Longmont Astronomical Society

April 2026

NGC 1499, California Nebula
by Jim Pollock

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Next LAS Meeting on Thursday April 16 at 6 to 9 pm
"Looking Back at 60+ Years of Astronomy" by Tim Brown

The next LAS meeting is 7 pm next Thursday, April 19, at the First Evangelical Lutheran Church, 803 Third Avenue, Longmont, CO 80501.

Dr. Tim Brown's presentation will be "Looking Back at 60+ Years of Astronomy -- Amateur, Professional, and Imaginary".

Tim Brown is an astronomical instrument-builder and observer. His science interests include spectroscopy of extrasolar planets, and the dynamics and evolution of rotation in Sun-like stars.

Location

The meeting will be at 7pm in the First Evangelical Lutheran Church, 803 Third Avenue, Longmont, CO 80501. It will also be available to LAS members on Zoom.

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.

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Front Cover: California Nebula
by Jim Pollock

Couple of excellent clear nights in Texas and two more anticipated for the weekend. Shot this image of The California Nebula, 60 frames at 3min each night for two nights. If this is the California Nebula, I'm assuming that dark area in the middle must be Lake Tahoe!

This image: 120 frames of 180sec for total of 6 hours exposure on my 9.25" EdgeHd at f/2 Hyperstar located at Starfront in Texas. Now that the moon is last quarter, I switched to the L-Quad filter which is (as the name would imply) a 4-band filter allowing excellent (>90%) passage of Ha, Hb, O-III, and Sulfur II. So it is a more general purpose filter for reflection nebula, galaxies etc. (Although the California is an emission nebula).

I'm pretty happy with this image, in that I was able to get. Enough contrast to have fun with all the intricate hydrogen cloud structures. Quite a storm going on!!! ;-)

Thanks for lookin'.

Jim

Back Cover: Umbrella Galaxy
by M. J Post

This is NGC 4651 and it resides in Coma Berenices about 50 M.l.y. from us. I've rotated this image 90 degrees clockwise to better display the namesake umbrella (east is up, north to the right). This object received APOD honors last June 30 (2025). It was discovered by (who else?) William Herschel in December 1783, but he made no mention of the faint tidal tails which only much later were revealed photographically.

It obviously has experienced a major encounter with another galaxy in the very distant past, causing widespread tidal tails of stars, and probably the formation of the dwarf galaxy to its west. Because of that, it is also listed in Halton Arp's catalog of peculiar galaxies as Arp 189.

From DSNM, CDK14 scope, ASI 6200MC camera, 3 hours total time on target, FOV ~ 12 x 18 arc minutes.

M.J. Post

Planets in April

Mercury

Mercury is not visible this month.

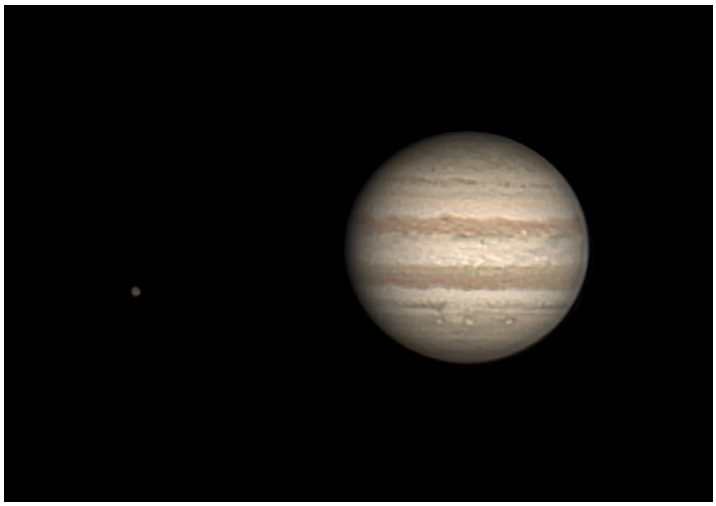
Venus

Venus is visible in the evening sky in the west. It is magnitude -3.9 in brightness and its full disk is around 11 arc sec across.

Mars

Mars is not visible until the end of May when it re-appears in the morning sky.

Jupiter



Ganymede and Jupiter on Mar 4 by Brian Kimball

Jupiter is in constellation Gemini. Best time to view Jupiter is between 8 and 9 pm. On the first it is -2.3 magnitude in brightness and the disk is 39 arc sec across. By the 30th it is 36 arc sec across and -2.1 magnitude. Some good times to view the Great Red Spot are listed in the table below.

Date	Time	Altitude
Apr 2	11:45 pm	34°
Apr 5	9:16 pm	60°
Apr 7	10:55 pm	40°
Apr 10	12:34 am	20°
Apr 10	8:26 pm	66°
Apr 12	10:05 pm	47°
Apr 14	11:44 pm	26°

Date	Time	Altitude
Apr 17	9:15 pm	53°
Apr 19	10:54 pm	33°
Apr 22	8:25 pm	59°
Apr 24	10:05 pm	39°
Apr 26	11:43 pm	19°
Apr 29	9:14 pm	45°

Saturn

Saturn has disappeared into the evening twilight. It will re-appear in the morning sky around the first week of May.

Uranus

Uranus is visible in the early evening in constellation Taurus. It is +5.8 magnitude in brightness and the disk is 3.5 arc sec across.

Neptune

Neptune has disappeared into the bright evening twilight. It will re-appear in the morning sky about the first week of June.

Lunar Phases in April

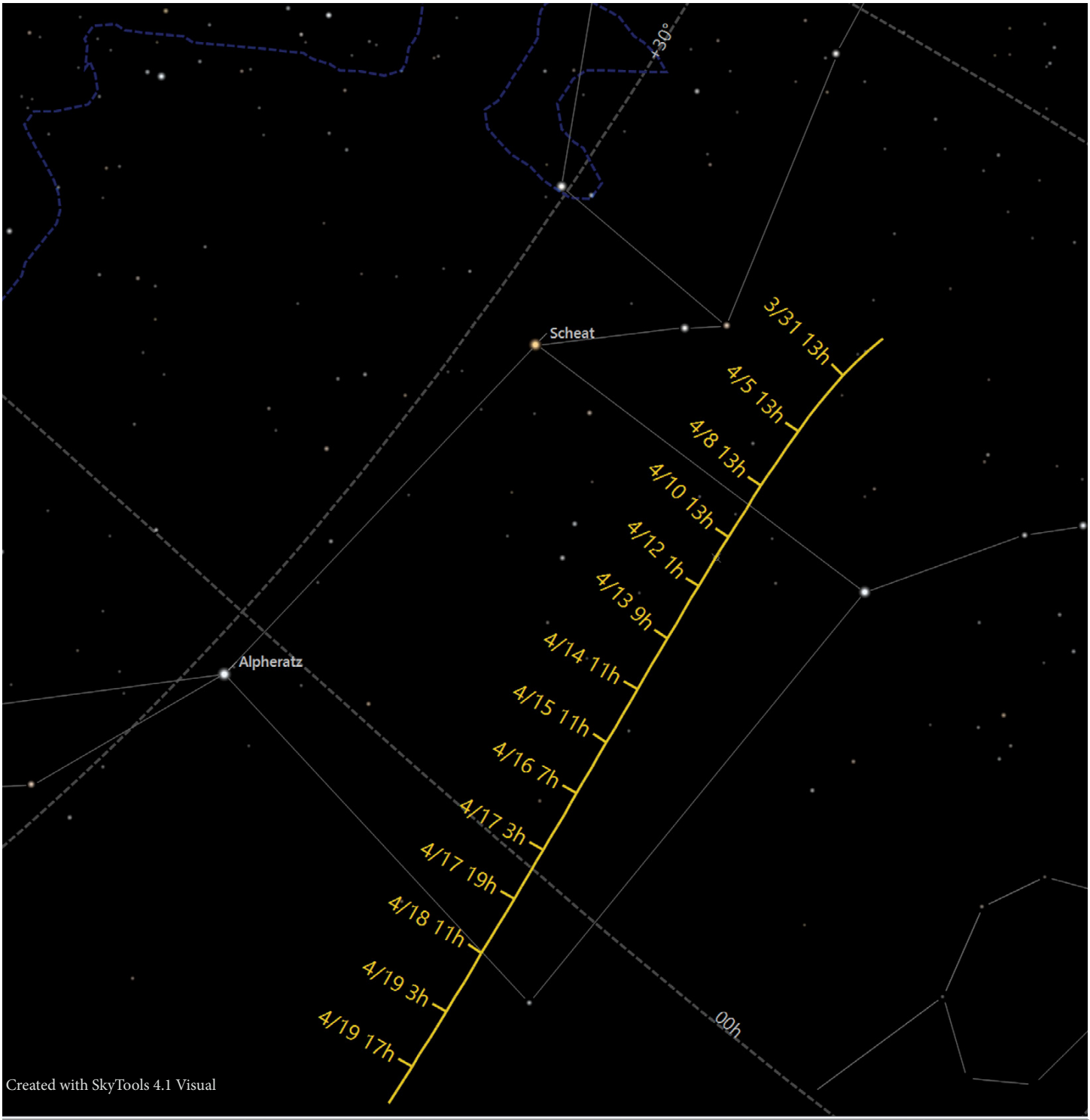
April 1 at 8:13 pm - Full Moon
April 9 at 10:53 pm - Third Quarter Moon
April 17 at 5:53 am - New Moon
April 23 at 6:40 pm - First Quarter Moon

First Quarter Moon on Apr 23 by NASA visualization Studio

Meteor Showers in April

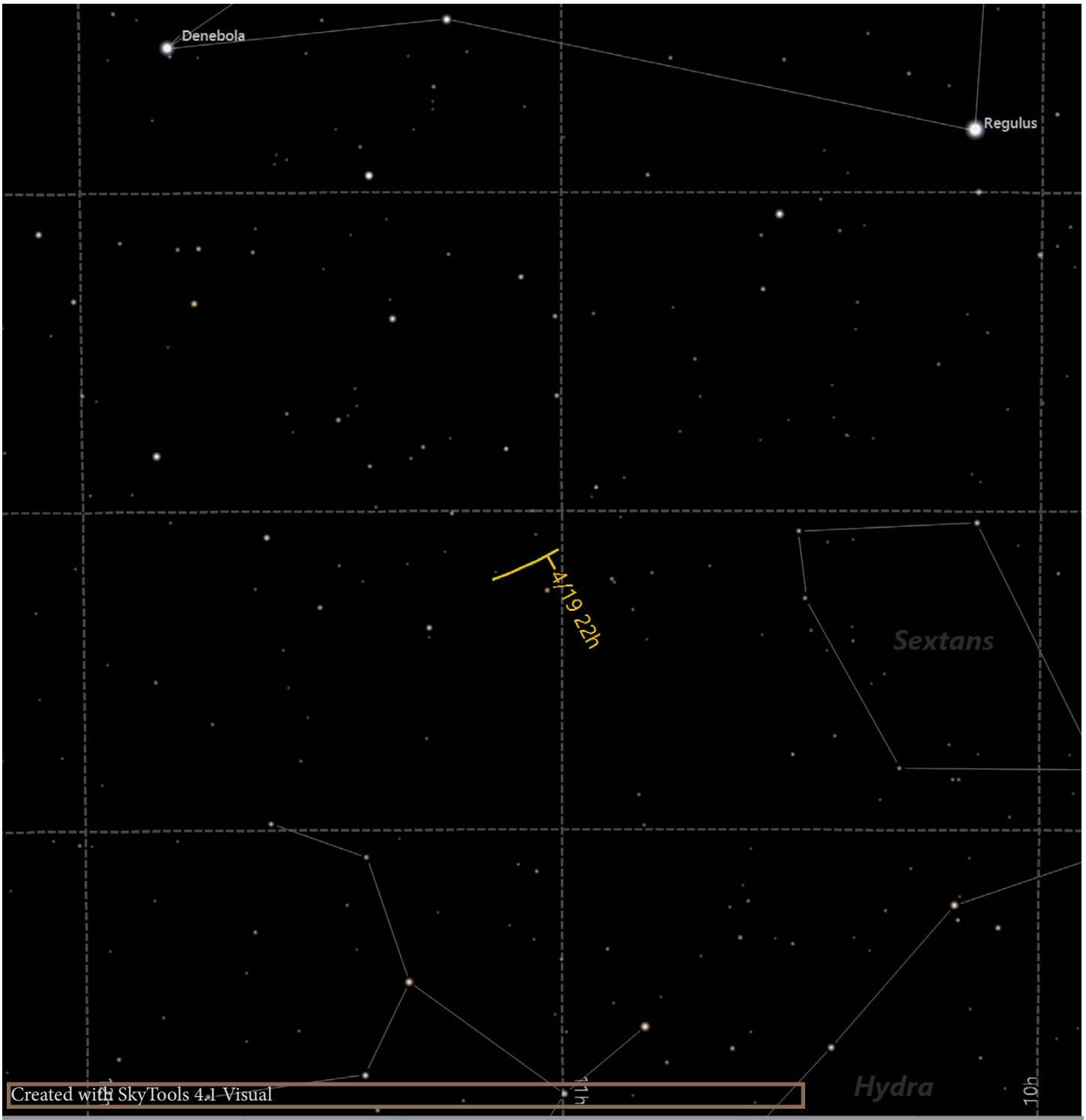
The Lyrids meteor shower peaks on the night of April 21 - 22. Four day old waxing crescent moon will set 12:19 am so won't interfere much. Debris from comet C/1861 G1 (Thatcher) causes this shower. Expect to see maybe 10 to 20 per hour from a dark location.

C/2025 R3 (PANSTARRS)



Date	Optimal time	RA	Dec	Constellation	Magnitude	Size (arc min)
Apr 1	5:32 am	22h47m03.9s	+19°53'41"	Pegasus	3.9	2.9
Apr 7	5:27 am	23h01m37.4s	+19°56'27"	Pegasus	2.2	3.5
Apr 13	5:30 am	23h32m18.1s	+19°12'48"	Pegasus	0.7	4.5
Apr 19	5:12 am	00h38m01.7s	+16°08'11"	Pisces	-0.3	6.0
Apr 21	5:36 am	01h11m35.4s	+14°00'35"	Pisces	-0.4	6.3
Apr 30	Not visible					

Comet 29P/Schwassmann-Wachmann

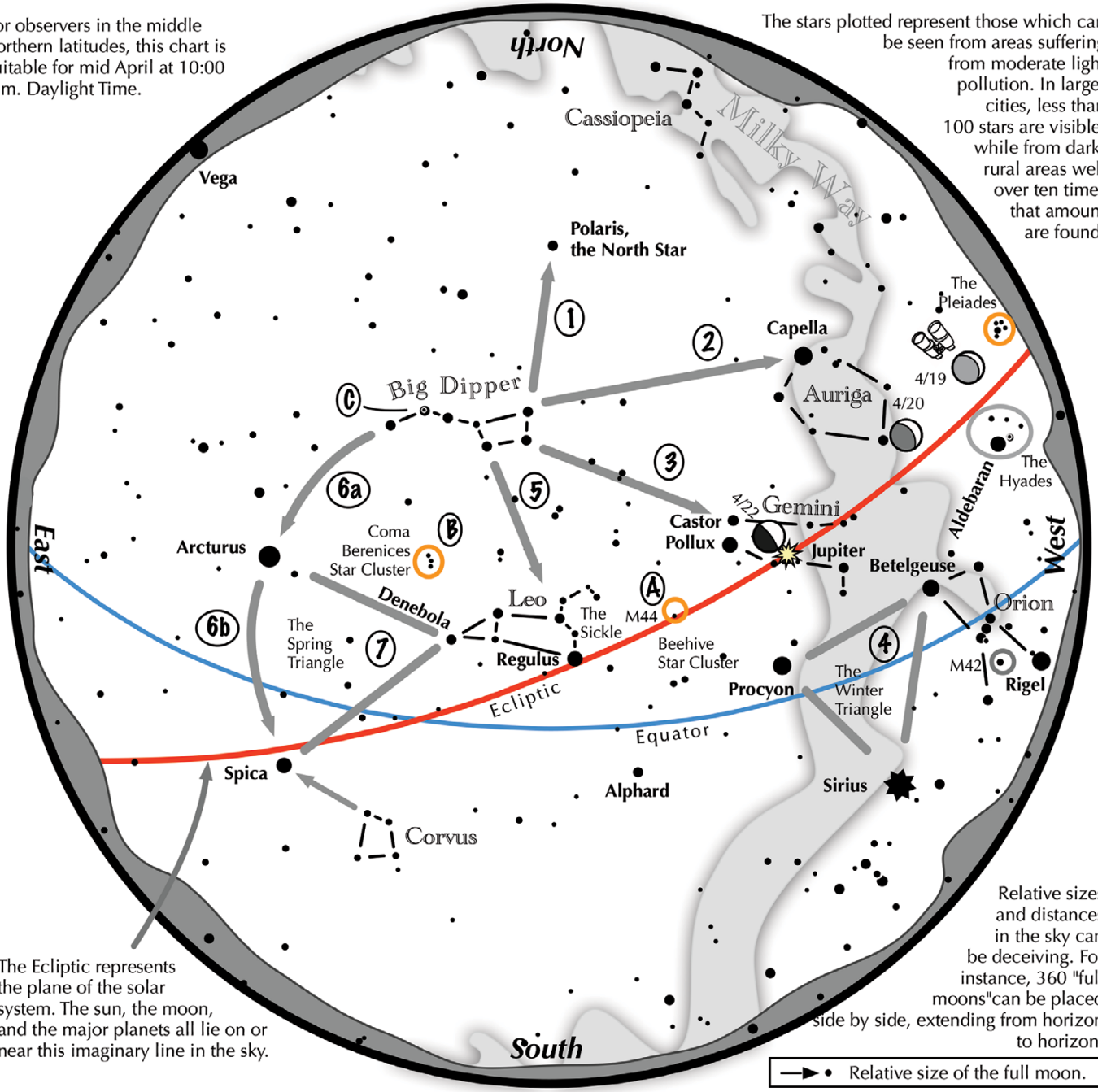


Date	Optimal time	RA	Dec	Constellation	Magnitude	Size (arc min)
Apr 1	8:50 pm	1h08m34.3s	-02°09'36"	Leo	11.7	1.8
Apr 7	11:05 pm	11h06m47.7s	-01°58'17"	Leo	11.8	1.8
Apr 13	10:36 pm	11h04m39.5s	-01°43'45"	Leo	11.8	1.8
Apr 19	10:11 pm	11h03m08.3s	-01°32'30"	Leo	11.8	1.8
Apr 25	9:41 pm	11h01m56.2s	-01°22'41"	Leo	11.8	1.7
Apr 30	9:30 pm	11h01m11.3s	-01°15'43"	Leo	11.9	1.7

Navigating the mid–April Night Sky 2026

For observers in the middle northern latitudes, this chart is suitable for mid April at 10:00 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 April night sky: Simply start with what you know or with what you can easily find.

