



Newsletter of the Pomona Valley Amateur Astronomers

If men were angels,  
 no government would be necessary.  
*James Madison*



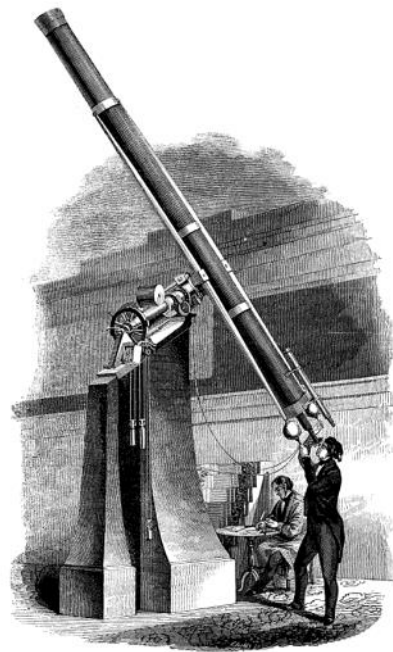
Volume 44 Number 11

*nightwatch*

November 2024

**Club Events Calendar**

- Nov 15**      **General Meeting 7:30 PM – Matt Wedel**  
                   **“My Telescopes, and What They've Taught Me”**
- Nov 27**      **Board Meeting 6:15 PM**
- Dec 7**        **Holiday Party 6:00pm IHOP on Euclid Ave**  
                   **in Upland**



**PVAA Officers and Board**

**Officers**

President .....	Mathew Wedel .....	909-767-9851
Vice President ..	Joe Hillberg .....	909-949-3650
Secretary .....	position is currently open	
Treasurer .....	Gary Thompson .....	909-935-5509

**Board**

Jim Bridgewater (2026).....	909-599-7123
Richard Wismer(2026) .....	
Ron Hoekwater (2025).....	909-706-7453
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**Directors**

Membership / Publicity....	Gary Thompson	909-935-5509
Outreach .....	Jeff Schroeder .....	909-758-1840
Programs .....	Ron Hoekwater .....	909-391-1943

