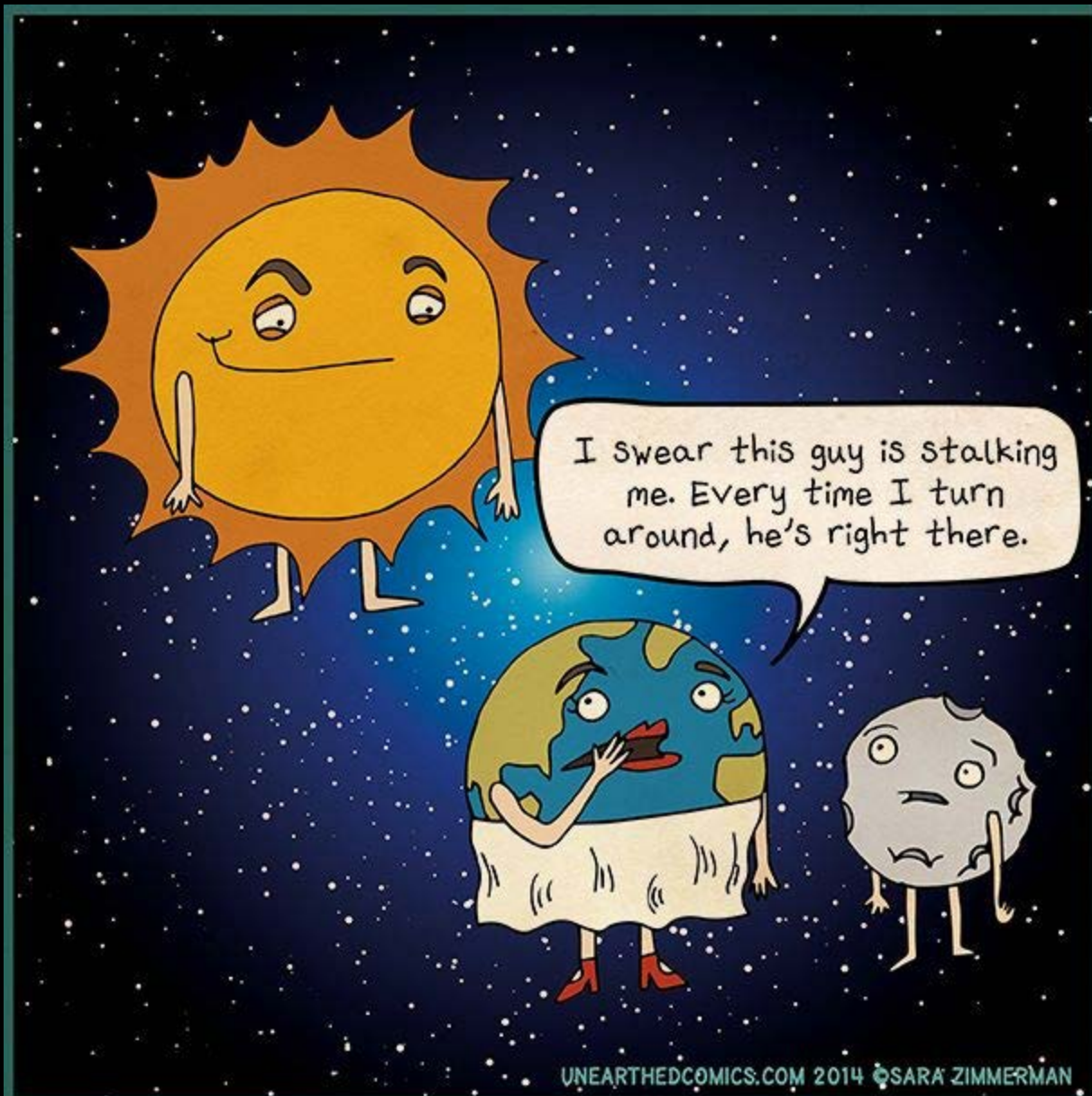


# Howard Astronomical League



June 18, 2020

# Astro Humor



# HAL OFFICERS

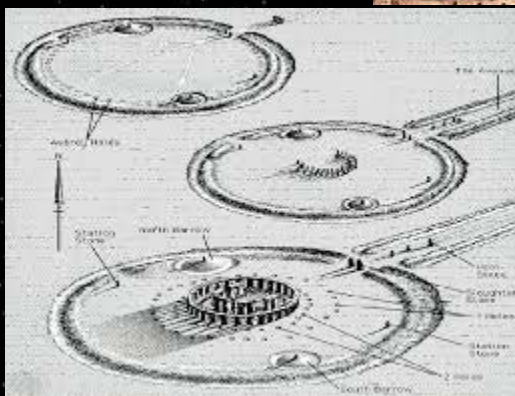
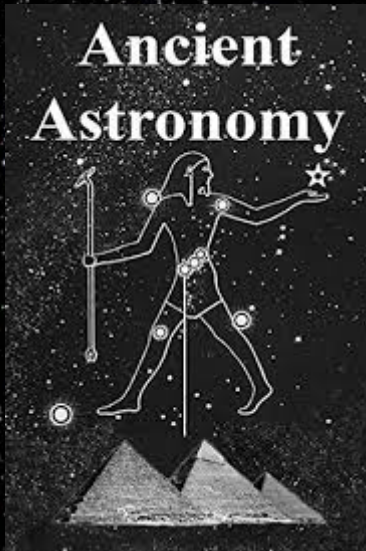
## HAL Officers/Positions 2020

