



Capturing Kuiper Belt Objects with the Seestar S50

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Pluto

- Brightest of the Kuiper Belt objects.
- ~ magnitude 15.
- Present in the Seestar Solar System list.
- Need to use a workaround to actually image Pluto.

Pluto

Steps to capture Pluto in the Seestar App

- Open Solar System window.
- Select Pluto and wait for confirmation that Pluto is centered.
- Switch back to the main window and select SkyAtlas.
- SkyAtlas should be showing the part of the sky where Pluto is located.
- Select Synch and then select GoTo.
- Image capture window will open.
- Select exposure length (30 sec) and begin capturing images (at least 40 to 60).

Pluto

Images captured on the mornings of July 15, 16, and 17, 2026



Pluto



Animation created from the three images

Link to animated GIF: https://www.sunflower-astronomy.com/Animations/Pluto/07172026/Pluto_07152026-07172026_Small2.gif

Pluto

Steps to create animation

- Load the images into DeepSkyStacker.
- Set the “save registered frames” option from the stacking options dialog.
- Execute the stacking and load the registered frames into The Gimp.
- Create an empty image in The Gimp and load the registered frames as new layers into the empty image.
- Sort the layers appropriately and change the transparencies of the layers so that you can align them.
- Crop the image and save it as an animated GIF.

Haumea

- Magnitude 17.3.
- Can't automatically center object since it is not in the Seestar App's list of targets.
- Need to center the S50 using the SkyAtlas and current object coordinates.
- Could only capture one image due to interference with the Moon and it is getting too near the western horizon.

Haumea

Image captured July 19, 2026 4:30 UT



Haumea

Siril: asteroid/comet
script confirming
location of Haumea

Siril-1.4.0
G:\Seestar\Siril_Processing\Haumea\07192026

Mem: 3370 MIB
Disk Space: 6.1 TiB

Open | Home | Undo | Redo | Image Processing | Tools | Scripts

Red | Green | Blue | RGB

Unknown_37x60sec_T33degC_2026-07-18_StatStretch.fit

layer(s), 1080x1920 pixels

11:04:19: Plate solving image from online Gaia DR3 (via Vizier) for a field of view of 1.46 degrees, using a limit magnitude of 17.28

11:04:19: Findstar: processing for channel 1...

11:04:20: Using 169 detected stars from image.

11:04:20: Contacting server

11:04:23: Fetched 1209 stars from Gaia DR3 (via Vizier) catalogue

11:04:23: Up is +359.69 deg Counterclockwise wrt. N

11:04:23: Resolution: 2.372 arcsec/px

11:04:23: Focal length: 252.20 mm

11:04:23: Pixel size: 2.90 μ m

11:04:23: Field of view: 42' 41.57" x Old 15m 53.90s

11:04:23: Image center: alpha: 14 36 12.692, delta: +14 44 58.123

11:04:23: Was 17.96 arcmin from initial value

11:04:23: Saved focal length 252.20 and pixel size 2.90 as default values

11:05:14: Starting script C:\Users\David Kolb\AppData\Local\siril-scripts\utility\Asteroid_Comet_Finder.py

11:05:15: Installing tzlocal. This may take a few seconds...

11:05:19: Collecting tzlocal

11:05:19: Downloading tzlocal-5.4.4-py3-none-any.whl.metadata (7.7 kB)

11:05:19: Requirement already satisfied: tzdata in c:\users\david kolb\appdata\local\siril\venv\lib\site-packages (from tzlocal) (2025.3)

11:05:19: Downloading tzlocal-5.4.4-py3-none-any.whl (18 kB)

11:05:20: Installing collected packages: tzlocal

11:05:20: Successfully installed tzlocal-5.4.4

11:05:21: Successfully installed tzlocal

11:05:24: Running Asteroid & Comet Finder v1.0.1...

11:05:24: Connecting to Windows pipe: \\.\pipe\d053a9bc-506d-4abd-a800-c934fef6347b

11:05:24: Image size: 1080 x 1920

11:05:24: Image center: RA=14h36m12.69s, Dec=+14°44'58.12"

11:05:24: Estimated FOV: 0.73°

11:05:24: Using observation date from FITS header: 2026-07-19 04:15:49.000

11:05:24: Using observatory Longitude from FITS header: -96.0631

11:05:24: Using observatory Latitude from FITS header: 39.1908

11:06:11: Querying SkyBot for RA=219.05°, Dec=14.75°, Radius=0.73°

11:06:14: SkyBot found 8 objects, showing those with mag <= 20.0

11:06:14: Querying Horizons for HAUMEA...

11:06:14: Using observatory location: Lon=-96.06°, Lat=39.19°, Elev=0.0m

11:06:16: Name 'HAUMEA' is ambiguous in Horizons.

11:06:40: Showing object: Haumea at RA=14h37m24.23s, Dec=+14°28'22.52"

11:06:40: Running command: show

11:06:40: The input catalog has been successfully downloaded

11:06:40: Haumea, RA: 14 37 24.2, DEC: +14 28 22.5

11:06:40: 1 objects found in the image (mag limit 0.00) using input catalogue

Command line

Type "help" for the list of supported commands

Ready.

