Don, ordering focusers from Astro Systems, 10 of those. That is everything except for focuser and coating of the mirrors.
- Observing reports? Comet Machholz next to Pleiades, Brian got some great shots. Send your images to club secretary Mark to get them on the web site if you want. Tim Brown got some observations in. Saturn has been great too! Saturn's closest approach just passed. Don Cerow talked about aurora display, now past the peak.
- Mike Hotka did a presentation on coordinate systems. Two systems most common: RA and declination, and Azimuth and Altitude, also multi-year lapse of stars orbiting massive object, and great presentation on Cassini at Saturn. Great pictures! Great talk!

Cactus Flats report by Gary Garzone

When we went to Cactus flats north on Saturday Feb. 5th, Comet Machholz was best yet. It is now high in northern skies past Cassiopeia towards Polaris now. Very long tail at Cactus flats, 10 to 15 degrees maybe, one of best views that night. Easily found with binoculars. Vern new LAS member with 11.5 inch Celestron scope; Mike Roos, 16 inch dobsonian; and Mark Wiley 8 inch Meade and myself had pretty awesome night until clouds moved in around 11 pm. NGC 891 favorite edge on galaxy in dark skies was great, along with M33 spiral, M51 late in evening, M81, 82 and many smaller ones.

Awaiting the night at Cactus Flats

Cactus Flats report by Bill Possel

"What a beautiful night!" That was repeated over and over again on Friday night, February 4th at Cactus Flats North, Pawnee Grasslands. Soon after I arrived, Dick Laatt pulled up with his 18-inch Obsession, followed by David Dunn (17.5-inch AstroSystems), Ken O'Toole (4-inch TeleVue refractor), Jacob Warman (10-inch Hardin dob) and Bill Travis (9.25-inch Celestron SCT). As the sun set, the sky on the horizon to the east was banded by blue and a bit higher was a band of pink. David said they were called the "belts of Venus." The band of darker blue is Earth's shadow being projected onto the dust and haze in Earth's atmosphere. The blue band was bordered by a strikingly vivid pink. It was one of the best views of Saturn I ever saw! The Cassini division was finely etched in the rings, while the southern pole had a shade of green. The shadow the planet was visible on the rings before they disappeared behind it. We had terrific views of the Orion nebula, open cluster M46 along with its planetary nebula NGC 2438, M51 with its detailed spiral arms, Thor's Helmet (NGC 2359) and many more. In David's scope we could even see the pink hue along on the edges of the Orion nebula!

David Dunn's Starmaster 17.5 in and "Belts of Venus" in background

10 Years Ago February 2015

Twenty members attended our annual banquet meeting at Pinocchio's Restaurant this year. Mike Fellows organized and handled all the details for the banquet. We played a slide show of some of the images taken by David Elmore, Chris Fauble, Glen Frank, Gary Garzone, Lefty Harris, Brian Kimball, Mike Lewis, Randy Moench, Jim Pollock, Bruce Rabalais, Vern Raben, Andy Schiller, and Will Thornburg during the past year. Congratulations all, your images are amazing!

Elections were held for the new board of directors. On Jan. 21st the previous board voted to certify the election of the new officers in accordance with the society by-laws. The following people were elected:
Vern Raben, President; Gary Garzone, Vice President; Michael Fellows, Treasure/ALCOR; James Hudson, Secretary; Brian Kimball, Board member-at-large; Jim Elkins, Board member-at-large; Tally O'Donnell, Board member-at-large.

At our coming February meeting Andrew Planck will give a talk on the Moon, discussing its history, formation, and the many fascinating objects that can be seen with even a small telescope. Andrew will show you how the Moon is an easy object that will keep you and your telescope busy for years. Andrew has written a book on the Moon, "What's Hot on the Moon Tonight?" which has just been published. After the presentation there will be a book signing and an opportunity to purchase the book.

Volunteers are needed to support the Mead High School star party on Feb. 12th at 6 pm. Mead High School address is 12750 County Road 7 (east side). Set up out by the soft ball fields on asphalt or concrete in front of the field house. The fields are directly behind the school and can be accessed from County Rd 7.

Comet C/2022 Q2 (Lovejoy) by Brian Kimball

Comet C/2022 Q2 (Lovejoy) and the Pleiades by Tally O'Donnell

Triple transit by Jupiter's moons on January 23 by Vern Raben

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IC 348 by Martin Butley