<b>President</b>	Phil Whitebloom	president@howardastro.org
<b>1st Vice President</b>	Victor Sanchez	1stvp@howardastro.org
<b>2nd Vice President</b>	JoAnn Shapiro	2ndvp@howardastro.org
<b>Treasurer</b>	Joel Goodman	hal_treasurer@howardastro.org
<b>Secretary</b>	Cheryl Kerr	secretary@howardastro.org
<b>Event Coordinator</b>	David Stein	events@howardastro.org
<b>Publicity Chair +</b>	Joel Goodman	halpublicity@howardastro.org
<b>Observatory Director *</b>	Joel Goodman	observatory@howardastro.org
<b>Librarian +</b>	Bob Dutilly	librarian@howardastro.org
<b>ALCor +</b>	Steve Jaworiwsky	halcor@howardastro.org
<b>Webmaster *</b>	Chas Rimpo	Use "Contact Us" Page

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

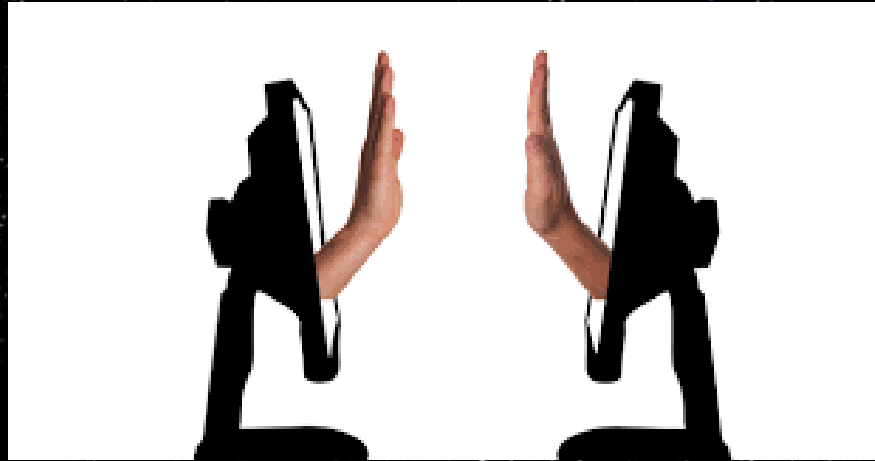
+ Appointed non-voting member of the board except when position filled by an elected officer

