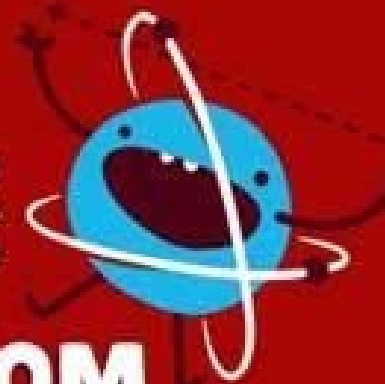


**NEVER
TRUST
AN ATOM**
*They Make Up
Everything*



Howard Astronomical League



August 15, 2019

Introductions



Welcome Everyone



Aug 7th
Public Star
Party

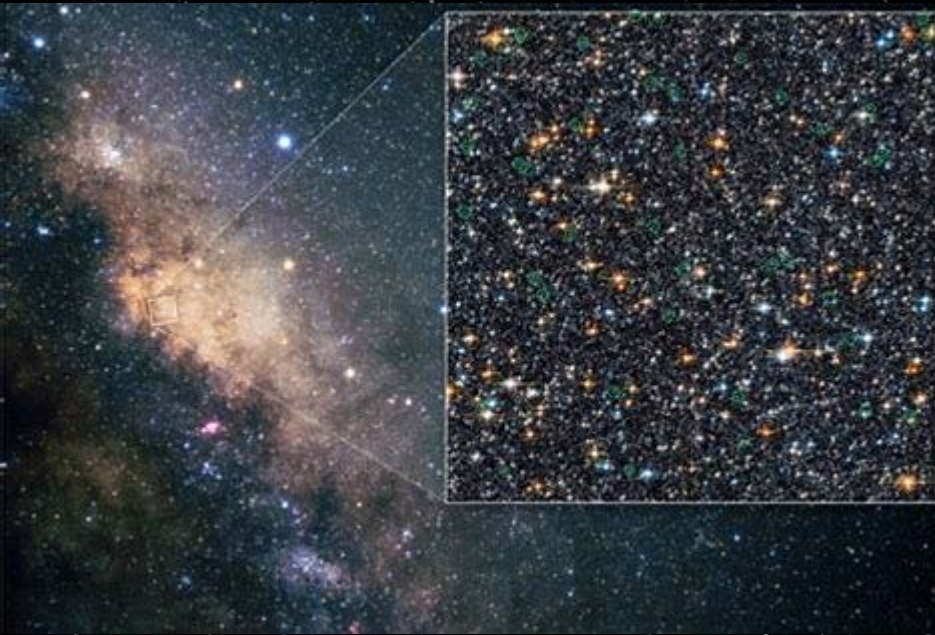
21 Scopes
150+ Visitors



Officers Reports

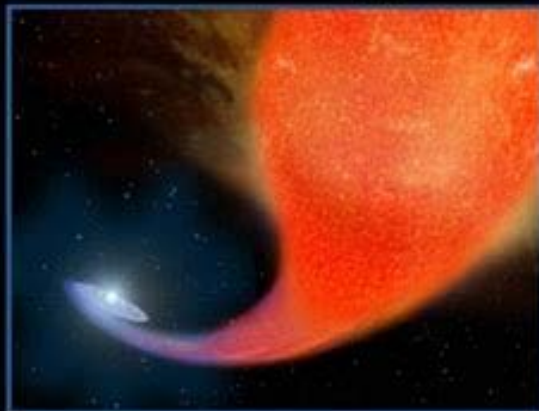
President	Phil Whitebloom	president@howardastro.org
1st Vice President	Mike Krauss	1stvp@howardastro.org
2nd Vice President	Victor Sanchez	2ndvp@howardastro.org
Treasurer	Chas Rimp	hal_treasurer@howardastro.org
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Publicity Chair +	Joel Goodman	halpublicity@howardastro.org
Observatory Director *	Joel Goodman	observatory@howardastro.org
Librarian +	Bob Dutilly	librarian@howardastro.org
ALCor +	Steve Jaworiwsky	halcor@howardastro.org
Webmaster *	Paul Montanaro	Use "Contact Us" Page

Have you ever heard of BLUE STRAGGLERS?