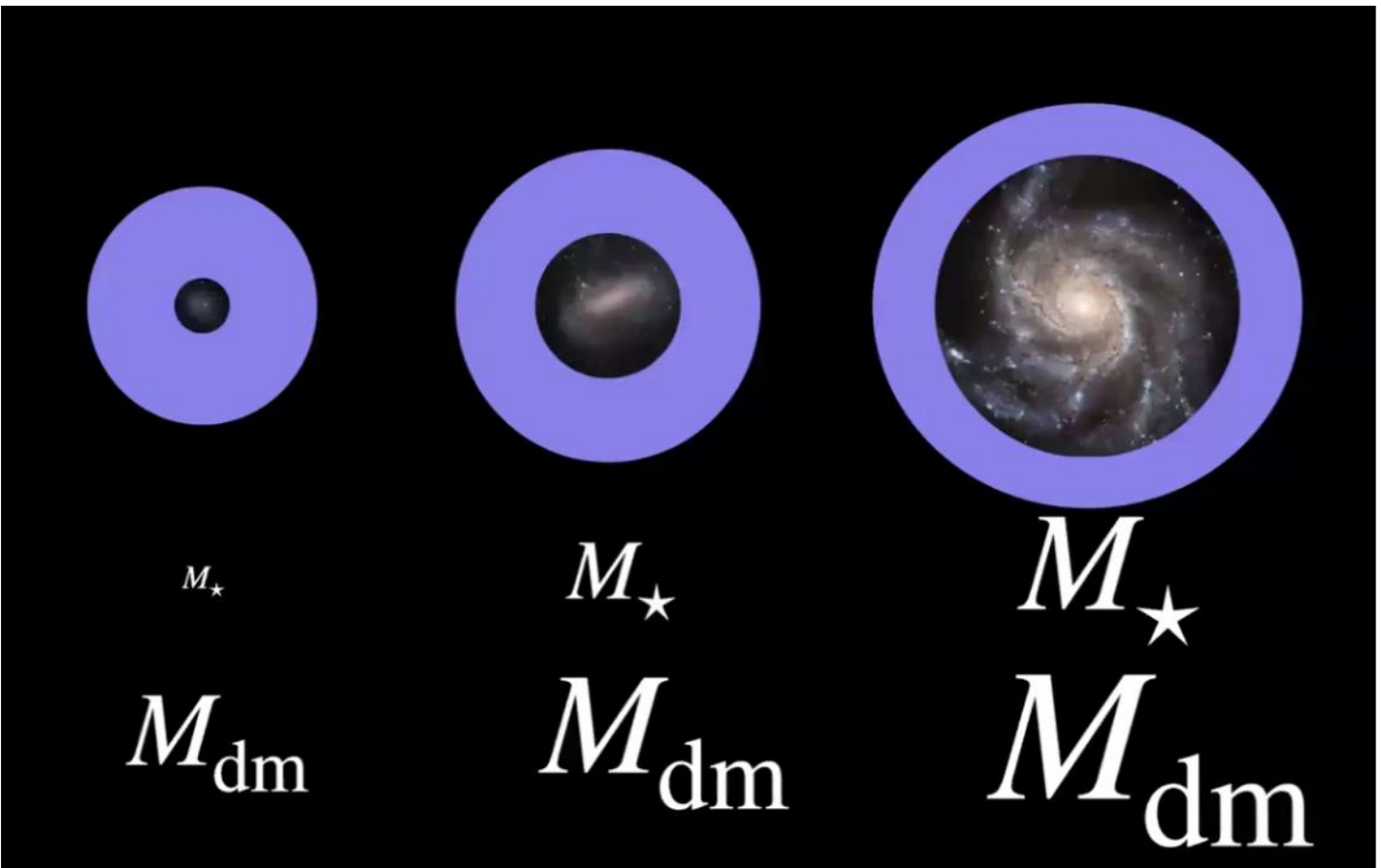
## PVAA General Meeting 10/18/24

Our speaker for the night was Dr. Jorge Moreno of Pomona College and the Carnegie Observatories. The title of his presentation was “The intriguing lives of galaxies lacking dark matter.” He started with ancient civilizations from the Aztecs to Egyptians and what they thought of the Milky Way. Scientific studies started in Persia (Iran) in the 960s AD with the Persian astronomer Abd al-Rahman al-Sufi. Al-Sufi made the first known recorded observation of the Andromeda Galaxy. In 964 AD he published “The Book of Fixed Stars.” Al-Sufi compared Greek constellations and stars as described in Ptolemy’s Almagest with Arabic ones and updated many of the stars’ coordinates and magnitudes.

Now we are working with computer simulations to simulate galaxy formation. We see how fast the outer stars are moving and have concluded that the only thing that keeps them from departing the galaxy is dark matter. Some galaxies are formed without dark matter. They have super-massive black holes and/or quasar induced formation in theoretical scenario #1. Scenario #2 are galaxies formed by close encounters. A tiny galaxy is formed by the relative closeness of a giant galaxy. The tiny galaxy would be lacking dark matter. Using this simulation they have found seven galaxies that are lacking dark matter. The tiny galaxies do not have extra mass to create new stars and have only old stars – mostly red dwarfs still active.

Simulations need to be verified by actual observations. This will take years and a lot of patience.

*Gary Thompson*



Dark Matter representation

# What do they have in common?



Dark Matter simulations -The tiny galaxies have stopped new star formation.



Using Indian heritage to name computer simulations.

## Ghost of Cassiopeia

We were hoping for three nights of imaging, but it wasn't in the stars, pun intended. Thursday night, Halloween, was clear, as was Friday, November 1, but Saturday was cloudy all day. Late in the afternoon, it started looking dark, so everything got packed up. A good thing, too, as it started raining shortly after dark. We still had to scramble to cover up chairs and a friend's equipment, but everything survived.

Since it was Halloween, the Ghost of Cassiopeia, SH2-185, seemed like an appropriate target. I'm surprised that I haven't imaged this before. Technically, SH2-185 is the entire red, glowing hydrogen region that includes IC-59 (the bluer V-shaped nebula) and IC-63 (the less blue V-shaped nebula). Only IC-63 is listed at the Ghost, not the entire region. Both nebulae glow with emission from excited hydrogen and show evidence of the dust in the region by the overlaid blue color reflected from the nearby star, Gamma Cassiopeiae, or Navi. Other evidence of the dust in the region is seen near the middle of the top and right sides of the image where dark clouds can be seen.

Gamma Cassiopeiae is the middle of the "W" of Cassiopeia and located 550 light years away as determined by parallax measurements. The nebulae are located about 3-4 light years from the star, however, confusingly, Wikipedia cites a source that has the nebulae located 10,500 light years from Earth. This seems to be incorrect as most sources seem to favor the nearer distance.



