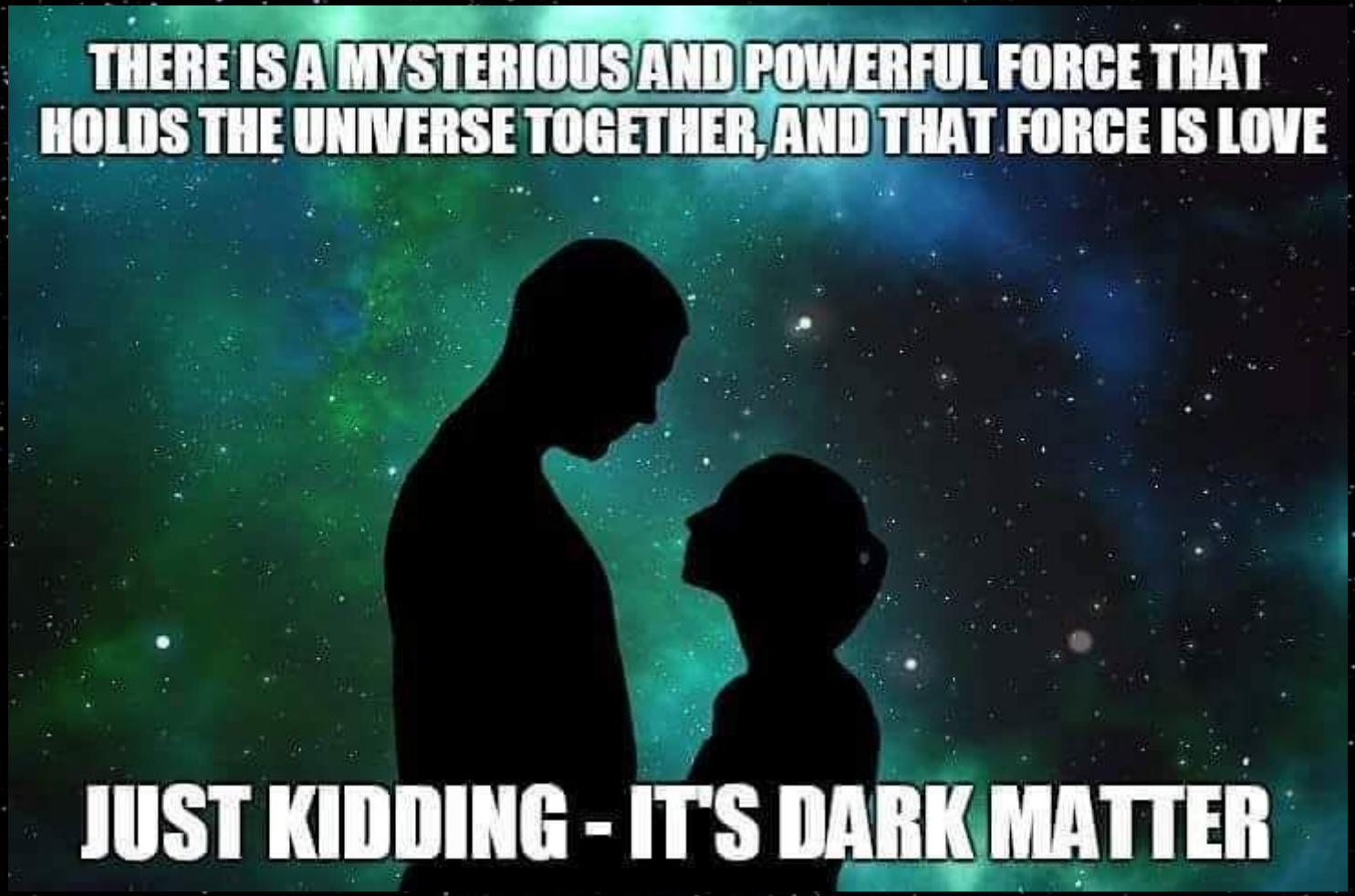
Howard Astronomical League

March 17, 2022

Astro Humor


THERE IS A MYSTERIOUS AND POWERFUL FORCE THAT HOLDS THE UNIVERSE TOGETHER, AND THAT FORCE IS LOVE
JUST KIDDING - IT'S DARK MATTER

Welcome New Members and Guests

HAL Public and Members Only Star Parties

2022

April	9	Public
April	30	Members
May	7	Public
May	21	Members
June	11	Public
June	25	Members
July	9	Public
July	23	Members
August	6	Public
August	27	Members
September	3	Public
September	24	Members
October	1	Public
October	22	Members
November	5	Public
November	19	Members

HAL Officers/Positions 2022

President	Phil Whitebloom	president@howardastro.org
1st Vice President	Victor Sanchez	1stvp@howardastro.org
2nd Vice President	Jim Tomney	2ndvp@howardastro.org
Treasurer	Joel Goodman	hal_treasurer@howardastro.org
Secretary	Yvonne Chiarelli	secretary@howardastro.org
Event Coordinator	Richard Ren	events@howardastro.org
Publicity Chair +	TBD	publicity@howardastro.org
Social Media +	Hannah Broder	socialmedia@howardastro.org
Observatory Director *	Victor Sanchez	observatory@howardastro.org
Librarian +	Bob Dutilly	librarian@howardastro.org
ALCor +	Steve Jaworiwsky	halcor@howardastro.org
Webmaster *	Ken Sall	Use "Contact Us" Page

* Appointed as voting officers of the board of directors by President with board approval

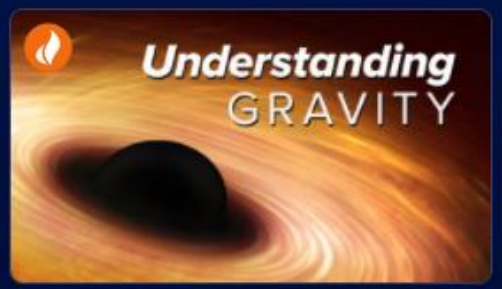
\+ Appointed non-voting member of the board except when position filled by an elected officer

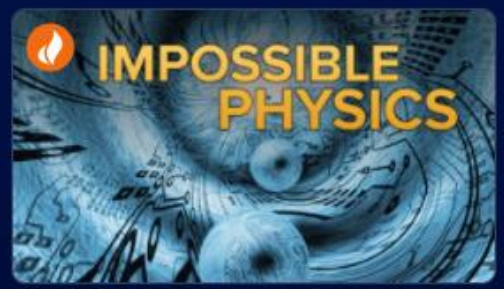
Our April Guest Presenter

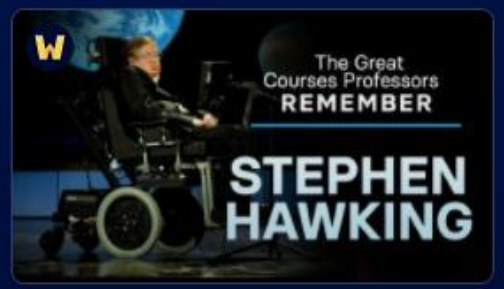
Dr. Benjamin Shumacher

Professor of Physics at Kenyon College

Topic: Six Impossible Things







Howard Astronomical League

HAL Website Search:

ENHANCED BY Goog

HAL Info | HAL Events | For Members | Blogs | Resources | Help / Contact

Howard Astronomical League

Public group · 706 members

Joined | + Invite

About | Discussion | Topics | People | Events | Media

Write something...