1. Extend an imaginary line north from the two stars at the tip of the Big Dipper's bowl. It passes Polaris, the North Star.
2. Draw another imaginary line west across the top two stars of the Dipper's bowl. It strikes Capella low in the northwest.
3. Through the two diagonal stars of the Dipper's bowl, draw a line pointing to the twin stars of Castor and Pollux in Gemini.
4. Look in the west-southwest for the bright Winter Triangle stars of Sirius, Procyon, and Betelgeuse.
5. Directly below the Dipper's bowl reclines the constellation Leo with its primary star, Regulus.
6. Follow the arc of the Dipper's handle. It first intersects Arcturus, then continues to Spica.
7. Arcturus, Spica, and Denebola form the Spring Triangle, a large equilateral triangle.

Binocular Highlights

A: M44, a star cluster barely visible to the naked eye, lies to the southeast of Pollux.
B: Look nearly overhead for the loose star cluster of Coma Berenices.
C: In the Big Dipper's handle shines Mizar next to a dimmer star, Alcor.

Astronomical League
www.astroleague.org

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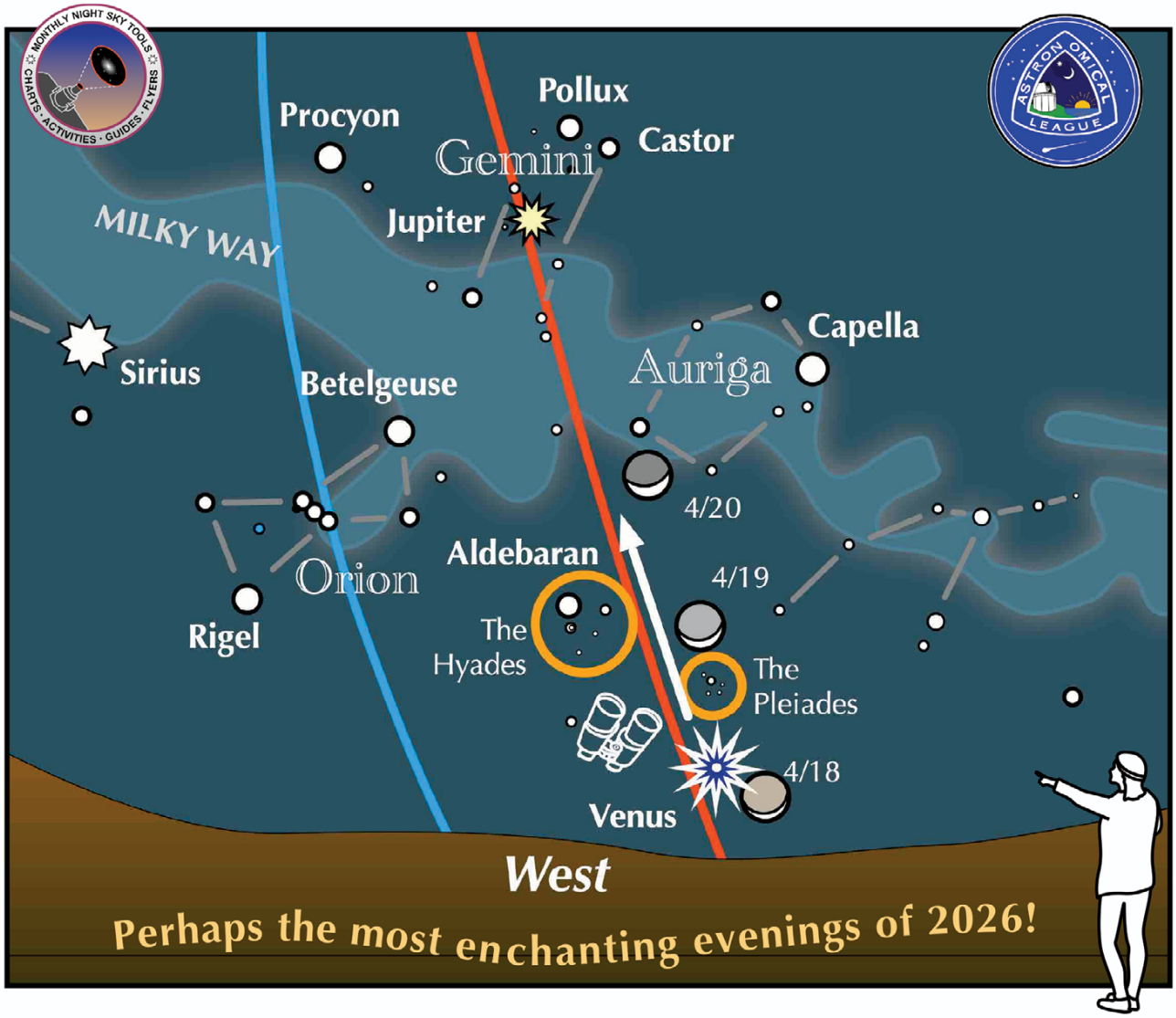
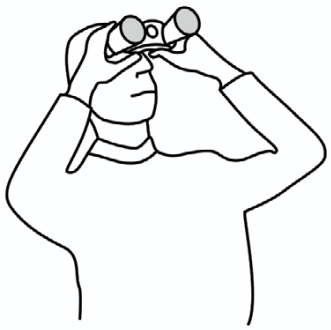
If you can see only one celestial event this April, see this one.





Enhance the scene – use binoculars!

On April 18, 19, & 20, look low in the west-northwest 60 minutes after sunset.

- On the first evening, the crescent moon, glowing full with earthshine, floats near brilliant Venus, while on the second evening, it moves just above the delicate Pleiades star cluster, and to the right of the bright star Aldebaran and the intriguing Hyades star cluster.
- On the third evening, the slightly thicker, but more pronounced crescent moon hangs above the Pleiades and the Hyades.
- Above it all, bright Jupiter plows through Gemini, shining near Castor and Pollux.

www.astroleague.org

LAS Meeting Notes March 19th, 2026

I. Introduction

Our third LAS monthly meeting of 2026 was held in-person and by zoom on March 19th at the Longmont Evangelical Lutheran Church, 803 Third Ave. President, Vern Raben, began the meeting with self-introductions of those attending in person and on-line. Eighteen attended in person, 9 attended on-line.

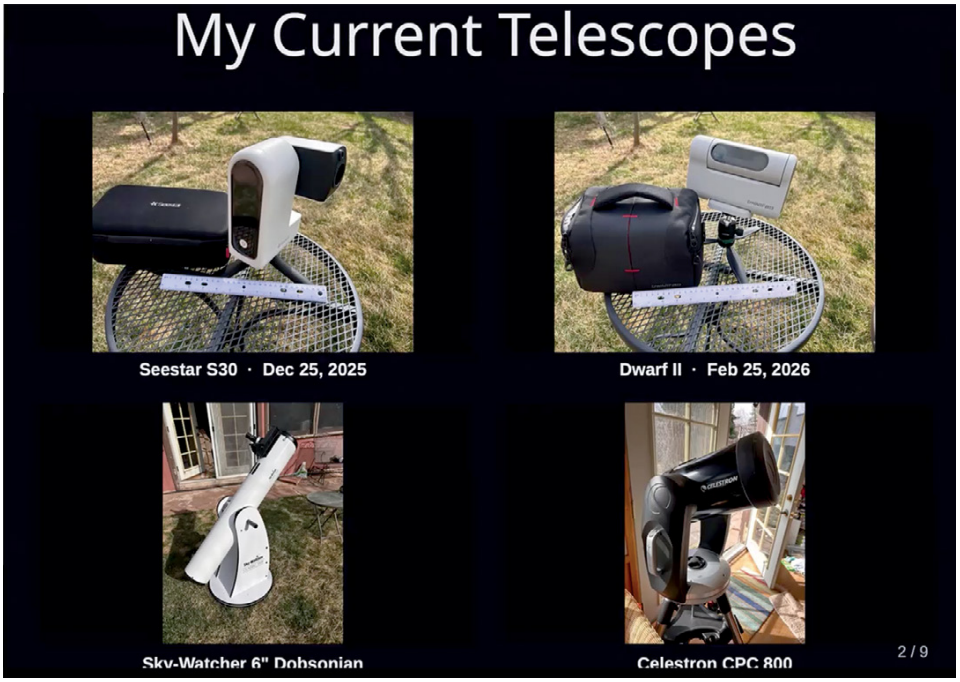
II. Main Presentation:

Tonight for our general meeting we have member presentations. The three presenters we have are:

- Daniel Williams; Smart Telescopes: Seestar S30 & Dwarf II
- Paul Robinson; Coming Kreutz Sun-Grazing Comet – Comets in April
- Gary Garzone; Hubble's Tuning Fork Diagram and Constellation of the Month: Leo

Smart Telescopes: Seestar S30 & Dwarf II
By Daniel Williams

Slide 1 My Current Telescopes

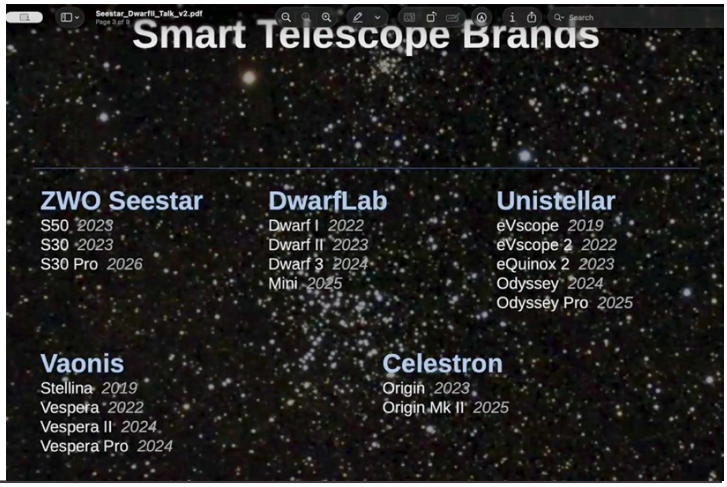


LAS member Daniel Williams enjoys visual observing with both traditional and smart telescopes and tonight presents a Show & Tell of some of the Smartscopes currently available. Daniel has 4 telescopes, 6" Sky-Watcher Dobsonian, 8" Celestron CPC 800, more recently has been experimenting with smart scopes, Seestar S30 and Dwarf II. Daniel enjoys physical observing and the idea of capturing images, but wasn't ready to invest in full astrophotography equipment.

While these are not the top of the line, these models are less expensive and great to get started with and experiment with taking images and doing a little processing, before investing into much more extensive and expensive astrophotography equipment. The images in the background of Daniel's slides were all taken by him earlier as he has been experimenting with his Seestar S30.

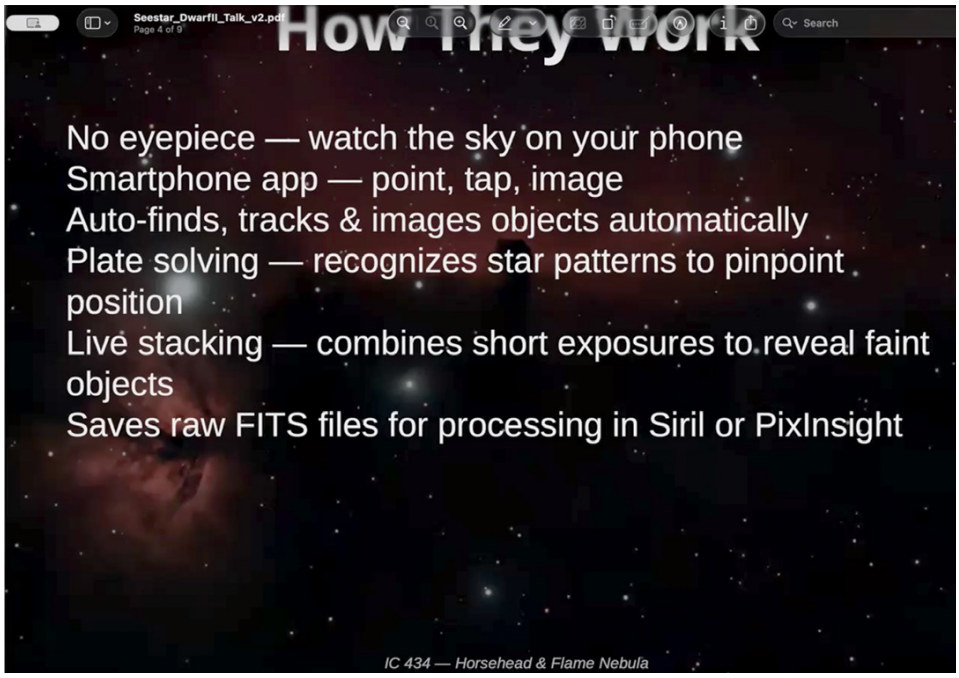
Slide 2 Smart Telescopes Brands

- ZWO Seestar and DwarfLab are the less expensive brands
- Ellen Steiner brought her Unistellar eVscope2 to last star party, amazing images



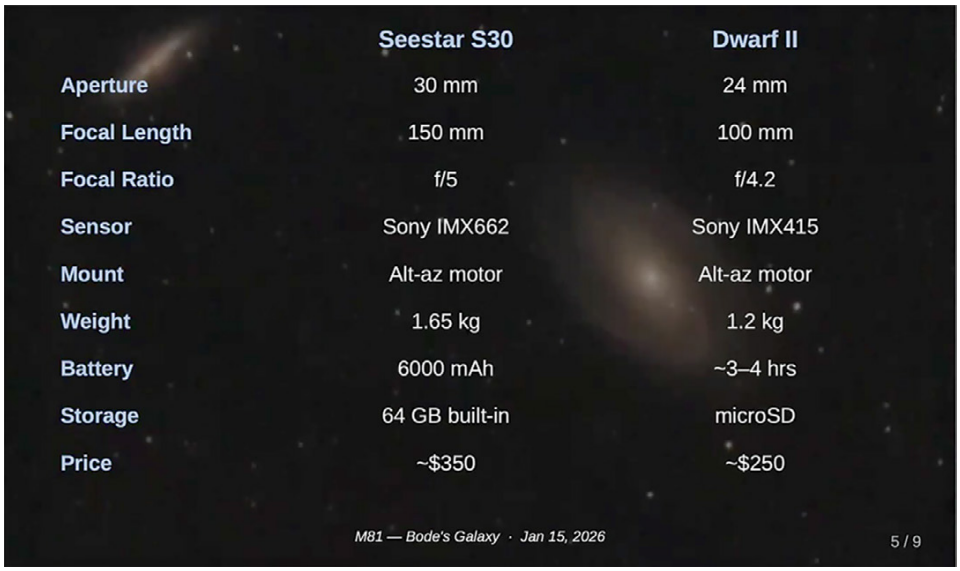
Slide 3 How they work

- Come with tiny stands, larger one can tilt to put in equatorial mode
- No eyepiece, use an app on your phone
- Can sometimes get confused, may need to calibrate a little, spin a bit find north-south
- Basically it does live stacking and saves the FITS files
- He takes both to star parties, often an image looks like tiny blur in larger scopes, but can then focus in on object with Smartscope, and get much more interesting image of what we are actually looking at; explains that it's all about the light it is collecting and stacking up, if our eyes could collect light for a few seconds we would see amazing things