M3

Birth of a Blue Straggler Star



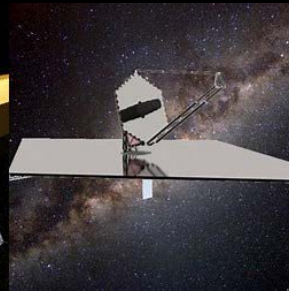
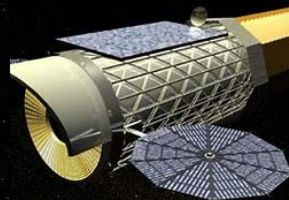
It's time once again for:

Astronomy

Past

Present

Future



PAST

The Anasazi of Chaco Canyon, New Mexico

The Anasazi were a mysterious people who lived in Arizona and New Mexico about a thousand years ago. A recently discovered site called Penasco Blanco shows a depiction on a cave wall of what must be a supernova explosion. The relative orientations of the crescent moon and the star make it very likely that this is a recording of the supernova which created the Crab Nebula in 1054 A.D. This supernova, which would have been about five times brighter than Venus for about three weeks, was also recorded by Chinese astronomers. The Anasazi also built a solar observatory called Hovenweep Castle at Four Corners. All of this evidence points to the fact that the Anasazi were quite experienced sky-watchers, as are their probable descendants, the Pueblo Indians.



Source: www.StarTeachAstronomy.com

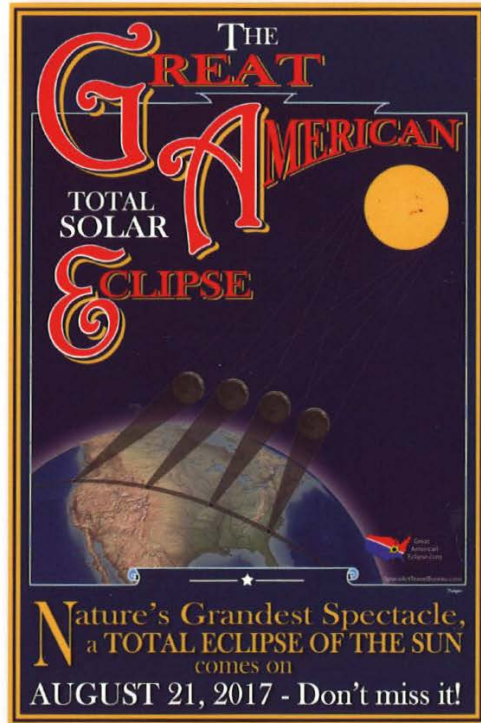


00208082

ECONOMICAL SOCIETY OF THE PACIFIC
CONFERENCE SERIES

VOLUME 516

CELEBRATING THE 2017
GREAT AMERICAN ECLIPSE: LESSONS
LEARNED FROM THE PATH OF TOTALITY



Edited by
Sanlyn R. Buxner, Linda Shore, and Joseph B. Jensen

PAST

A Dark and Sunny Day

Leona Upton Illig
Author and Amateur Photographer,
<https://leonawrites.wordpress.com/>

Abstract. How two dedicated amateur astronomers, David Illig and Gerry Doyle, made their way from Maryland to Hendersonville, Tennessee, to successfully photograph the eclipse, with a little help from their friends.

“He’s coming.”

“What?” I put down my fork. My husband, David, had a look in his eye that I had seen before. It was a look that meant, “hold on to your hats!”

“Gerry. He’s coming.”

“You mean, he’s flying from London to Tennessee to see the eclipse?” I could hardly believe what I was saying.

“Not exactly. He’s still in Qatar, but the RAF is giving him leave. He’ll fly from Qatar to the UK, spend a day or two with his family, then fly to Dulles on the 17th. I’ll pick him up and drive back here. We’ll load the car on the 18th, and on the 19th we’ll drive to Hendersonville, Tennessee. That’ll give us one day before the eclipse for one last practice session. After the eclipse, we’ll spend the night in Hendersonville to pack up and rest, drive back home on the 22nd, and put Gerry on a plane back to Qatar the next morning.”

“And if it’s cloudy on the 21st?”

David shook his head. Amateur astronomers are accustomed to disappointment. We both remembered the heavy fog that spoiled the Transit of Venus in 2004.

David and I had talked about photographing the eclipse with our friend, Gerry, for years. We had talked about finding the right place, what equipment to take, and how this might be a once-in-a-lifetime event for us. But it had always seemed to be one of those pie-in-the-sky schemes: something that might be done, but that was probably out of reach.

Now, however, it was reality. The dedication and tenacity of two amateur astronomers had overcome any doubts, and the game was on.