42% fwhm: N/A

Image: Unknown_37x60sec_T33degC_2026-07-18.fit

65535 | Min/Max | MIPS-LO/Hi | Linear | ? | Star | Telescope | Zoom In | Zoom Out | Pan | Rotate | Copy | Paste

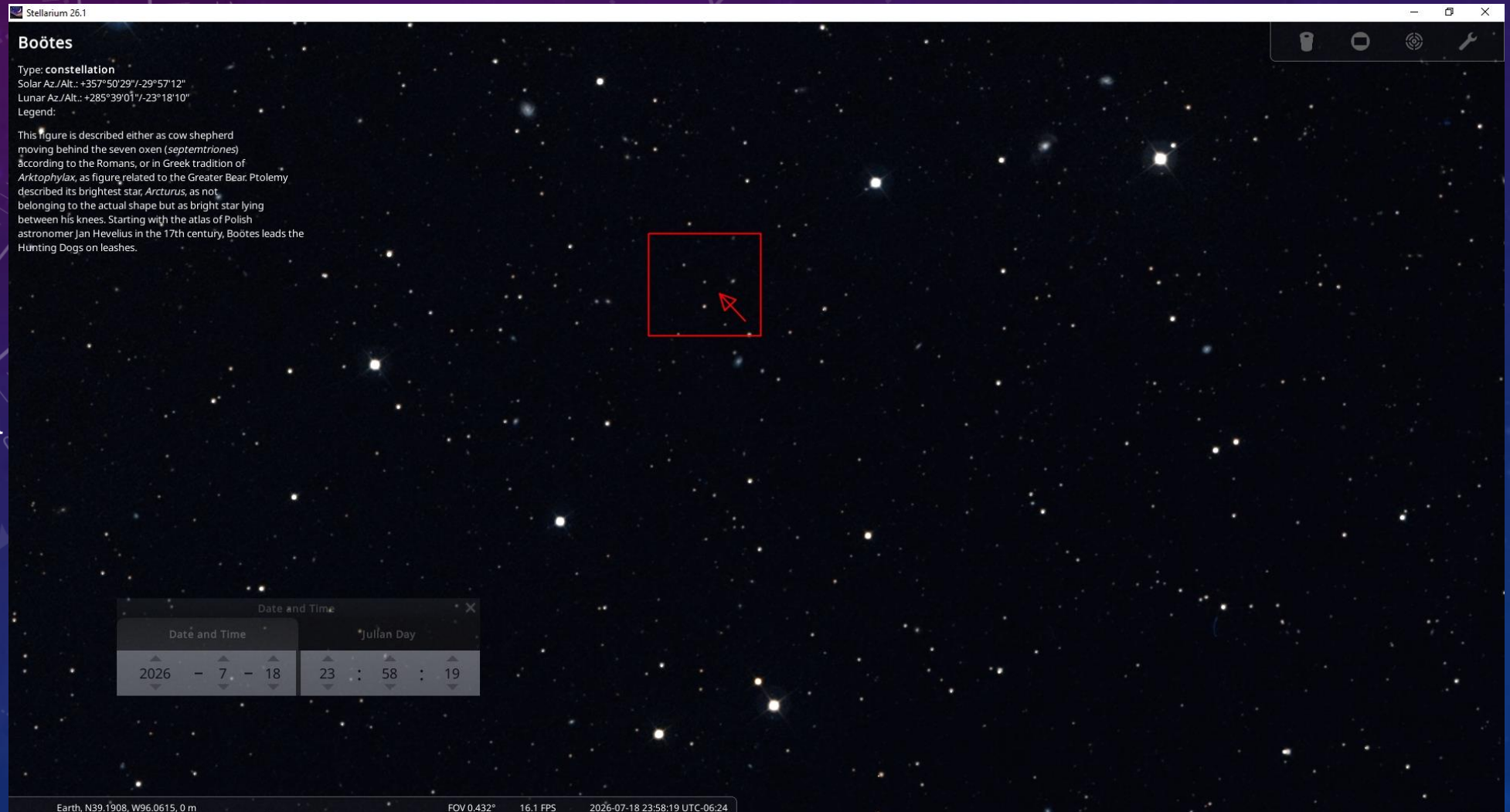
0 | User

B=21.7144
G=22.3844
R=22.0434

α : 14h35m19s 6; +14°28'05"
x: 0870 y: 1384

Haumea

Stellarium: shows
nothing where Haumea
was located



Eris (Planned)

- Magnitude 18.6.
- Will be well placed near the meridian around the time of August's New Moon.

The background is a gradient of dark blue and purple, speckled with small white dots. Overlaid on this are several faint, white geometric patterns. These include concentric circles of varying sizes, some with dashed lines. A prominent circular scale is visible on the left side, with degree markings ranging from 140 to 260 in increments of 10. Arrows and curved lines suggest a sense of rotation or movement.

Questions?