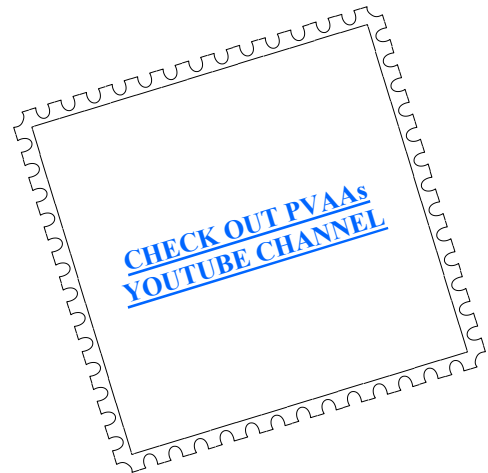




Newsletter of the Pomona Valley Amateur Astronomers

Sleep under a blanket of stars, and your heart will forever be kept warm by your love of life.

*Anthony T. Hincks*



Volume 43 Number 4

*nightwatch*

April 2023

**Club Events Calendar**

<p><b>Apr 7</b>            <b>Virtual General Meeting 7:30 PM</b>  <b>Salem Emara, JPL Ambassador</b>  <b>“The invisible beauty beyond JWST images”</b></p> <p><b>Apr 22</b>            <b>Star Party–GMARS</b>  <b>Apr 26</b>            <b>Board Meeting 6:15 PM</b></p> <p><b>May 5</b>             <b>Virtual General Meeting 7:30 PM</b>  <b>May 20</b>            <b>Star Party – GMARS</b>  <b>May 24</b>            <b>Board Meeting 6:15 PM</b></p> <p><b>Jun 2</b>             <b>Virtual General Meeting 7:30 PM</b>  <b>Jun 17</b>            <b>Star Party – GMARS</b>  <b>Jun 28</b>            <b>Board Meeting 6:15 PM</b></p> <p><b>July 7</b>            <b>Virtual General Meeting 7:30 PM</b>  <b>July 15</b>            <b>Star Party – GMARS</b>  <b>July 26</b>            <b>Board Meeting 6:15 PM</b></p>	<p><b>Aug 4</b>             <b>Virtual General Meeting 7:30 PM</b>  <b>Aug 19</b>            <b>Star Party – GMARS</b></p> <p><b>Sep 16</b>            <b>Star Party – GMARS</b>  <b>Sept 20</b>           <b>Board Meeting</b>  <b>Sep 29</b>            <b>Virtual General Meeting 7:30 PM</b></p> <p><b>Oct 14</b>            <b>Star Party – Joshua Tree Night Sky Festival</b>  <b>Oct 18</b>            <b>Board Meeting 6:15 PM</b>  <b>Oct 27</b>            <b>Virtual General Meeting 7:30 PM</b></p> <p><b>Nov 8</b>             <b>Board Meeting 6:15 PM</b>  <b>Nov 17</b>            <b>Virtual General Meeting 7:30 PM</b>  <b>Nov 18</b>            <b>Star Party – GMARS</b>  <b>Nov 29</b>            <b>Board Meeting 6:15 PM</b></p> <p><b>Dec 9</b>             <b>Holiday Party</b></p>
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Correction to March 2023 Nightwatch – page 2. Mike Magras’ telescope is not a Celestron Richey-Chretien but a Celestron Edge, which is an aplanatic Schmidt Cassegrain.

**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

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Jim Bridgewater (2024).....	909-599-7123
Richard Wismer(2024) .....	
Ron Hoekwater (2023).....	909-706-7453
Howard Maculsay (2023).....	909-913-1195

**Directors**

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

## PVAA General Meeting 3/10/23

Our March general meeting started out with a reminder of annual dues becoming due. Please visit our website at PVAA.US go to the Club Membership page and click the [Download Membership Form](#) link on instructions on how to give.

Our speaker for the night was our own PVAA president Matt Wedel and his topic was “How an Asteroid Killed the Dinosaurs (and Lots of Other Things).” Matt frequently goes on ‘dinosaur digs’ in Utah and other places as a paleontologist. (A scientist who studies the history of life on Earth through fossil records.)