It was early 2017. The clock had started ticking.

David, a master of preparation, had already chosen a location: the Hyatt Place Nashville/Hendersonville, Tennessee. This was the closest and most convenient location from our home in Gambrills, Maryland. There was a reasonable chance of fair weather there, and we would be able to get back home quickly so that Gerry could return to Qatar on schedule. Google Earth showed that the location had just what we needed: it was a few kilometers from the center line and, according to the NASA eclipse web site, offered 2 minutes and 32 seconds of totality, just seven seconds less than the center line in Gallatin, Tennessee, which, due to scheduled tourist events and limited vehicle access, was not an option for serious photography. And we would not need to

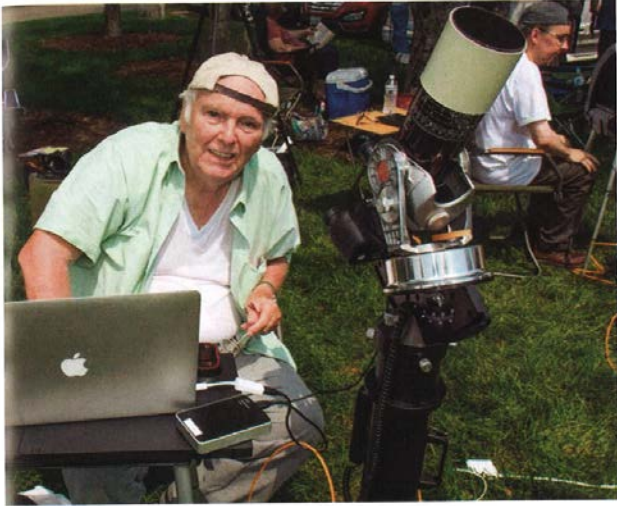


Figure 1. David (left) and Gerry.



Figure 2. Gerry and Leona.




Figure 3. Time-lapse by David and Leona.



Figure 5. Solar Corona by Gerry.

Science

The black hole at the center of our galaxy just lit up twice as bright as ever. Who knows why

 N'dea Yancey-Bragg, USA TODAY 6 hours ago



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A large, cratered asteroid, likely Apophis, is shown against a starry background. The asteroid is irregularly shaped and covered in numerous craters of various sizes. It is positioned on the left side of the frame, with its right edge facing towards the center. The background is a dark, star-filled space.

FUTURE

On April 13th, 2029, an asteroid called 99942 Apophis will pass between the Moon and Earth.

It will miss the Earth by 31,300 KM. That is closer than some geostationary satellites.



WHAT'S UP

August 2019

**A Special Feature from
“What’s Out Tonight”**

August 2019

www.whatsouttonight.com

Clusters, Nebulae, Galaxies +

ly = Light year, a unit of distance. 1 ly = 6 trillion miles.

- Albireo. This 3rd magnitude star becomes two stars, a blue and gold splendor, in a telescope with just 50x. Coma Cluster. Sprinkle of 40+ stars. Appears as a faint haze in dark skies. Spans 4.5°. In COMA BERENICES.
- Coathanger Cluster. Ten stars that form the shape of a singlewire coathanger. In VULPECULA.
- IC4665. A cluster of 30 stars that is best in binoculars. It spans an area larger than the Moon. In OPHIUCHUS.
- M4. Globular Cluster. Distance: 7,200 ly / Diameter: 68 ly / Mag 5.6 / Spans 30'. Contains 10,000+ stars. In SCORPIUS.
- M6. Similar to and above M7, this cluster also has 80 stars but it is a little fainter and 1/4 the size. In SCORPIUS.
- M7. Ptolemy's Cluster. A great cluster, nice in binoculars or telescope. About 80 stars at magnitude 3.3 spanning an area larger than the Moon. Can see as a "patch" with eyes. In
- M13. Globular Cluster. Distance: 21,000 ly / Diameter: 104 ly / Mag 5.8 / Spans 17'. Contains 500,000 stars. In HERCULES.
- M22. Globular Cluster. Distance: 10,400 ly / Diameter: 88 ly / Mag 5.1 / Spans 29'. 100,000+ stars. In SAGITTARIUS.
- M51. Whirlpool Galaxy. Distance: 37 million ly / Diameter: 118,000 ly / Mag 8.1 / Spans 11'. In CANES VENATICI.
- M57. Ring Nebula (Planetary). Distance: 1360 ly / Diameter: 0.5 to 1 ly / Mag 9 / Spans 1.3'. In LYRA. Remnants of a dying star.
- M81/82. Bode's Galaxies. Visible in many light polluted skies. M82 shaped like a cigar. Mags 6.8/8.1. In URSA MAJOR. Mizar. Two stars with good eyes or binoculars. Three stars with a telescope at 50x. Located in the handle of the Big Dipper.