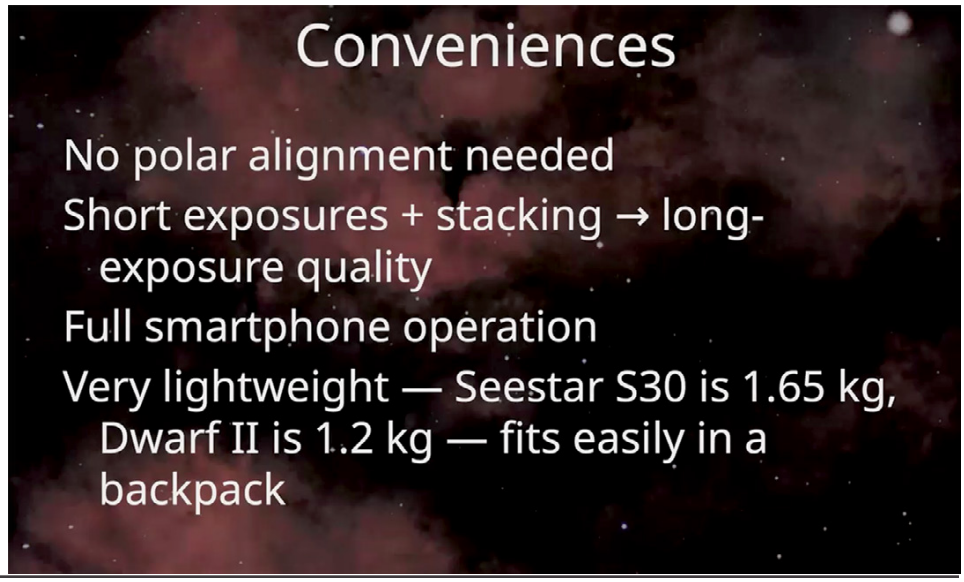
Slide 4 Seestar 30 vs Dwarf II

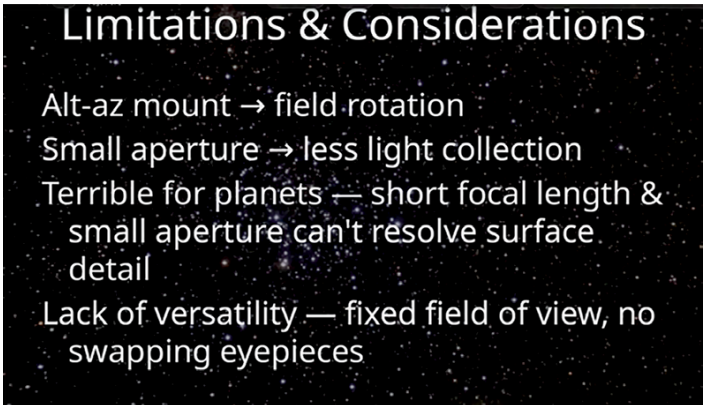
- Small apertures, don't collect a lot of light, but persistent about collecting little bit of light over time
- Very light to pack and carry in a backpack
- Batteries don't last a great long time, but several hours is fine



Slide 4 Conveniences

- Very light and portable



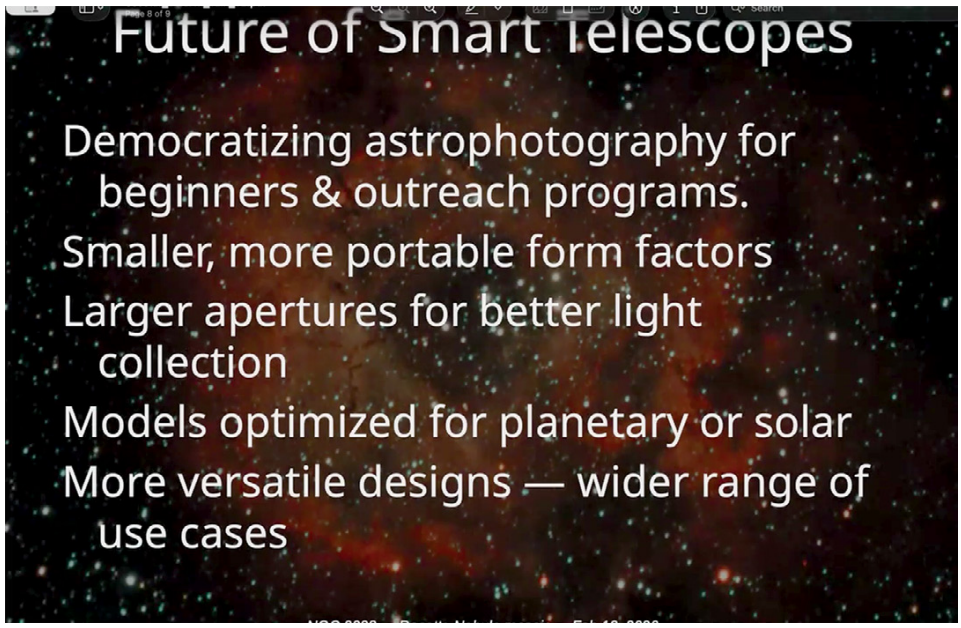


Slide 5 Limitations & Considerations

- Not good for planets, wide field of view
- But for what it is, it is very convenient

Slide 6 Future of Smart Telescope

- Democratizing telescope observing for many more people to get started
- Seestar 30 Pro and possibly Seestar S70 coming out – enhanced light collection



Slide 7 Orion Nebula – Questions/Comments

- Seestar comes with sun filter for solar imaging
- Heat shield built in
- Can do a lot more with your images if post-processing, can get out many more details
- Unistellar Odyssey better able to capture planets

Coming Kreutz Sun-Grazing Comet – Comets in April
By Paul Robinson

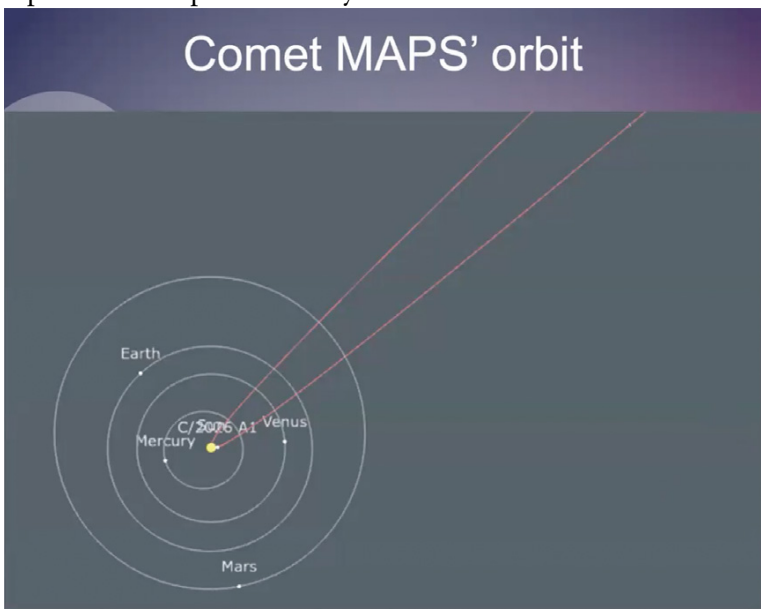
Paul Robinson is a longtime comet tracker and has kept LAS informed of their comings and goings for many years. Tonight he talks about the Kreutz Comet Family, comets soon coming into view, and what we might see.

The Kreutz Sun-Grazing Family Comet is believed to be part of a much bigger parent comet which has fragmented; it was first seen around 371 BC and has accounted for many bright comets seen throughout history.

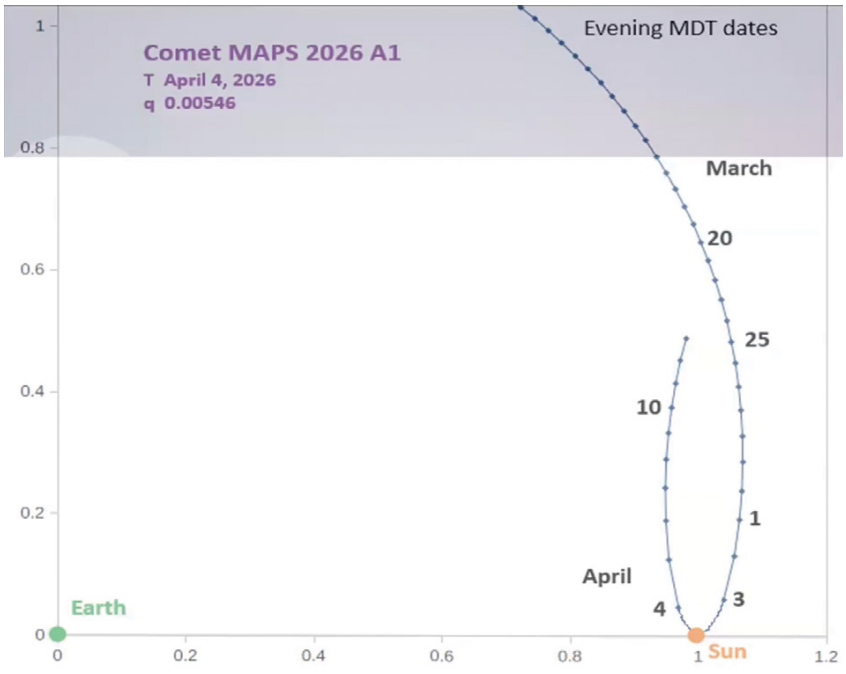
- Very small perihelion distances ~0.005 AU
- This one will get very, very close to the surface of the sun
- Potential for briefly becoming visible in daylight, they have done so in the past
- After leaving the vicinity of the sun, go up into the sky, often have very long bright tails
- Very elliptical orbits, almost eccentricity 1
- Last very one good in 1965, Ikeya-Seki reached mag -10, widely viewed in daytime
- Last pretty good one 2011, Comet Lovejoy reached -6 briefly may have been seen in daytime with difficulty

Comet MAPS' Orbit named after initials of group of people who set up observatory in Chile

- Comes in from upper right; passing very close to the sun, then goes back out almost in same direction it came; in our sky will be in the evening, both in and out
- This is the arrangement of planets on April 4 which is the day of perihelion



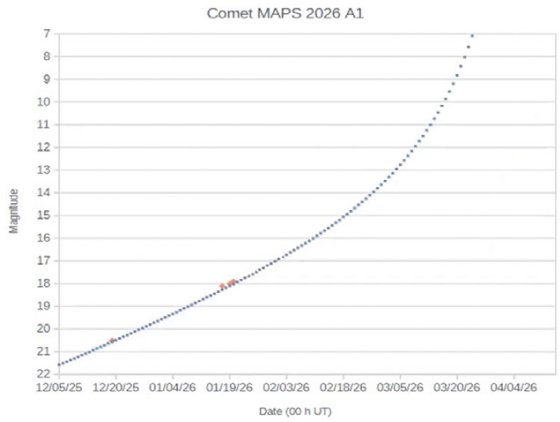
- Type of diagram Paul created called ECS (Earth Comet Sun) Diagram. The earth and sun remain fixed throughout the period of time the comet is in the area. Piece of paper would be the plane of the earth, sun and comet on any one of those given days
- This shows basically whether or not we can see the tail, how well we can see the comet, and whether it is between us and the sun or on the other side. From this plot we see it approaches, goes around sun quickly and heads back up again, so tail presentation is pretty good. It never gets near the earth but gets very close to the sun.



- Original magnitude chart; 11.5 +20 log(r) = absolute magnitude, indicated a very

Original magnitude chart

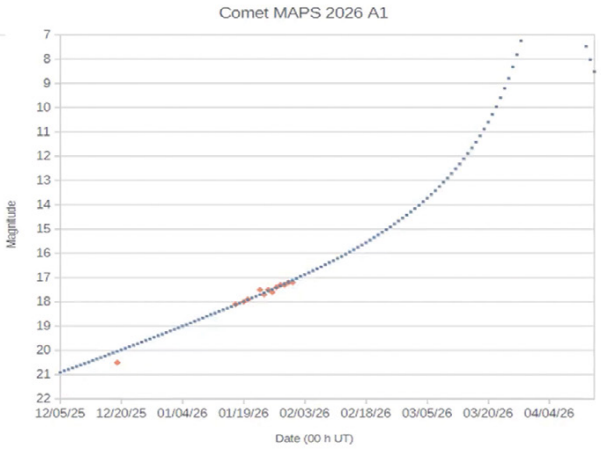
11.5+20 log(r)



strong brightening rate, at this rate would exceed brightness of sun, so breaks down at that point, but the comet would be very bright for a couple days before and after

First period of magnitude development

12.8+15.4 log(r)



- Magnitude 12.8+15.4 log(r) developed for a while, Paul revised his prediction formula, now down to 15.4 log (r) lot more reasonable, still presented a very bright comet easy to see on April 4th and visible the day before and after

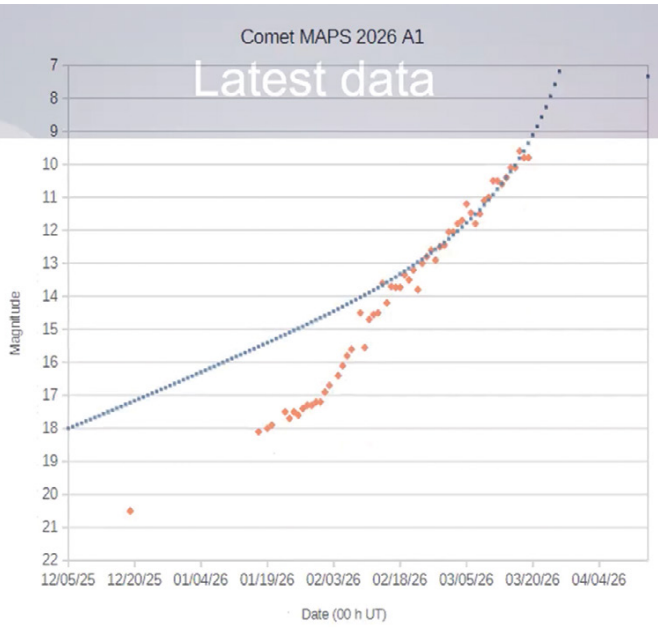
- Magnitude 12.8+15.4 log(r) Break-off to 2nd magnitude trend, later period of magnitude development and actually got brighter, knew would settle down to another trend

Latest data

10.9+13 log(r)

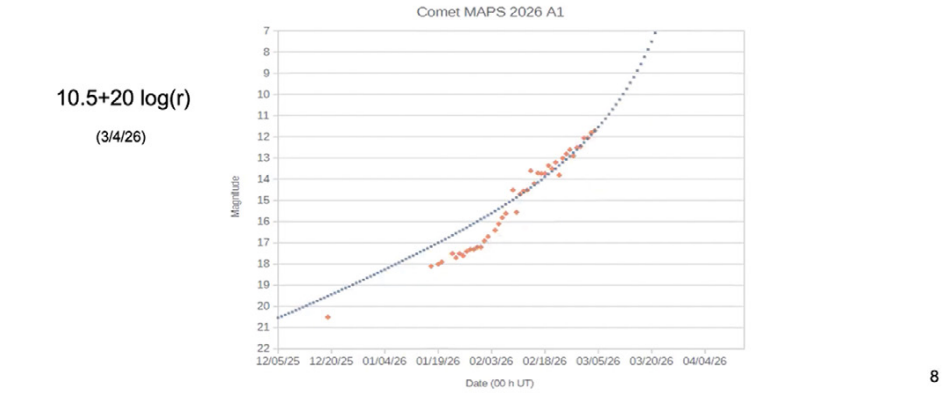
(3/19/26)

3rd	-4.03
	-18.52
4th	-5.24



- Magnitude 10.5+20 log(r) (3/4/26) Next trend: Second period of magnitude development

