



Howard Astronomical League Monthly Meeting

February 16, 2023

Tonight's Agenda, February 16, 2023

- ⇒• Introductions
- Announcements
 - Star Parties
 - Astro-school – Phil Whitebloom
 - Book of the Month – Krystal Rolon
- What's Out in the Sky This Month...
 - Solar – Phil Whitebloom
 - Lunar – Bob Prokop
 - Planets – Jim Tomney
 - Deep Sky – Jared Case
 - Space-Based Astronomy – Wayne Baggett
- Featured Speaker – Dr. Angela Stickle, JHUAPL
- Members' Astro-Images and Sketches
- Wrap-up & Discussion

Star Parties...

HAL's 2023 Scheduled Star Parties

Month	Date	Invitees
March	18	Members
March	25	Public
April	15	Members
April	22	Public
May	20	Members
May	27	Public
June	17	Members
June	24	Public
July	15	Members
July	22	Public
August	12	Members
August	26	Public
September	9	Members
September	23	Public
October	14	Members
October	21	Public
November	04	Members
November	11	Public



Regional 2023 Star Parties

Name	Location	Typical Date
Winter Star Party	West Summerland Key, FL	Feb
Triad Starfest	Jamestown, NC	Feb
International Messier Marathon	Everywhere!	March 18,19
Northeast Astronomy Forum	Suffern, NY	April
Texas Star Party	Fort Davis, TX	May
Michiana Star Party	Vandalia, MI	May
Bootleg Spring Star Party	Harmon, IL	June
Bryce Canyon Astronomy Festival	Bryce Canyon National Park, UT	June
Cherry Springs Star Party	Coudersport, PA	June
Grand Canyon Star Party	Grand Canyon, AZ	June
Rocky Mountain Star Stare	Gardner, CO	June
Wisconsin Observers Weekend	Hartman Creek State Park, WI	June
Gateway to the Universe Star Party	Marten River Provincial Park, ON	July
York County Star Party	York, PA	July
Maine Astronomy Retreat	Washington, ME	July/Aug
Stellafane Convention	Springfield, VT	Aug
Almost Heaven Star Party	Spruce Knob, WV	Aug
Acadia Night Sky Festival	Bar Harbor, ME	Sept
Black Forest Star Party	Coudersport, PA	Sept
AstroAssembly	North Scituate, RI	Sept
Hidden Hollow Star Party	Mansfield, OH	Sept
Enchanted Skies Star Party	Socorro, NM	Oct
NOVAC Stargaze	C. M. Crockett Park, VA	Oct

Astro School



The Place in Our Galaxy Where You Choose the Topics

Our Campus Locations



HALO



Robinson Nature
Center

- Topics (examples)
 - Planets
 - DSO's
 - Solar
 - Astro-photography
 - Beginners
 - Advanced
 - Telescopes
 - Eye Pieces
 - Cosmology
 - Space Travel

Book of the Month

Title:

- The Glass Universe How the Ladies of the Harvard Observatory Took the Measure of the Stars

Author:

- Dava Sobel

Length: 266 pages

Audience Level:

- Beginner Friendly
- Intermediate
- Advance/Experienced

“Positively glows . . . [Sobel] lucidly captures the intricate, interdependent constellation of people it took to unlock mysteries of the stars.” –NPR

