Howard Astronomical League Monthly Meeting

August 17, 2023

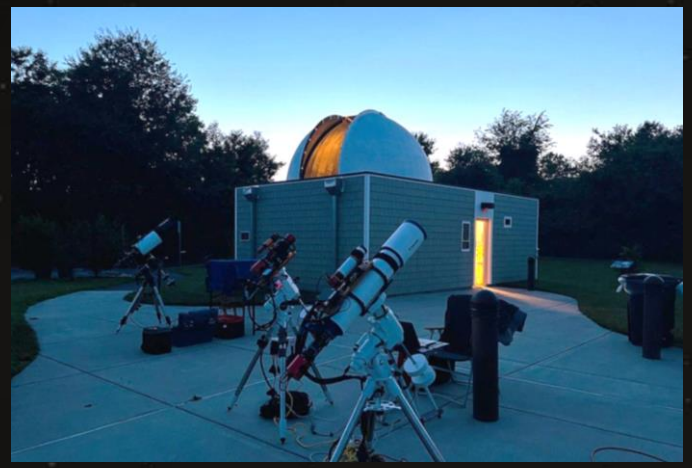
Tonight's Agenda, August 17, 2023

- Introductions
- Announcements
  - Star Parties & Outreach
  - Book of the month – Krystal Rolon
- Featured speaker – Tom Reinert, President of DarkSky International
- Destination Astronomy
  - The Ooty Radio Telescope – Arjun Meenashi Sundar
- What's Out in the Sky This Month…
  - Solar – Phil Whitebloom
  - Shallow Sky – Jim Tomney
  - Space-Based Astronomy – Wayne Baggett
- Members' Astro-Images and Sketches
- Wrap-up & Discussion

August 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 Star Party info…
https://skyandtelescope.org/astronomy-resources/annual-stargazing-events/

Note about Impromptu Star Parties

Don't forget to keep an eye out for impromptu events as we are due for some good weather

Note: if you're not already on the impromptu mailing list and would like to join there are instructions on the howardastro.org

Impromptu Mailing List (howardastro.org)

(you can find a link to this page from the website home page under the "Hal Info" dropdown menu)

Book of the Month

Title:

- ASTROBIOLOGY: THE SEARCH FOR ALIEN LIFE
  - The Illustrated Edition

Author:

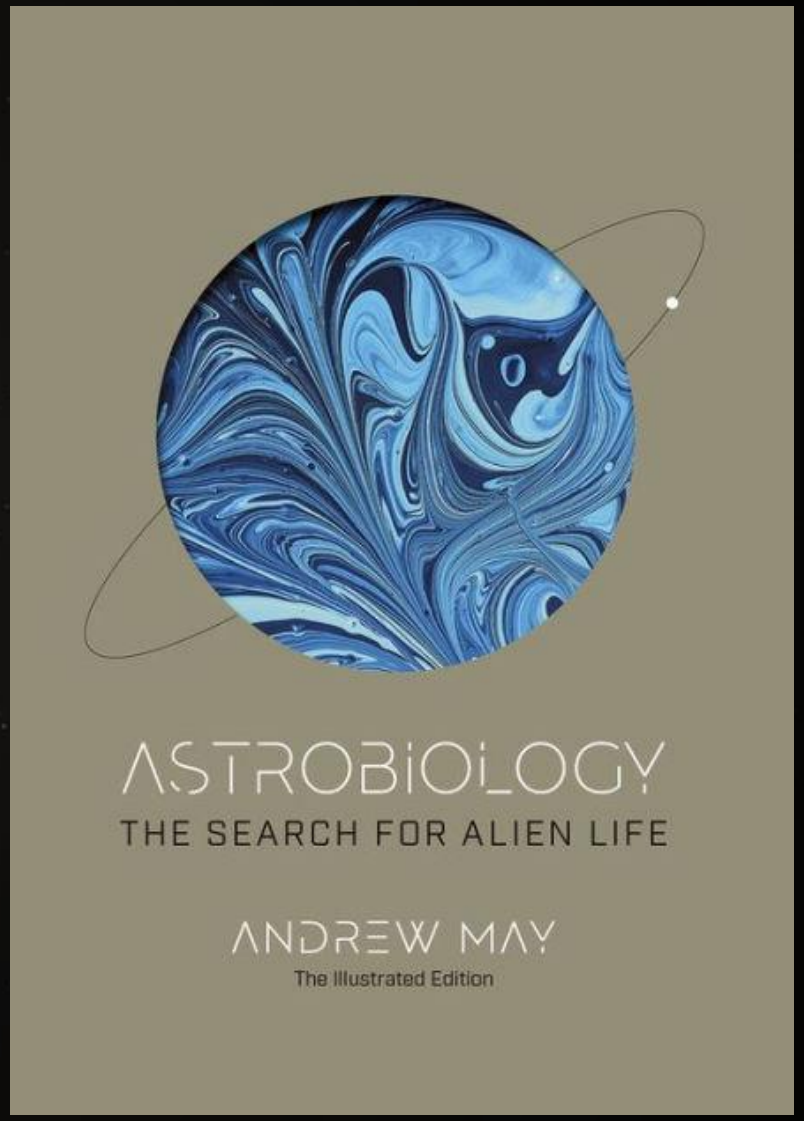
- Andrew May

Length:

- 213 pages

Audience Level:

- Beginner Friendly
- Intermediate
- Advance/Experienced



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DarkSky International 2023,
A Presentation to the Amateur Astronomy Community

Tom Reinert

- Tom is a retired Washington, D.C. lawyer who spent most of his career representing airlines and railroads in labor and employment matters, including extensive experience translating scientific experts for lay decision-makers
- He has assisted the International Dark-Sky Association on policy and legal issues for almost a decade,
- His prior environmental activism includes a decade fighting water pollution with a local riverkeeper organization, the South River Federation, on the Chesapeake Bay in Maryland.
- Currently residing in the City of Fairfax, Virginia, he is an active member of NOVAC and former HAL member
- He and his wife Chris travel extensively in the Western United States seeking dark sky locations, and he is a member of the Tucson Astronomical Association.
- He is a graduate of Harvard College (where he never took an astronomy or physics course) and the Harvard Law School (where he never took an environmental law course).

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SPACE.com

Scientists may have just cracked the sun's greatest mystery

Tereza Pultarova

July 26, 2023 · 3 min read

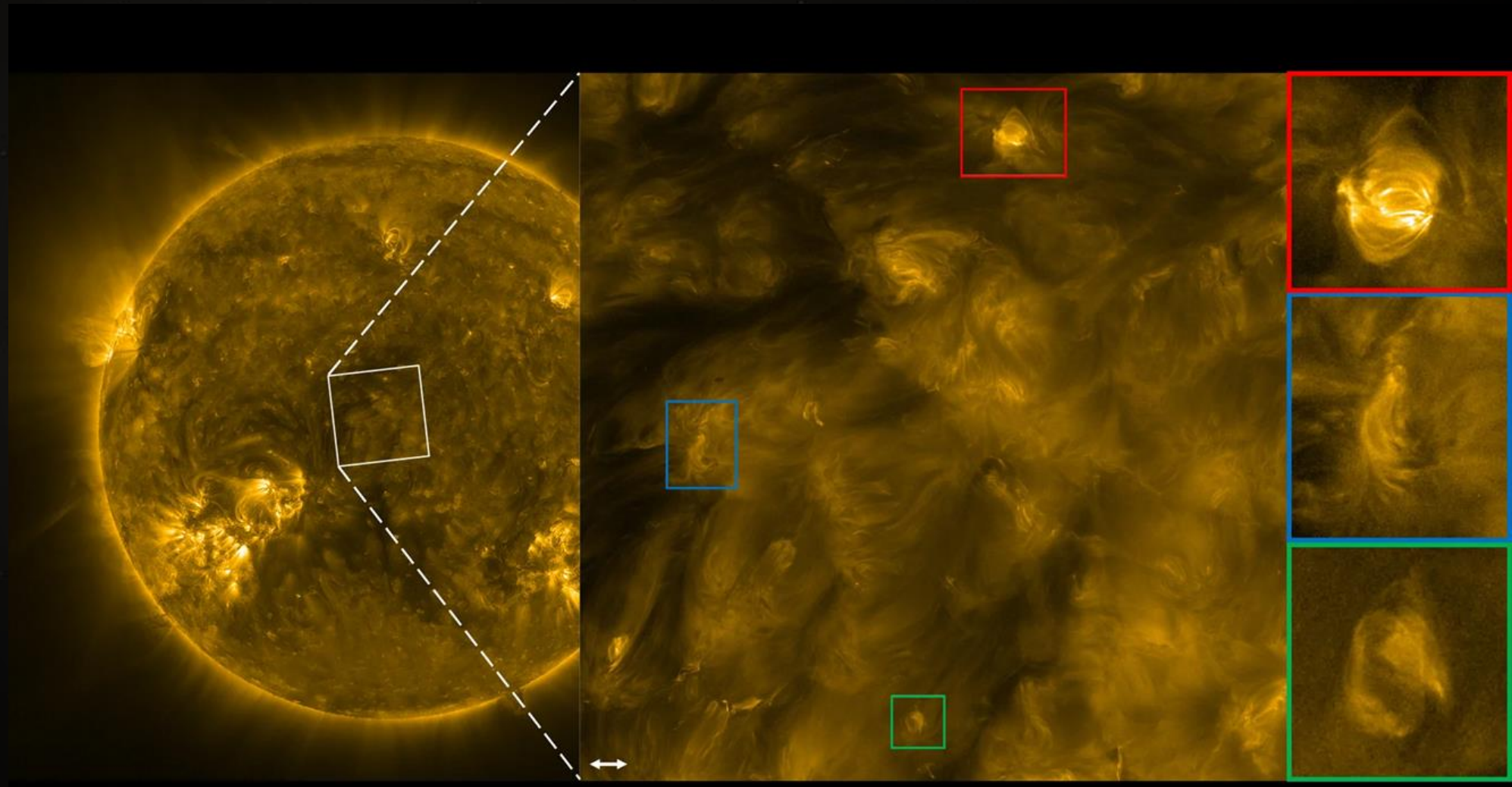
Sun Temperatures

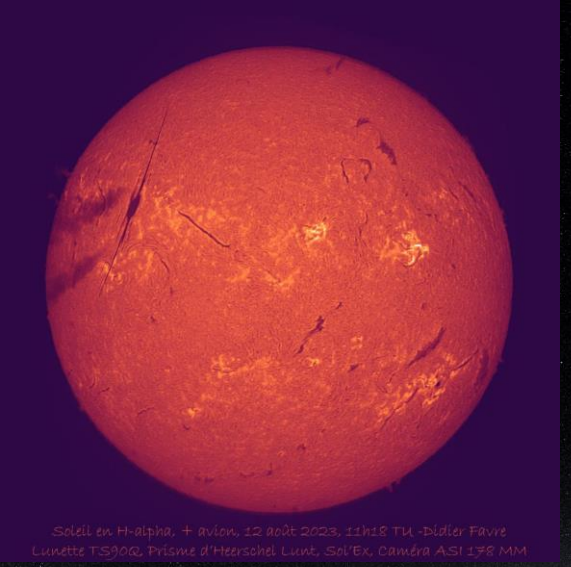
Photosphere – Varies between 6,700°F and 11,000°F

Chromosphere – Varies between 6,000°F and 14,000°F

Corona – Can reach temperatures over 1.8M °F

Magnetic structures on the sun's surface featuring fast oscillating magnetic waves that might explain the mysterious heating of the solar corona.