The image I'm sharing is an LRGB composition of 21 red and green, 22 blue, and 321 luminance frames. The color frames are all 5-minute exposures and the luminance frames are 2-minute exposures. Total exposure time was just over 16 hours. 21 dark frames and 15 flat/flat dark frames were used for calibration. The 90mm StellarVue refractor with a reducer was used to collect the photons. The images plate-solved and the focal length of the refractor was determined to be 490 mm. Stacking, calibration, and processing was done in PixInsight. After combining the color channels, stars were removed from the RGB and luminance images. Stars and nebulae were processed separately before recombining. Care was taken not to push the luminance too far in order to avoid oversaturation in the final LRGB image. Once the LRGB image was made, stars were again removed to increase the local contrast and further sharpened the nebulae.

Clear skies until next time.

*Ron Ugolick*

<https://www.astrobin.com/users/rucddu/>

## Carl Zeiss 9/11/24

Today is the 208th birthday for Carl Zeiss [1816-1888]. He was a pioneer in optical instrument design & fabrication, including high quality refracting telescopes. The 12-inch refractor at [Griffith Observatory](#) is a Zeiss telescope, the same one that was installed when the observatory opened in 1935. And their digital planetarium projector is also a Zeiss instrument. I think the one there now is a replacement for the one installed during the 2002-2006 renovation.

Zeiss pursued an apprenticeship (1834-1838) as a master machinist, while attending a limited number of classes in mathematics and science at the University of Jena. In 1838 he completed his apprenticeship, and went on as a journeyman machinist, along with a certificate for his classes at the university. Over the period 1838-1845, Zeiss worked in Germany & Austria, gaining experience in heavy machinery as well as optical instrumentation. Thereafter he finally settled on optical & scientific instrumentation, opening his own shop in Jena in 1846.

Carl Zeiss is the founder of the eponymous company Carl Zeiss Jena, now known as Carl Zeiss AG, and still one of the world's best known manufacturers of optical instruments. Carl Zeiss AG owns all of the subsidiary companies of the Zeiss Group, and is itself owned by the Carl-Zeiss-Stiftung (Carl Zeiss Foundation). Carl-Zeiss-Stiftung was founded by Carl Zeiss's partner, the physicist Ernst Karl Abbe [1840-1905] in 1889. Meanwhile, another of Zeiss's partners, Friedrich Otto Schott founded Schott AG in 1884 (Glastechnische Laboratorium Schott & Genossen (Glass Technical Laboratory Schott & Associates)). Today, Carl-Zeiss-Stiftung owns Schott AG, as well as Zeiss AG.

As of 30 September 2023, Carl Zeiss AG employed 42,992 people (continuously rising for the last few years. And in 2022/2023 showed €10,108,000,000 in revenue, and €1,686,000,000 in operating income. It looks like the vision of Zeiss has created quite a legacy.

[https://en.wikipedia.org/wiki/Carl\\_Zeiss](https://en.wikipedia.org/wiki/Carl_Zeiss) (Wikipedia)

[http://camera-wiki.org/wiki/Carl\\_Zeiss](http://camera-wiki.org/wiki/Carl_Zeiss) (Camera Wiki)

<https://micro.magnet.fsu.edu/.../timeline/people/zeiss.html> (Carl Zeiss - Science, Optics & you, National High Magnetic Field Laboratory)

<https://www.zeiss.com/.../about.../history/carl-zeiss.html> ("Who Was Carl Zeiss?" - Zeiss AG)

[https://www.zeiss.com/.../carl-zeiss\\_s-200th-birthday.html](https://www.zeiss.com/.../carl-zeiss_s-200th-birthday.html) ("ZEISS celebrates 200th birthday of its founding father" - Zeiss AG, 2016; photo source)

<https://www.cambridge.org/.../AB7931A055A6AA1399E3DD731DD...> ("Carl Zeiss, Ernst Abbe, and Advances in the Light Microscope" - Microscopy Today 25(4): 50-57, July 2017, Cambridge University Press)

<https://en.wikipedia.org/wiki/Carl-Zeiss-Stiftung> (Carl-Zeiss-Stiftung - Wikipedia)

[https://en.wikipedia.org/wiki/Carl\\_Zeiss\\_AG](https://en.wikipedia.org/wiki/Carl_Zeiss_AG) (Carl Zeiss AG, - Wikipedia)

<https://www.zeiss.de/corporate/home.html> (Zeiss AG, homepage)

<http://www.griffithobs.org/> (Griffith Observatory homepage)



The picture shows Carl Zeiss circa 1850 and comes from the Zeiss AG webpage, commemorating the 200th birthday for Carl Zeiss, in 2016.

*Tim Thompson – Facebook Post 9/11/24*