Live video | Photo/video | Poll

About

Howard Astronomical League is an amateur astronomy club located in Howard County, Maryland. We hold monthly meetings, conduct

YouTube

HOWARD ASTRONOMICAL LEAGUE

YouTube

HAL Website Search:

ENHANCED BY Goog

HAL Info | HAL Events | For Members | Blogs | Resources | Help / Contact

Howard Astronomical League

62 subscribers

HOME VIDEOS PLAYLISTS CHANNELS ABOUT

Created playlists

HALO History

VIEW FULL PLAYLIST

2021

VIEW FULL PLAYLIST

2022

VIEW FULL PLAYLIST

Howard Astronomical League

YouTube

HAL Website Search:

ENHANCED BY Goog

HAL Info | HAL Events | For Members | Blogs | Resources | Help / Contact

Instagram

Search

hocoastro

Message

35 posts 234 followers 27 following

Howard Astronomical League

Nonprofit organization

HAL is home to over 300 astronomy enthusiasts in the greater DC, Maryland, Virginia area & beyond

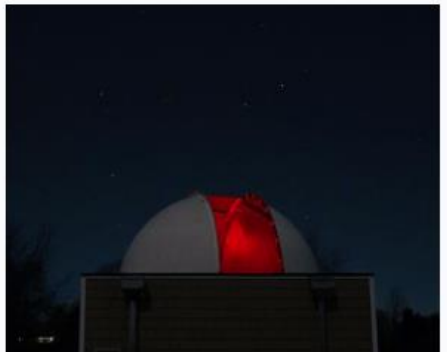
Tag your photos with #howardastro

Join today

howardastro.org

Followed by stardocjg, crimpo, and astropics.by.anthony

POSTS VIDEOS TAGGED



Discord.com (for HAL Members Only)

HAL Community

Want this server to feel unique? Unlock custom server banners with 7 more boosts.

Boost This Server

NEW MENTIONS

public-landing-pad

HAL_MEMBER_CHATS

social-media
main•chat
strictly-visual
)imaging-discussions
)in-the-field
)processing-station
)some-help
)for-sale

VOICE CHANNELS

General

STAR_PARTIES

)members_star_party
)public_star_party

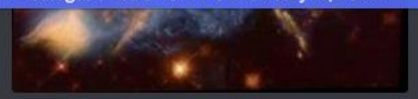
NEW MENTIONS

Philwhitebl... #6904

)processing-station — Share helpful tips or ask questions on PixInsight, Photoshop, GIMP, or whatever you use to process your photos.

Search

42 new messages since 6:40 PM on February 12, 2022 — Mark As Read



1

3:08 PM The other data process:

1

screenshotted.

March 5, 2022

Jared 03/05/2022
Struggling with DBE today. I think I have tried every combination of tolerance and sample size etc. feel like I'm trying to guess a padlock combination.

March 6, 2022

Jared 03/06/2022
So I found the source of my issues with DBE and wanted to share. I shoot OSC, on two seperate rigs with an ASI294MC and ASI2600MC Pro. Usually with Nebula I leverage the L-Extreme narrowband filter. I was running into a problem with DBE were removing gradient was creating a strange banding effect on my image, espcially in the blue and sometimes green channel. I'm pretty sure I tried every combination of tolerance, sample size, smoothing options etc in DBE. In the end, it appears that in order for DBE to remove the artifacts it needed 64-bit resolution. This option is not a default, but if you select sample format under target image correction and in the pull down list choose '64-bit IEEE 754 floating point' the problem is corrected.

I'm going through my process again today now that I corrected that issue and if I come out with another version of Cone Nebula after posting a "final image" you will know why. 🙂

(Sorry, this is for PixInsight users only)

March 9, 2022

Message #)processing-station

HAL_CAPTAIN — 2
Jared
WayneB

WIA PROJECT MEMBER — 3
Arjun Meenashi Sundar at School
Brad Martin
Brian Rehrey

HAL_MEMBER — 7
belliott4488
corey
GDunk49
kalel410
Philwhitebloom
prrguy
Robert Jacobson

OFFLINE — 32
Assis
billm
Brian Owen

DISCORD

CONNECT, SHARE AND LEARN IN THE HAL DISCORD SERVER

AGENDA

What is Discord?

Why should I get into Discord?

How do I join?

WHAT IS DISCORD

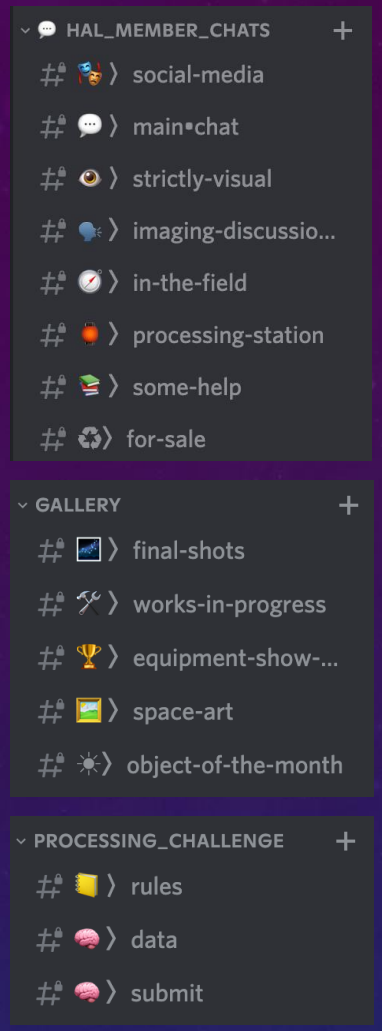
"Imagine a place…that makes it easy to talk every day and hang out more often… Create an invite-only place where you belong. Discord servers are organized into topic-based channels where you can collaborate, share, and just talk about your day without clogging up a group chat."

What it isn’t

- A social media platform
- A substitute for e-mail
- A blog
- Just for gamers

What it is, for us:

- Dedicated environment of community members for community members
- Topic based text channels that allow us to share thoughts and content (Chat rooms)



SO WHY SHOULD I GO TO DISCORD?

Discord provides a way to share and chat in real time on topics that you care about in dedicated channels.

For example:

You constantly think about astronomy, astrophotography and want to find a place to ask questions and share with some of the most talented folks in our community.

You're not sure the best way to improve your processing skills, or how to collimate your new Telescope?

You want to sell an older camera to someone that will give it a good home and lives in the area so you can visit.

You're in the field taking pictures and want to know if that guy in Frederick has clear skies?

You've been working on your Astrobin/Instagram images and want to share the links with HAL members?

