

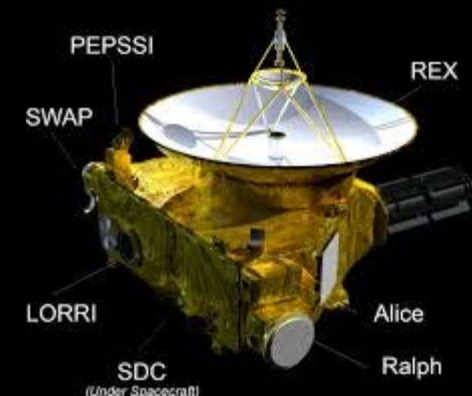
# Special Feature



## New Horizons Parallax Program

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Applied Physics Lab – Lead Engineer LORRI  
Instrument on New Horizons

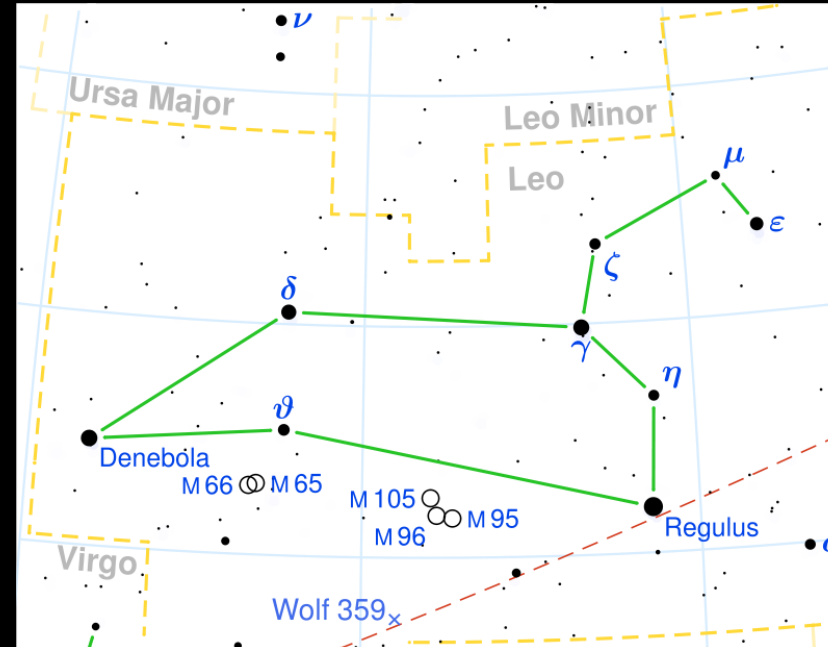


# BLUF and Relevant Links

- On 23 April, New Horizons LORRI will image Wolf 359 twice
  - 04:00 UT (best opportunity for eastern US observers)
  - 10:00 UT
- Amateurs will have the opportunity to collect images at the same time from earth
  - With New Horizons 47 AU from earth (4.4 billion miles) and Wolf 359 “only” 7.9 LY away, there is an opportunity to see parallax between the New Horizons images and those amateurs collect
  - Expected difference is about 20 arcseconds in position vs. background stars
- <http://pluto.jhuapl.edu/News-Center/News-Article.php?page=20200129>
- <http://pluto.jhuapl.edu/Learn/Get-Involved.php#Parallax-Program>

# Wolf 359

- RA:  $10^{\text{h}} 56^{\text{m}} 28.99^{\text{s}}$
- Dec:  $+07^{\circ} 00' 52.0''$
- Vmag: 13.54
  - But it is pretty red, so it will seem brighter in most modern cameras
- Distance 7.9 LY



# Parallax Angle

- New Horizons at 47 AU from sun or 0.00074 LY
  - Sanity check  $0.00074 \text{ LY} \times 365 \text{ D/Y} = 0.27 \text{ Day}$  or ~6.5 hours – which is approximate the one way light time
- Parallax Angle =  $\text{atan}(0.00074 / 7.9) = \text{atan}(0.000094) = 0.0054^\circ$   
= 19 arcseconds
- New Horizons LORRI 4 x 4 IFOV = 4 arcseconds
  - Parallax angle is about 5 LORRI binned pixels

# Wolf Star Catalog

- Catalog of high proper motion stars
- Assembled by Maximilian Franz Joseph Cornelius Wolf (21 June 1863 – 3 October 1932)

–German astronomer and pioneer in astrophotography

# Wolf 359 Sci-Fi Fun Facts

- Name 3 Mass Media Sci-Fi references to Wolf 359
  - Battle of Wolf 359 was referenced in Star Trek: The Next Generation episode, “The Best of Both Worlds”, Part II (1990), and was later seen during the first episode of Star Trek: Deep Space Nine
  - “Wolf 359” from The Outer Limits season 2, episode 8 (1964)
  - “Wolf 359” podcast, a radio drama about a dysfunctional crew on an aging spacecraft orbiting Wolf 359

## Jackie Donaldson and Steve Conard's Practice Image

- Taken in late February at Willow Oak Observatory (Gamber, MD)
- 14" SCT with Hyperstar, running at f/1.9
- Jackie's camera—ZWO ASI294MCPro
  - Exposure 6 seconds
- Rotated (north up), flipped, and cropped to 55 x 44 arcminutes



# New Horizons Finder Chart vs. Our Photo