# Ancient Astronomy



# HAL Virtual

## What's Been Happening?



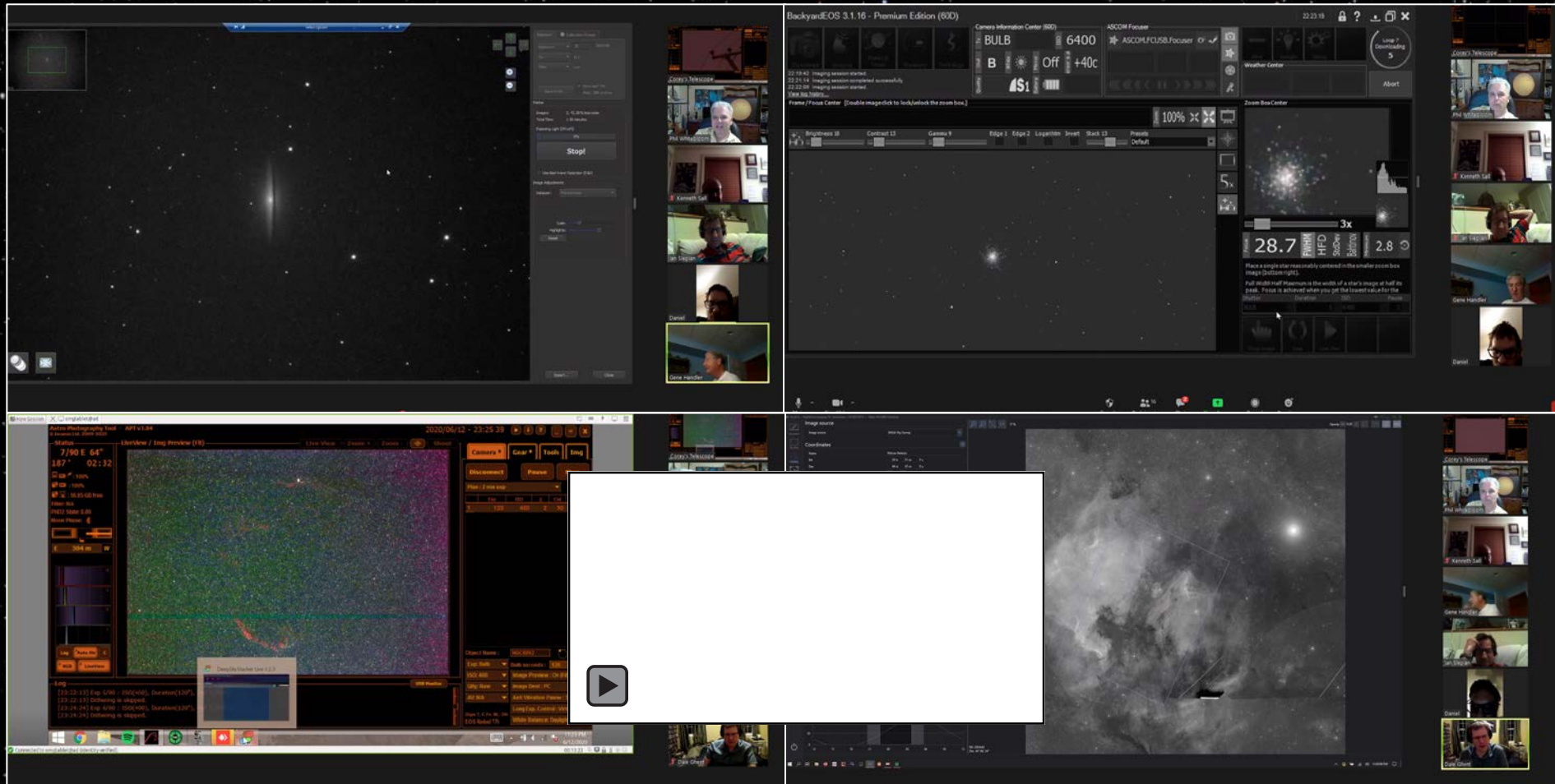
# Astro-School Virtual

We have not had an event since Jim concluded on the Celestial Sphere. Resulting from our Open Cluster get together, I will be talking with Dennis Conte regarding doing a session on exoplanets.

# HAL Open Cluster

It is an open forum. The conversation guided itself. Great ideas came from it. Everybody wants to continue on a monthly basis. Next meeting will be soon after July 4<sup>th</sup>.

# Virtual Star Party



Thanks to our backyard astronomers: Gene Handler, Jim Johnson, Dale Ghent, and Corey Kovil

Exposure: 30 seconds  
Gain: 6.2  
Filter: Lark

Status  
Images: 4, 19, 18% less noise  
Total Time: 2:00 minutes  
Exposing light (1 Left): 76%

Stop!

Use Bad Frame Rejection (BFR)

Image Adjustments  
Delayer: [dropdown]  
Scale: [slider]  
Highlight: [slider]  
Reset

Corey's Telescope  
Phil Whitebloom  
Kenneth Sall  
Gene Handler  
Ian Stepien  
Daniel  
Blake Obenck

M81 and M82 – Gene Handler

Exposure: 30 seconds  
Gain: 6.2  
Filter: Lark

Status  
Images: 4, 50.00% less noise  
Total Time: 2:00 minutes  
Exposing light (1 Left): 64%

Stop!

Use Bad Frame Rejection (BFR)

Image Adjustments  
Delayer: [dropdown]  
Scale: [slider]  
Highlight: [slider]  
Reset

Corey's Telescope  
Phil Whitebloom  
Kenneth Sall  
Gene Handler  
Ian Stepien  
Daniel

M83 – Black eye galaxy – Gene Handler

The screenshot displays a software interface for astronomical imaging, titled "telescope". The main window shows a star field with a central supernova. A green box highlights a region in the top-left corner. The interface includes a control panel on the right with the following sections:

- Exposure:** Coloration Frames, Exposure: 30 seconds, Bin: 1x1, Filter: Lsm.
- Status:** Images: 11, 69.85% less noise, Total Time: 5.50 minutes, Exposing Light (20 Left): 32%.
- Image Adjustments:** Debayer: Marochiame, Scale, Highlights, and a Reset button.

At the bottom right, there is a video call overlay with five participants:

- Corey's Telescope
- Phil Whitebloom
- Kenneth Sall
- Ian Sleplan
- Gene Handler
- Daniel

Buttons for "Export..." and "Close" are visible at the bottom of the control panel.

M61 with Super Nova – Gene Handler

The screenshot displays the Telescope software interface. The main window shows a dark field of stars with the M51 Whirlpool Galaxy in the center. A green box in the top-left corner indicates the current field of view. The software's control panel on the right includes the following sections:

- Exposure:** Calibration Frames, Exposure: 30 Seconds, SN: 3:1, Filter: uan. Buttons for Save Profile and Save each file (Main: SBK.archive) are present.
- Status:** Images: 2, 29.29% less noise, Total Time: 1.00 minutes, Exposing Light (22 Left): 26%. A large **Stop!** button is visible.
- Image Adjustments:** Debayer: Monochrome, sliders for Scale and Highlights, and a Reset button.

At the bottom left of the Telescope window are icons for a camera and an envelope. On the right side, a video call overlay shows five participants: Corey's Telescope (top), Phil Whitebloom, Kenneth Sall, Gene Handler (highlighted with a yellow border), Ian Slepan, and Daniel (bottom).