Visual Observers Corner

Tonight's Guest Speaker

Dr. Lou Strolger

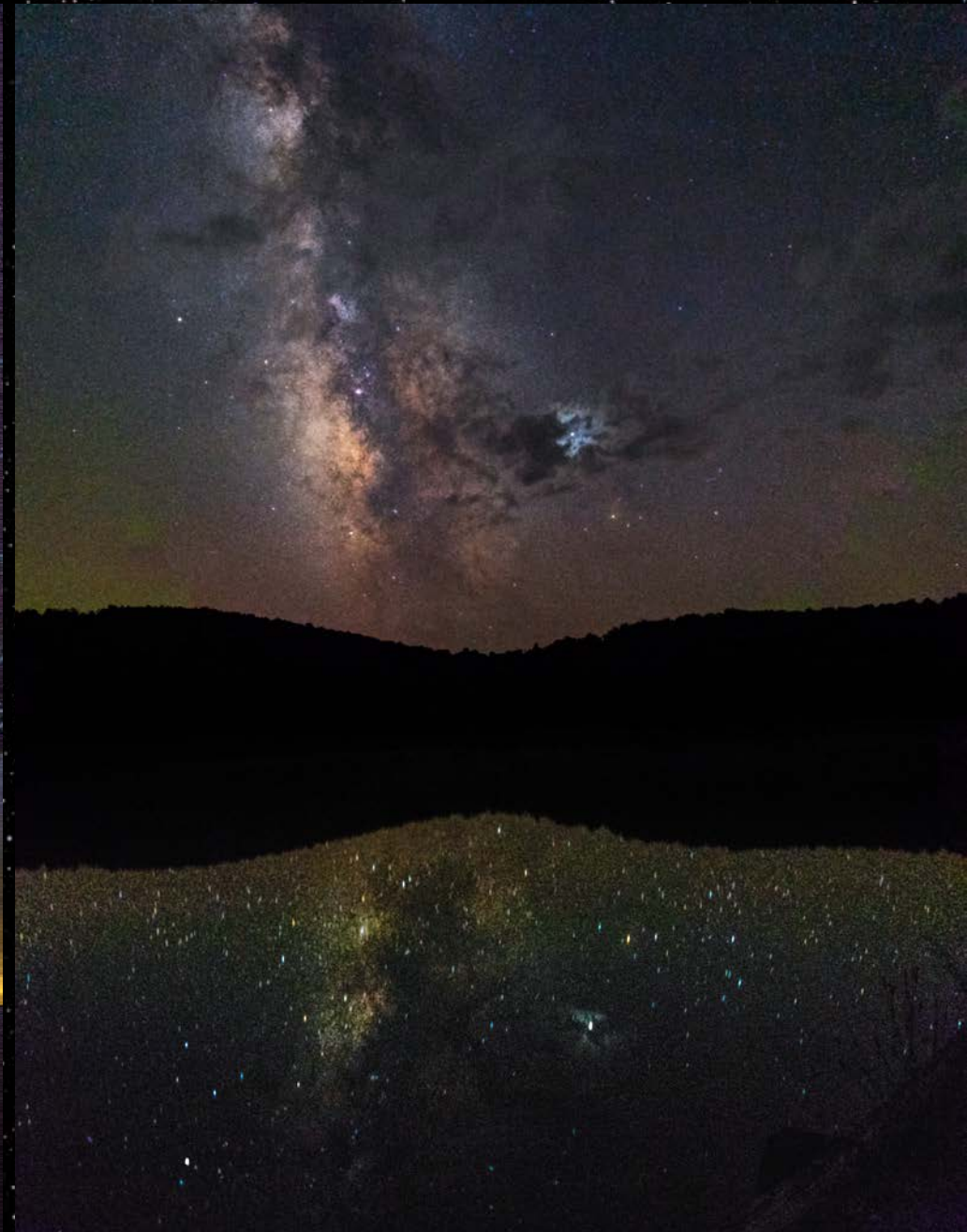
Scientist, Space Telescope Science Institute in Baltimore

