



Howard Astronomical League Monthly Meeting

June 19th, 2025

Tonight's Agenda, June 19th, 2025

- Introductions
- Announcements
 - 2025 Star Parties, Recent & Upcoming Events
 - Book of the Month – Krystal Rolon
- Featured Speaker – Marcel Mabson, Professor Of Practice, Astronautical and Space Engineering, Capitol Technology University
- What's Out in the Sky This Month...
 - Shallow Sky – Jim Tomney
 - What's up In Space – Wayne Baggett
- Members' Astro-Images and Sketches
- Wrap-up & Discussion

HAL Star Parties...

2025 Schedule of Star Parties

March

March 8 – Public –
March 29 - Members

April

April 5 - Public (Jupiter/Europa shadow transit)
April 26 – Members -

May

May 3 – Public-
May 24 - Members **Host: Wayne Baggett**
May 31 - Member Mentorship Night **Hosts: Multiple**

June

June 7 – Public **Hosts: Phil Whitebloom, David Stein, Ken Everhart**
June 21 - Members

July

July 5 - Public (Mercury near greatest eastern elongation)
July 26 - Members

August

August 2 - Public
August 23 - Members

September

September 13 - Public (No moon)
September 20 - Members (Saturn at opposition)

October

October 4 - Public (International Observe the Moon Night, Moon 93.7% full)
October 18 - Members

November

November 1 - Public
November 15 - Members

Recent/Upcoming Events

- Members Mentorship Night 5/31/2025
 - We had about 10 seasoned HAL members and about 10 new members w/gear/questions attend
 - A lot of one-on-one mentoring
 - The clouds were touch and go
 - We'll try to have another one soon
- Impromptu Star Parties Held 5/17, 5/19 & 5/24
 - Thank you to Wayne Baggett, Jose Urias and Ernie Morse for Opening up the Park this month
 - If you are interested in getting notifications, visit the HAL website, <https://howardastro.org/join-impromptu>
- Sky Watching Event with the Howard Nature Conservancy for June 14 cancelled on account of rain - Stand by for re-scheduling announcement
- Forecast looks good for the Members star party scheduled for this Saturday, the 21st
- Fingers-crossed for the public star party on the 5th of July



Regional Star Party info...

<https://skyandtelescope.org/astronomy-resources/annual-stargazing-events/>

Book of the Month

Title:

- Starstruck: A Memoir of Astrophysics and Finding Light in the Dark

Author:

- Sarafina El-Badry Nance

Length:

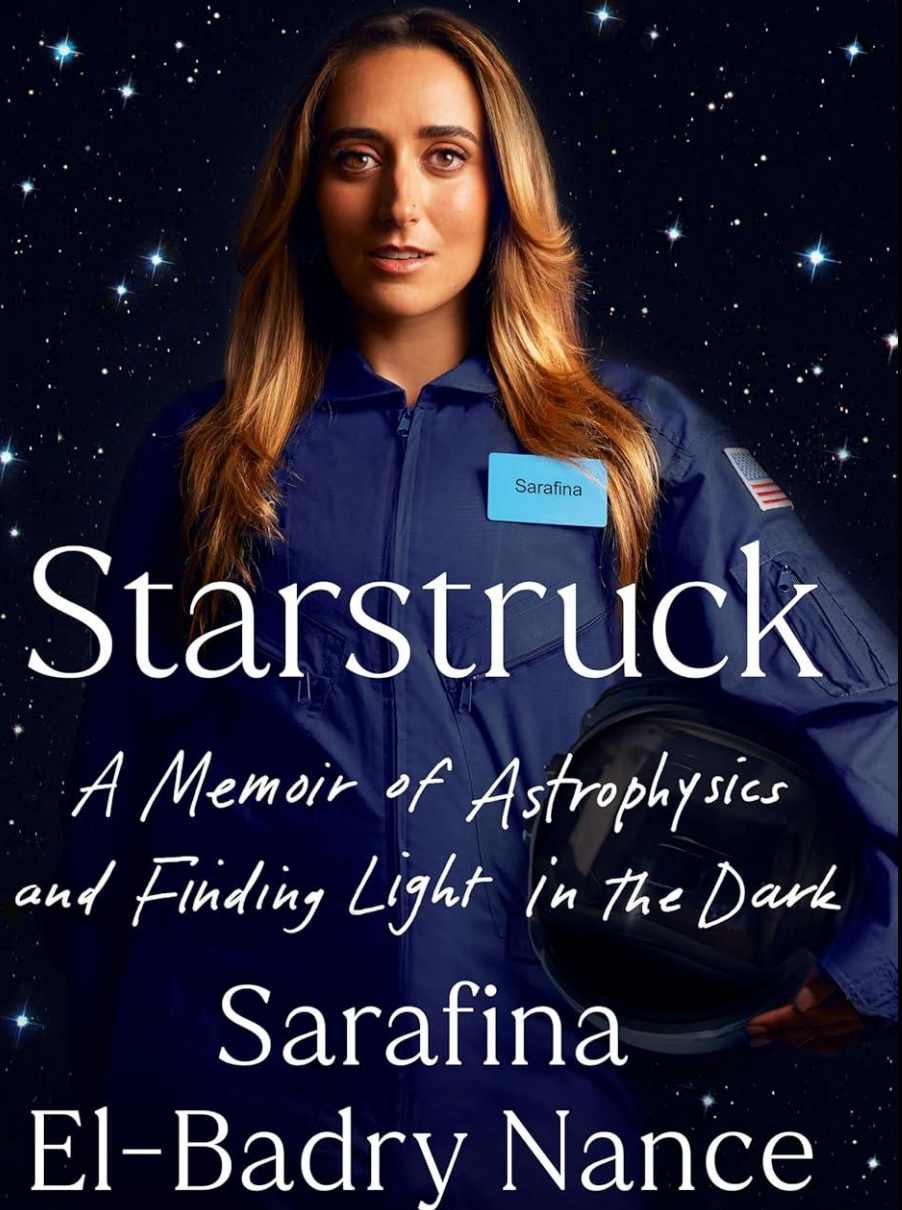
- 336 pages

Audience Level:

- Beginner Friendly – Trauma Topics*
- Intermediate
- Experienced

June 2025

"The best book you will ever read about growing up to be a scientist."
—SEAN CARROLL, *New York Times* bestselling author of *The Biggest Ideas in the Universe*



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Topic: ALPHA Observatory, Near-Earth Asteroid Detection and Automation

Marcel Mabson, Professor Of Practice, Astronautical and Space Engineering, Capitol Technology University

Prof. Mabson earned his B.S in Astronautical Engineering from Capitol Technology University in 2010 and has supported over 20 NASA and commercial space missions, including Landsat, GOES, LRO and Cygnus. Since joining Capitol in 2015, Prof. Mabson has supported the Space Flight Operations Training Center, ALPHA Observatory, and various projects to support the next generation of engineers and provide mentorships to prospective and enrolled students. Prof. Mabson has earned various awards, including Faculty of the year, Landsat and GOES-R Group achievement.

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Shallow Sky Highlights for June-July 2025

- *Mercury has a fair evening appearance. Catch the swift inner planet next week if you have a clear western horizon*
 - *Jun 26th – greatest elevation coincides with the planet appearing $3\frac{1}{2}^{\circ}$ left of a thin crescent Moon.*
- *Venus is a pre-dawn object sporting a gibbous phase*
- *Mars is tiny (smaller than Mercury in an eyepiece) and moving through Leo.*
- *Jupiter lost in Solar glare.*
- *Saturn is getting well placed in the morning sky for early risers. Rings are slowly opening but most eyepiece views will show a ball of yarn skewered by a darning needle!*

Last Call for Titan Shadow Transits

From now until fall you get one last chance to see the shadow of Saturn's largest moon – Titan – traverse the cloud tops

- This can only happen when Saturn is near its equinox, which just happened last month. With a near 27° axial tilt and 30-year orbit, you won't see this phenomenon again until 2038!