SpaceWeatherLive.com

Real-time auroral and solar activity

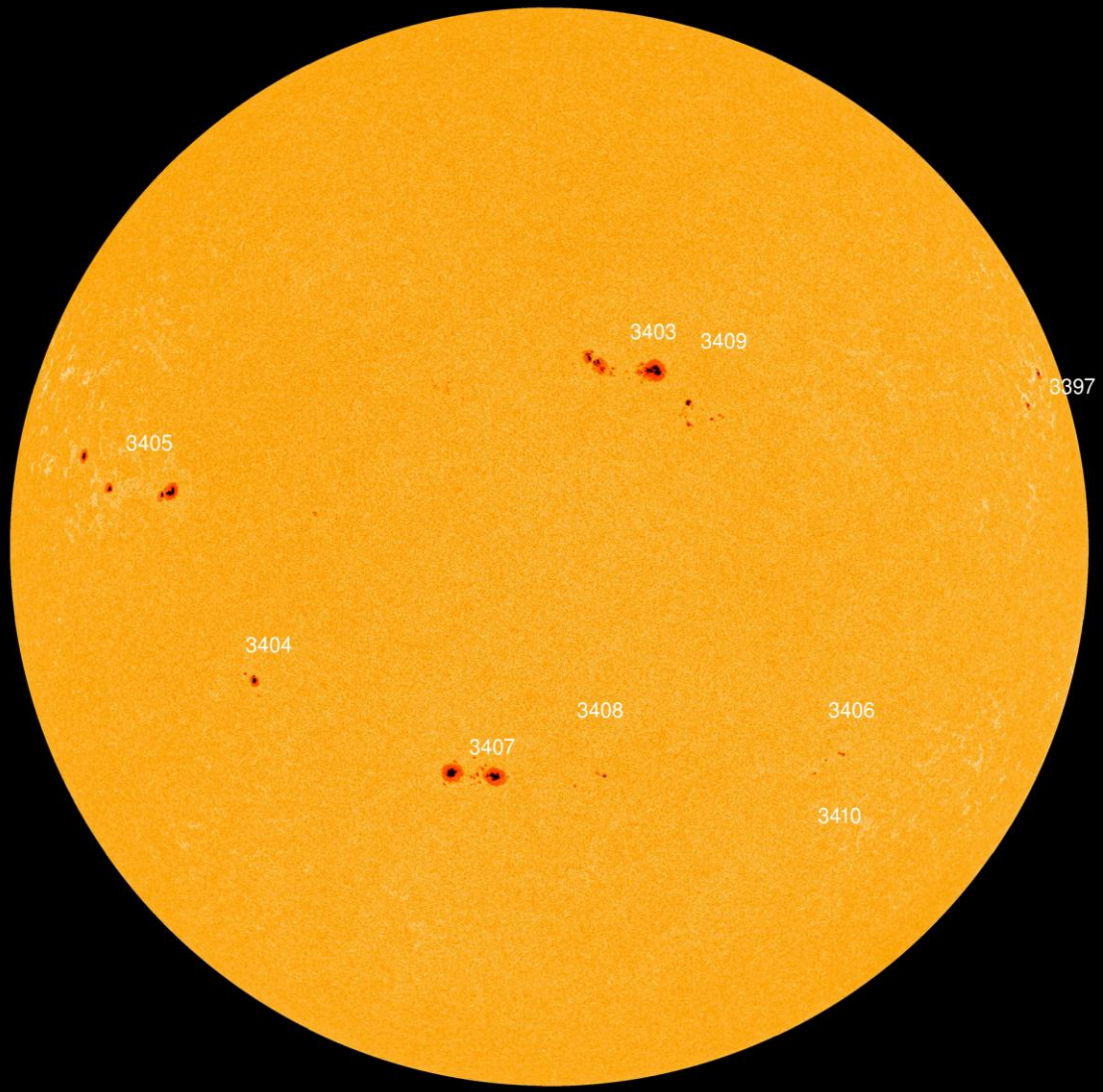
Tracking the Solar Cycle

https://www.spaceweatherlive.com/en/solar-activity/solar-cycle.html

August 17, 2023

spaceweather.com

News and information about the Sun-Earth environment



Shallow Sky Highlights for Aug-Sept 2023

- *Mercury is unobservable but heading for a nice morning apparition*
- *Venus is past inferior conjunction, will start to pop up in pre-dawn sky*
- *Mars - unavailable*
- *Jupiter will begin rising around midnight, lots of activity as always*
- *Saturn hits opposition August 27th when it will be in the sky all night. It is now in Aquarius, so nudging higher into N. hemisphere skies.*
  - The globe's shadow on the rings disappears at opposition – how soon after can you see it again.
  - Rings are at only 8° open now – can you still make out Cassini Division at the outer part of the rings?
  - Can you see a difference in the brightness and/or color of Ring A vs. Ring B?