Title: High Redshift Supernovae: Beyond the Epoch of Dark Energy



Member
Astrophotos, Sketches, and
Paintings

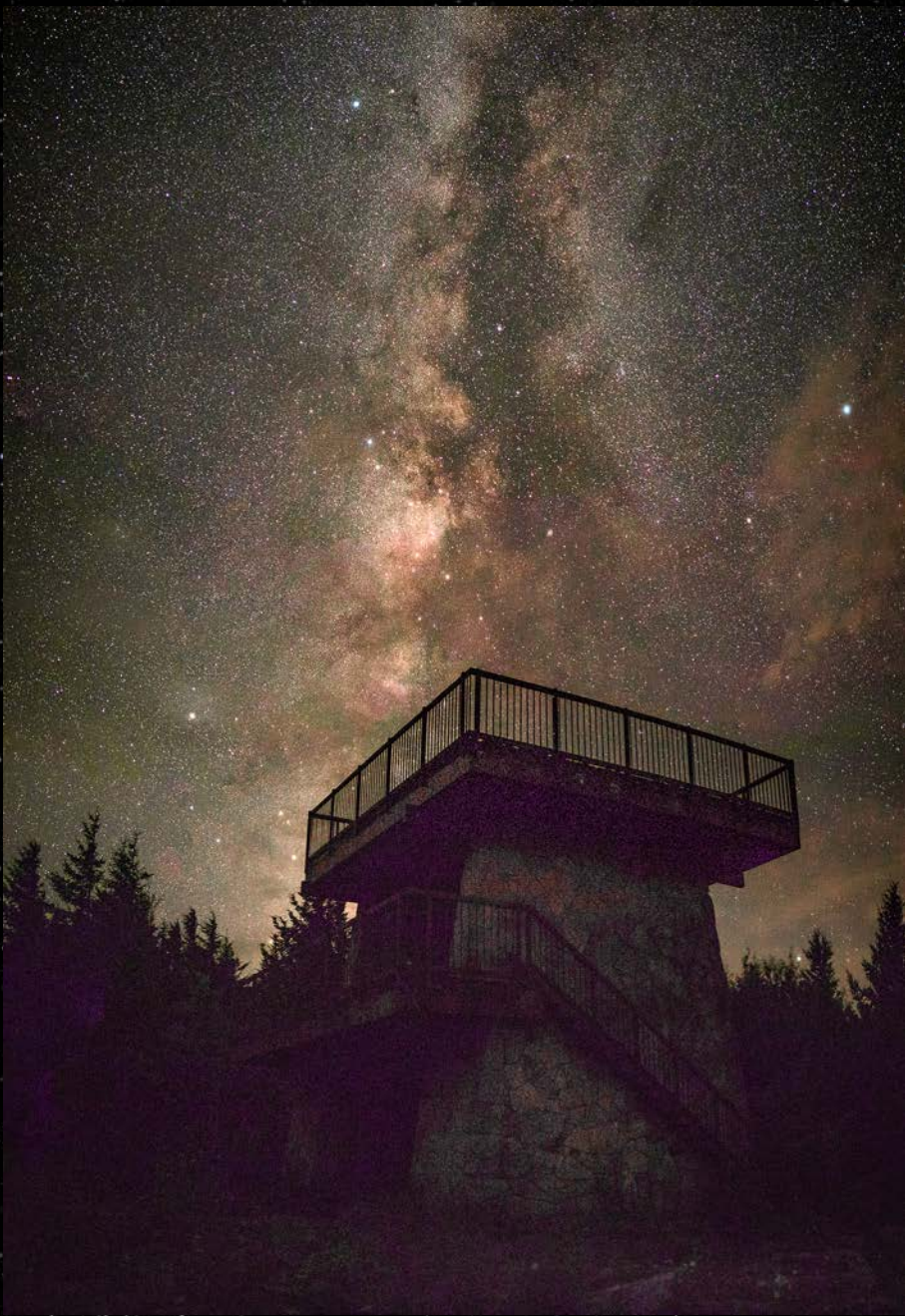
Cheryl Kerr





Cheryl Kerr





Cheryl Kerr



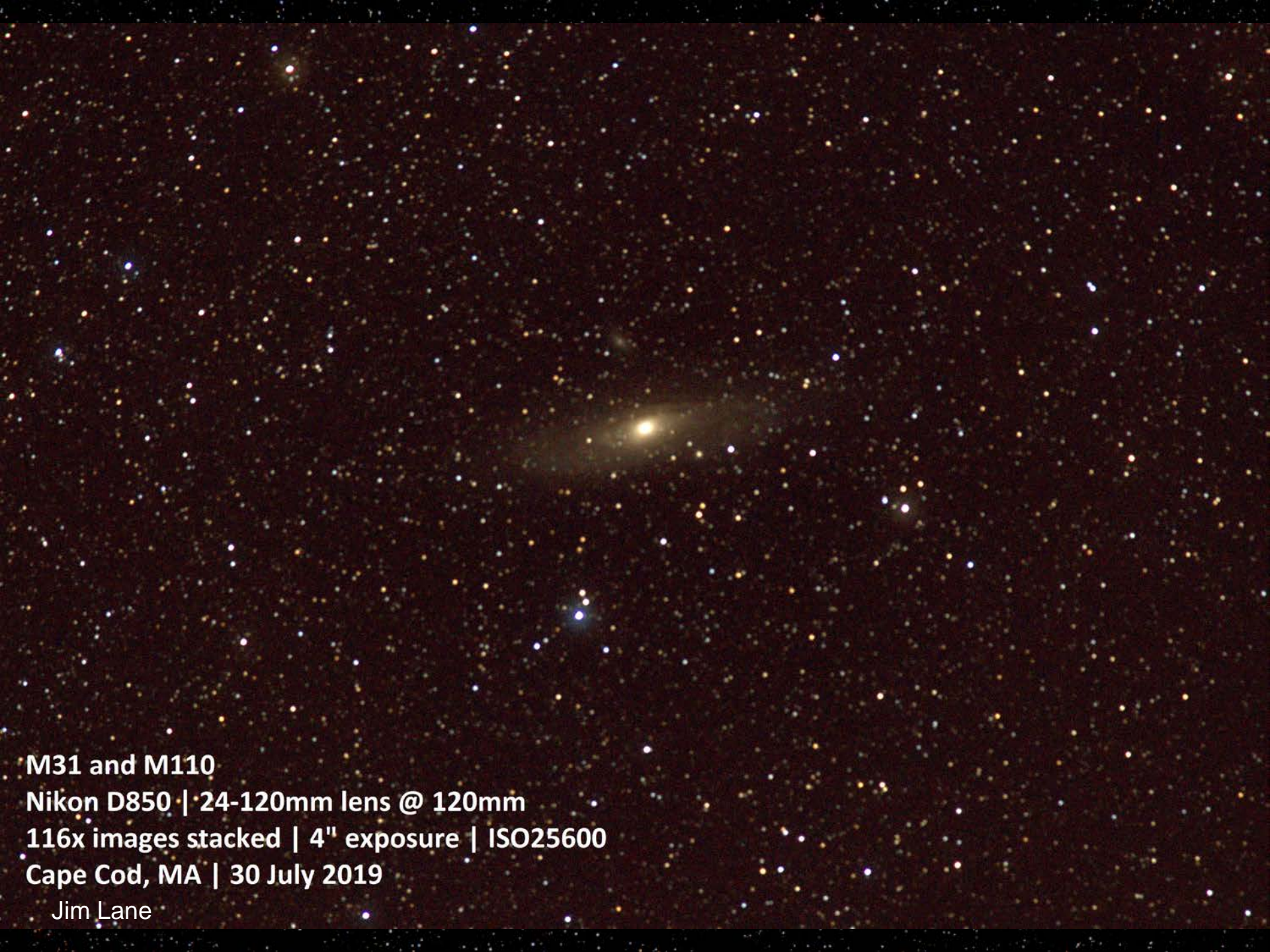


Chris Miskiewicz
AstroPhotography



Milky Way
Nikon D850 | 14mm lens @ f3.2
10" exposure | ISO2500
Cape Cod, MA | 30 July 2019

Jim Lane



M31 and M110

Nikon D850 | 24-120mm lens @ 120mm

116x images stacked | 4" exposure | ISO25600

Cape Cod, MA | 30 July 2019

Jim Lane



Jim Lane

Moon | Nikon D850 | 200-500mm x2 = 1000mm | 1/800" | ISO400 | Severn, MD | 12 July 2019





M22 - Great Sagittarius Cluster
Type: Globular Star Cluster
Magnitude: 5.1
Distance: 9,800 light years