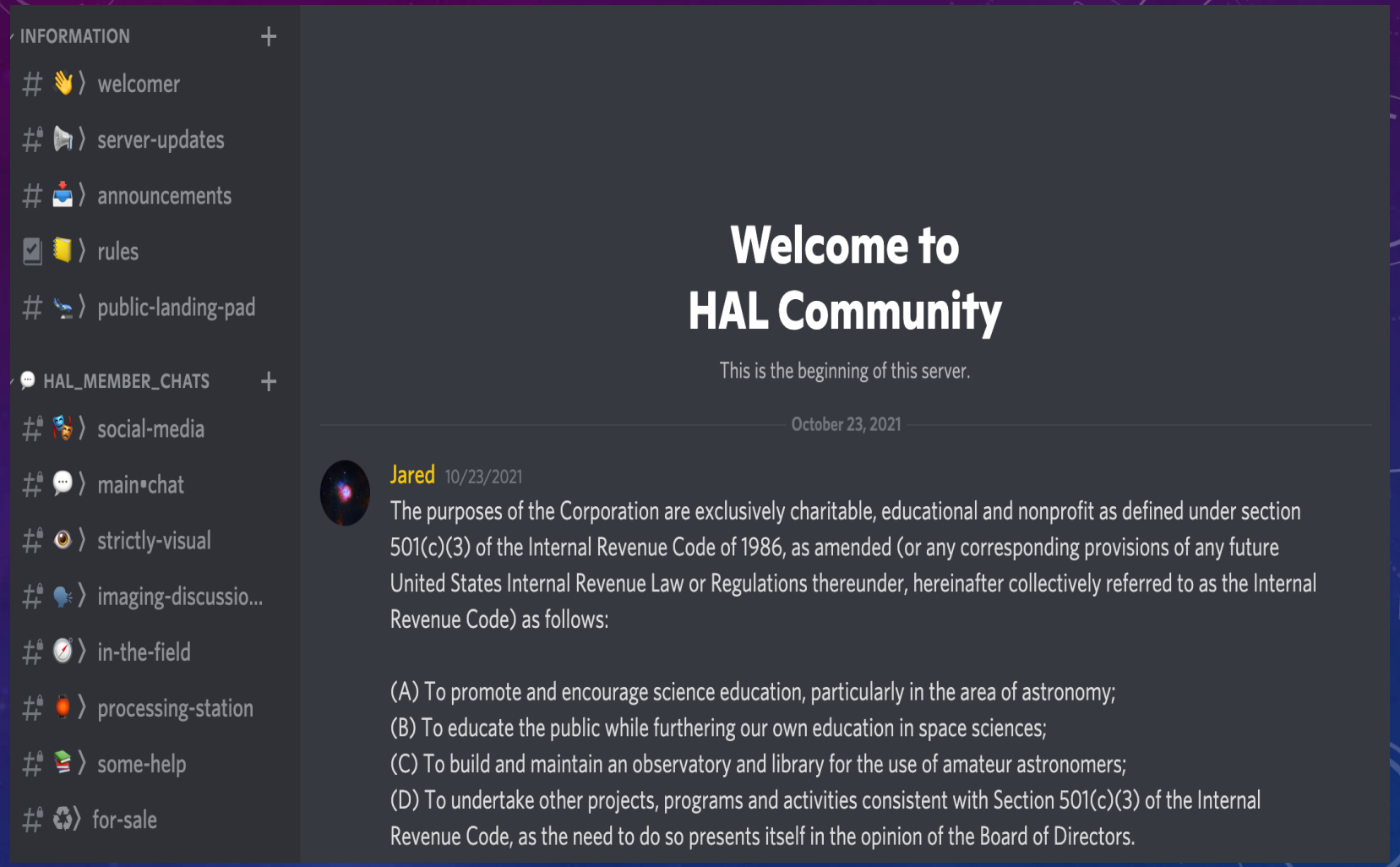
You are looking for new a new adventure and would like to join our "Object of the Month" or "Monthly Processing challenge" to see how your skills are coming along.

Seriously, you just like talking about all things related to Astronomy so why not? And we are a friendly bunch of folks.

OK, SO HOW DO I DO THIS?

1. First, you need a digital device. Phone (APP) Computer (APP) or if you are an “anti software download” kinda person, just use a Web Browser.
2. Go to https://www.howardastro.org/discord/
3. Read through the HAL’s use of Discord rules and click on the invite link provided in the website above. (Requires HAL membership login)
4. Clicking on the link will open Discord, if you already have an account you will be added to the server, if you do not have a discord account it will walk you through the steps to create an account before you can join the server.

ONCE YOU GET INTO DISCORD REVIEW THE RULES AND IF YOU HAVE QUESTIONS FEEL FREE TO ASK IN THE “SOME-HELP” CHANNEL



Tonight's Topic - Filters


ASTRONOMY
TECHNOLOGY TODAY
Your Complete Guide to Astronomical Equipment
EXPLORE SCIENTIFIC AR152 ACHROMATIC REFRACTOR
THE IOPTRON CUBE PRO • ROOFNEST HARD-SHELL ROOFTOP TENT
BAADER 6.5NM
CMOS-OPTIMIZED
NARROWBAND
FILTERS
Volume 16 • Issue 2 $6.00 US

James Webb Space Telescope

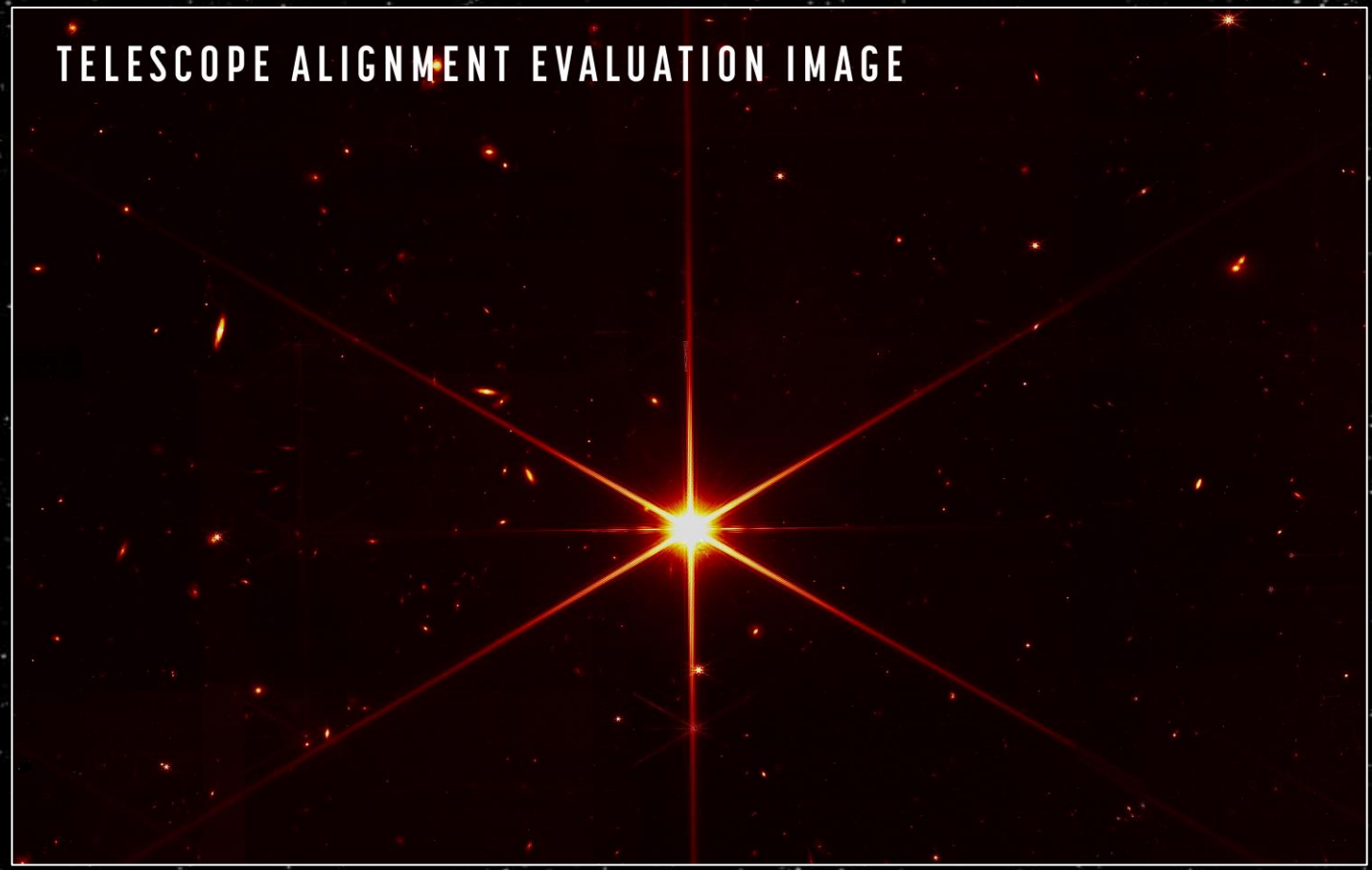
From our own Wayne Baggett:

JWST has narrowband filters. NIRCam's suite includes narrowband filters at wavelengths of 1.64microns ([FeII]), 1.87microns (H, Paschen-alpha), 2.12microns (H2 moleule), 3.23microns (H2 molecule), 4.05microns (H, Brackett-alpha), 4.66microns (CO molecule), and 4.70microns (H2 molecule), where the items in "()" indicate the species responsible for the emission/absorption in the filter. Note that the wavelengths are appropriate for the rest wavelengths, so these are not for distant universe use, generally. In addition, since the distant universe is faint, using a narrowband filter to observe stuff would limit how faint you could detect since you're blocking so much of the light.

Remember also that the SHO palette is for emission nebulae, and we're not really going to see emission nebulae in those very distant galaxies where redshift is a significant issue. However, at those large redshifts the SHO lines would be shifted into the IR (the "S" (sulfur) is nearly in the IR in the Milky Way!), or perhaps well into the MIRI wavelength range (at an edge of the universe redshift of 13, H-alpha would be somewhere around 9microns if I did my arithmetic right).

And, in the spirit of teaching people how to fish, the instrument information (and lots more!) can all be found on STScI's website at

https://jwst-docs.stsci.edu/



Planets & Filters

What filters can offer for visual observation of Solar System objects

The Premise of Filters

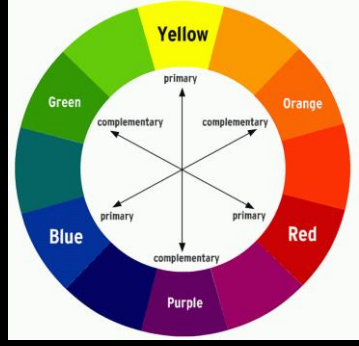
- Glare reduction
  - Moon, Venus
    - Neutral density filter
    - Violet can work well for Venus
  - Jupiter, Mars (and Saturn to a lesser degree)

Neutral Density

Unfiltered

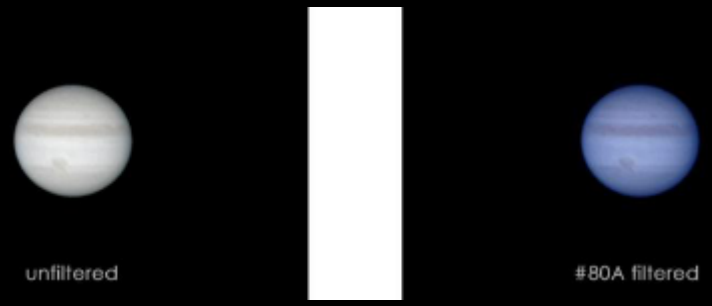
https://www.skyatnightmagazine.com/advice/telescope-filters-beginners-guide/

The Premise of Filters

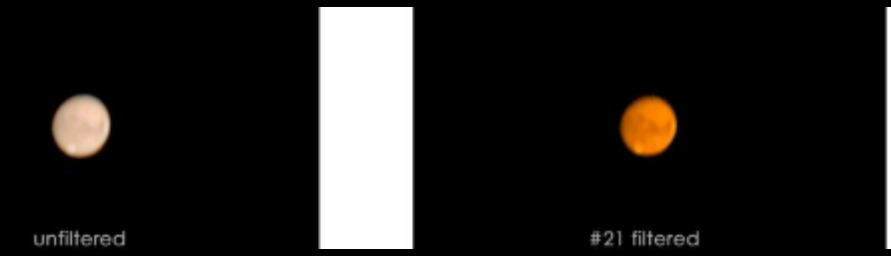


- Improve the contrast of colored features
  - A colored filter will block (darken) its complementary colors

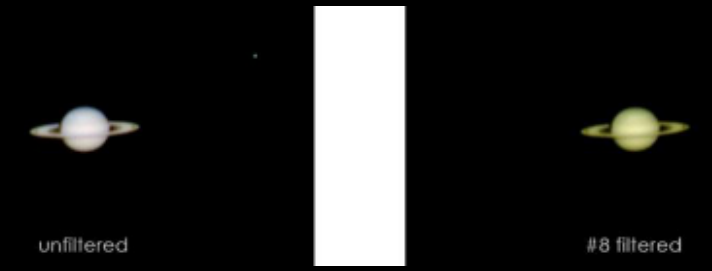
- Blue filter
  - For Mars, accentuates polar caps and clouds
  - For Jupiter, darkens the belts and GRS



- Red filter
  - For Mars, improves contrast on albedo features
  - For daylight observing (Venus, Mercury) darkens the background sky



- Yellow
  - Helpful with Jupiter and Saturn's bands



Cloudy Nights brought to you by astronomics

- Takahashi TSA-102 Super Apochromat
- 14mm and 10mm Pentax XW eyepieces and a Tele Vue 2.5x Powermate
  - Effective focal lengths used ranged from 4mm to 5.6mm.

Baader Neodymium Moon & Skyglow with UV & IR Cut
Baader Semi-APO
Baader Contrast Booster
Celestron Mars
Polarizer
#8 Light Yellow (83%T)
#11 Yellow-Green (40%T)
#12 Deep Yellow (74%T)
#15 Dark Yellow (66%T)
#21 Orange (46%T)
#23A Light Red (25%T)
#25 Red (14%T)
#29 Dark Red (06%T)
#30 Magenta (27%T)
#38 Blue (43%T)
#38A Blue (17%T)
#47 Blue (03%T)
#56 Light Green (53%T)
#58 Green (24%T)
#80A Blue (28%T)
#82A Pale Blue (73%T)

Moon

- Nightime
  - Baader Moon & Skyglow stacked with the #82 Pale Blue

  “This combination added a moderate blue tint to the view but resulted in an excellent level of contrast to the regolith shades in the maria, lava flows, and the whites of the impact ejecta”

- Daytime
  - #23A Light Red with Polarizing filter

  “To get the optimum contrast effect, the best combination I found was the #23A Light Red stacked together with a single Polarizing filter. The eyepiece is then rotated in the focuser to achieve the desired amount of darkening of the background sky from the Polarizer.”