Robert Lunsford
ALPO Gallery

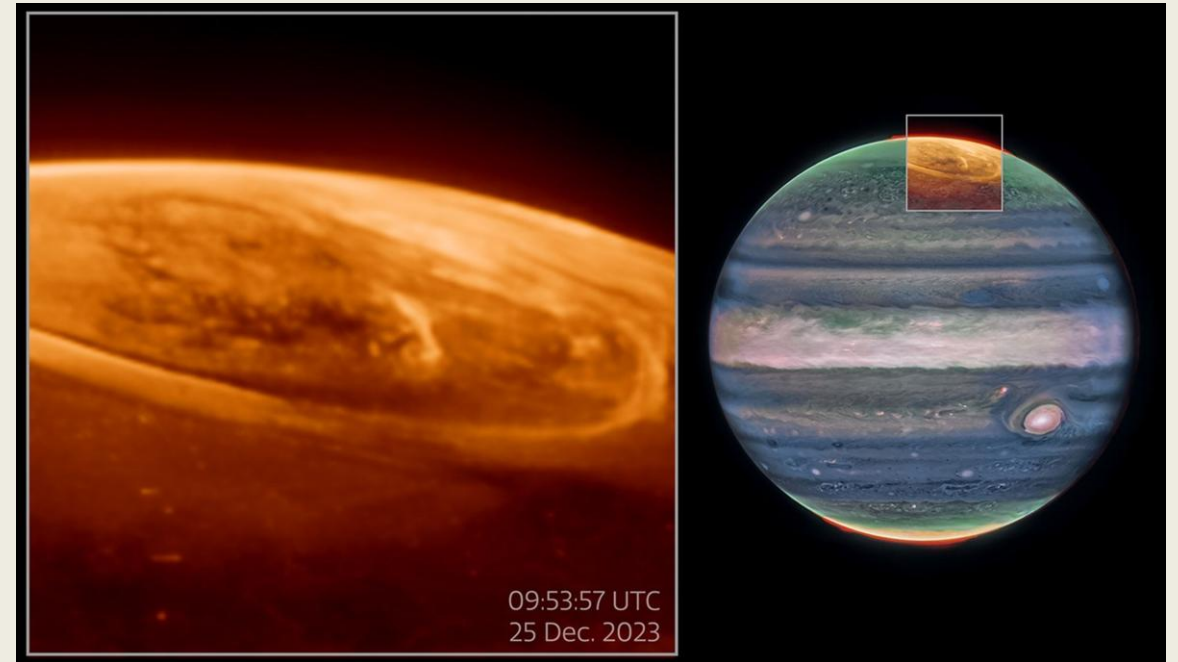
Upcoming Titan Shadow Transits (UT)			
Date	Start	Mid-transit	End
Apr 29	10:35	13:45	16:34
May 15	9:49	12:59	15:44
May 31	9:05	12:12	14:53
Jun 16	8:21	11:24	14:00
Jul 2	7:40	10:35	13:03
Jul 18	7:00	9:44	12:05
Aug 3	6:25	8:52	11:04
Aug 19	5:52	8:01	10:00
Sep 4	5:25	7:09	8:50
Sep 20	5:09	6:20	7:34
Oct 6	—	5:32*	—

*Full shadow on disk only at mid-transit

What's Up in Space Headlines

JWST Observes Jupiter's Auroras

- 3.36 μm observations by NIRCam
- Trihydrogen cation, H_3^+ , more variable than previously believed
 - Variable on the order of seconds
 - Trihydrogen cation lifetime found to be about 150sec
- Observations present a diagnostic window for the Jovian magnetosphere and ionosphere