Second period of magnitude development



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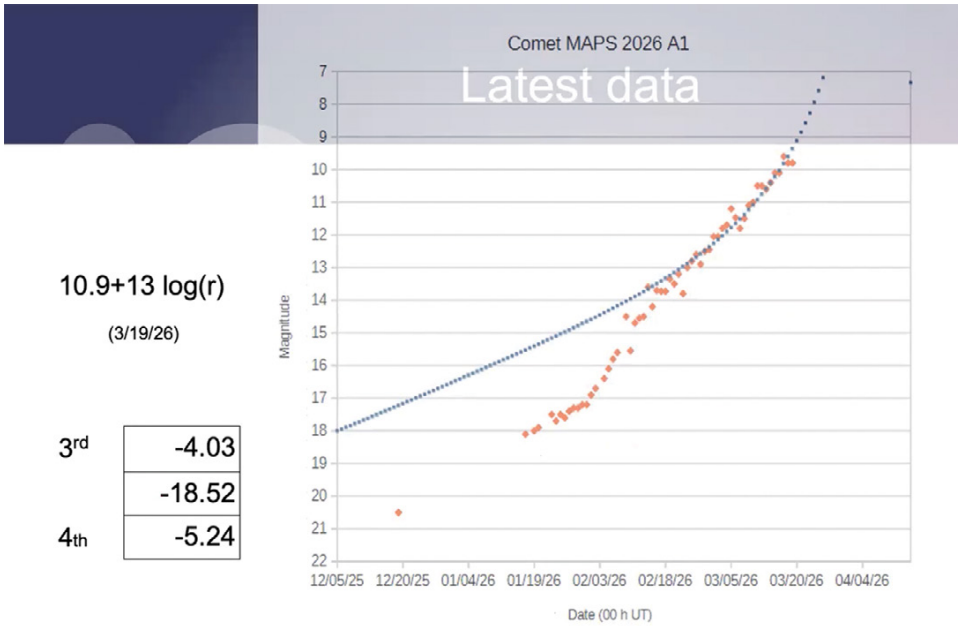
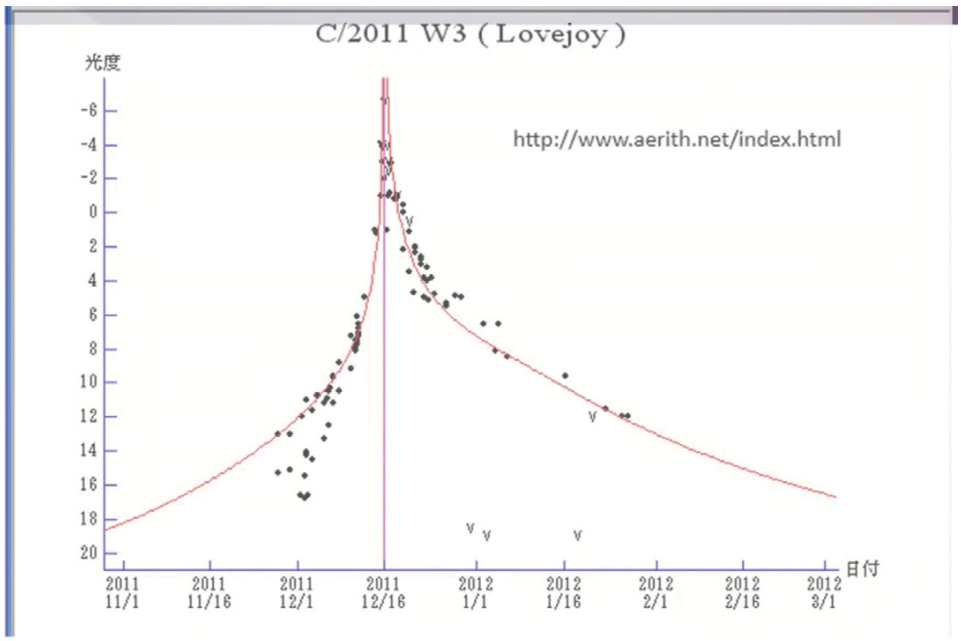
Latest data from (3/19/26) 10.9+13 log(r)
Brightening rate has slowed down quite a bit, but still gets it to possibly, on the evening of the 3rd (-4.03) just enough to see and photograph in daytime, rest of afternoon and evening of 4th (-5.24) brighter than Venus

- Day of 4th is really the day of interest, could be around -10 be a lot like Ikeya-Seki



Comet Lovejoy C/2011 W3
Shows brightening at a rate of 15 log(r) which is comparable to what



this comet is doing right now so gives hope this trend will continue all the way in, absolute magnitude is not as bright as Lovejoy which was only visible in Southern Hemisphere, this one is visible here, equator best location.

Outlook for April 2-6

- April 2 & 3 comet may attain naked-eye daytime visibility

- April 4 Perihelion. Comet could be easy naked-eye in daytime if clear sky (no haze, smoke)
- April 4 Evening comet might be visible in twilight sets 7 minutes after sunset
- April 5-6 comet may remain visible in daytime and improving after sunset in twilight
- For best views head out east away from mountains

April 4 – Day of Main Action

- 6:40 am sunrise- but comet is behind the sun so we can't see it

- 8:07-8:47 comet peaks our from behind sun (8:25)
- 8:47-10:18 comet transits sun's disk – this give us an opportunity to do something we have never done; see the silhouette of a comet in front of the sun
- Rest of day, comet moves east of sun making it easier to see
- At sunset, 7:26, comet upper left of sun, setting 10 min later
- Tail may linger into darkness, especially on later evenings

April 4 Viewing

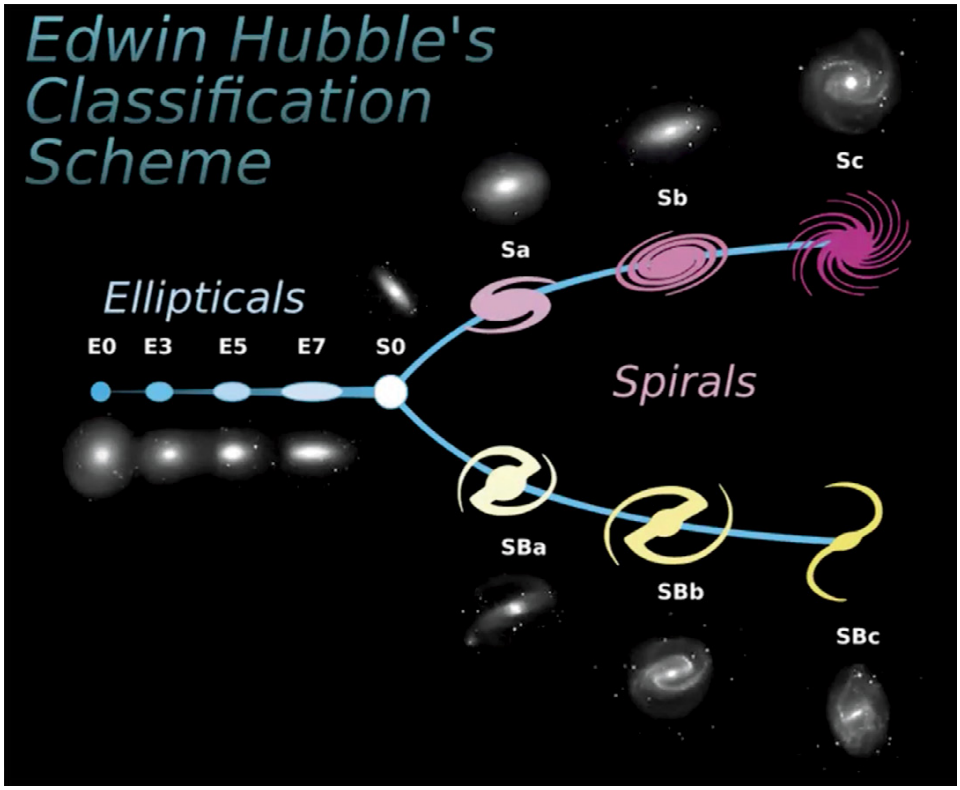
- Distance to the comet are to scale
- Whatever time of day you are looking up is up
- Best time to see in daytime is around local noon - 2pm naked eye, not as much dust, etc.
- Good idea to get behind a building, be in the shadow of a building without any chance of getting the sun in your optics! Paul has used a gas station roof awning; binoculars are best

Do Not Point a Scope At This Comet, binoculars are best, if you are looking wear sunglasses, put a lunar or yellow filter on your scope. Since this is very close to the Sun, if you do not know what you are doing do not even try to do this!

Hubble's Tuning Fork and Constellation of the Month – Leo
By Gary Garzone

Gary Garzone, long-time dark sky visual observer and astrophotographer, leads discussion on the amazing assortment of galaxies we find in a dark night sky. Following Hubble's Classification Scheme of galaxies and his tuning fork design; later updated to SINGS, he details the brightest of Stars and Deep Sky Objects that make up the Constellation of the Month – Leo, the Lion.

Edwin Hubble's Classification Scheme The Original Tuning Fork (1923) later updated



- Palomar 1929 Hubble defined the redshift of stars moving away
- 1948 built the Mount Wilson 100" telescope

Defining shapes of galaxies – Ellipticals and Spirals
Distances when measuring space:

- Light year = 6 trillion miles
- Parsec = 3.26 light years or 206,265 Astronomical Units (au)
- 206,265 au = 93 million miles

Measuring distance when you are outside at night:
Thumb = 2 degrees
Fist = 10 degrees
Spread fist = 20 degrees

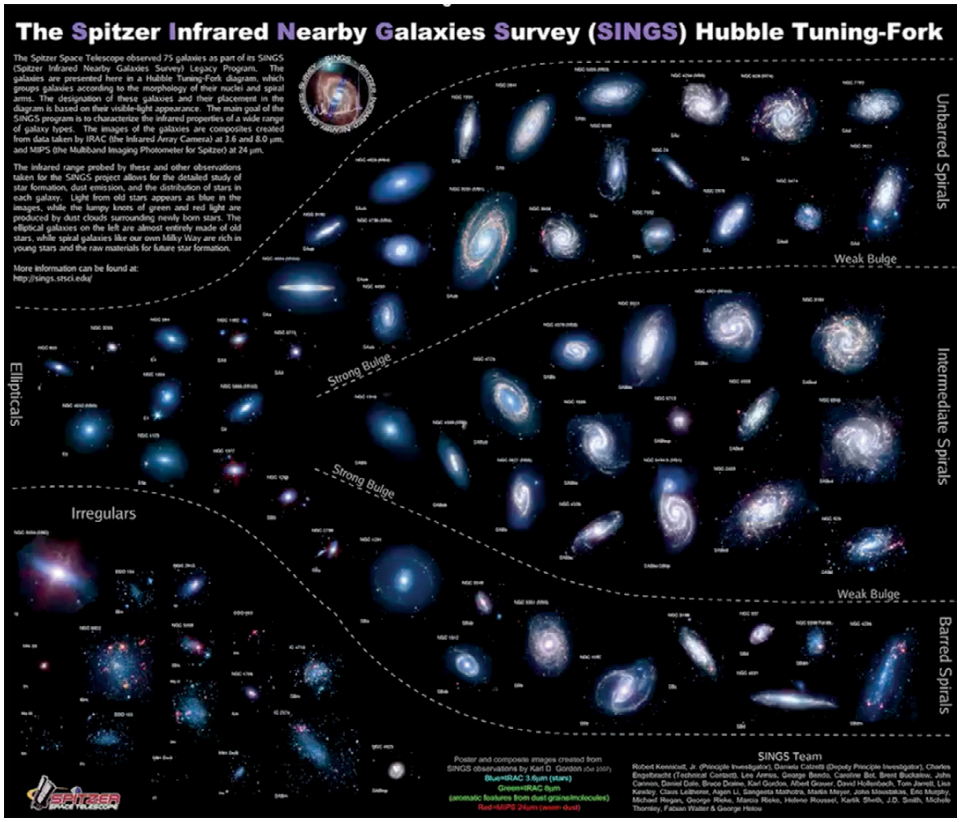
Edwin Hubble first to identify the Local Group of galaxy = collection of about 30 or more galaxies; Largest are Andromeda, Milky Way, (200 million stars) Triangulum, Draco, Ursa Major and Minor; Large and Small Magellanic Cloud, many more

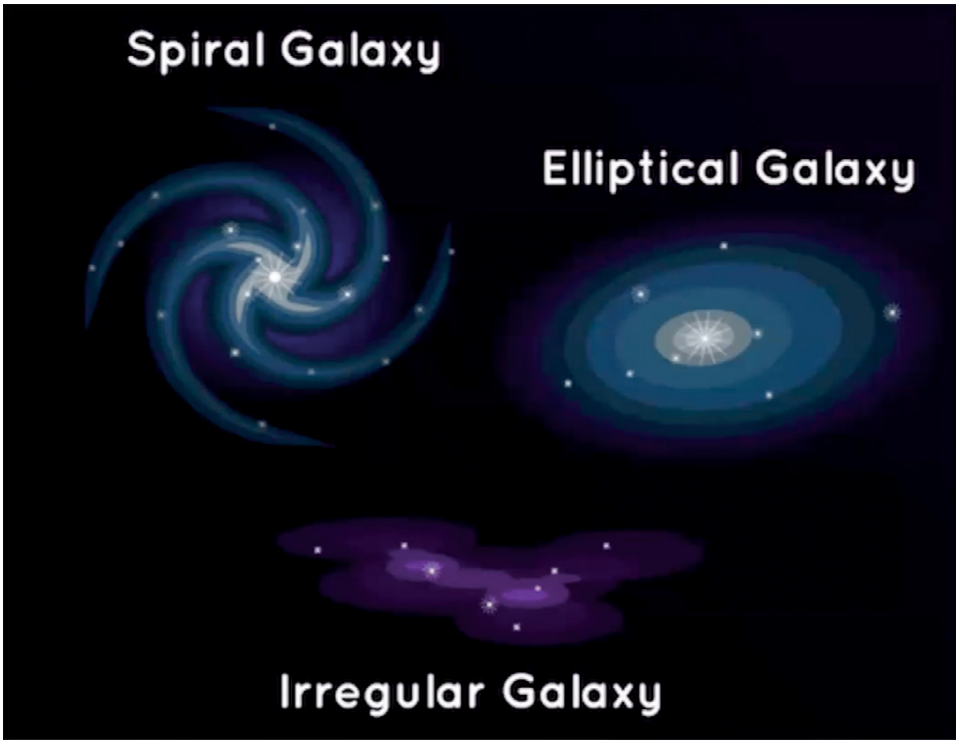
- Elliptical 0=7
- Spiral galaxies are bluish spiral, traced out by bright young starts surrounding the nucleus bulge: spirals Sa-c (a-more tightly spiral wound, b,c more widely wound)
- Barred Spiral are far less common and feature a bar across the nuclear region with spiral arms trailing out in front of the bar
- Irregular Galaxies

Spitzer Infrared Nearby Galaxies Survey (SINGS) Hubble Tuning-Fork

SINGS was a project that studied 75 nearby galaxies using the Spitzer Space Telescope from 2003-2006, focusing on their infrared emissions to gain insights into star formation and other galactic processes. SINGS provided a vital foundation for understanding the connection between star formation processes and the interstellar medium properties of galaxies. The data collected has contributed to a broader understanding of the universe's structure and evolution.