M51 Whirlpool Galaxy – Gene Handler

BackyardEOS 3.1.16 - Premium Edition (60D) 22:43:10

Camera Information Center (60D)

Mode: **BULB** ISO: **6400**

Dial: **B** White Mirror Off error fix at **+39c**

Quality: **AS1** Battery:

ASCOM Focuser

★ ASCOM.FCUSB.Focuser

Weather Center

Loop 57 Busy 5

Abort

Frame / Focus Center [Double image click to lock/unlock the zoom box.]

Brightness 10 Contrast 13 Gamma 9 Edge 1 Edge 2 Logarithm Invert Stack 13 Presets Default

Zoom 100%

5x

Zoom Box Center

3x

Focus: **5.2** FWHM HFD StdDev Backdoor Minimum **2.8**

Place a single star reasonably centered in the smaller zoom box image (bottom right).

Full Width Half Maximum is the width of a star's image at half its peak. Focus is achieved when you get the lowest value for the

Shutter	Duration	ISO	Pause
BULB	5	6400	0

Snap Image Loop Live View

Corey's Telescope

Phil Whitebloom

Kenneth Sall

Gene Handler

Ilan Slepian

Daniel

M57 – Ring Nebula - Jim Johnson

# BackyardEOS 3.1.16 - Premium Edition (60D)

22:44:34

Camera Information Center (60D)  
Ty **BULB** ISO **6400**  
Dial **B** White Mirror **Off** sensor is at **+39c**  
Quality **AS1** Battery

ASCOM Focuser  
★ ASCOM.FCUSB.Focuser

Weather Center  
Loop 65  
Snap Image  
**0**  
Abort

Frame / Focus Center [Double image click to lock/unlock the zoom box.]  
Zoom **500%**

Brightness 10 Contrast 13 Gamma 9 Edge 1 Edge 2 Logarithm Invert Stack 13 Presets Default

Zoom Box Center  
Zoom **3x**  
Focus **6.0** FWHM HFD SteDev Bahtinov Minimum **2.8**

Place a single star reasonably centered in the smaller zoom box image (bottom right).  
Full Width Half Maximum is the width of a star's image at half its peak. Focus is achieved when you get the lowest value for the

Shutter	Duration	ISO	Pause
BULB	5	6400	0

Shut Image Loop Live View

Corey's Telescope

Phil Whiteblom

Kenneth Sall

Gene Handler

Ilan Steplan

Daniel

Image source: NASA Sky Survey

Coordinates:  
Name: Pelican Nebula  
RA: 20 h 51 m 0 s  
Dec: 44 d 22 m 0 s  
Field Of View: 100 degree

Camera Parameter:  
Width: 4056  
Height: 3120  
Pixel Size: 5.6  
Focal Length: 414

Targets:  
Horizontal Panels: 1  
Vertical Panels: 1  
Overlap percentage: 20%  
Rotation: 115

Buttons: Recenter Image, Stop, Replace as Sequence Target, Add as Sequence Target

Graph: Plot of RA vs Dec with points for 'Star' and 'Target North'.

RA: 20:54:43  
Dec: 44:00:24

Corey's Telescope

Phil Whitebloom

Kenneth Sall

Gene Handler

Ian Slepian

Daniel

Dale Ghent

Astro Photography Tool - APT v3.84  
 © Incanum Ltd. 2009-2020

2020/06/12 - 23:25:39

**Status**    LiveView / Img Preview (Fit)    Live View    Zoom +    Zoom -    Shoot

**7/90 E 64"**  
**187'    02:32**

[Battery Icon]: 100%  
 [Signal Icon]: 100%  
 [Storage Icon]: 56.85 GB free  
 Filter: N/A  
 PHD2 State: 0.00  
 Moon Phase:

E 304 m W

Log    Auto Str    C  
 RGB    LiveView

**Log**  
 [23:22:13] Exp 5/90 : ISO(400), Duration(120\*),  
 [23:22:13] Dithering is skipped.  
 [23:24:24] Exp 6/90 : ISO(400), Duration(120\*),  
 [23:24:24] Dithering is skipped.

DeepSkyStacker Live 4.2.3

USB Monitor

**Camera #**    Gear #    Tools    Img  
 Disconnect    Pause    Stop

Plan: 2 min exp    edit

Exp	ISO		Cnt	Qty
1	120	400	2	90 Raw

Object Name: NGC6992    A    F

Exp: Bulb    Bulb seconds: 120  
 ISO: 400    Image Preview: On (Fit)  
 Qty: Raw    Image Dest: PC  
 AV: N/A    Anti Vibration Pause: 3s  
 Digic 7, C.Fn. BL - ON    Long Exp. Control: Virtual  
 EOS Rebel T7i    White Balance: Daylight

11:25 PM  
 6/12/2020  
 00:13:23

Connected to omtablet@ad (identity verified)

Corey's Telescope

Phil Whitebloom

Kenneth Sall

Gene Handler

Daniel

Dale Ghent

Camera

Camera State: ASI EXP IDLE

Name: ZWO ASI1600MM Pro

Description:

Driver Info: ZWO ASICamera2      Driver Version: 1.14.1119

Sensor Type: Monochrome      Sensor Name:

Camera X Size: 4656      Camera Y Size: 3520

Minimum Exposure Time: 3.2E-05      Maximum Exposure Time: 2000

Max Binning X: 4      Max Binning Y: 4

Pixel Size X: 3.8      Pixel Size Y: 3.8

Temperature Control

Cooler: 96.00%

Cooler Power: -7.00 / -10.00

Chip Temperature:

Cooling: Target Temperature: -10.00      Min. Duration: 0.00

Warning: Min. Duration: 0.00

Camera Settings

Gain: 139

Offset: 21

USB Limit: 40

Graphs:

22:59:30      23:00:00      23:00:30      23:01:00      23:01:30      23:02:00

22:59:30      23:00:00      23:00:30      23:01:00      23:01:30      23:02:00

Taskbar: Camera | Cooling | % | 11:00:23 PM

Corey's Telescope

Phil Whitebloom

Kenneth Sall

Gene Handler

Ian Slepian

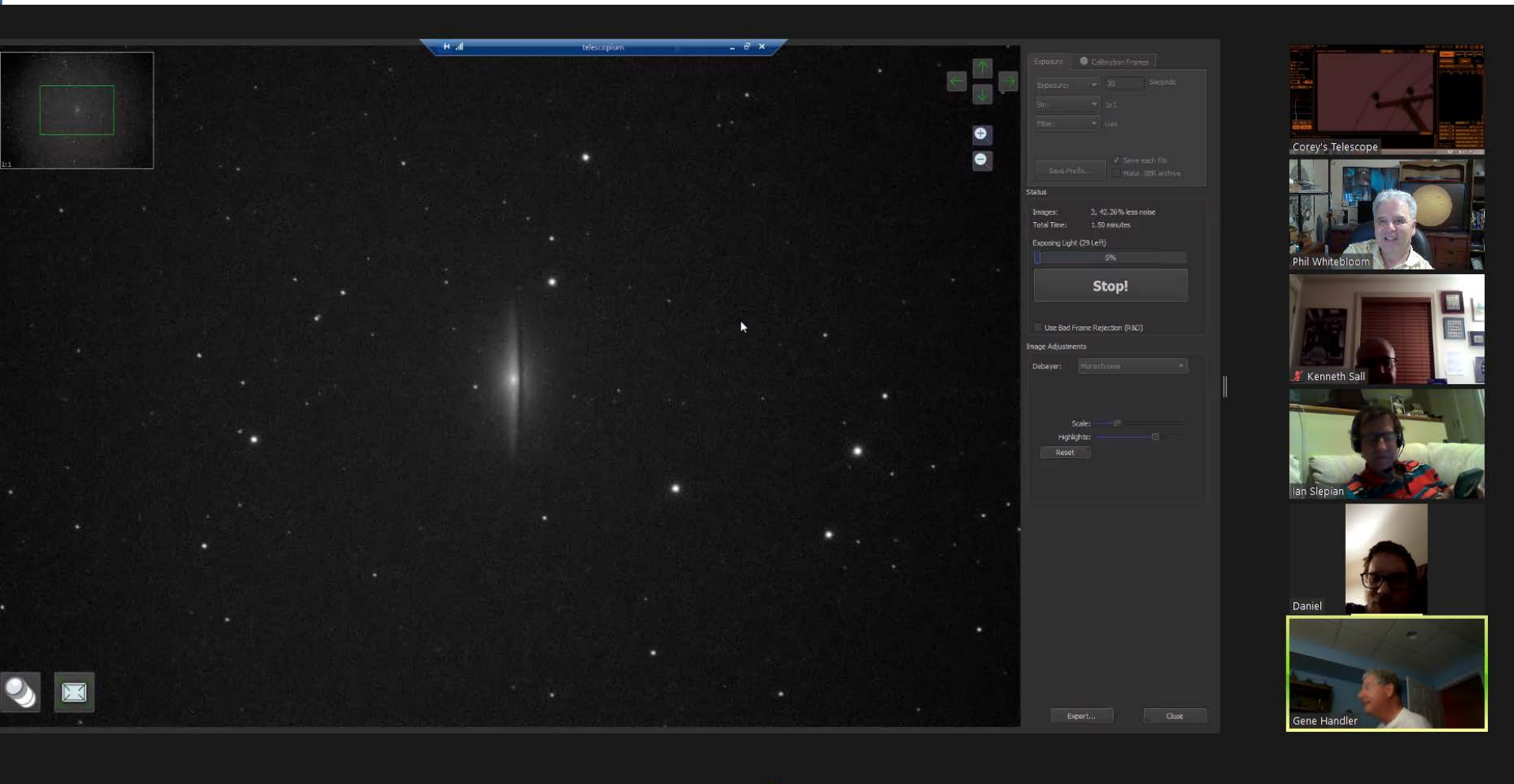
Daniel

Dalé Ghent

Dalé Ghent Screen

The screenshot displays a comprehensive astronomical imaging control interface. The central window shows a dark, star-filled field of view. To the left, a control panel includes sections for 'Camera', 'Cooler', 'Warming', 'Tracking', and 'Weather'. The 'Camera' section shows 'Gain: 139' and 'Cooler Power: 53.00%'. The 'Tracking' section lists 'Sideral Time: 15:47:29' and 'Mordian RA: 05:08:57'. The 'Weather' section shows 'Temperature: 22.10 °C' and 'Humidity: 60.00%'. Below the main field, a 'Guiding' window displays a graph with 'State Guiding RA: 0.28 (0.66")' and 'Dec: 0.22 (0.54")'. The bottom status bar indicates 'Sequence: Exposing 58 / 300' and 'Exposures: 2 / 40'. On the right, a 'Settings' panel shows 'Exposure Time: 10' and 'Filter: 1x1'. A video call overlay on the far right features several participants: 'Corey's Telescope', 'Phil Whitebloom', 'Kenneth Sall', 'Gene Handler', 'Daniel', and 'Dale Gkent'.