THE GLASS UNIVERSE

HOW THE LADIES *of the* HARVARD
OBSERVATORY TOOK *the* MEASURE *of the* STARS



100
NOTABLE BOOKS
The New York Times
Book Review

2017

DAVA SOBEL

#1 NEW YORK TIMES BESTSELLING AUTHOR OF
Longitude AND *Galileo's Daughter*



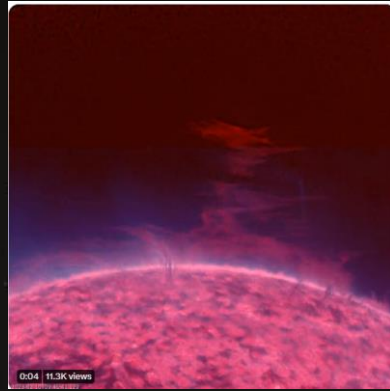
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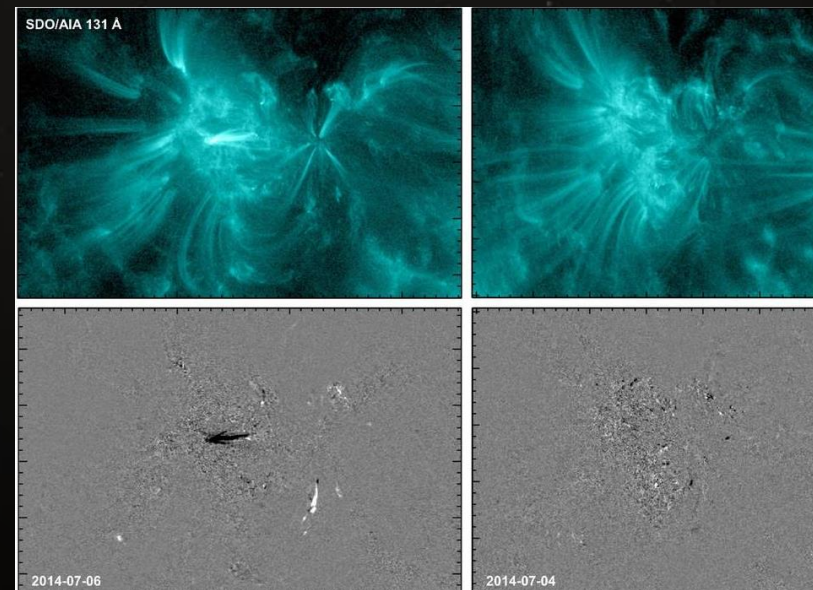
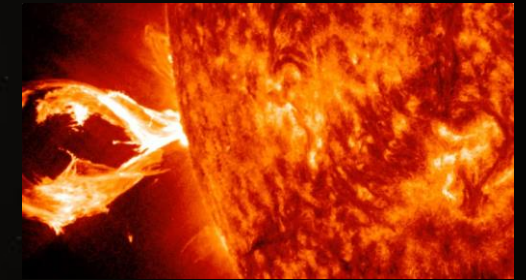
Our Sun in the News (NASA SDO)



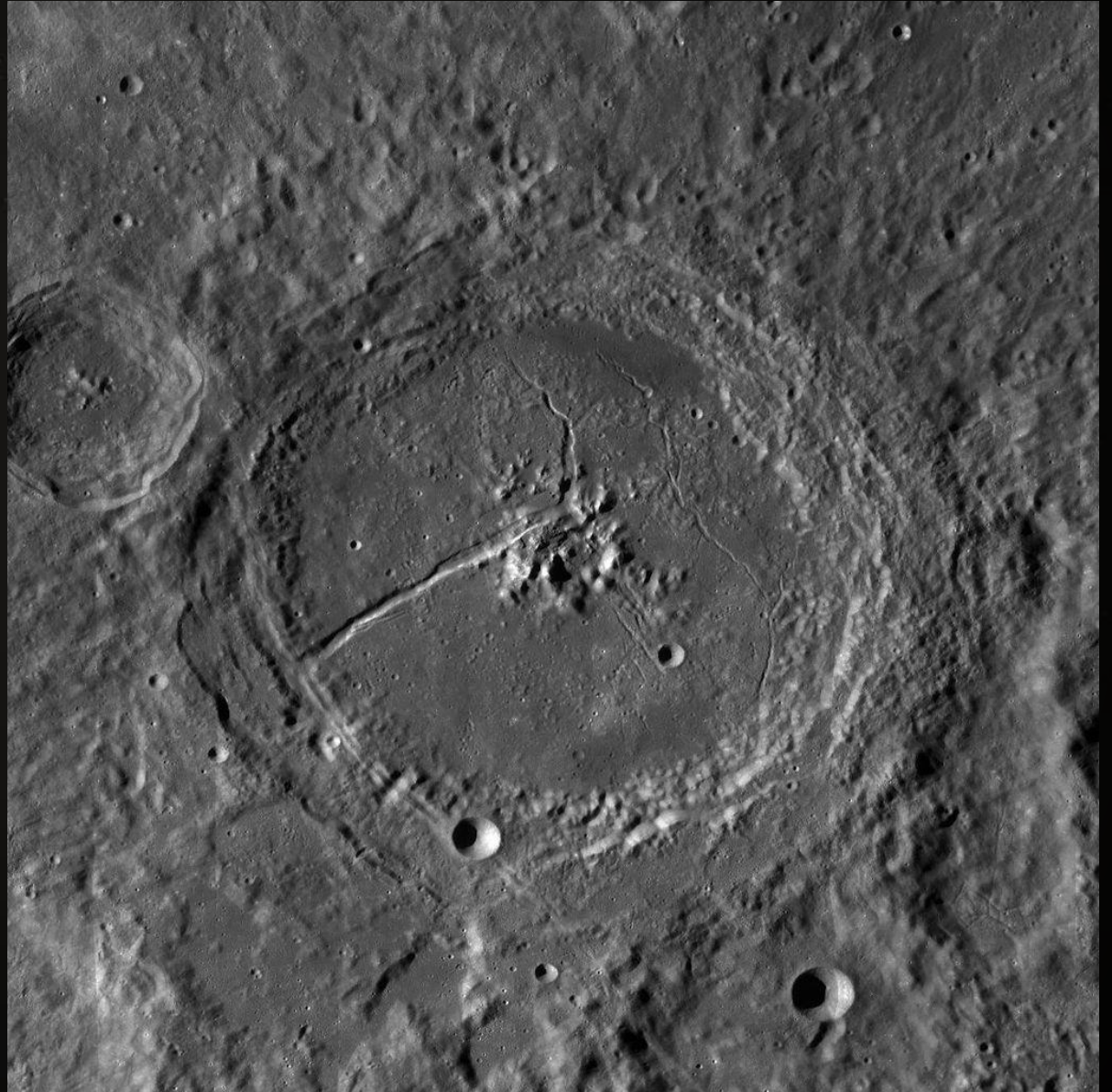
- Telescope video shows part of the sun breaking off and forming a vortex, making scientists scratch their heads (Feb. 2, 2023)