- Divided into ellipticals
- Unbarred, intermediate and barred spirals
- Irregulars



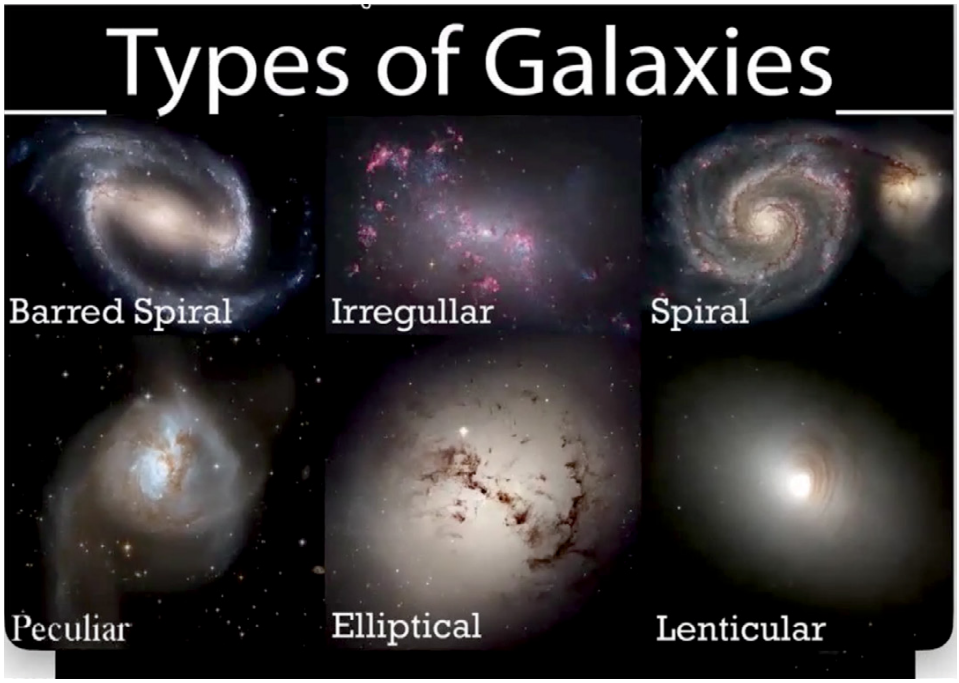


- Spiral Galaxy, Elliptical Galaxy, Irregular Galaxy

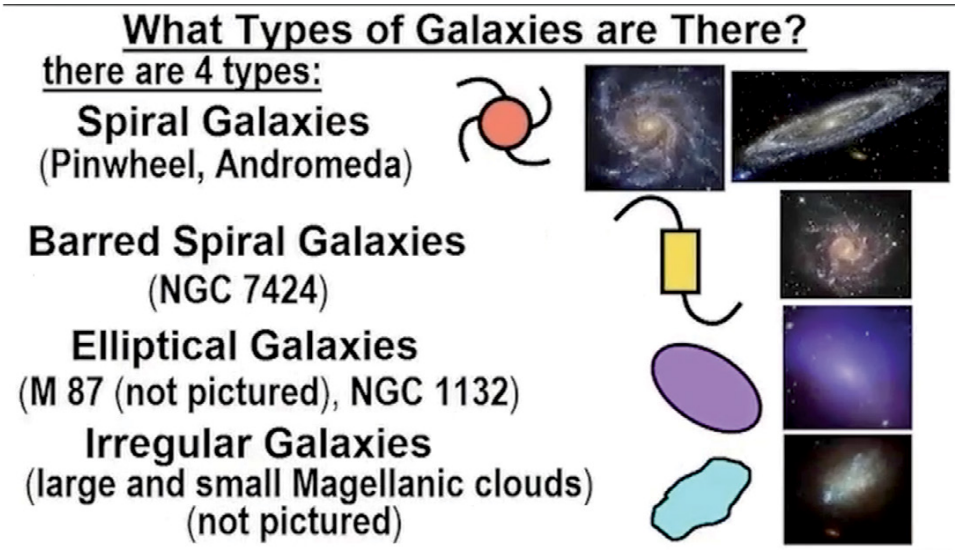
Types of Galaxies

Types of Galaxies

- Hubble did not know these were galaxies and called them nebulae, later figured out with Walker 100" telescope and understanding of redshift of stars moving away

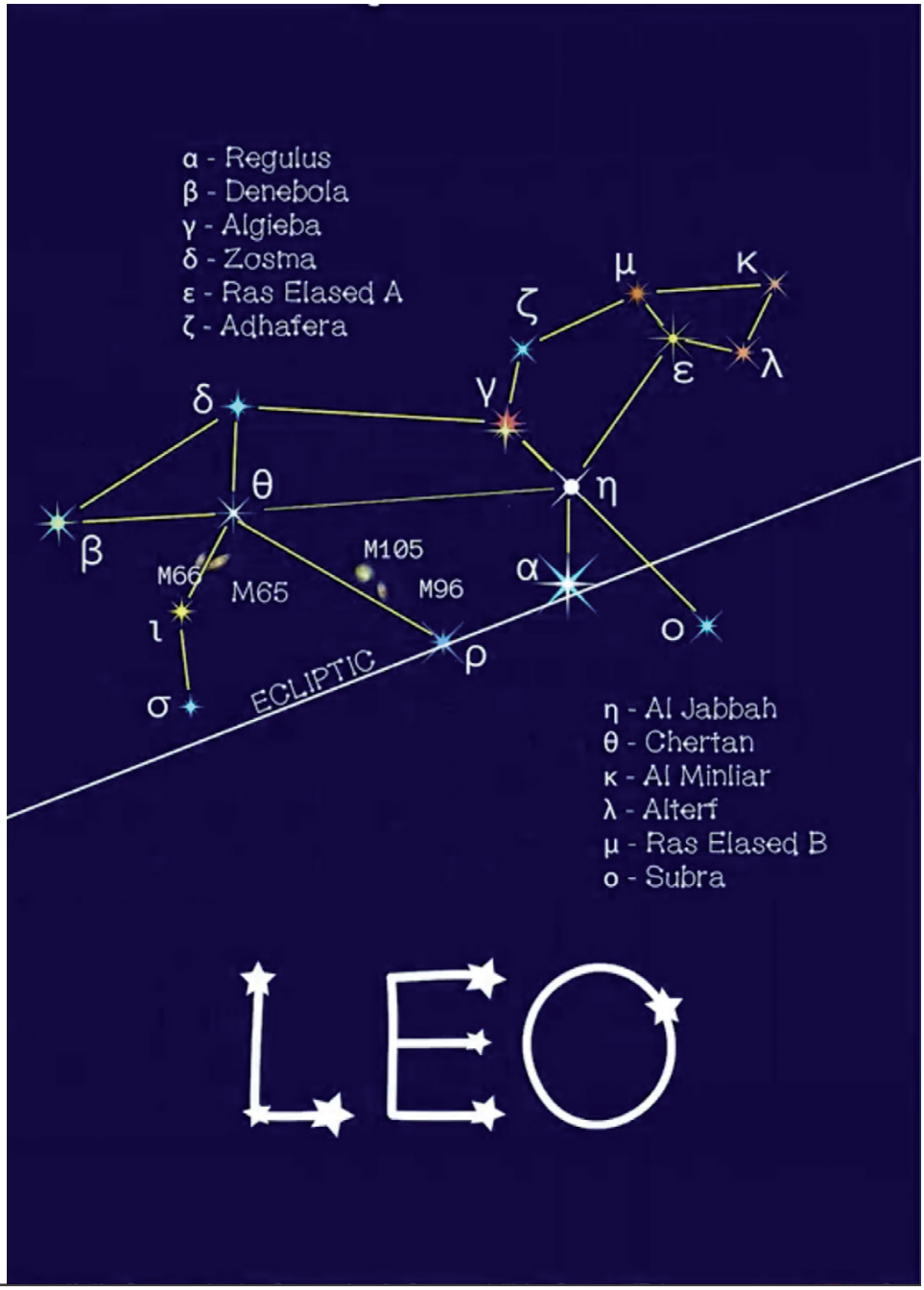


- Types of Galaxies



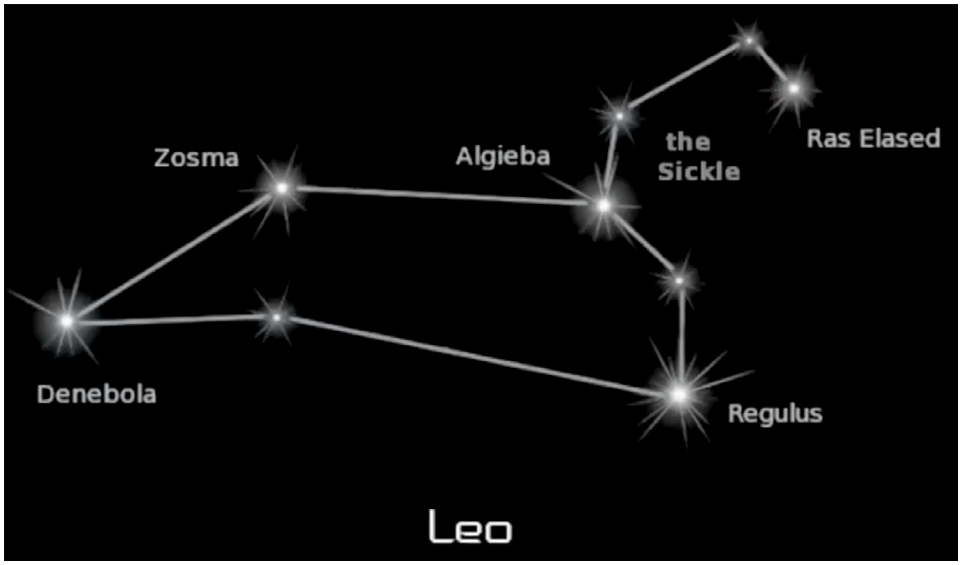
Leo - Constellation of the Month

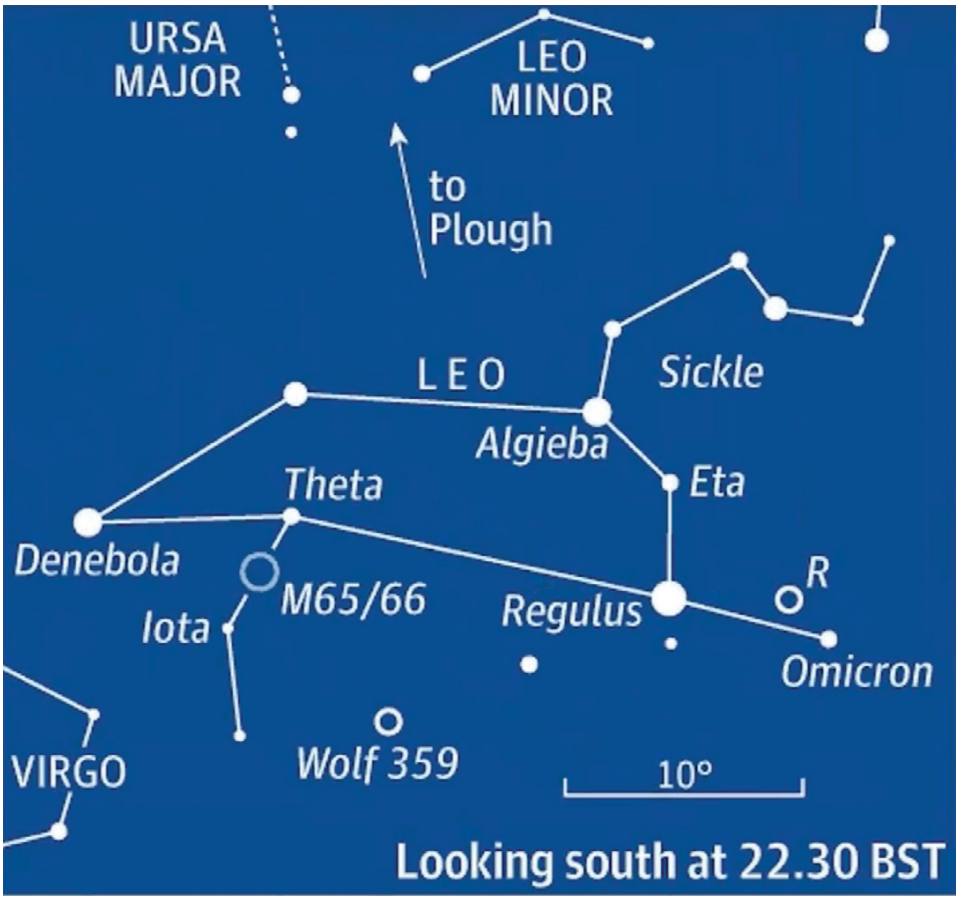
- Predominant constellation, large, easy to see, one of the constellations of the Zodiac
- Located in Northern Celestial Hemisphere between Cancer the Crab to west and Virgo the Maiden to east
- Name "Leo" is Latin for Lion, and has been associated with the Nemean Lion from Greek mythology, which was slain by the hero Heracles
- Familiar stars in Leo Constellation – Regulus mag 1.35, Denebola mag. 2.23, Algieba, Zosma, Ras Elased, variable star, red giant; R Liones with periodic brightness to mag. 4.4
- Contains several dark sky object; Messier objects; M65, M66, M95, M96, M105, NGC 3628 also known as the Hamburger - unbarred spiral galaxy of the Leo Triplet (M65, M66, NGC 3628) M95, M96 both visible in binoculars, M95 barred-spiral galaxy
- Asterism – the Sickle
- One of the oldest constellations in the sky, Babylonians knew the star Regulus as "the star that stands at the Lion's breast" or the King Star. Both the constellation and its



brightest star were well-known in most ancient cultures

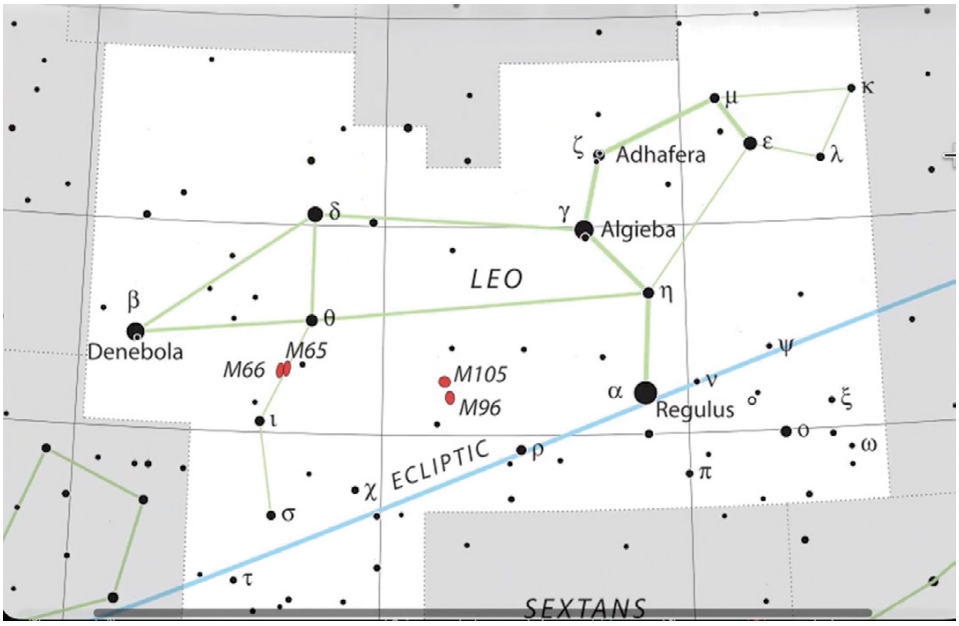
- Basically, we all love galaxies! Most are elliptical, then spiral, they vary in sizes and shapes, elliptical from 0-7; some spiral more loosely bound. Next month we will look at Virgo!





Leo Stars

Looking South
Leo Constellation Map by IAU and Sky&Telescope Magazine- Leo Triplet in Red



IV. Announcements/Upcoming Events with Outreach Coordinator Aref Nammari

- March 21 – Public star party at Sandstone Ranch with City of Longmont Parks 6:30-9:30pm
- March 27 – Public star party at Rabbit Mountain with Boulder County Parks 6:45- 9:30pm
- April 16 – LAS Monthly Meeting – Presentation by Dr. Tim Brown from 7:00-8:30pm
- April 17 – (New Moon) Public star party at Rabbit Mountain with Boulder Parks 7:30-9:30pm

III. Business Meeting with Treasurer Bruce Lamoreaux

Longmont
Astronomical Society

P.O. Box 806
Longmont, CO 80502-0806

LAS Treasurer's Report - Bruce Lamoreaux **3/19/2026**

Main Checking Account (xxx-1587)

Begin Balance:	$ 5,240.00	**2/3/2026**	
Deposits:	$ 75.00	Membership	
Expenses:	$ (470.00)	Bank Charges, Insurance, Library Telescope	
Current Balance:	**$ 4,845.00**	**3/3/2026**	

2-Year Savings Account (xxx-1478) (matures 10/23/25)

Past Balance:	$ 8,312.00	**10/23/2025**
Interest:	$ 12.00	
Balance:	**$ 8,324.00**	**12/31/2025**

Telescope Fund (xxx-0165)

Past Balance:	$ 1,090.00	**1/29/2026**
Deposits:	$ -	
Expenses:	$ -	
Balance	**$ 1,090.00**	**2/26/2026**