North American Nebula – Pelican Nebula - Dale Gent Screen



Sombrero Galaxy – Gene Handler

BackyardEOS 3.1.16 - Premium Edition (60D)

22:19:42 Imaging session started  
 22:21:14 Imaging session completed successfully  
 22:22:09 Imaging session started  
 View log history...

Frame / Focus Center [Double image click to lock/unlock the zoom box.]

Camera Information Center (60D)  
 Ty BULB ISO 6400  
 Dial B White Mirror Off +40c  
 Quality S1 Battery

ASCOM Focuser  
 ASCOM.FCUSB.Focuser

Weather Center  
 Loop 7 Downloading 5  
 Abort

Brightness 10 Contrast 13 Gamma 9 Edge 1 Edge 2 Logarithm Invert Stack 13 Presets Default

Zoom 100%

Zoom Box Center  
 3x  
 Focus 28.7 FWHM HFD StdDev Bahrtinov Minimum 2.8  
 Place a single star reasonably centered in the smaller zoom box image (bottom right).  
 Full Width Half Maximum is the width of a star's image at half its peak. Focus is achieved when you get the lowest value for the

Shutter	Duration	ISO	Pause
BULB	5	6400	0

Swap Image Load Live View

Corey's Telescope  
 Phil Whitebloom  
 Kenneth Sall  
 Ian Slepian  
 Gene Handler  
 Daniel

M13 Jim Johnson

# HAL Members Astro Art



A large, dark gray, circular object, possibly a planet or a moon, is shown against a black background. The object has a slightly textured surface and a small, dark, circular spot in the center. The right side of the object shows some horizontal lines, possibly indicating a scanning artifact or a specific surface feature. The overall appearance is that of a celestial body.