- Space claw! Sun shoots powerful flare that knocks out shortwave radio (Feb. 8, 2023)
- Flashes on the Sun Could Help Scientists Predict Solar Flares (Jan. 17, 2023)



Petavius from Earth and LROC



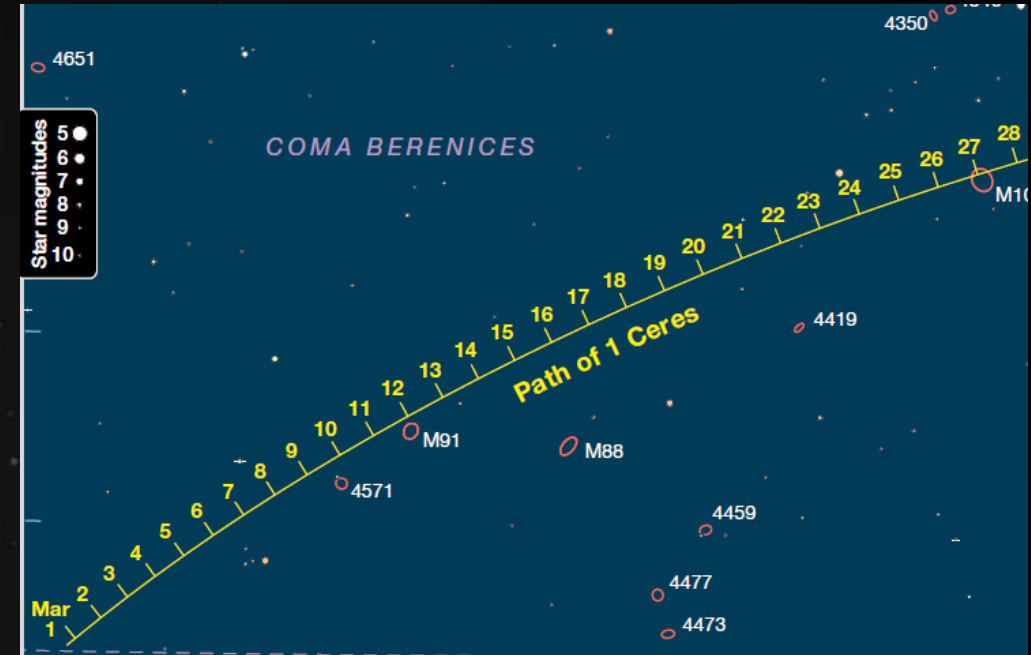
Planet Roundup Feb-Mar 2023

- Venus: Increasingly easy to spot in evening, 12" and 85% illuminated
- Mars: Down to 8" but still well placed, imaging still worthwhile
 - Clouds more frequent (blue filter)? Recent one over the Argyre basin
- Jupiter: Starting off lower each evening – grab it during the early twilight at its highest altitude and possibly good seeing
- Comet C/2022 E3 ZTF: On its way back out, visible in telescope but main show is over