NASA, ESA, CSA, STScI, Ricardo Hueso (UPV), Imke de Pater (UC Berkeley), Thierry Fouchet (Observatory of Paris), Leigh Fletcher (University of Leicester), Michael H. Wong (UC Berkeley), Joseph DePasquale (STScI), Jonathan Nichols (University of Leicester), Mahdi Zamani (ESA/Webb)

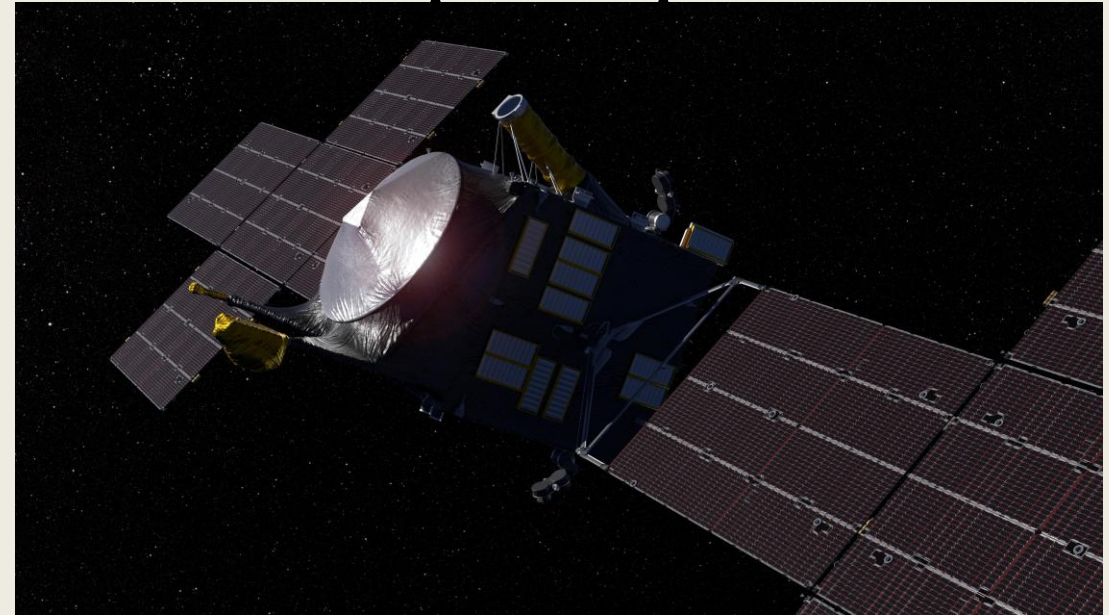
More Info at

<https://science.nasa.gov/missions/webb/nasas-webb-reveals-new-details-mysteries-in-jupiters-aurora/>

What's Up in Space Headlines

Psyche Spacecraft Switches to Backup Propellant

- Mission to asteroid Psyche to map the surface and determine composition
- Solar-electric propulsion using xenon gas
- Spacecraft has redundant propellant lines
- Valve issue caused low pressure in xenon tank, causing propulsion loss
- Switching to backup restores propulsion
- Mission should proceed as planned, reaching the asteroid in August 2029



Peter Rubin, <https://www.jpl.nasa.gov/images/pia23875-psyche-spacecraft-artists-concept/>

More Info at

<https://science.nasa.gov/blogs/psyche/2025/05/28/nasas-psyche-spacecraft-using-backup-fuel-line/>