Jim Johnson

Venus

- Daytime
  - Baader Semi-APO & #80A Blue & Polarizer stacked together

  “Unlike with the Moon however, the blue filters worked better both aesthetically and practically for me on Venus than the red filters. So my preference was to stack the Polarizer filter with the stronger #80A Blue filter to help reduce the excessive brightness of Venus as well. This combination also darkened the background sky very nicely while keeping it fairly natural looking.

  When I added the Baader Semi-APO filter to the stacked Polarizer and #80A Blue filter, I felt the view improved even more as a still bright Venus was now dimmed just a little more resulting in some cloud details becoming visible near the terminator on Venus”

- Nightime (Not covered by author)
  - #47 Violet (3% transmission)

  “A deep blue filter (W46, W47) is useful to reveal the very low contrast shadings in its atmosphere. Since Venus is extremely bright a filter is necessary to cut down on its intensity and reduce irradiation in the observers eye.” –Jeff Beish A.L.P.O.

Mars

1. Baader Contrast Booster (best general contrast improvement all features)

“I felt that the Baader Contrast Booster enhanced contrast across all features on Mars the best. It was an excellent generalist at darkening maria without losing edge details, brightening white or bright features like the deserts, polar caps, and limb haze, and it also kept the color pallet of Mars within what I felt was reasonable for Mars.”

2. #30 Magenta (specialty: brightens polar caps, limb haze, fog)

“For the narrow task of wanting to accentuate the polar caps, limb haze, or ice fog on Mars, and not caring about the other features, I found that the VERNONscope #30 Magenta filter did this task the best. This filter was very good at making those Martian features show more brightly than the Contrast Booster.”

1. #58 Tricolor Green (specialty: brings out Lowell Bands around poles)

“The #58 Tricolor Green filter dramatically darkened the Lowell Bands that are seasonal dark bands around the polar caps. During my observations these bands were not visible unfiltered, showed light to moderately with the Baader Contrast Booster, but showed dramatically dark with the #58 Green filter.”

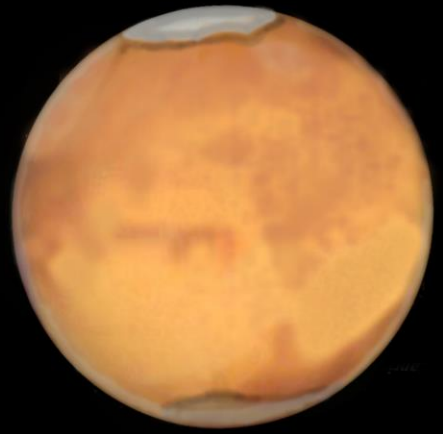
Mars

Date: 09 -10 August 2018
Time: 23:15 to 00:45

Constellation: Capricornus
Magnitude: -2.6
Distance: 36,255,765 miles
Size: 23.9 arcseconds
Phase: 99%
CM: 7.2 degrees (at 00:15)

Telescope: 155mm Refractor
Eyepiece: 4.5mm Delos with barlow (413x)
Filters: Mars B, Blue #80A
Green #58, Red #25
Orientation: Inverse View (South Up)

Location: Deck of House
Drawing by: Richard Orr



Jupiter

1. Baader Contrast Booster (best general contrast improvement all features)

“The most color-neutral results that also had very good enhancement of feature contrast on Jupiter was from the Baader Contrast Booster. The Belts, Polar Regions, and GRS on the planet were nicely contrasted and more distinctly visible while it only slightly dimmed the view. The Contrast Booster made the Belts easier to see compared to unfiltered, while accentuating their finer internal and edge details, including festoons off the Belts. The Contrast Booster also revealed some Belts or portions of Belts that were not be visible unfiltered, like the Equatorial Belt.”

2. #82A Pale Blue (specialty: GRS color appear more vividly)

“As a special feature filter, the #82A Pale Blue filter made the natural color of the GRS appear more vividly bright and color-saturated, which was exciting to see. The GRS, Belts, and Polar features on the planet were also slightly more distinct compared to unfiltered with the #82A Blue filter. However, a light blue tint was given to the planet's lighter features which had the subtle effect of generally muting the colors other features on the planet aside from the GRS. Given how vividly this filter made the GRS color "pop" on the planet, I definitely recommend it for that purpose as it made observing the GRS all the more interesting.”

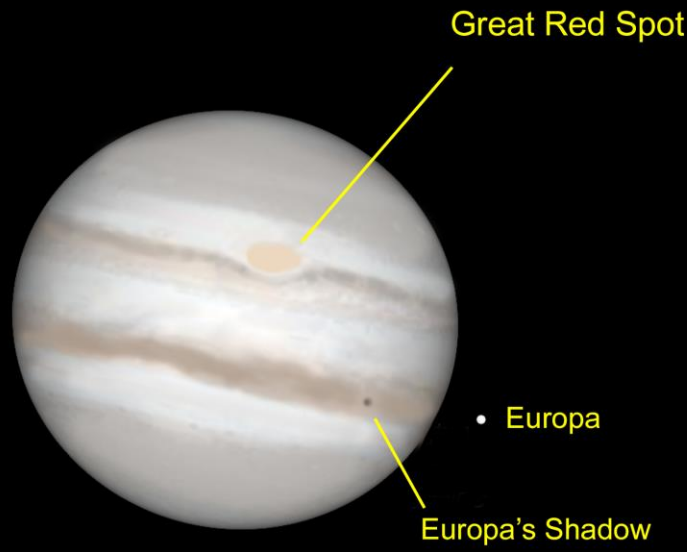
JUPITER & MOONS

Date: 29-June-2020
Time: 04:45 (0415 to 05:10) EDT

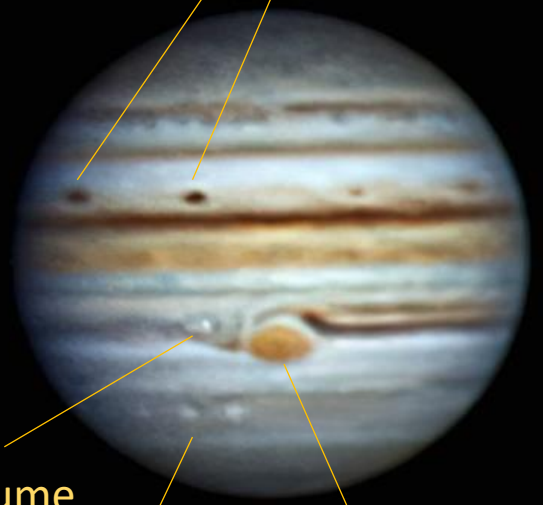
Magnitude: -2.73 (Jupiter)
Magnitude: 5.3 (Europa)
Magnitude: 4.6 (Ganymede)
Magnitude: 5.6 (Callisto)
Distance: 390,414,390 miles
Size (Jupiter): 47 x 44 arcseconds

Ganymede

Telescope: 155mm Refractor
Eyepiece: 10mm Delos w/barlow (186x)
Filters: Green #58 & Blue #80A
Orientation: Inverted Image (South Up)



Location: Deck of House
Drawing by: Richard Orr



Jupiter 2021-10-02 01:52:09 UT
WL with IR cut filter
CMI=167° CMII=6° CMIII=201°
25cm Newtonian f\6, 2.5x TV Barlow
ASI178MC at 97 fps

Jim Tomney
Towson, MD USA

Saturn

1. Baader Contrast Booster or Baader Semi-APO (best general contrast all features)

"Of all filters the Baader Semi-APO was the one that more vibrantly and starkly rendered the major features, i.e., the Cassini Division, Belts, North Polar Region and Hexagon, Rings (including the C-Ring), and Cassini Division. The Baader Contrast Booster rendered a view similar to the Semi-APO, and contrasted the North Polar region just a little better, but at the expense of dimming the overall view enough to make the view appear less vibrant overall."