Image by: Phil Whitebloom
Date: July 27, 2019 Time: 12:36AM EDT
Location: Alpha Ridge Park, Marriotsville, MD USA



M17 - Omega Nebula
Type: Emission Nebula
and Open Cluster
Magnitude: 6.00
Distance: 5,499 Light-years

Image by: Phil Whitebloom
Date: July 27, 2019 Time: 1:27 AM EDT
Location: Alpha Ricge Park,
Marriottsville, MD USA

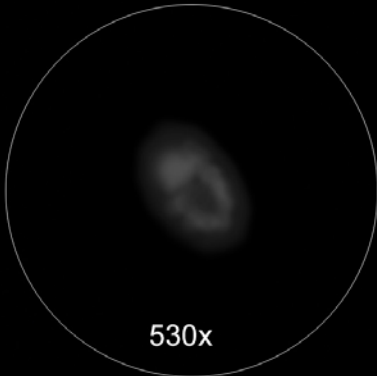


Forest Arnold

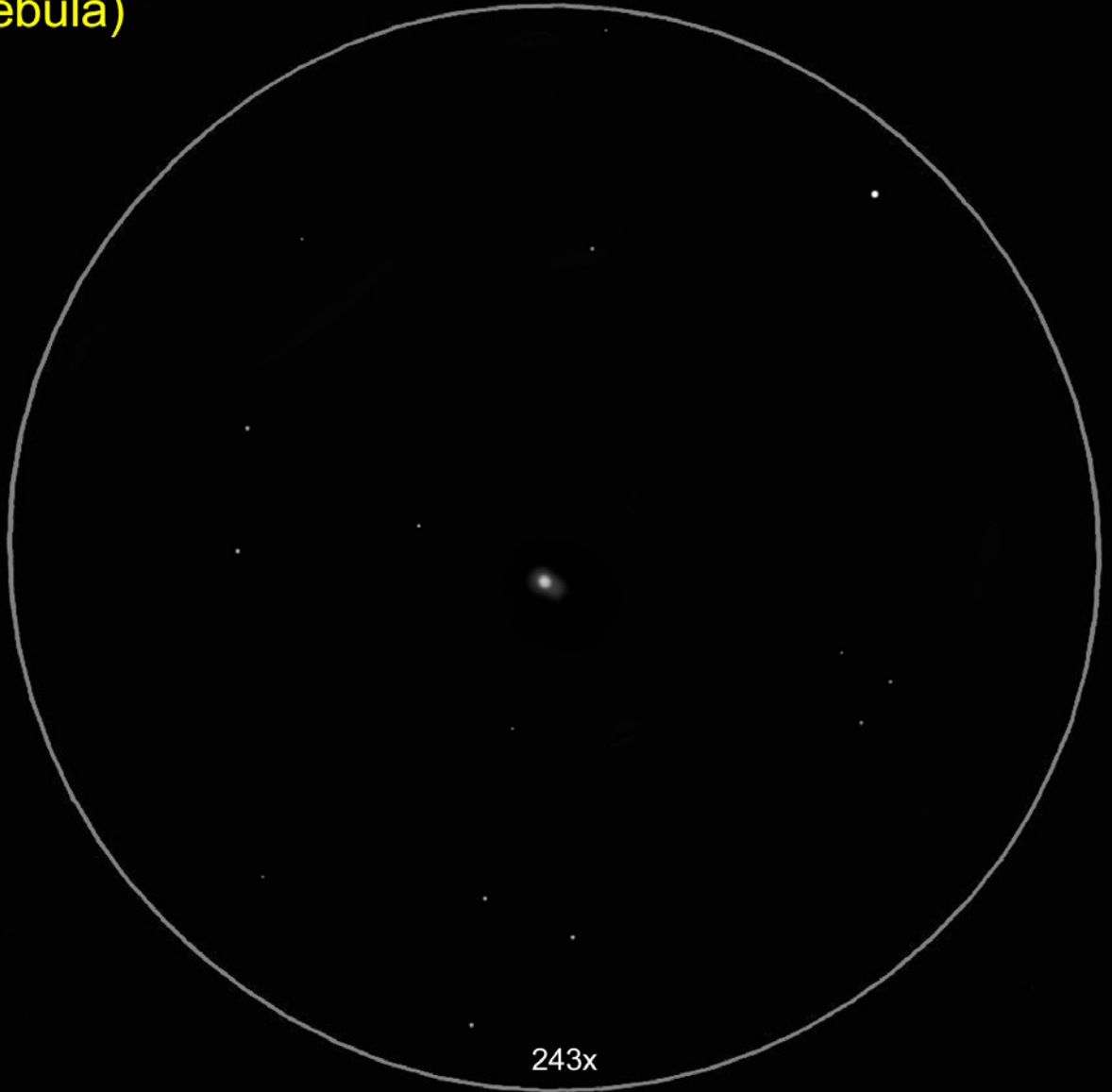
NGC 7027 (Magic Carpet Nebula)