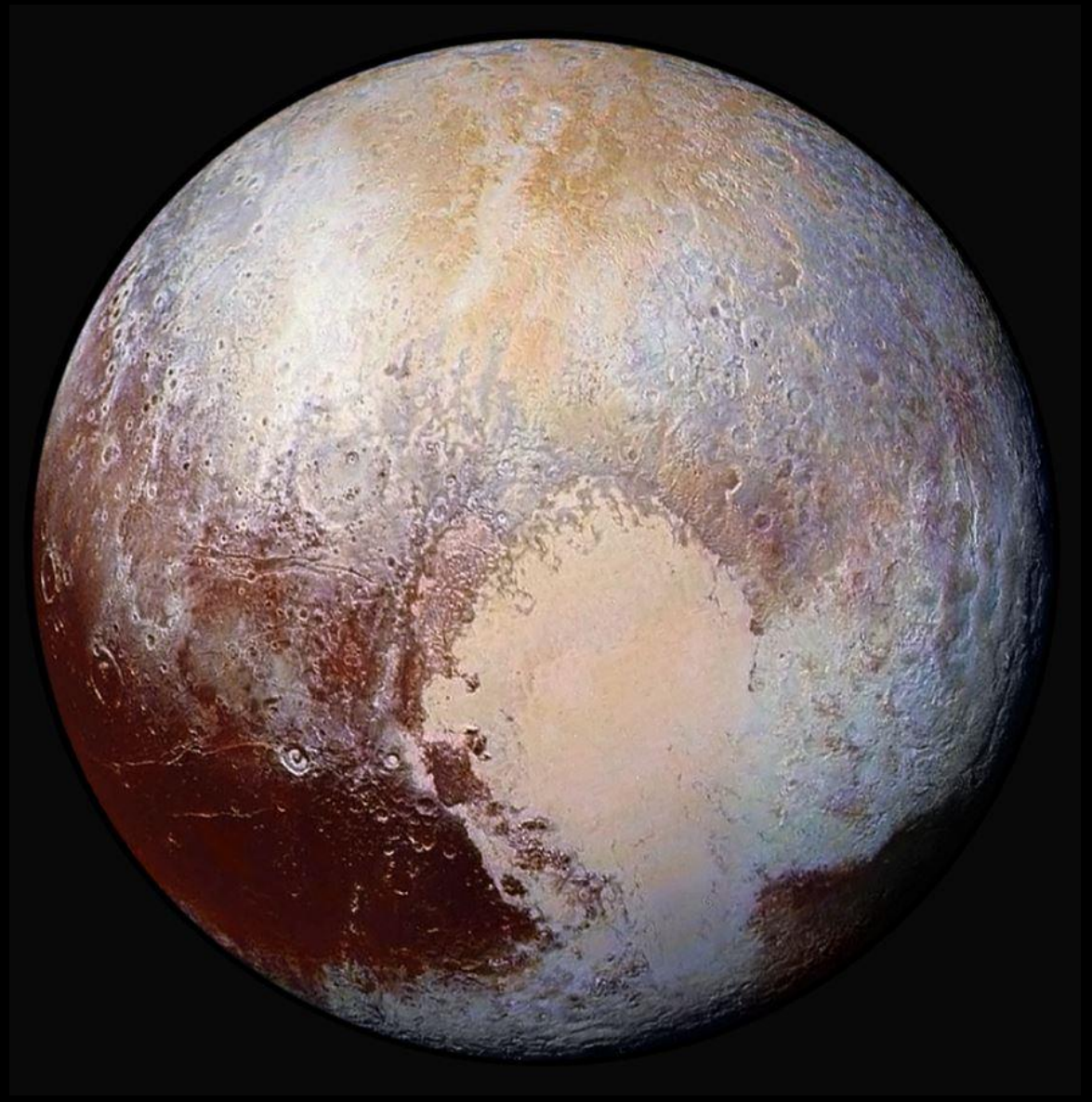
See Seeliger

- Also called “Opposition Surge”
- A sudden brightening of the rings for a brief period around opposition
- Cause? Not 100% clear but many suspect it is the lack of ring fragment shadows

What's Up in Space: New Horizons Re-purposed

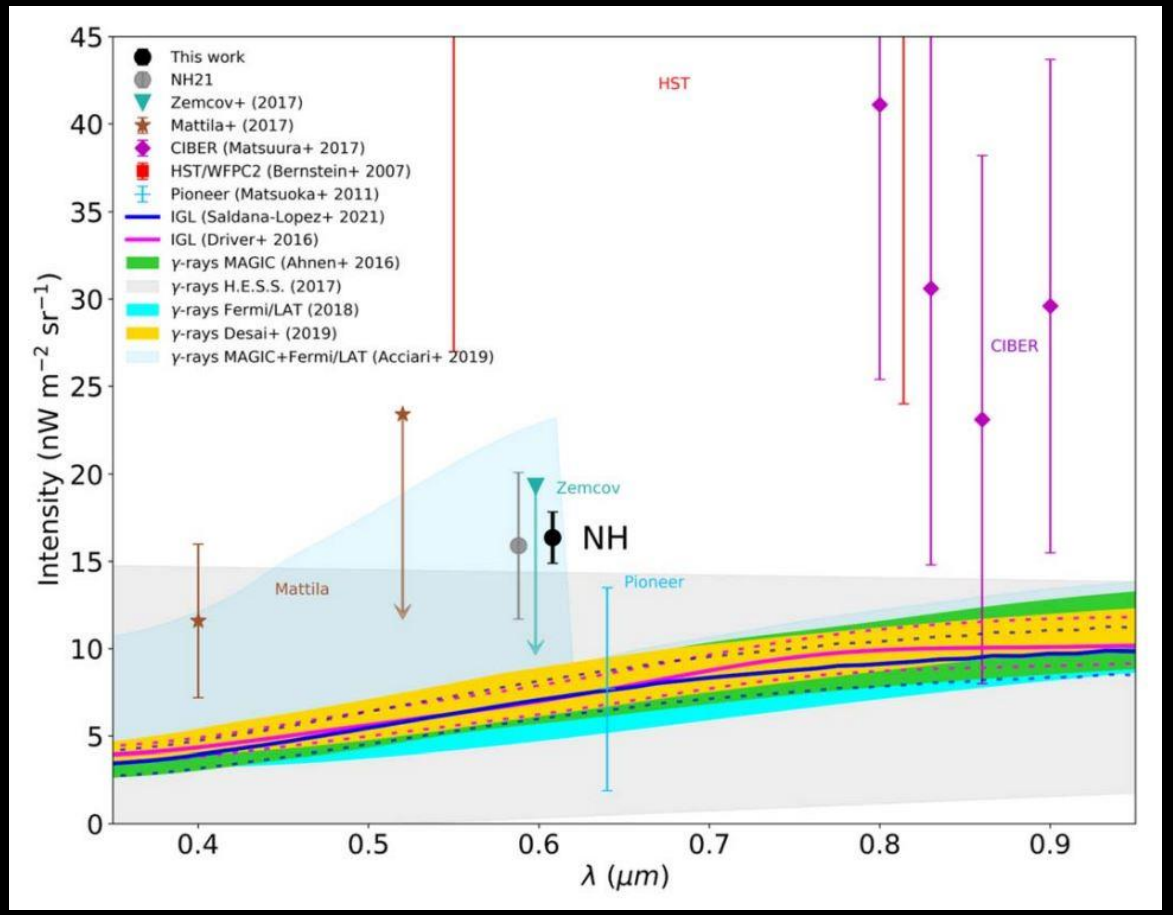
- The New Horizons spacecraft returned the first close-up images of Pluto and Charon in 2015
- **Flyby of Kuiper Belt object Arrokoth in 2019**
- No new Kuiper Belt object to study
  - **But instruments are working fine**
- Team identified a new useful measurement New Horizons could make in studying the universe:

Measure the Cosmic Optical Background (COB)



What's Up in Space: New Horizons Re-purposed

- Expected value is estimated by considering
  - Unresolved stars
  - Diffuse Galaxy Light (scatter off IR Cirrus)
  - Scattered light from bright stars in the FOV
  - Scattered sunlight from Kuiper Belt dust
  - Other instrumental/astronomical sources
- Previous measurements of the COB:
  - Detected more light but with large uncertainties
- The New Horizons observations show
  - The COB is twice as bright as expected after accounting for all know sources of light
  - Much tighter constraints on the value than previous observations



https://doi.org/10.3847/2041-8213/ac573d

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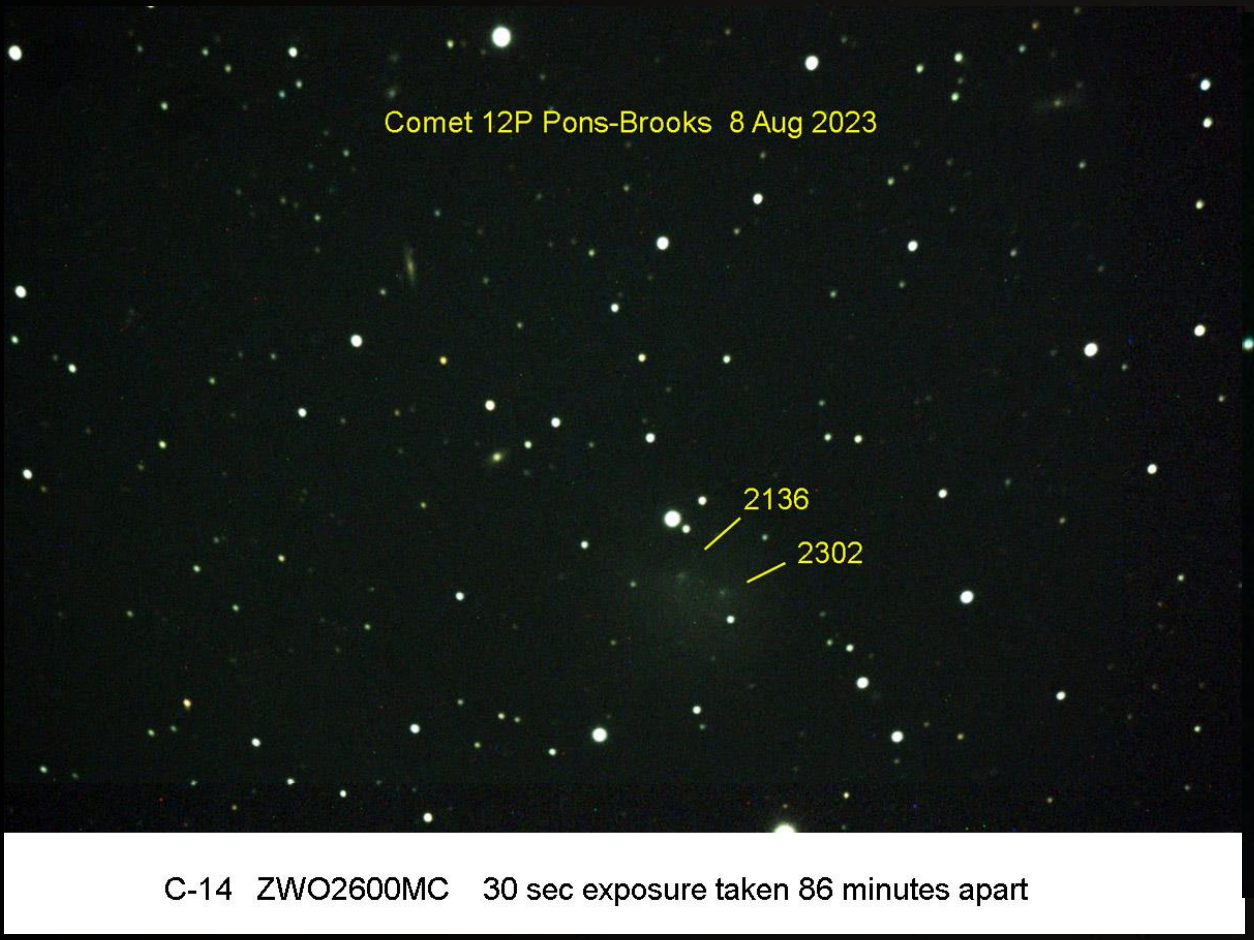