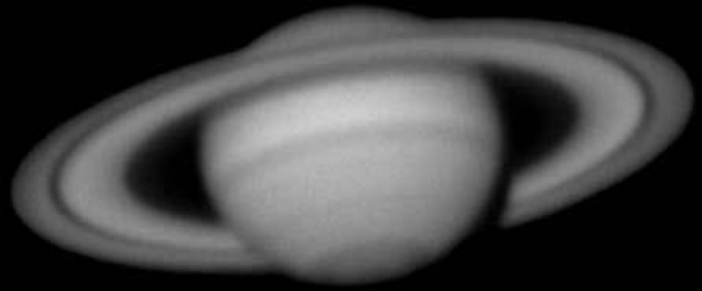
2. #15 Dark Yellow (specialty: best on Cassini Division)

"If my goal was to render the Cassini Division as dark, contrasted, and visibly discernable as possible, then of all the filters I tested the #15 Dark Yellow accomplished this task the best.."

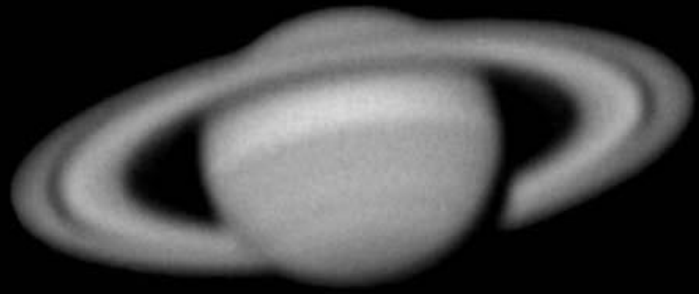
Saturn Composite Image

ZWO ASI290MM
TeleVue 2.5x PM
Meade LX850

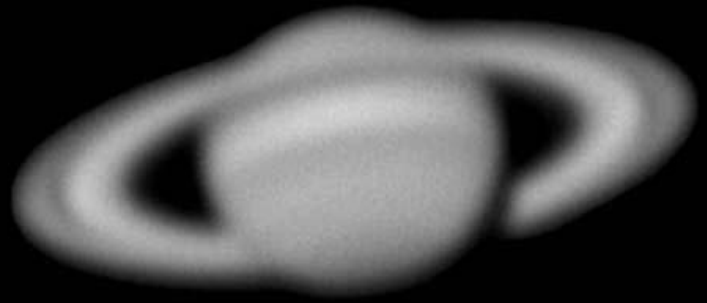
Jim Johnson
Ashton MD
2021-09-11



Red



Green



Blue

LRGB

Comets

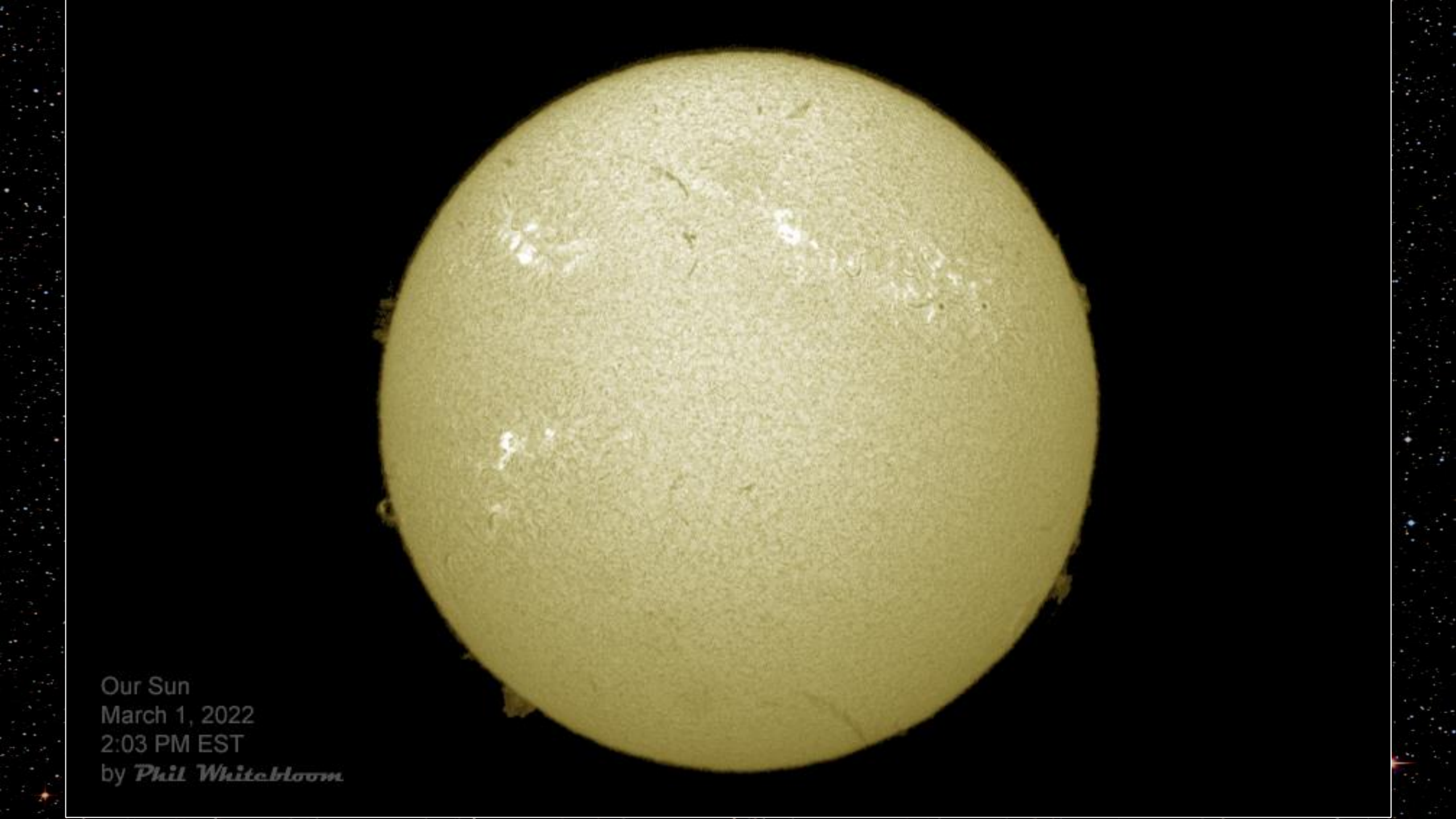
- Possibly no longer being manufactured (but available), the Lumicon Swan Band filter selectively isolates the 501 nm OIII line and both C_2 lines at 511 nm and 514 nm.
- The green hue we see in comets is due to excitation of cyanogen and diatomic (C_2) carbon – so the Swan Band filter can selectively pass this light, increasing contrast of the coma.
- It won't help contrast on a dust tail (it will actually diminish that).