Petty Cash

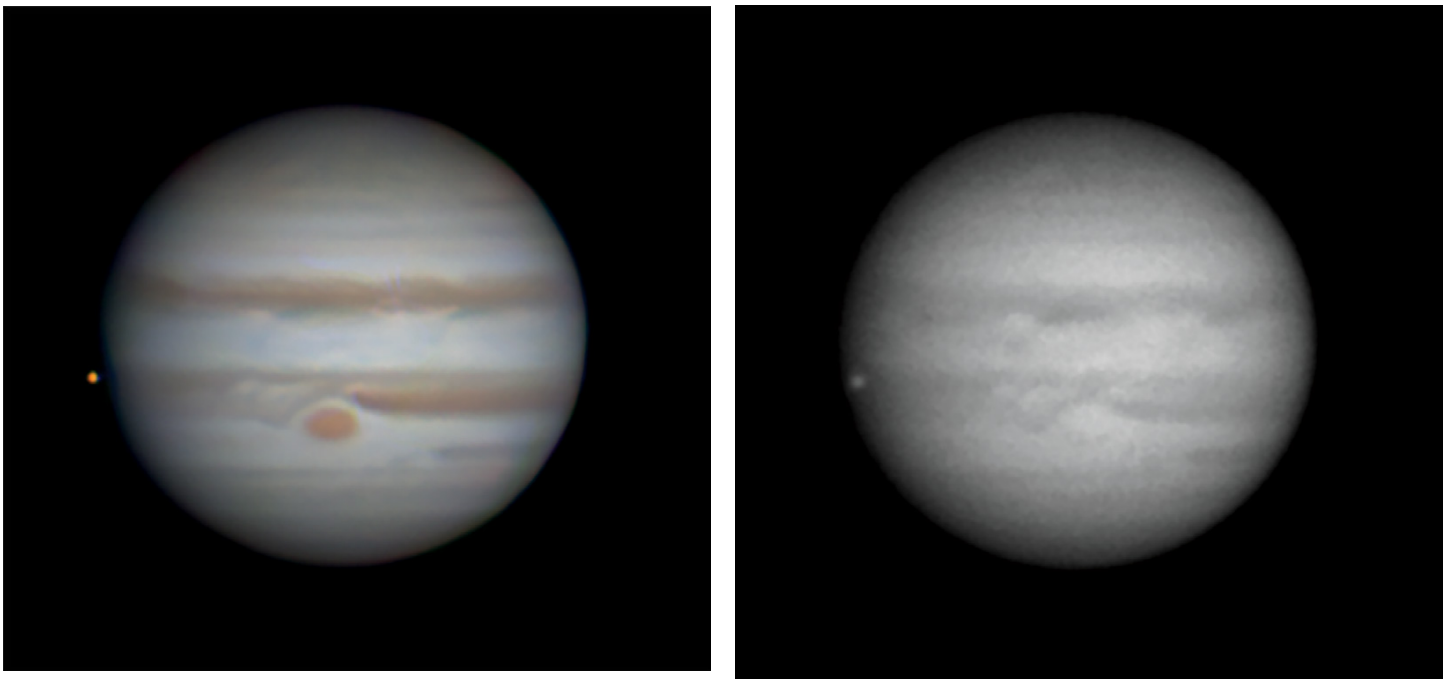
Past Balance:	$ 50.00
Deposits:	$ -
Expenses:	$ -
Balance	**$ 50.00**

Total Assets	**$ 14,309.00**	$ (395.00)	Down from February

Active Membership:	**110**	
Student Membership:	**2**	
Total	**112**	Active

Abel 1541 by Martin Butley

3 hours each of RGB, 13 hours Luminance
Total integration 22 hours at Starry Meadows
TAK 130 FSQ ZWO AS/ 6200



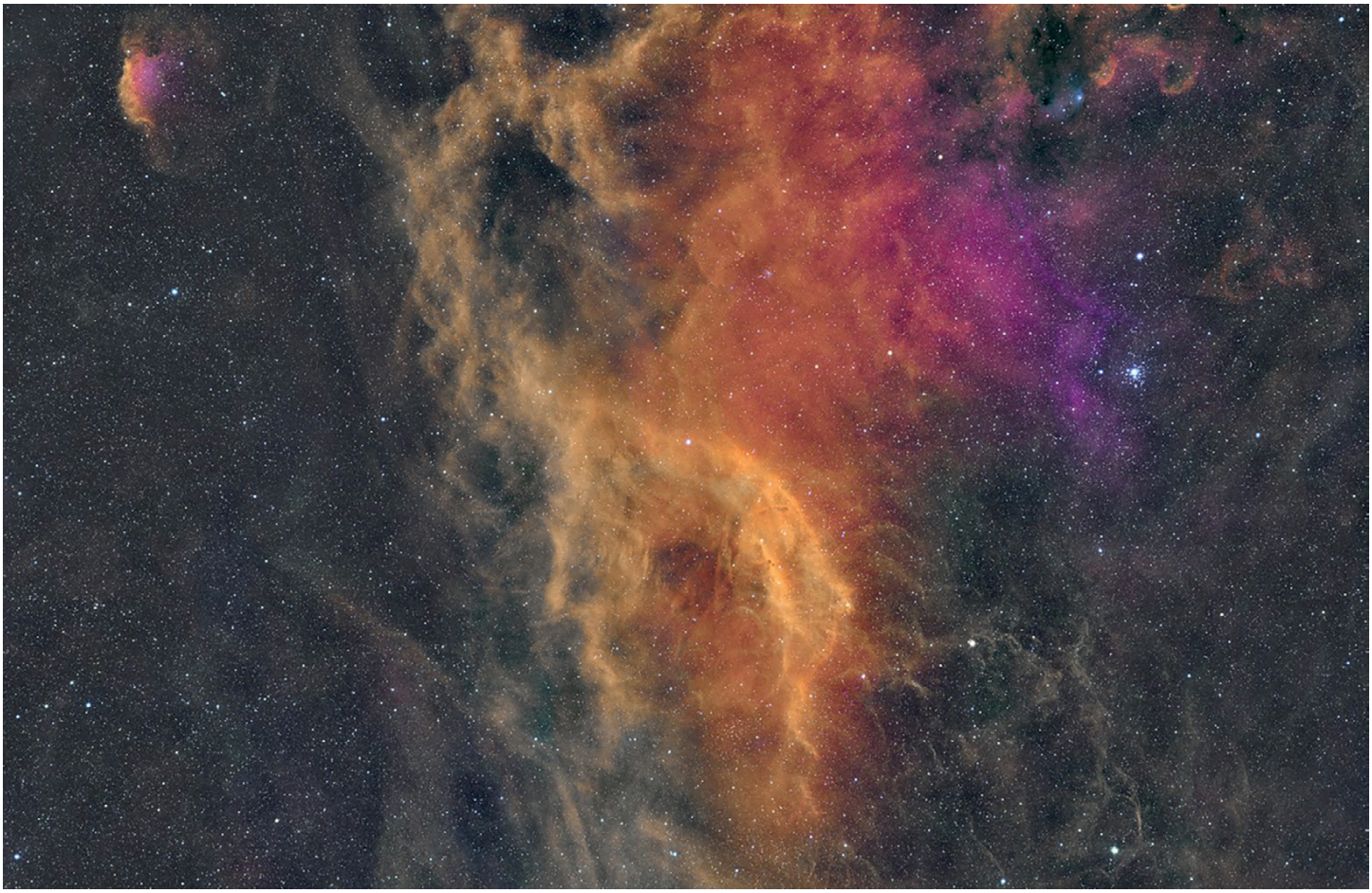
Jupiter on March 19 by London Crosby

Shot with QHY 585m, Edge 9.25, 2x televue (above image on left). Europa transiting near the GRP with Io and Ganymede to the side. Quick 60 live stack in NIR for comparison and an RBG stack (above image on right).

Took the opportunity with the heat dome we had almost two weeks ago to do some mono imaging of Jupiter and stream it online.

While the seeing wasn't amazing I did finally get my ch4 filter in and to my surprise we were able to easily make out auroral activity at the poles of Jupiter.

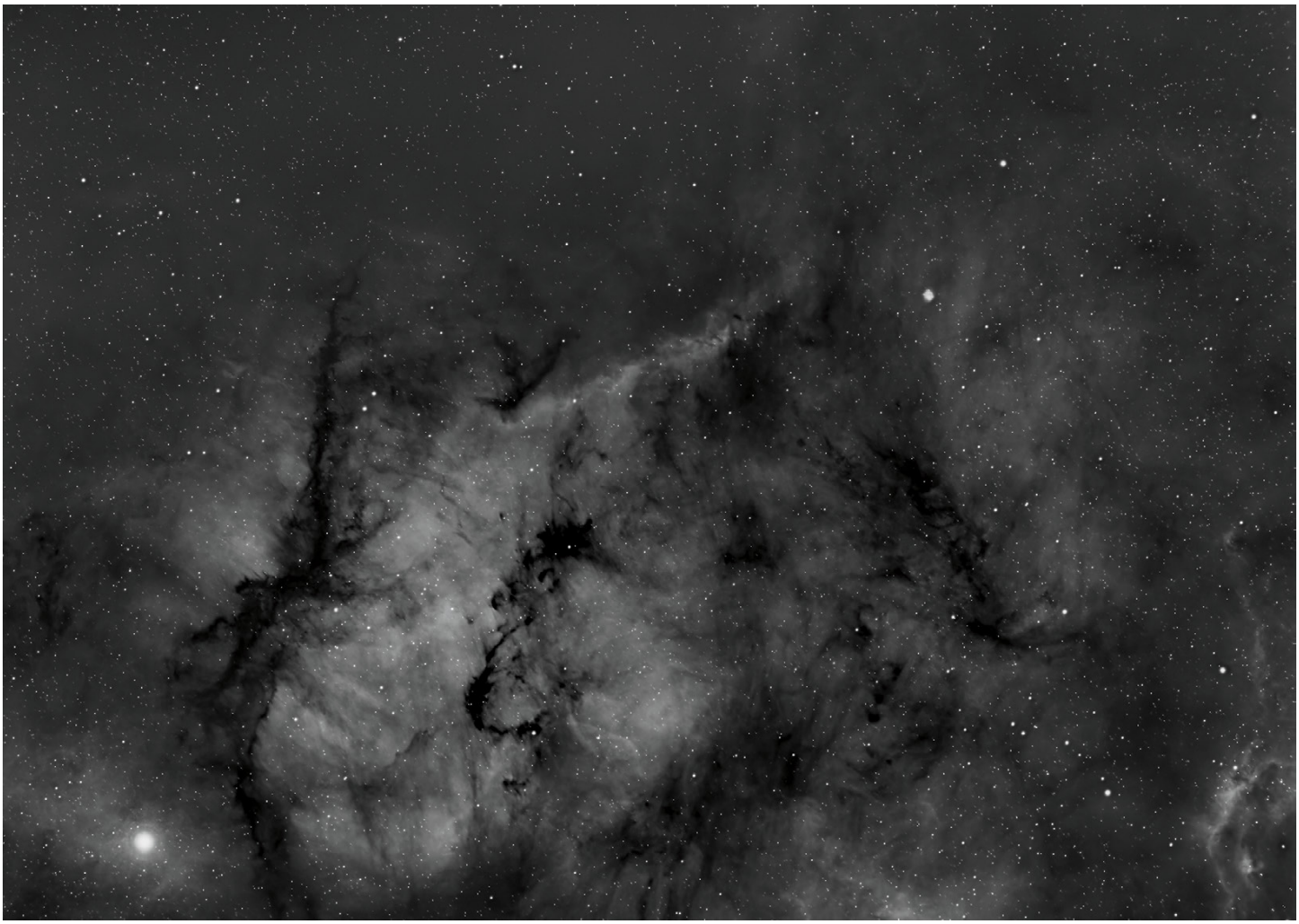
Aurora of Jupiter on March 19 by London Crosby



Sh 2-310 Region in Narrowband by David Elmore

This is Sh2-310, a very large star forming region pretty far south in Canis Major taken with a Borg107 refractor with 5° x 8° field of view. I find it a great target for astro-physics and astro-art. Color table used is close to pure HSO (H-alpha red, Sulfur II green, Oxygen III blue) therefore creating some interesting combinations of emission from the nebula. The Sh2-310 itself is mostly H-alpha (red) and Sulfur II (green) therefore the yellow band down the center. But next to it is pure H-alpha (red) then H-alpha + OIII (blue) = magenta. This is 6h40m total integration from my little observatory at Dark Sky New Mexico.
The open cluster right of center contains a blue super giant star that is 280,000 times brighter than the sun. The ionizing radiation from this star, Tau Canis Majoris, is what is creating the OIII emission.

David



Sh 2-249 in H-Al[pa by Stephen Garretson

Sharpless 2-249 is the HII region east [and slightly north] of IC 443, the Jellyfish Nebula; the Jellyfish appears to be swimming towards it, reaching out with its forward tentacles to connect. The bright star in the lower left is Tejat Posterior A, the fourth brightest in its constellation, Gemini. At 3 solar masses, it's getting on in years, having burned through all its hydrogen and all its helium. Also known as Calx, this red giant has a surface temperature of a cool 3650°. Most amazing to me is its size, it has a radius of 0.48AU; thus it would just fit between the Earth and the Sun.

Capture:
[28] 600s guided Ha subs
Total integration: 4 hours, 40 minutes
FOV rotated 50° clockwise
Dual scopes each having the following components:

- William Optics FLT 132 APO Triplet, 0.8x reducer/ flattener, running at f/5.6
- ZWO 2600MM Pro
- ZWO EFW
- Chroma 3nm Ha, OIII, & SII filters
- Wanderer Astro Mini V2 Rotator
- Bahtinov mask modified Wanderer Astro Eclipse
- MicroTouch focus motors

Guiding:
William Optics WhiteCat f/4.9 Astrograph
ZWO 220 Mini

Paramount MX+

from the Beevo Dome

TheSkyX, SGP, PHD2
PixInsight, MacOS Photo, Preview

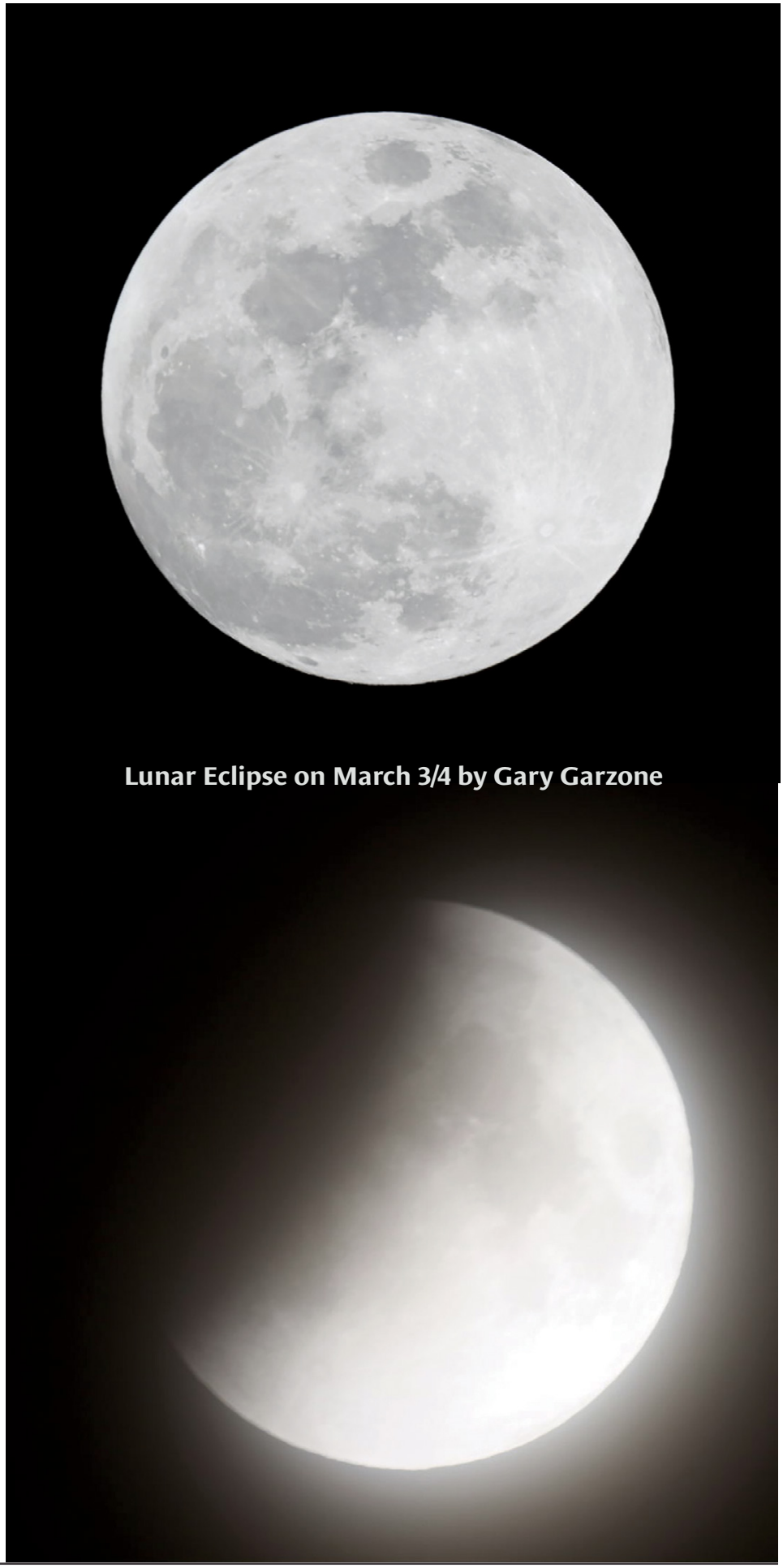
...Stephen

Eclipse attempt clouds before totality

I sent up my old 8 inch Newtonian, used 2 inch camera adapter with Canon Rebel digital camera.
The skies were clear right up to beginning penumbra. Shadow began did mange few pictures, but clouds quickly moved over, really hard to focus camera with thin clouds, was hoping to get few holes but only got worse.