- Mercury, Saturn – poorly placed for observing
- No significant meteor showers



Planet Highlights Feb-Mar 2023

- Minor Planet **Ceres** is heading to one of its better oppositions on March 21st when it'll be magnitude 6.9 (won't be this well positioned again until 2032). It'll be passing by several members of the Virgo cluster as March unfolds.
 - Disk discernable at 0.8"?
- A close conjunction of Venus & Jupiter on February 28th (about ½° apart)
 - Daytime observation of the duo?

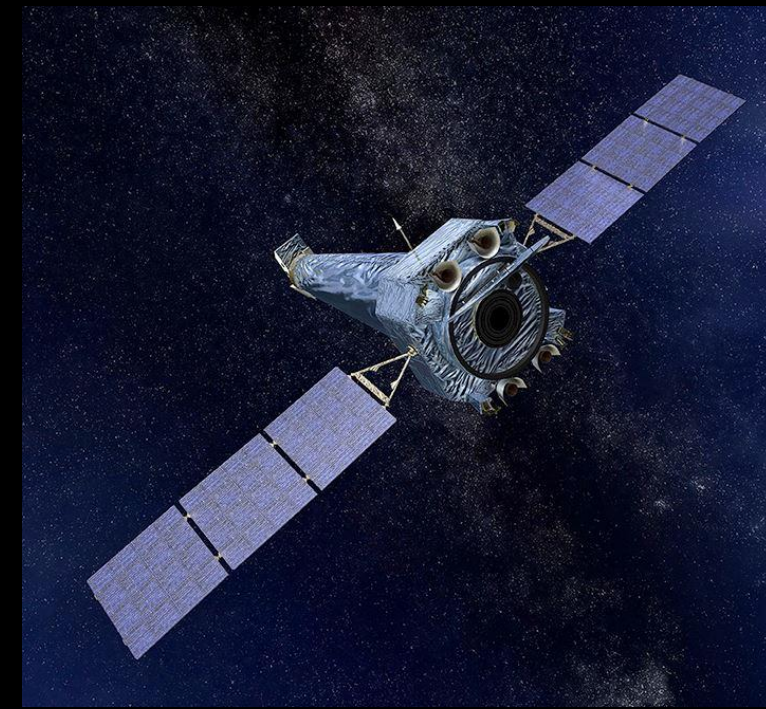


Deep Sky Roundup... Jared

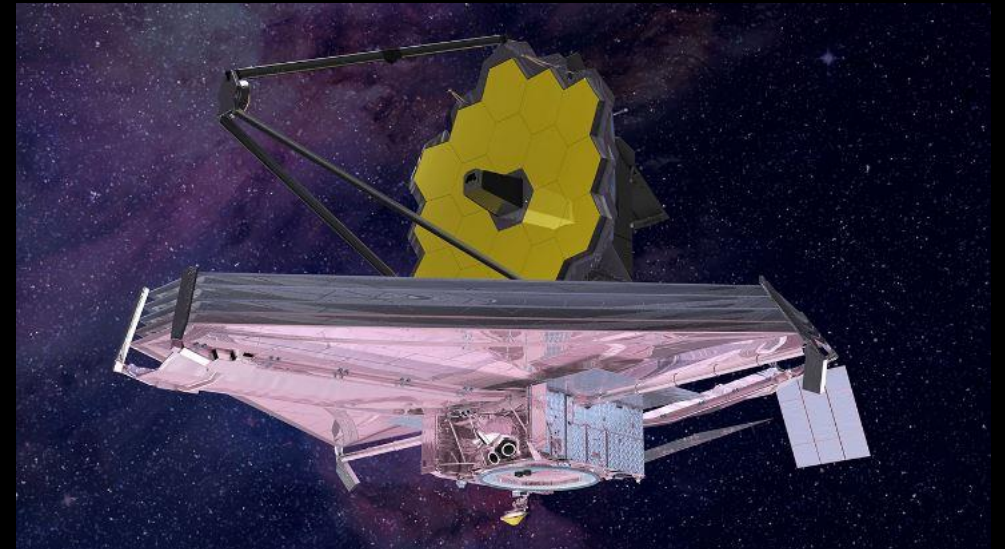
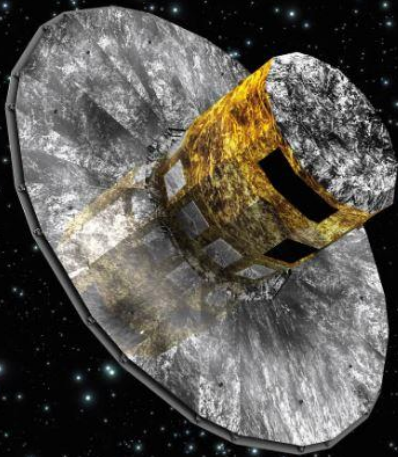