**Chris Miskiewicz**



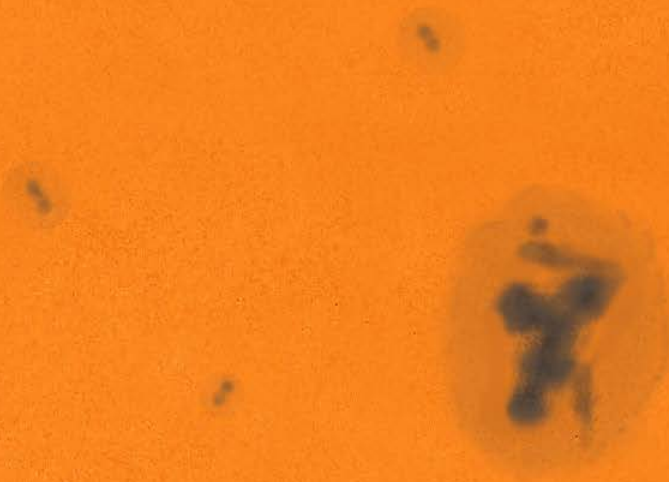
**Chris Miskewicz**



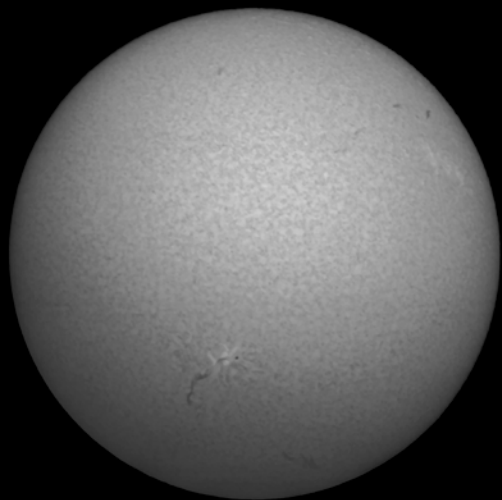
# Sunspot Group

## Active Region AR-2765

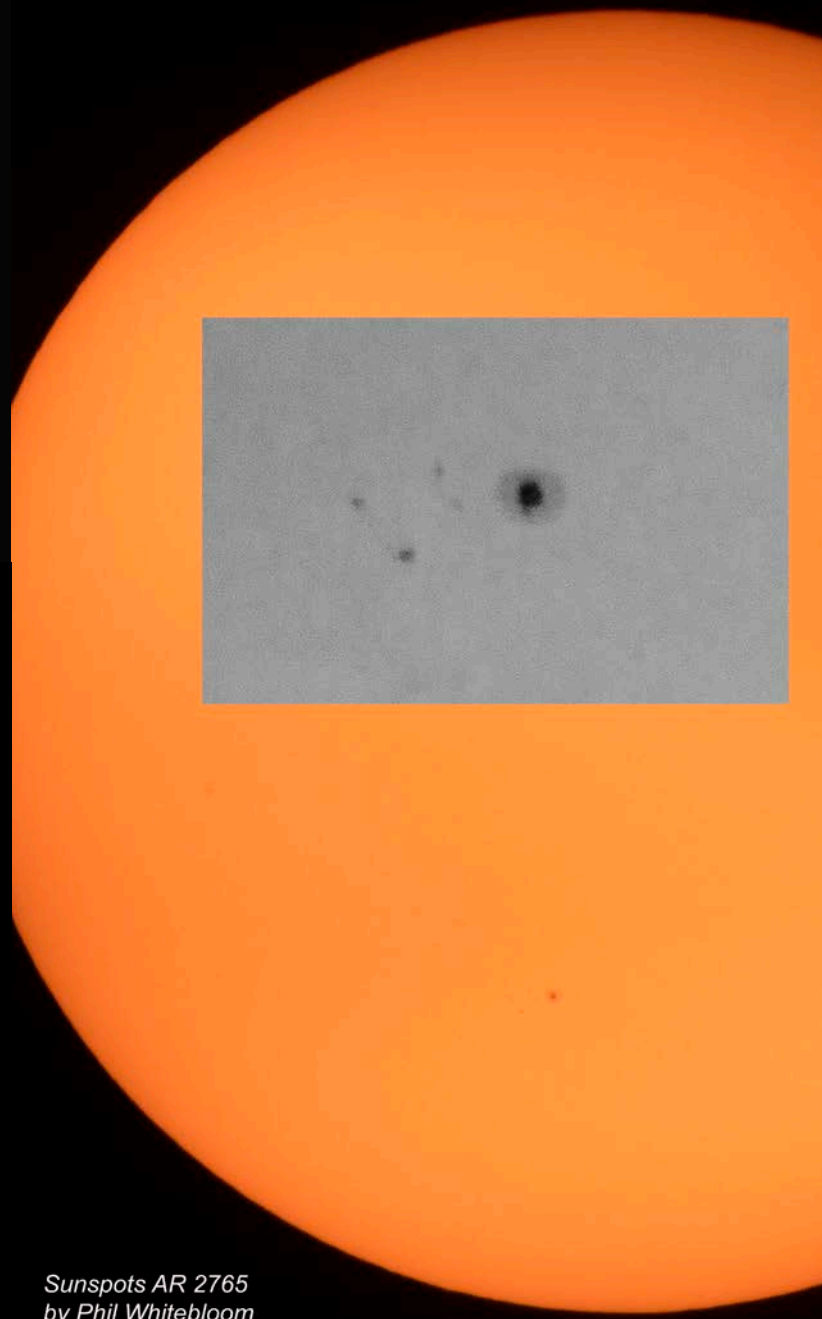
Date: 09-June-2020 Time: 08:45 to 09:30 EDT



Telescope: 155mm Refractor      Eyepiece: 6mm Delos (182x)  
Solar Filter: Thousand Oaks      Orientation: Diagonal View  
Drawing by: Richard Orr



*Sunspots AR2765 Ha  
by Phil Whitebloom  
June 9, 2020*



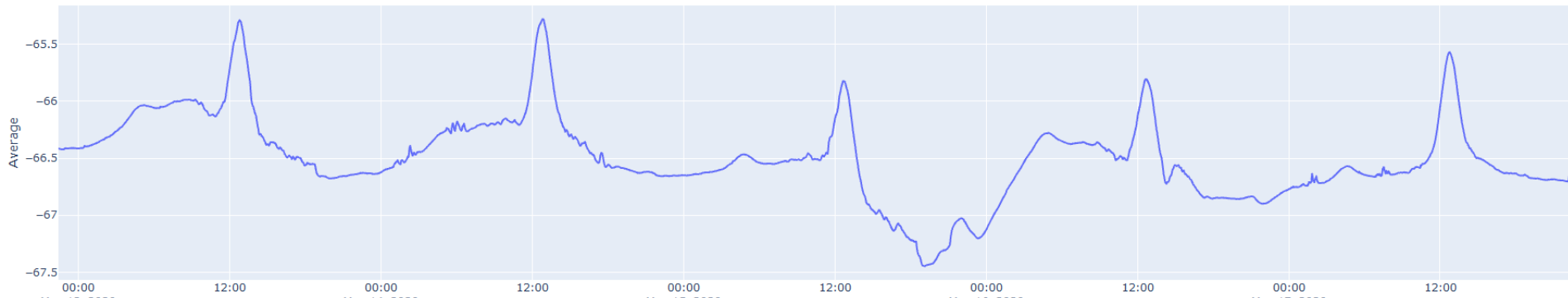
*Sunspots AR 2765  
by Phil Whitebloom  
June 7, 2020*

# Radio Astronomy by Jim Lane

The plot is a continuous recording over five days. The larger spikes on the plot are the sun going in front of the antenna. The smaller bumps/ripples to the left and right of the larger spikes is the Milky Way going by. Milky Way times are ~0530 and ~1600 local times. Other ripples in the plot are unexplained (temperature swings of my gear outside; local noise; ??).