What's the Cost?

Filter Costs (1.25")	
Wratten Filters	$10-$60
Swan Band *	$110
Baader Moon & Skyglow	$95
Baader Contrast Booster	$95
VernonSCOPE #30 Magenta	$45
Baader Semi APO Filter	$95
Celestron Mars Filter *	$70
Neutral Density	$20-$60
Polarizer Filter	$30-$55

** Discontinued?*


The Sun, AR2965 - 2022-03-13 16:21 UTC
Jim Johnson, Ashton MD
ZWO ASI291MC/2.5x PowerMate
TeleVue NP101is/Losmandy G11
© 2022

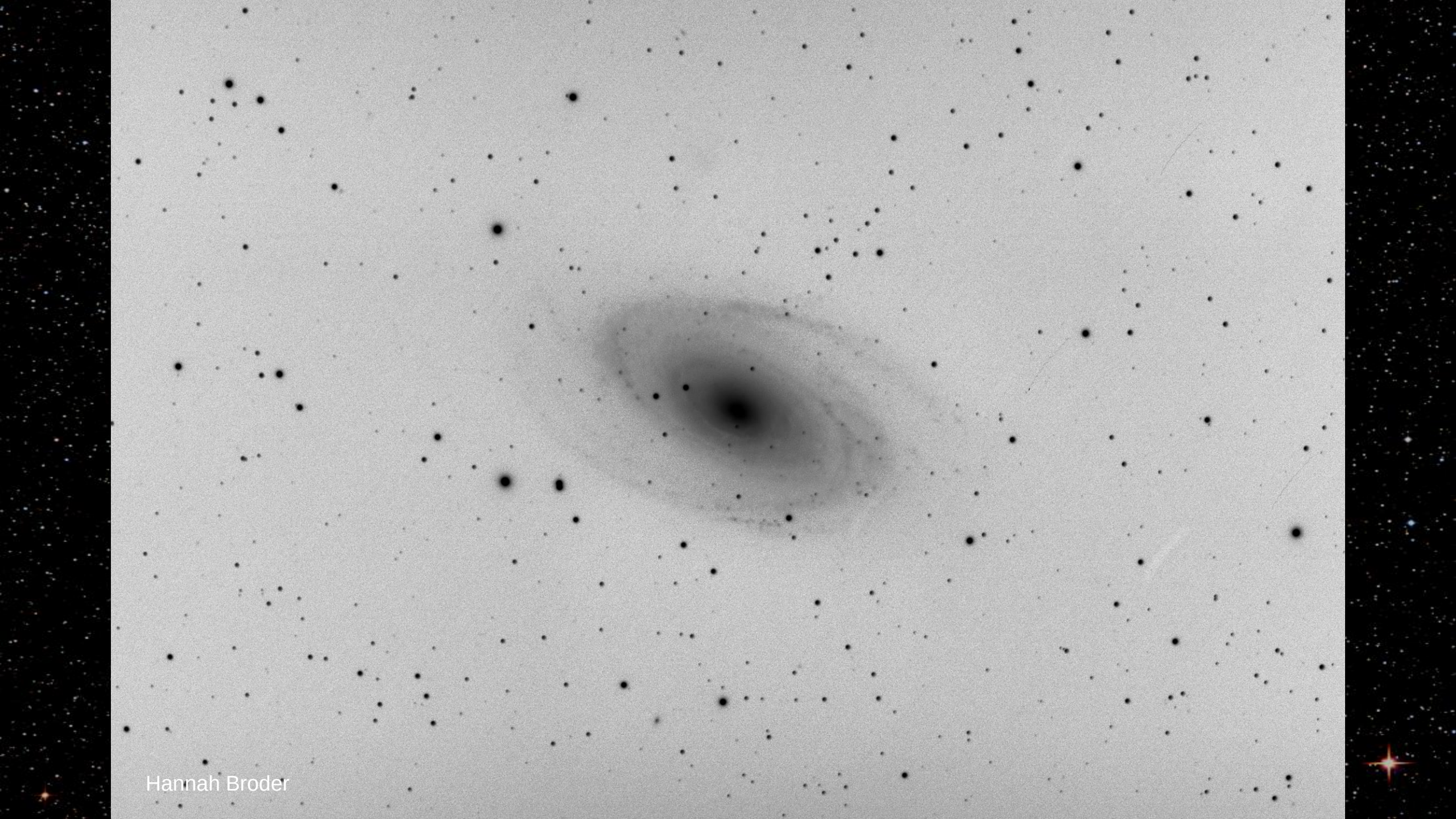

Our Sun
March 1, 2022
2:03 PM EST
by Phil Whitehoom

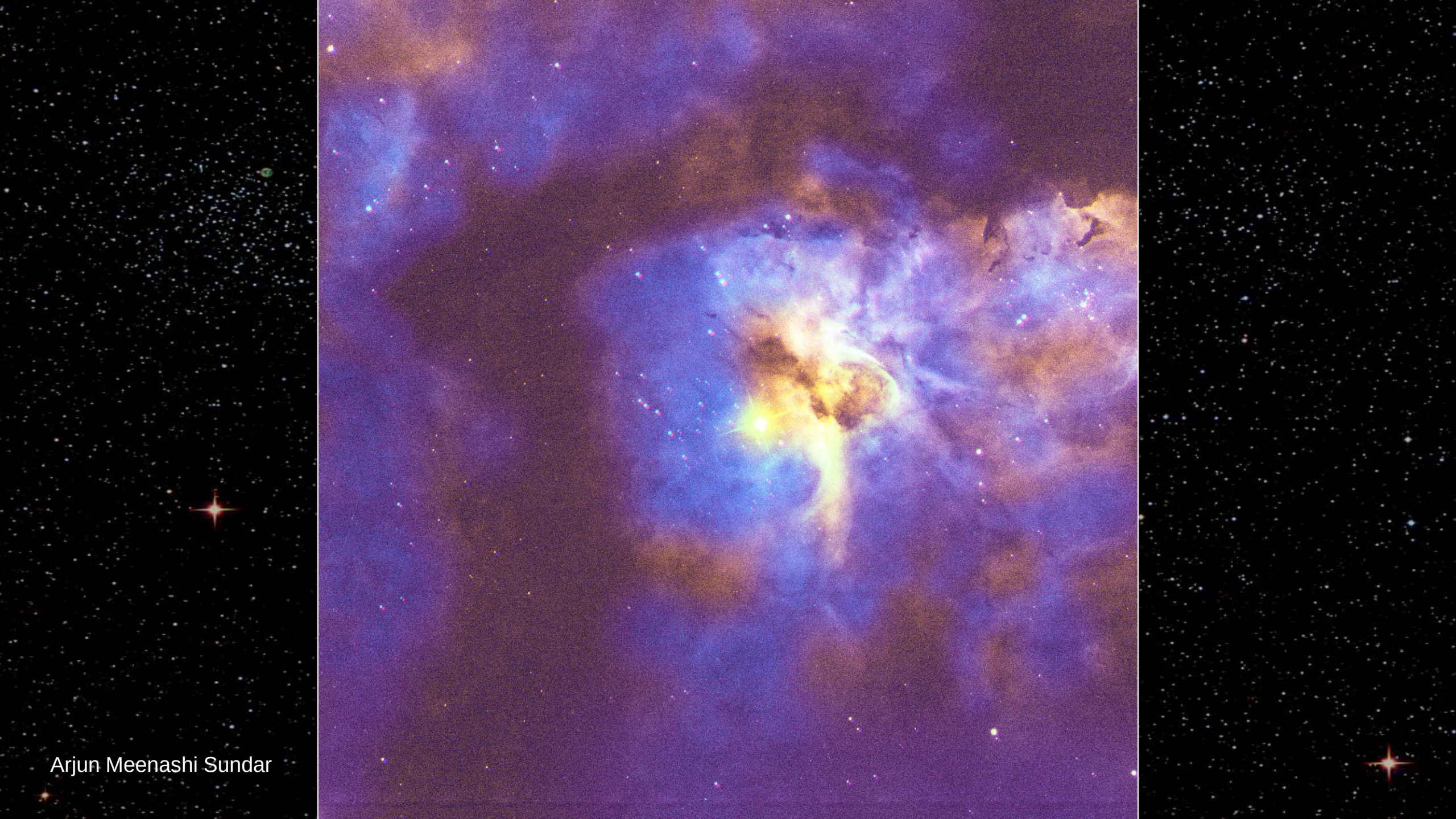
Supernova Remnant Sh 2-221 (SNR G160.9+02.6)
"The fate of stars > 8-10 solar masses: Constellation Auriga