What's Up in Space?



Wayne
Baggett



What is This Feature?

- Regular feature in our meetings
- Will give information about/from space-based astronomy missions
 - JWST, HST, Chandra, XMM-Newton, GAIA, etc.
 - Will not generally include solar, lunar, or planetary missions
- Focus will be on the astronomy, not the missions

- A generally good thing to remember, Newton's Second Law of Motion:
 - $F = ma$

JWST Observations of LEDA 2046648

- Released 2/1/2023
- In Hercules near the center of the Keystone
- LEDA 2046648
 - Type: SBc
 - Brightness: $B \sim 17$
 - Size: 36" x 18"
 - Rad Vel: ~ 26000 km/s, $z = v/c = 0.087$
 - Distance: ~ 1.2 billion ly = ~ 370 Mpc
- Most technical info from the HyperLeda website
- <http://leda.univ-lyon1.fr/>



Press Release at https://www.esa.int/ESA_Multimedia/Images/2023/01/A_spiral_amongst_thousands

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Featured Speaker, February 16, 2023

Thursday, February 16th, 2023

Topic: Defending Planet Earth: The Double Asteroid Redirection Test

Presenter: Dr. Angela Stickle, DART Impact Modeling Working Group Lead, Johns Hopkins Applied Physics Laboratory

[Quick Zoom Link](#). More options on [home page](#).

NASA's [Double Asteroid Redirection Test \(DART\)](#) was the first planetary defense test mission. The DART spacecraft purposefully ran into a small asteroid, [Dimorphos](#), on September 26, 2022, in order to test asteroid deflection. DART was a huge success, changing Dimorphos's orbital period by around 30 minutes and generating many tons of ejecta. We will discuss planetary defense, the DART mission, initial results from the team and how we are using those results to learn more about Dimorphos, Didymos, and future applications to [planetary defense](#).

Dr. Angela Stickle is a planetary geologist with a background in Aerospace and Mechanical Engineering, and impact processes on planetary surfaces. She specializes in hypervelocity impact processes and dynamic failure of materials. Dr Stickle is currently a senior research scientist at the Johns Hopkins University Applied Physics Laboratory. She is the Deputy Principal-Investigator for the Mini-RF radar, a Co-I for the LRO-LAMP instrument aboard the Lunar Reconnaissance Orbiter, the impact modeling working group lead for the Double Asteroid Redirection Test mission, and a Co-I on the Dragonfly mission. Her research includes analyzing young impact craters on the Moon to better understand ejecta emplacement processes, impact modeling on asteroids and rocky/icy bodies, planetary defense testing, and working to understand and evaluate available technology for future lunar surface missions. [Asteroid 36986 Stickle](#) is named in her honor.