Continuum Observation - 1420.405 MHz - 1.6 MHz bandwidth - Horn antenna - 180az/70alt - Severn, MD  
All times local





© Cheryl Kerr

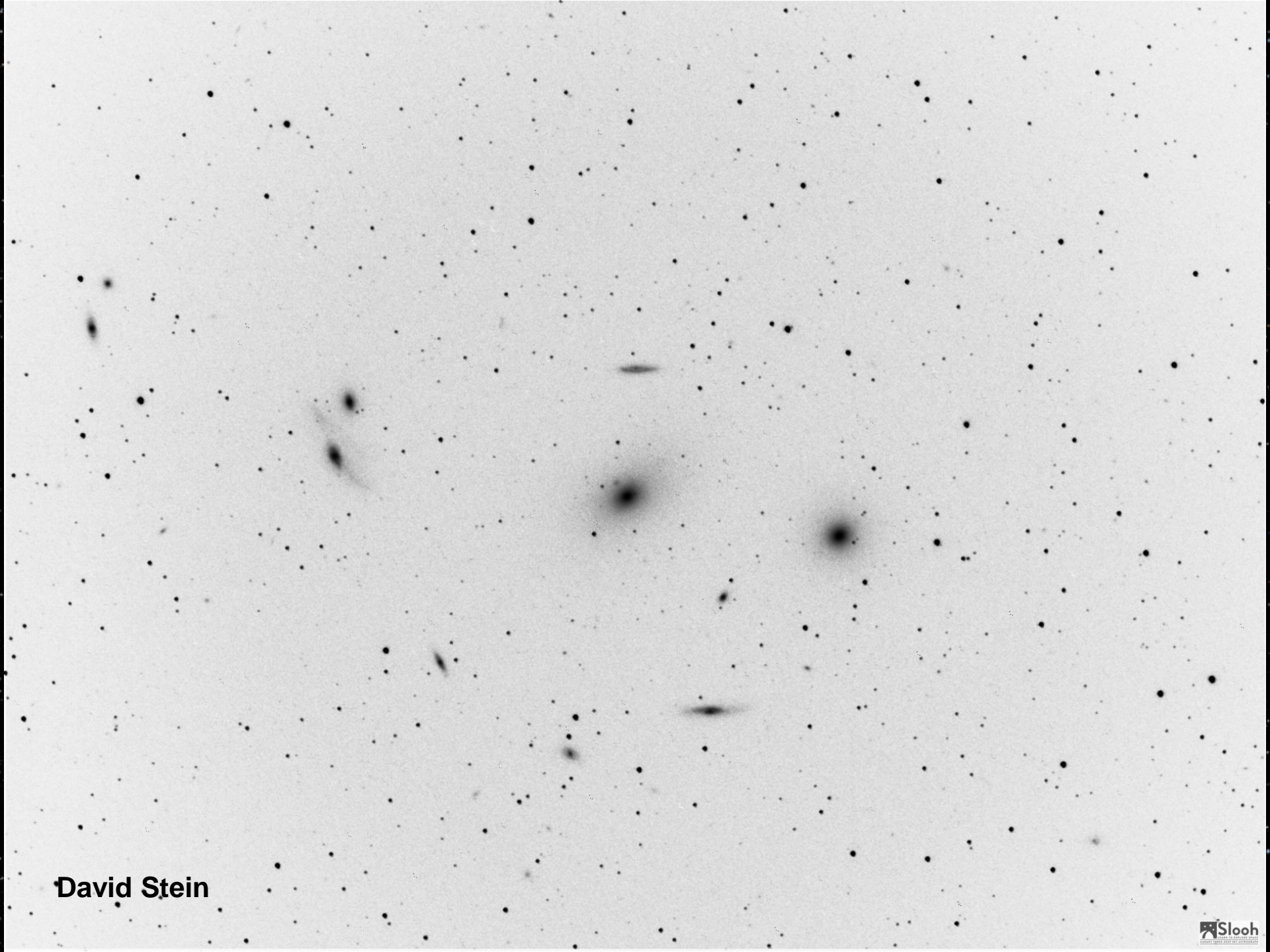


Victor Sanchez





David Stein



David Stein



## Leo Triplet

M65 – M66 – NGC 3628

May 25, 2020

Towson, MD

(Class 8 Bortle)

- ✓ 375x10 sec exposures  
(about 1 hour  
integration)
- ✓ ISO 3200
- ✓ Canon t6s
- ✓ Vixen ED80sf refractor  
(80mm f/7.5)
- ✓ Processed using
  - DeepSkyStacker
  - PixInsight
  - Photoshop



Elevation: 29 Degrees  
CM1:29.8 CM2:281.8 CM3:349.4

June 10th 2020 @0810.3UT  
©JamesWillingham

**The Moon and Planets**  
**June 10th 2020**



# Tonight's Guest Presenter

**Dale Ghent**

Topic: "NINA Software and Astro Imaging Apps

"

# July Guest Presenter

July 16, 2020

7:00PM

To Be Announced

Thank To All of You

Stay Healthy

Stay Safe

Clear Skies