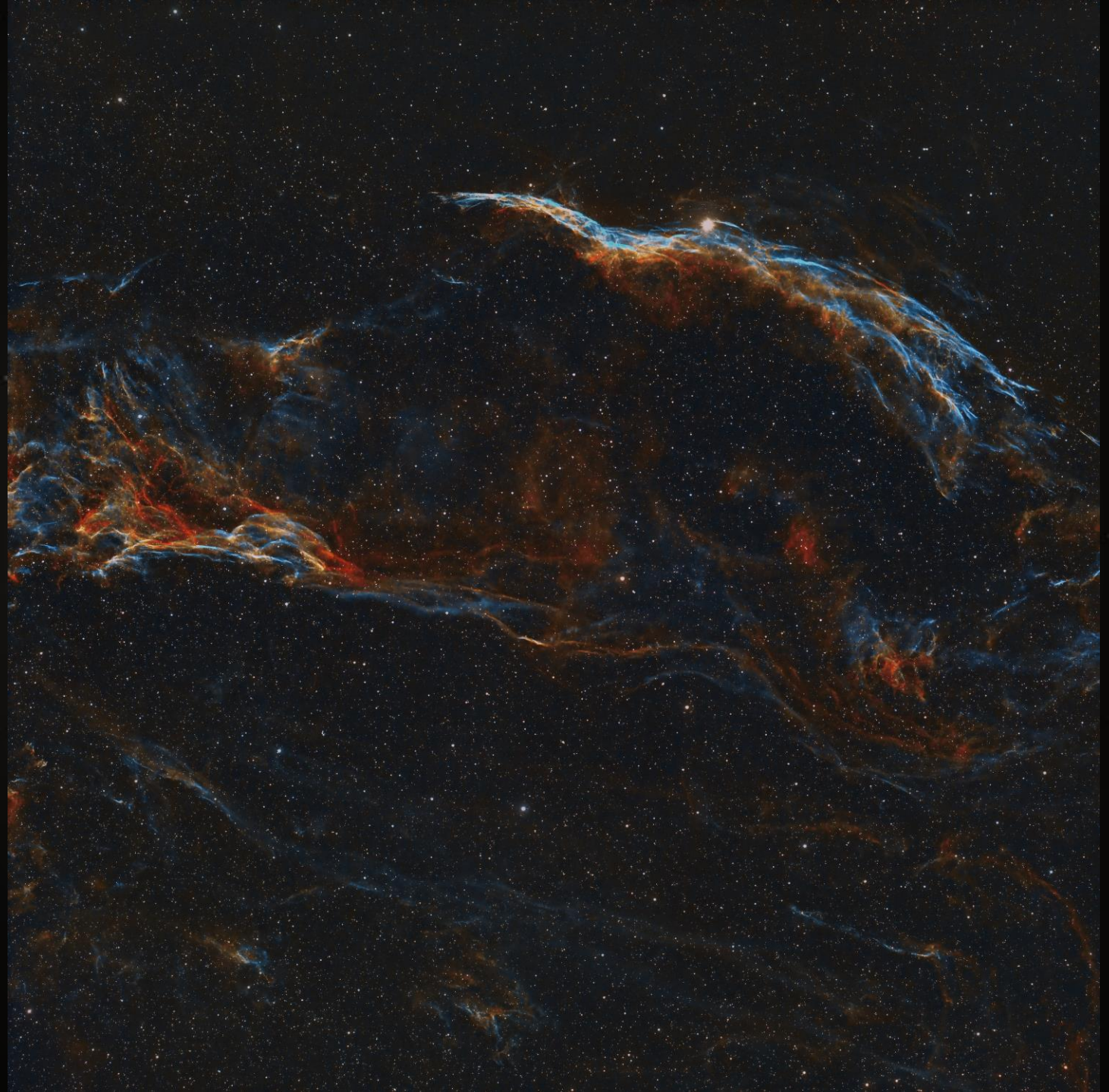
C-14 ZWO2600MC 30 sec exposure taken 86 minutes apart

Steven Gauss

Joel Goodman

Joel Goodman

Travis Totten



Travis Totten

Messier 57 (NGC 6720) "The Ring Nebula"

By: Ken Everhart
July 27, 2023 (UTC)
Hanover, Maryland

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

Lum:	40	X	30 Secs.
Red:	40	X	30 Secs.
Green:	40	X	30 Secs.
Blue:	40	X	30 Secs.