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Joseph Novotka



Joshua Shrader



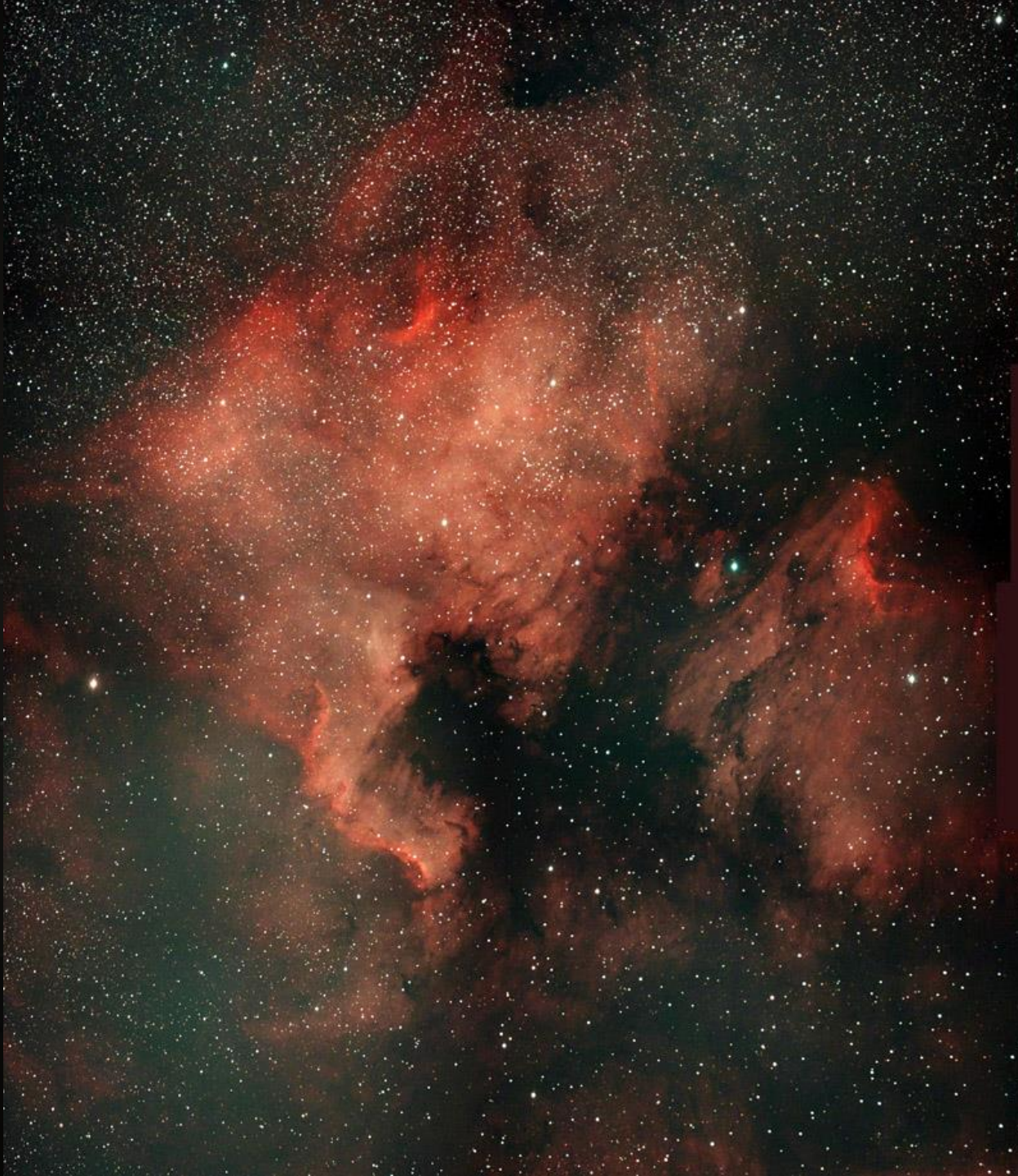
Al Francis

8 November 2022 Lunar eclipse sequence 0420 to 0550
C-14 with Hyperstar ASI2600MC Mt. Airy, MD





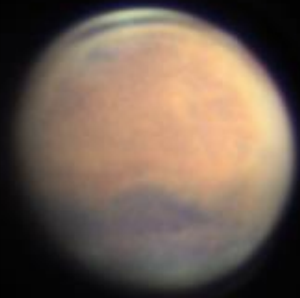