What's Up in Space Headlines

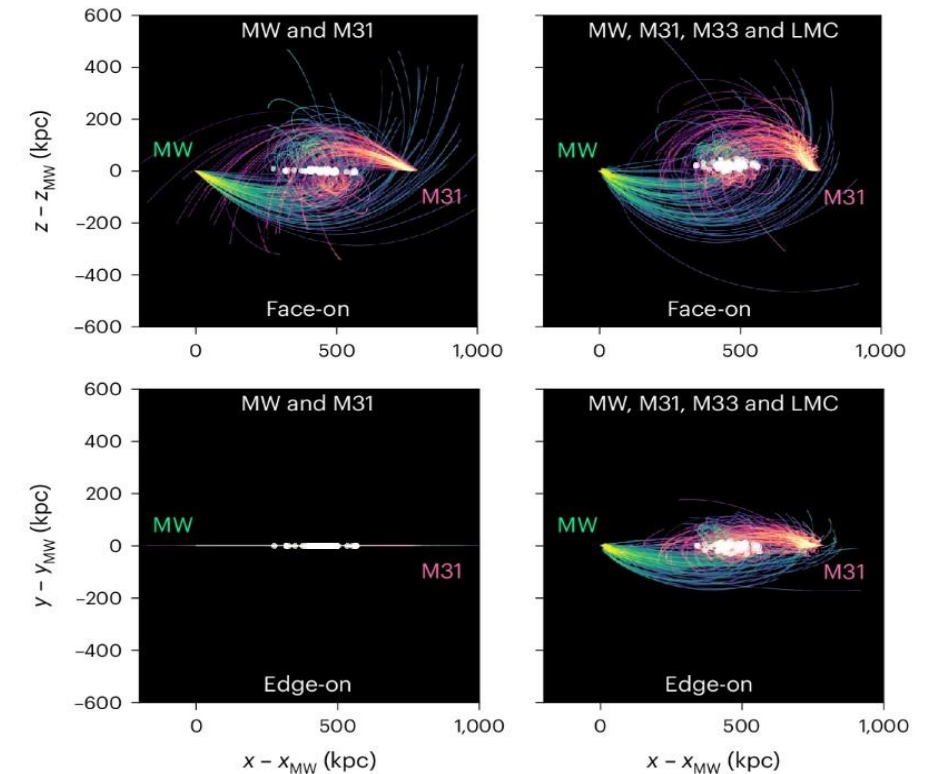
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Milky Way – Andromeda Collision: Maybe Not

- Previous studies of the relative motion between the Milky Way and M31 have suggested a collision in about 5 Gyr
- Positions and proper motions from HST and GAIA DR3
- New study adds the effects of M33 and LMC
- Monte Carlo simulations of possible orbital paths
- Study predicts an almost 50% chance that the merger will not happen – it's basically a coin flip

Fig. 1: Possible future MW-M31 orbits.

From: [No certainty of a Milky Way–Andromeda collision](#)



Sawala, T., Delhomelle, J., Deason, A.J. et al. No certainty of a Milky Way–Andromeda collision. Nat Astron (2025). <https://doi.org/10.1038/s41550-025-02563-1>

More Info at

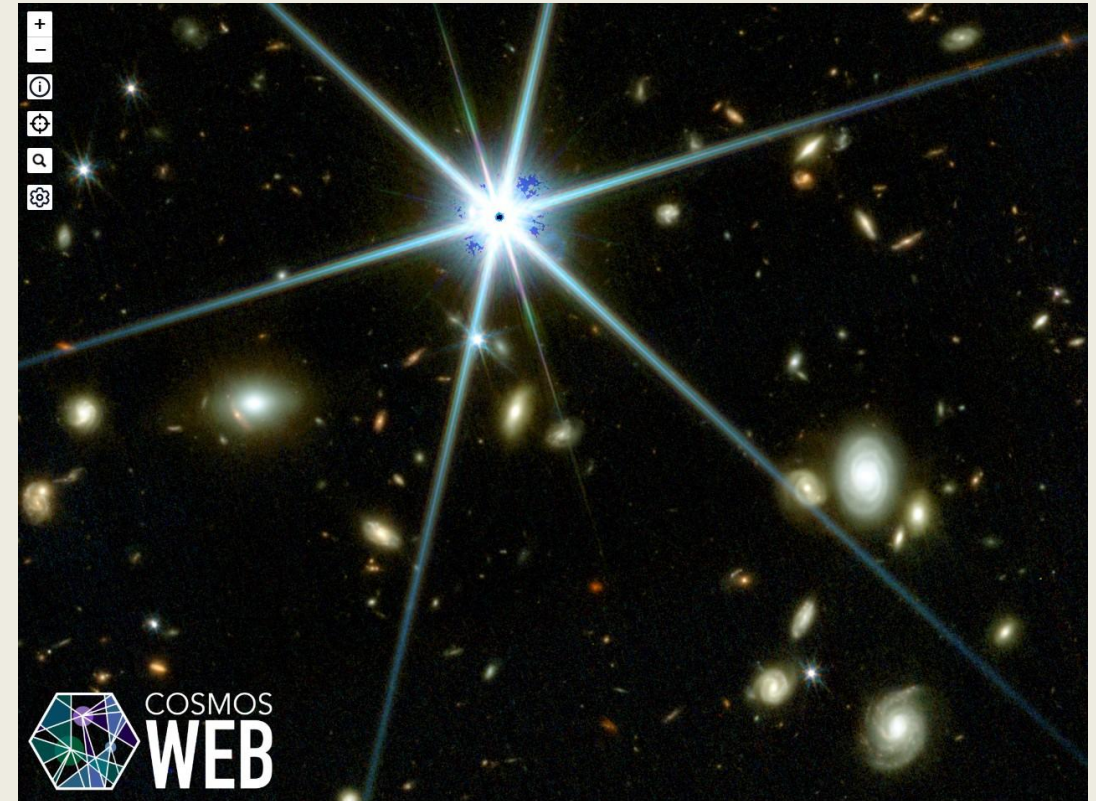
<https://www.nature.com/articles/s41550-025-02563-1>