Ken Everhart

Venus

30 July 2023
22h 04m UTC

Hanover
Maryland

Size: 53″
Phase Angle: 168°

Distance:
39,400,000 Miles

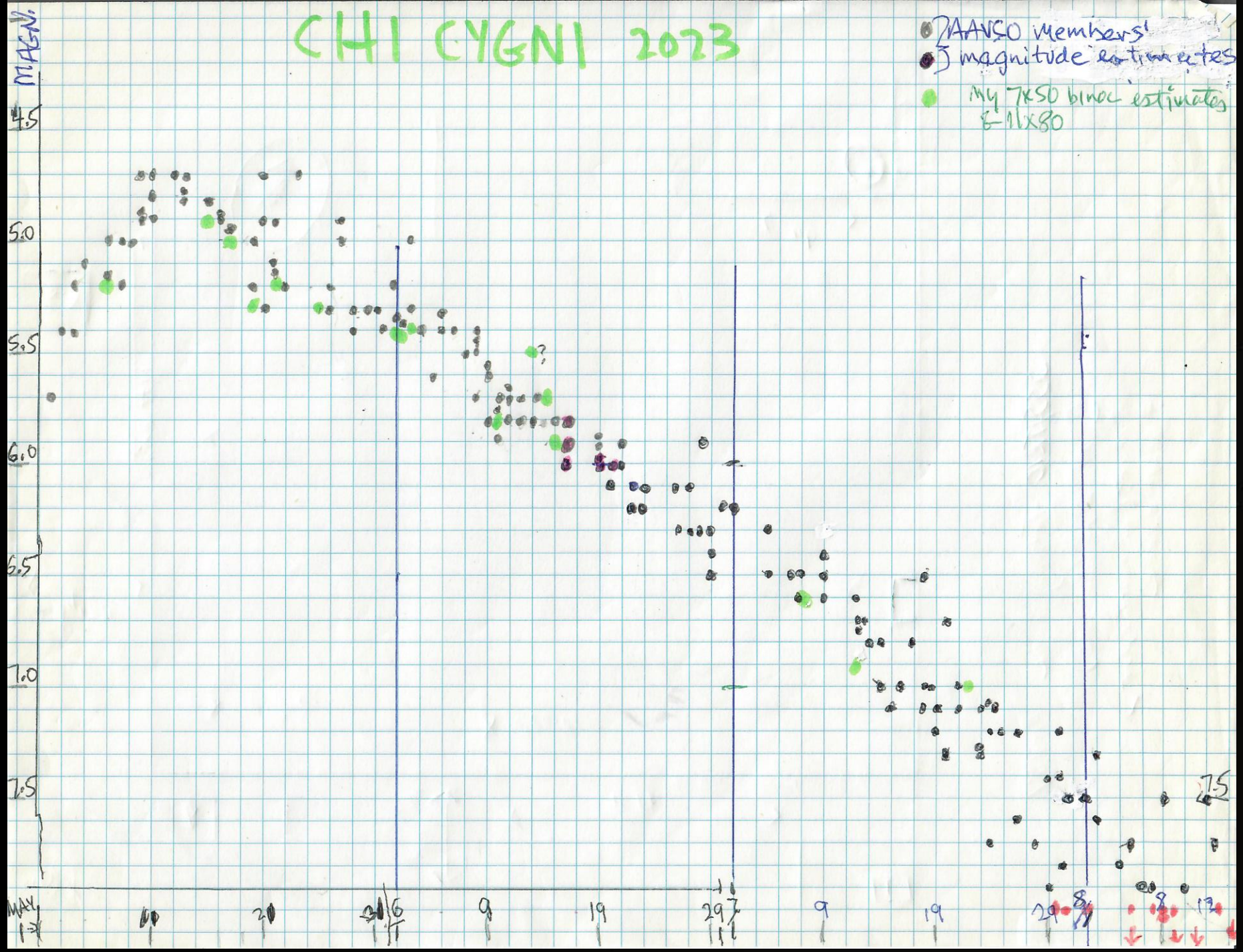
Telescope:
Meade LX-850 14″

Camera:
ZWO ASI2600MM

IR -742 1000 X 3.1ms
Red: 1000 X 1.9 ms
Green: 1000 X 0.8 ms
Blue: 1000 X 0.7 ms

Processing:
Auto Stakkert
Registax 6.0
Pixinsight
Photoshop.

Ken Everhart



Richard Taibi

James Willinghan

James Willinghan

Elevation: 44 Degrees
CM1: 101.4 CM2: 287.5 CM3: 298.5
Elkridge, MD USA/Meade 12" LX200/ASI174MM

July 26th 2023 @0839.4UT
@JamesWillinghan

James Willinghan