Planetary Nebula Sh 2-216 (PN G158.5+00.7)
"The fate of stars < 8-10 solar masses" Constellation Perseus

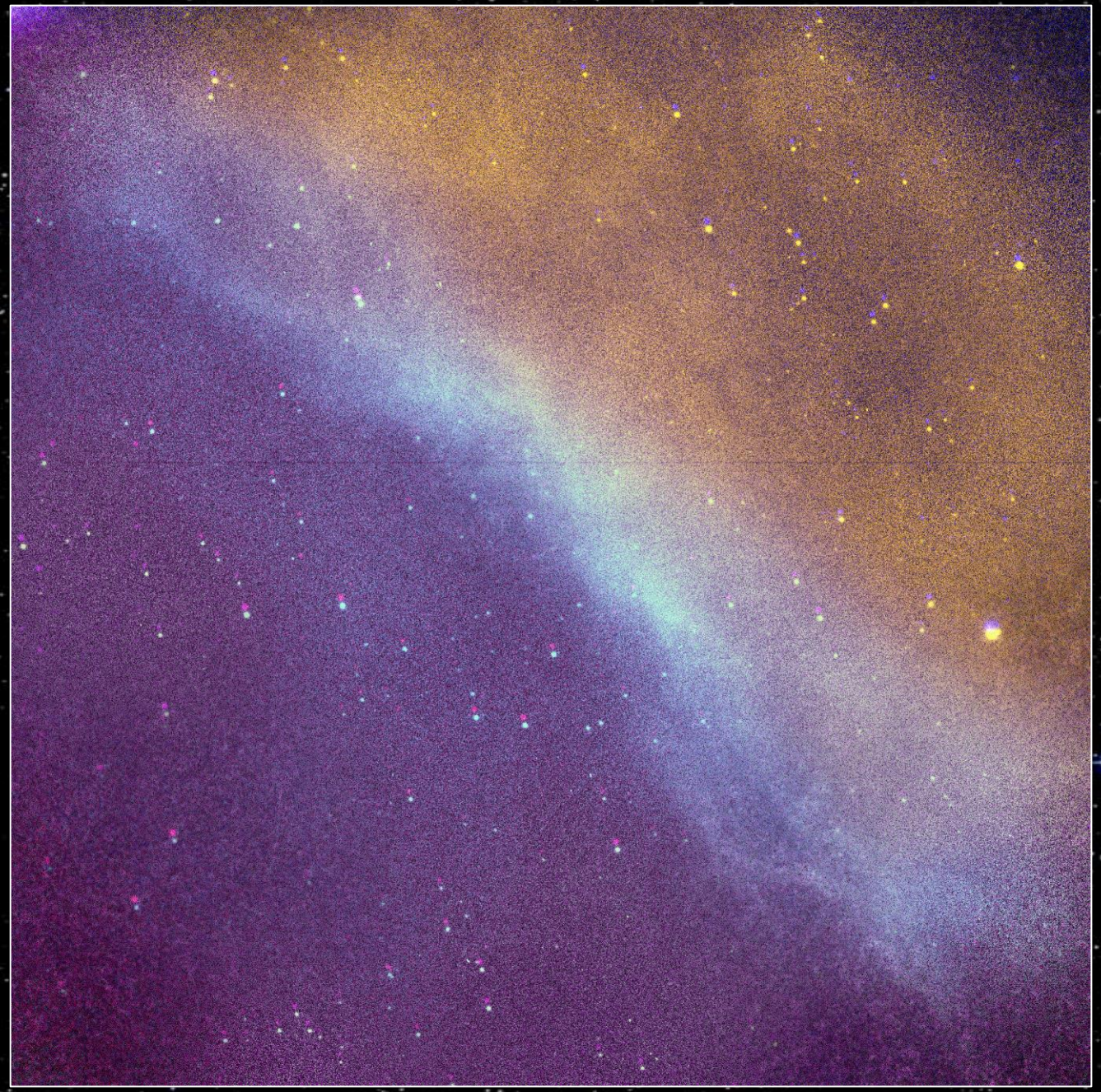
TSQ-106 telescope & ASI 6200MM Pro camera
Narrowband image: Ha(6 nm)/OIII(3 nm)
2-frame mosaic (~ 31 hours total exposure)
February/March 2022; Brad Sheard, Ellicott City, MD


Hannah Broder


Hannah Broder



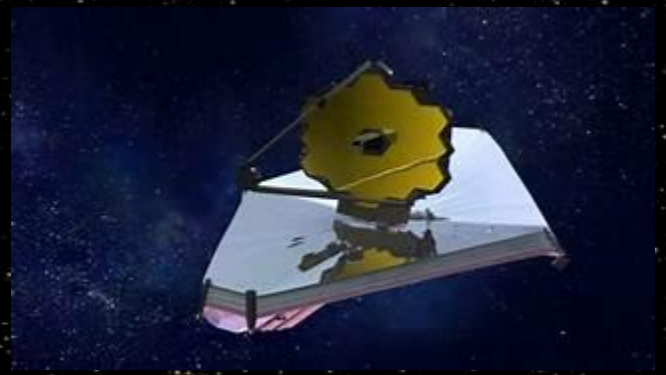
Arjun Meenashi Sundar



Arjun Meenashi Sundar

Arjun Meenashi Sundar

Thank You



CLEAR SKIES!