Steve Gauss



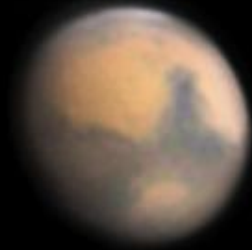
Steve Gauss



James Willingham



January 22nd
11.9 arcsec



February 9th
9.9 arcsec

@JamesWillinghan

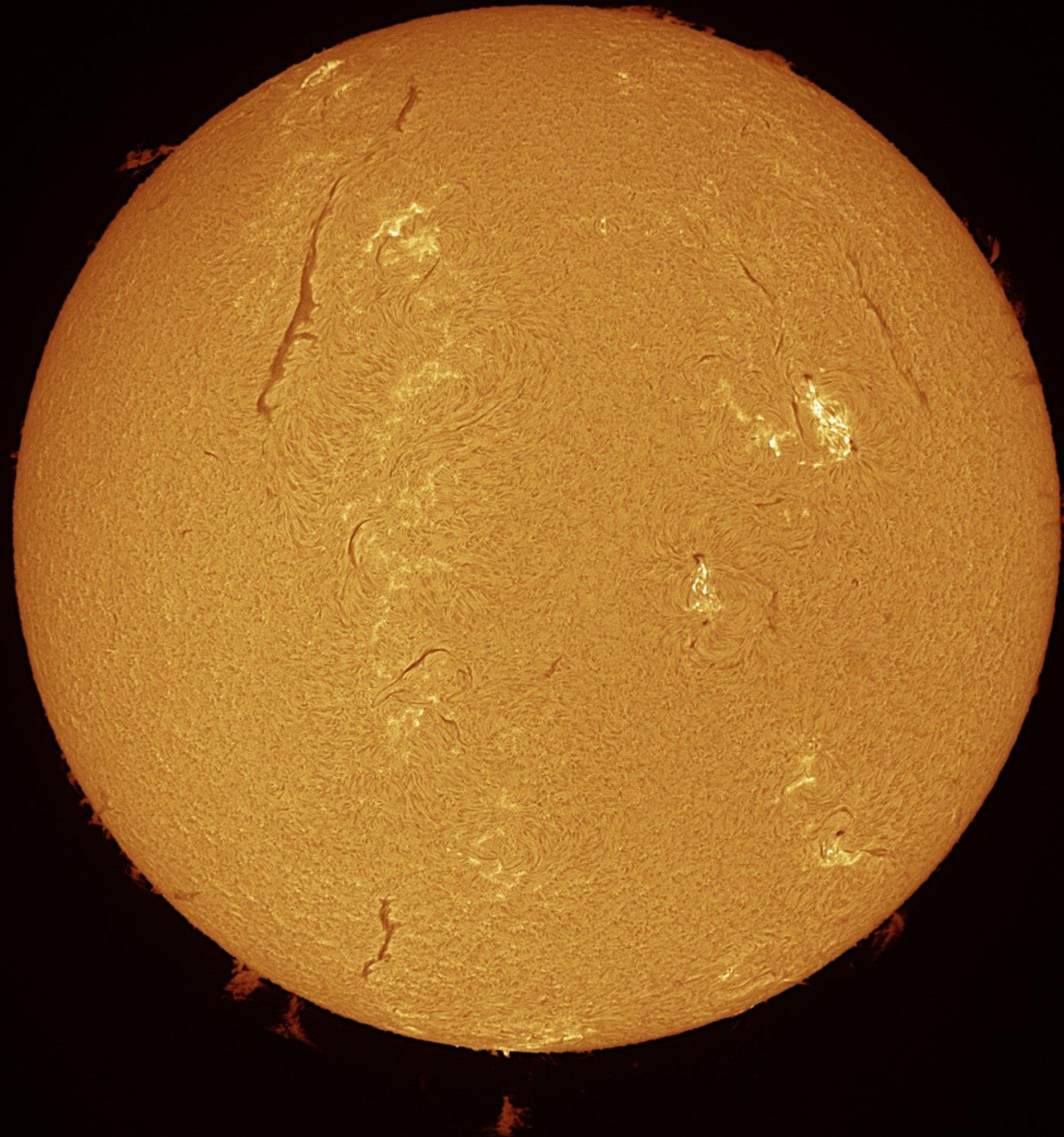




Joel Goodman



Joel Goodman



Al Francis