I was up till 5 but got nothing, Darn
Some great pictures on line, bye,

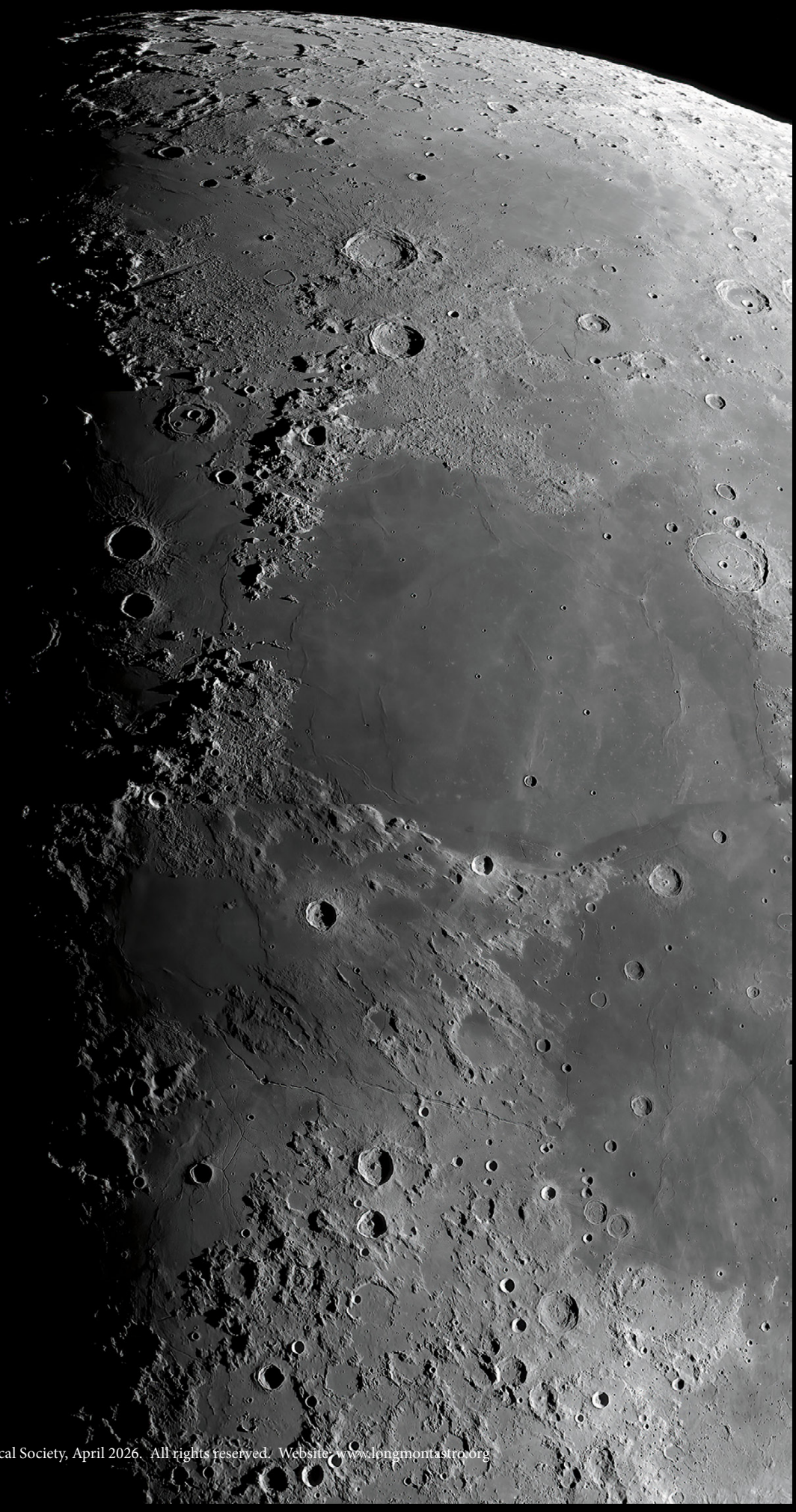
Gary



Lunar Eclipse on March 3/4 by Gary Garzone

Magellanic Clouds by Greg Steele

I spent a week in Chilean Patagonia, fly fishing. Didn't take any Astro equipment, but managed to capture both Magellanic Clouds using my iPhone.



Lunar Terminator
by Brian Kimball

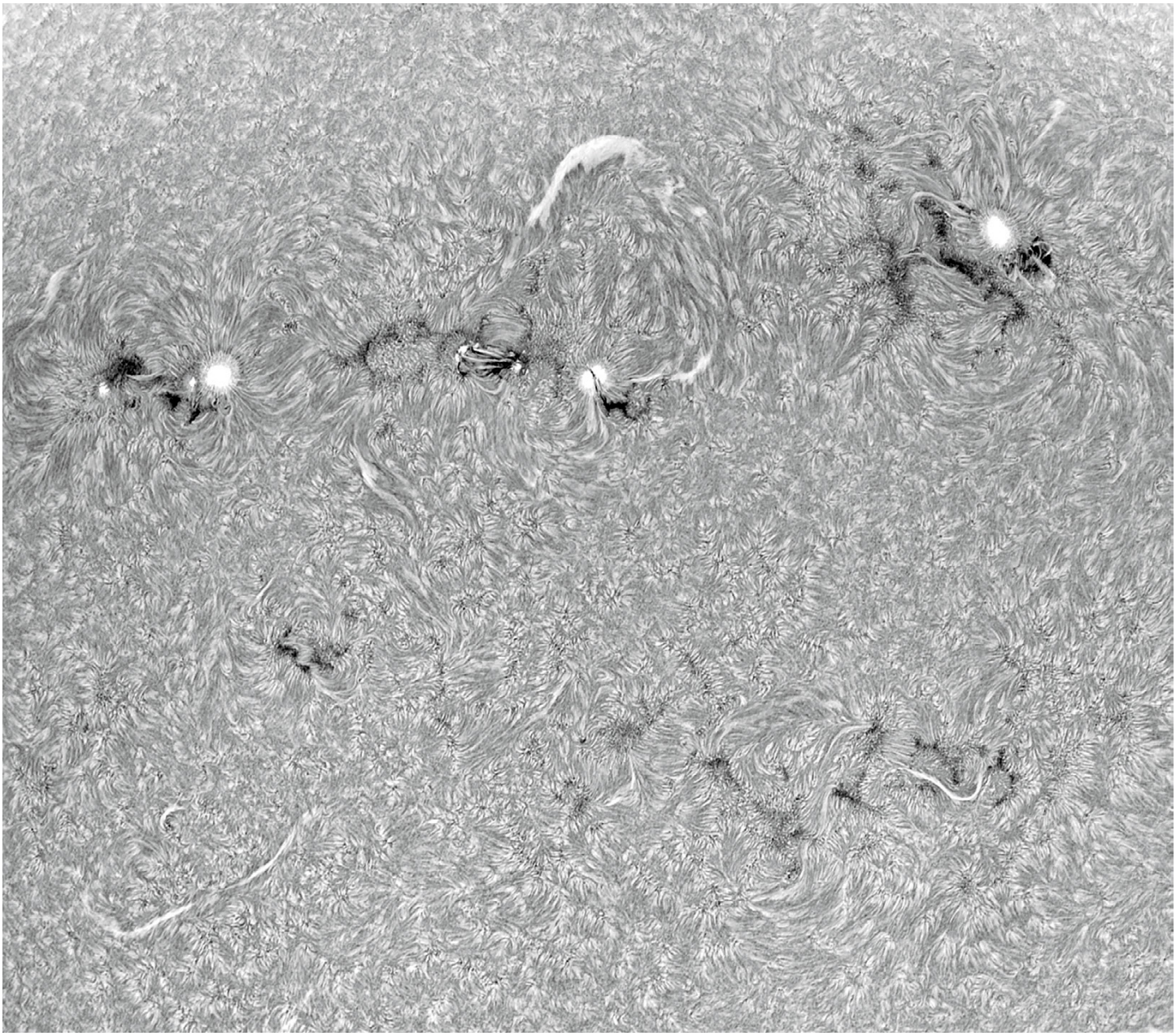
I'll be back...

Taken last night (Mar 25) with above average seeing. This is a 7-frame mosaic of the Terminator. Taken with the 10" f16 Dall Kirkham and ZWO174. Don't forget to zoom in.

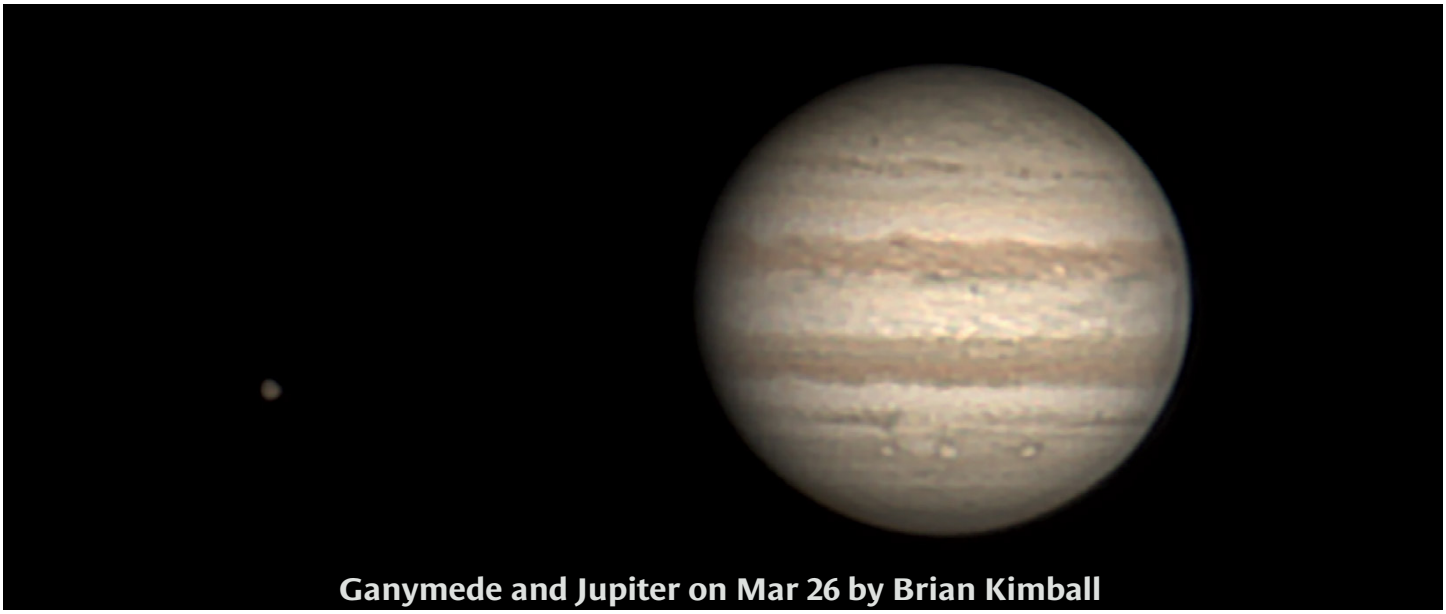
Thanks for looking,

Brian Kimball

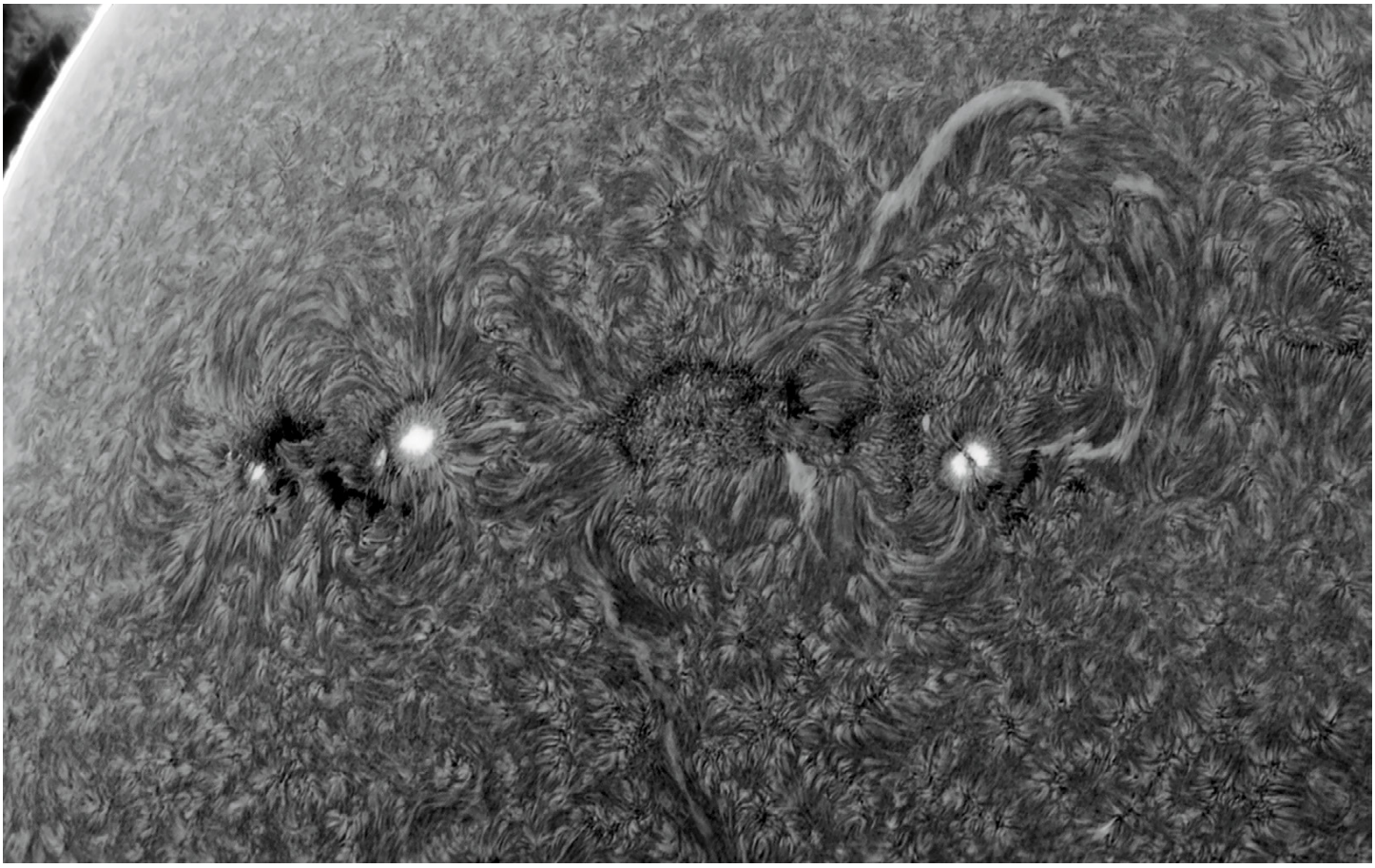
Lunar Terminator
by Brian Kimball



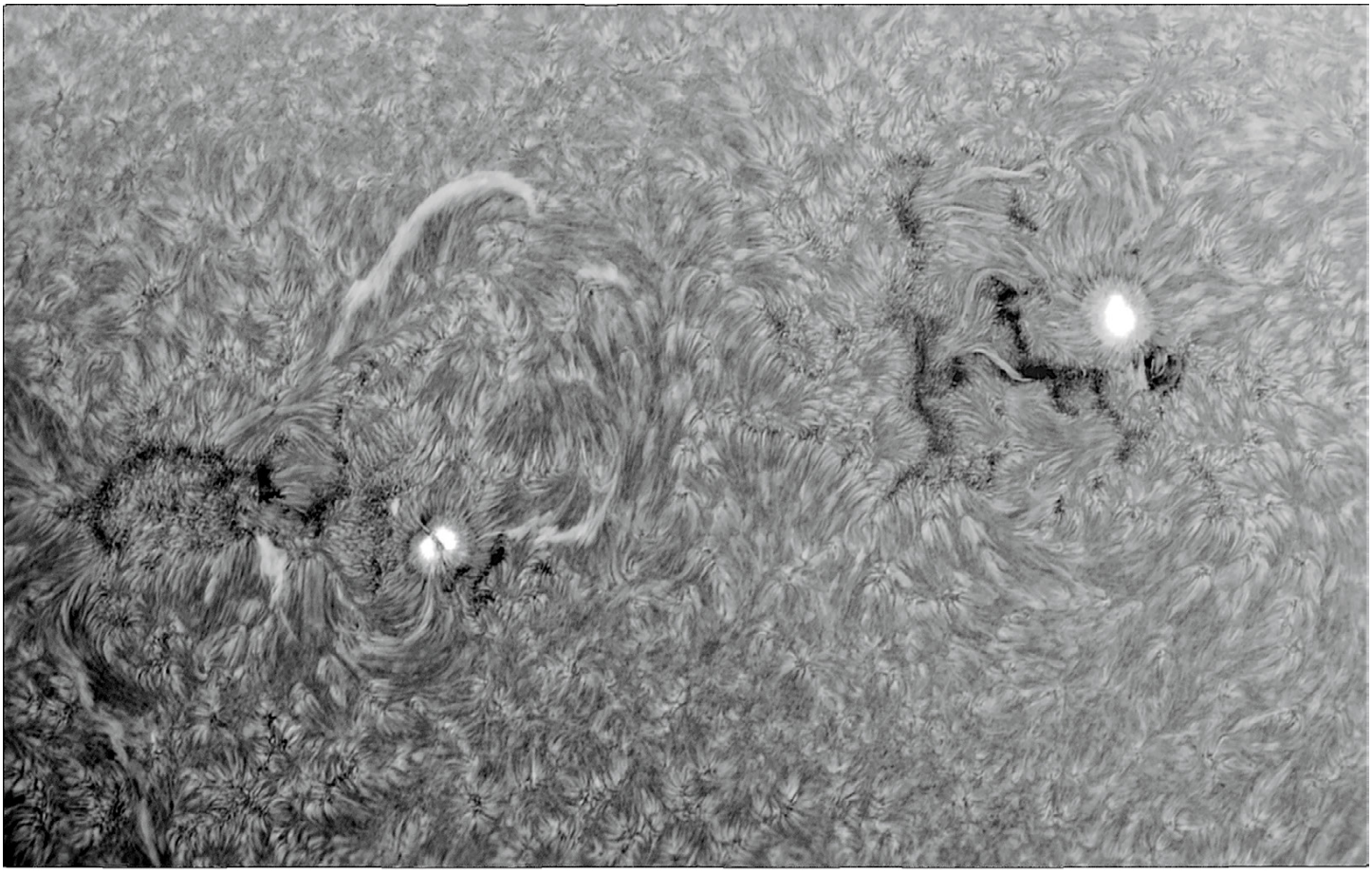
Solar active regions 4378, 4381, 4384, and 4385 in H-Alpha by Brian Kimball