Planetary Nebula

Constellation: Cygnus
Magnitude: 8.5
Distance: 2,100 light years
Age: 600 years old
Actual Size: 0.2 by 0.1 light year
Apparent Size: 16 by 12 arcseconds
Telescope: 155mm Refractor
Eyepieces: 4.5mm Delos (243x)
3.5mm Delos w/barlow (530x)
Field of View: 0.29 degrees (4.5mm Delos)
Filter: Oxygen III
Orientation: Diagonal View
Date: 26-July-2019
Time: 02:30 to 03:45 EDT
Location: Deck of House
Drawing by: Richard Orr



530x



243x



Name C:\Users\owner\Videos\video0003 19-08-11 23-07-50_20190811_230822

Stack 89

WScheme 1_0

Wvalues926_932_859_797_693_496

Jupiter, 11 inch SCT

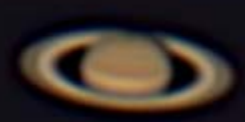
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Celestron Nextimage 5 Imager.

89/181 Stacked 1/23" exposures.

Registax 6.1.0.8

Ian Slepian



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Stack 94

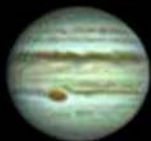
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TerraSky
Celestron Nextimage 5
Imager. Stacked 0.2"
exposures.
Registax 6.1.0.8

Ian Slepian

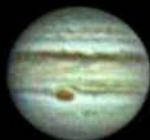
Jupiter 2019-07-26 03:16 to 03:46 UT
15cm f/8 Newtonian, video capture with
DFK21AU042 camera using 2.5x TV PowerMate
AutoStakkert!3 and RegiStax 6



CMI=122.1°
CMII=297.3°
CMIII=279.7°



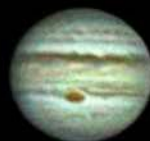
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CMII=300.4°
CMIII=282.8°



CMI=128.3°
CMII=303.4°
CMIII=285.8°



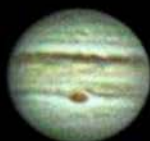
CMI=131.3°
CMII=306.5°
CMIII=288.8°



CMI=134.4°
CMII=309.5°
CMIII=291.9°

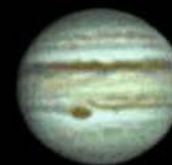


CMI=137.4°
CMII=312.5°
CMIII=294.9°



CMI=140.4°
CMII=315.5°
CMIII=297.9°

Jim Tomney





Messier 51 / NGC 5194 "The Whirlpool Galaxy"

Ken Everhart

Alpha Ridge Park

August 11, 2019 03:39 UTC

Telescope: Ilig Takashashi TAO 150

Camera: ZWO ASI071MC

Stack of 10 20-Second Exposures at 300 Gain



Messier 17 / NGC 6618 "The Omega Nebula"

Ken Everhart
Alpha Ridge Park
August 11, 2019 01:19 UTC

Telescope: Illig Takashashi TAO 150
Camera: ZWO ASI071MC
Stack of 10 20-Second Exposures at 300 Gain

Moon and Jupiter

August 10, 2019
02h 24m UTC

Hanover, Maryland

Lens:
Canon EF 70-300mm IS

Camera:
Canon EOS 60D

Single Image
.125 ms



Ken Everhart

Upcoming Events

- **August 21-25: York County Star Party** – Susquehannock State Park
- **August 31: Members Star Party** – Alpha Ridge
- **September 7: Public Star Party** – Alpha Ridge
- **Yoga Under the Stars** – 7:30PM-8:00PM
- **September 28: Members Star Party** – Alpha Ridge

A Clear Night My Dog and My Questar



Next month's meeting is on Thursday,
July 20st, 2019 at 7 PM

Dr. Sibasish Laha
Assistant Research Scientist
NASA Goddard Space Flight Center

Topic: "To the Moon and Beyond... An Astronomical
Journey"