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What's Up in Space Headlines

JWST COSMOS-Web Data Release 1

- Largest JWST Cycle 1 observing program
- Survey of 0.54 square degrees of sky with NIRCam and 0.2 square degrees with MIRI
- >10,000 separate images in 250 hours of exposure time were combined to make the survey
- Informs studies of galaxy evolution over the history of the universe
- COSMOS2025 catalog includes photometry, morphology, redshift, and physical parameters for more than 700,000 galaxies
- Data can be displayed in an interactive viewer



Screenshot extraction of a small region of the COSMOS-Web Data Release 1 NIRCam dataset

Kartaltepe/Casey/Franco/COSMOS-Web

More Info at

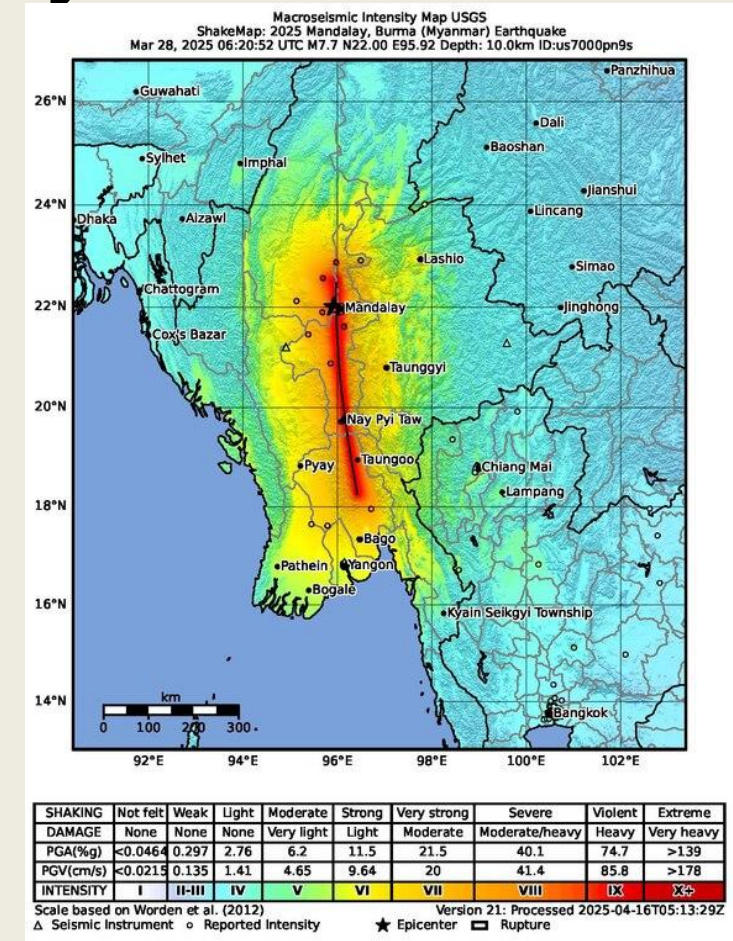
<https://www.rit.edu/news/cosmos-web-opens-window-universe-scientists-and-citizens>