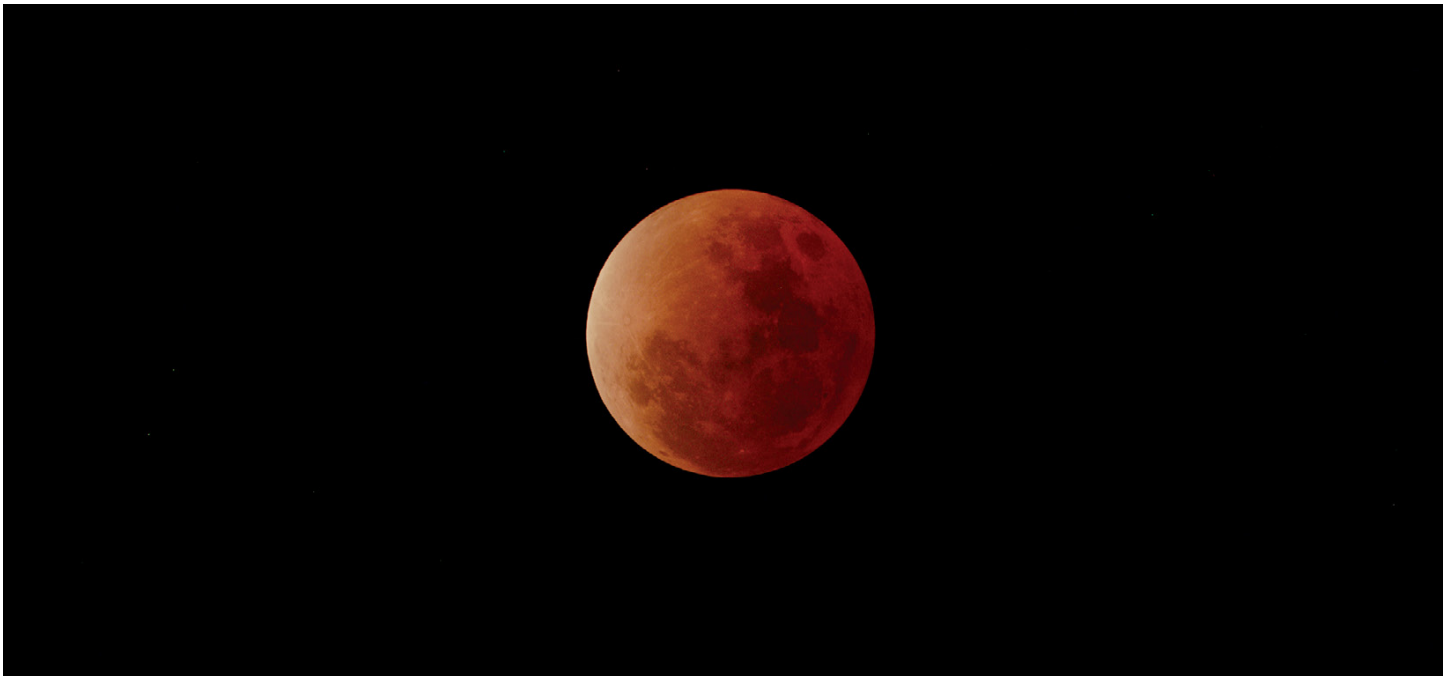
Ganymede and Jupiter on Mar 26 by Brian Kimball



AR 4381, 4384 in H-Alpha on March 4 by Brian Kimball



AR 4378 and 4381 in H alpha on March 26 by Brian Kimball



Lunar eclipse Mar 3/4 by Jim Pollock

It was cloudy around my house, and it was cloudy down in Texas at Starfront, but at least there, occasional gaps occurred, so I was able to shoot a few images through thinner times. Here's a shot of the moon shortly after mid-totality. This is a 3-second exposure through thin clouds with my 9.25" EdgeHD at f/2 Hyperstar with the ZWO 2600mc duo color camera. Next lunar eclipse: June 2029!!!

M101, Pinwheel Galaxy by Jim Pollock

Caldwell C6, The Cat's Eye by Jim Pollock

First time I've ever shot the Cat's Eye Nebula (Caldwell C6). Man! It's pretty cool! Like my BlackEye Galaxy, this I heavily cropped since it's a small object in my Hyperstar Field of View. Another example of a nebula powered by a Wolf-Rayet star. The little orange comma at the top is real. Its part of gas jet extending away from the object.

This image is 50 frame of 180s for 2.5 hours of exposure on the 9.25" EdgeHD at f/2 Hyperstar into a ZWO 2600mc duo color camera.
Jim P.

A Giant Pinwheel (M101, image on page 34, bottom)

As my mindset is shifting to galaxies (it's the season!) but still in my f/2 wide field configuration, I figured it was a good time to go ahead and shoot the Pinwheel. As in the giant, sprawling circuitous M101 face-on toy.

M101 is three times the diameter of the Milky Way and about 21M light years away. It was discovered by Pierre Méchain in 1781 who told Charles Messier about it. Messier added it as entry #101 in his catalog. Mechain described it as a large "nebula without star". William Herschel using his 20-foot focal length reflector noted "a mottled kind of nebulosity". But it wasn't for another 100 years before Lord Rosse attacked M101 with his 72-inch diameter reflector that revealed and sketched a large spiral structure

This image is 66 frames of 300sec for 5.5 hours of exposure into my 9.25" EdgeHD at f/2 Hyperstar at Starfront. L-Quad filter into the ZWO 2600mc duo color camera. Cropped pretty heavily from the Hyperstar wide field.
Jim P.

Sh 2-216 by Jim Pollock

This is kinda cool. SH2-216 is a rarely imaged, ancient planetary nebula over 600,000 years old. Interestingly, it is the LARGEST planetary nebula in our night sky, as it is old, expanded, but also the CLOSEST planetary nebula to earth at only 400 light years away!!!

While it is very close to us, it is so spread out that it is very very faint. You need a dark sky, narrowband filters and a long exposure to get this bad boy.

I shot this image with my 9.25" EdgeHD at Starfront in Texas over the last 3 nights.

112 frames of 5mins each for 9.3 hours of exposure on the 9.25" EdgeHD at f/2 hyperstar into my ZWO 2600mc color camera after passing through an L-Quad 4-band narrowband filter. No moon.

The entire planetary nebula is moving though the interstellar medium right-to-left created the "bow wave" or more heavily compressed front edge, hence the bright concentrated arc on the left. I'm not sure which star is the "central star" that caused this thing, as it is described as "significantly displaced from the apparent center" after so many hundreds of thousands of years of expanding, traveling and being compressed.

This PN was first cataloged by Stewart Sharpless in 1959 as a (mis-identified!) large H-II region, but wasn't classified as a planetary until 1981. The white dwarf central star was confirmed in 1985. Interesting!!

Jim

Comet C/2025 R3 (PanSTARRS) on Mar 26 by M. J. Post

This comet barely peeked over our observatory wall at DSNM last night. It will be much higher in the next few days, but clouds will prevail. This is a composite of sixteen stacked 30-sec-long sub frames just before sunrise, with stars getting wonky because of top-of-wall diffraction. Max elevation 17 degrees (4 atmospheres). CDK14 scope, FOV ~0.9 x 0.6 degrees.

M.J. Post

NGC 3338 by M. J. Post

A Little Beauty in LEO - NGC 3338

I was pleased how willingly this galaxy rendered its beauty, most likely because it is almost face-on and relatively close (75 M.l.y.). Wth a breadth of 130,000 l.y. it is nearly a carbon copy of our Milky Way, albeit lacking a bar. The bright blue star in the foreground is HD 92622, mag 9.2, about 800 l.y. from Earth.

DSNM, CDK 14 scope, 3 hours on target, 33 x 22 arc minute FOV.

M.J. Post

LBN 902 by M. J. Post

This bright nebula has both emissions and reflections emanating from it, plus some fascinating dark structures. It lies in Monoceres just above the cone nebula. It has been on my "To Do" list for more than two years, after seeing Stephen's narrowband images back on Jan 4, 2024. Just for the heck of it, I decided to see what would result from a broadband (one-shot-color) look, and I'm glad I tried. What a range of colors!

From DSNM, CDK14 scope, 3 hours total exposure on ASI 6200MC camera. FOV is about 49 x 33 arc minutes.

M.J. Post

LAS Archives April 1996, 2006, 2016 by Eileen Hall-McKim

30 Years Ago – April 1996

At our March meeting we discussed comet sightings, weekend weather, a need for volunteers at public viewings at Sommers-Bausch Observatory on the CU campus, comet tracking by offsetting the polar axis of an equatorial mount, the Pawnee location for the April star party, our intent to get back to the basics of observing at future meetings, and the upcoming FRASC meeting.

While most astronomers were very conservative in their predictions of Comet Hyakutake's brightness and tail length, the comet made all predictions pale in comparison. Most published magnitude estimates predicted a max. brightness of 1st or 2nd magnitude on its closest approach in March. Many observers made estimates of between -1 and 0 magnitude during this period. While observing from Carter Lake on March 26th, the comet's tale was visible all the way to Coma Berenices! With the comet's head near Polaris that make the tail 50° long!

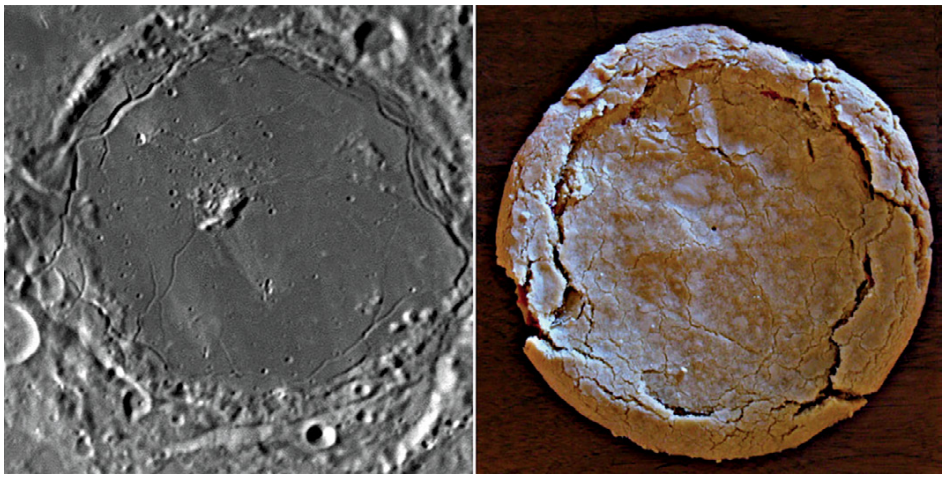
- Dennis Ward was the first of the volunteers for our Show-and-Tell program showing a two-hole wooden focus aid for telescopes and a multi-hole tripod-top board for secure handy stowing of eyepieces etc.
- Dave Street brought his famous all-sky camera, in which the latest model has a CCD camera looking down at the moon hubcap in which the whole sky is reflected. He took a group portrait of us all with it.
- Bob Michael and Linda Chen showed their Vista binocular mount, which has parallelogram height adjustment permits a taller and shorter person to see the same object without re-aiming.
- Bob also showed his COSCO brand IR night-vision scope, which runs on AA batteries.

20 Years Ago – April 2006

Crow Valley report from Garry Garzone

Hey gang! Lucky seven again! Seven of us had another new moon dark sky night at Crow Valley.
Several other campers were there but they were far enough away to not bother us with their lights from campfire. Large group of campers at group camping area, but that is far away from us too. I like Crow Valley but this will be our last time there because of all the campers that can show up there. Low temperatures were just below freezing, way warmer than last month.
It looked like a marginal night when I left late Saturday for grasslands dark sky viewing. When I got there the skies opened up some. Steady wind blowing got me nervous about high plains winds. It turned out to be Ok. Fog bank rolled in quickly around 11pm or so and then cleared again for several more hours then fog till morning. Vern and I left early morning in foggy skies for most of the way home. We had a pretty good night for several hours. I got to see lots of favorites again.

Lunar picture of the day by Andrew Planck.



Andrew wrote: "Last weekend I was in the kitchen baking a cherry pie to celebrate my mom's 94th birthday (she was born on George Washington's birthday), and when I took the pie out of the oven I was immediately struck by some similarities between the pie, the crater Pitatus, and some of your commentary in "Modern Moon" about subsidence and arcuate rilles around basins and large craters. I have been asked by my astronomy club to do a presentation

on the Moon, and I plan to show the attached photo of my mom's cherry pie to help explain that when lava comes up through cracks and fissures to cover basin floors, after it cools and forms a crust it is so heavy that the floors frequently subside and arcuate rilles appear around the perimeters. In the case of my mom's cherry pie, when the underlying pie filling (the "lava") cooled and shrank a bit, the heavy pie crust subsided and some remarkable arcuate rilles opened up. (I don't make "light and fluffy" pie crusts–it's solid butter, flour, & sugar! CAW comment: The rilles of floor-fractured craters like Pitatus probably form in association with an uplift of the crater floor by an intrusion of magma. But Pitatus undoubtedly does not taste as good."

Saturn by Brian Kimball

The skies were pretty steady about 8:00 pm this evening so I snapped of a webcam of Saturn. This picture was taken with a 12.5' Ritchey at fl 8 and a Philips ToUcam. 400 our of 1200 frames were used in Registax

10 Years Ago – April 2016

- The March guest speaker was Dr. Fran Bagenal with the Laboratory for Atmospheric and Space Physics (LASP) at the University of Colorado. Her presentation was "Pluto the Pugnacious Planet". Fran has been a member of New Horizons team since the project was first proposed to NASA over 15 years ago. She reviewed the mission highlights as it progressed in its journey to Pluto. She discussed some of the stunning images that have received and discoveries made by the team that were published a week before in Science Magazine. Pluto's upper atmosphere is much colder and way more compact than models predicted.
- Following Fran's presentation we had a short business meeting. Mike Fellows gave the monthly financial report. Vern Raben did an update on the Library Telescope Project – two telescope kits were delivered to the Louisville Public Library on March 19.

Planetary Image Processing

Vern provided a brief tutorial of using the AutoStakkert application to align and stack planetary images. The application is available for download from http://www.autostakkert.com/wp/download/

Longmont Astronomical Society
P. O. Box 806
Longmont, CO 80506

Umbrella Galaxy by M. J. Post