<https://cosmos2025.iap.fr/fitsmap/?ra=150.0186021&dec=2.2085050&zoom=2>

What's Up in Space Headlines

Magnitude 7.7 Earthquake in Myanmar

- March 28, 2025, M7.7 quake struck central Myanmar (Burma)
- Extensive damage, 5,500 fatalities, 11,000 injuries
- Earthquake centered near Mandalay in central Myanmar, at a depth of about 6.2 mi (10 km)
- The rupture zone extended 330 miles (530 km)
- The first known video of a fault rupturing during an earthquake was obtained near Thazi, Myanmar, about halfway between Mandalay and Nay Pwi Taw



More Info at

https://en.wikipedia.org/wiki/2025_Myanmar_earthquake

<https://www.youtube.com/watch?v=77ubC4bcgRM>

2025-08-26 12:46:40

Secondary prefabricated cabin-2

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Hercules Cluster (M13)



M3

Gary Richardson



M5

Gary Richardson





Sirius A and B "The Dog Star"

By: Ken Everhart
March 19, 2025 (UTC)
Hanover, Maryland

Telescope: Meade LX-850 14"
Camera: Zwo ASI1600MC
Processing: Registax 6.1
Photoshop Elements

RGB 75 X 1 Sec.
RGB 75 X 250 ms
Total: 1 Minutes 33 Seconds

Venus

28 February 2025
23h 34m UTC

Hanover,
Maryland

Seeing: 3-Average
Altitude: 22°

Size: 47.9"
Phase Angle: 135°
Constellation:
Pisces

Distance:
31,794,000 Miles

Telescope:
Meade LX-850 14"

Camera:
ZWO ASI1600MM

IR 1000: 75 X 6 secs 139 Gain
Red: 1000 X 2ms 139 Gain

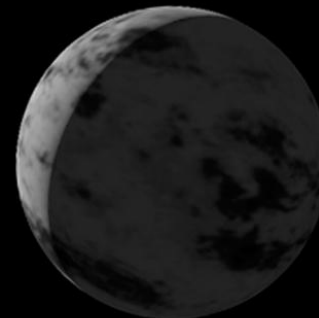
Processing:
Auto Stakkert
Registax 6.0
Pixinsight



Red



Infrared - 1000nm / 1 μ M



Winjupos Graphic



Messier 109 "The Vacuum Cleaner Galaxy"

By: Ken Everhart
May 25, 2025 (UTC)
Alpha Ridge Park, Maryland

Telescope: Meade LX-850 14"
Camera: Zwo ASI2600MM
Processing: Pixinsight
Photoshop Elements

Lum:	21	X	60 Secs.
Red:	20	X	60 Secs.
Green:	20	X	60 Secs.
Blue:	20	X	60 Secs.

Total: 1 Hours 21 Minutes

Ken Everhart



Messier 104 "The Sombrero Galaxy"

By: Ken Everhart
May 20 and 25, 2025 (UTC)
Alpha Ridge Park, Maryland

Telescope: CarbonStar 150
Camera: Zwo ASI1600MM
Processing: Pixinsight
Photoshop Elements

Lum:	40	X	60 Secs.
Red:	38	X	60 Secs.
Green:	28	X	60 Secs.
Blue:	40	X	60 Secs.

Total: 2 Hours 26 Minutes

Ken Everhart

Thank you