It took a long time for scientist to recognize impact craters on Earth. Meteor impacts had never been observed or reported, so all old impacts were thought to be volcanic in origin. It wasn’t until Gene Shoemaker with the discovery of coesite (a high pressure form of silica created during impacts) at Meteor Crater in Arizona that the possibly of impact craters even existed. They had a lot of similarities to craters created by nuclear explosions. Shattercones are the result of nuclear blasts or meteor impacts, but not volcanoes. Simple craters usually are less than 12 miles in diameter, have steeper walls, and little or no central peak. Complex craters have a central peak, and impact basins have multiple rings.

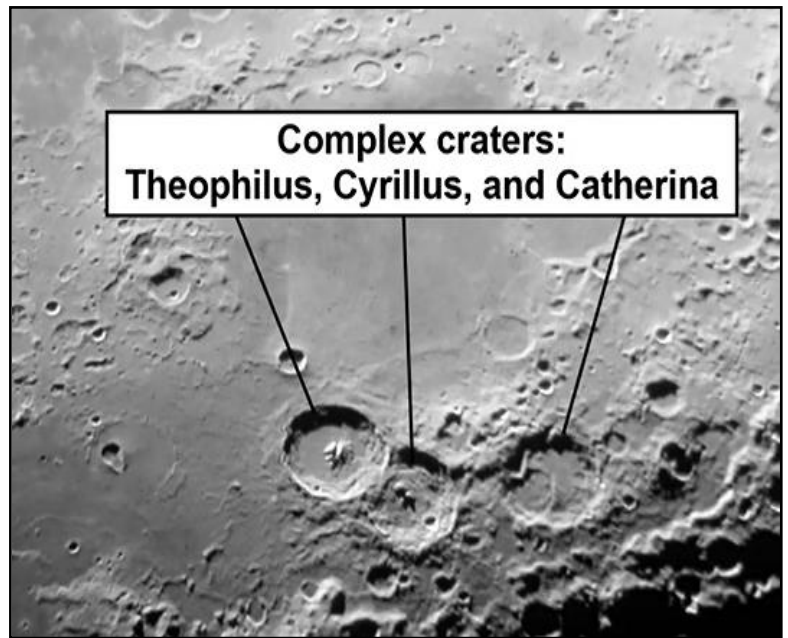
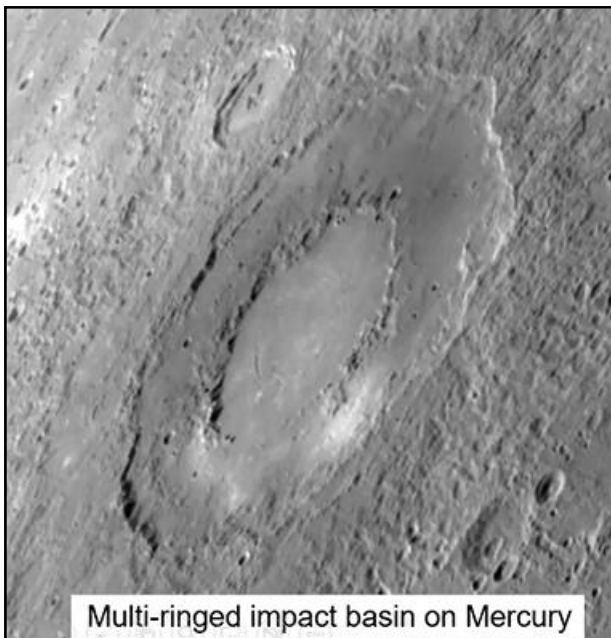
Discovered from the air over Argentina are the Rio Cuarto impact craters. The material was ejected out in one direction, and not a circle. America’s other large meteor crater is Upheaval Dome in Canyonlands National Park in Utah. While it looks like a complex crater, that is due to the erosion over time.

Matt pointed out several recent meteorite blasts – like the one over Chelyabinsk, Russia in 2013, and the Tunguska blast over Siberia in 1908. In 1947 there was an airburst over Siberia that left several chunks of iron meteorites. Now, with satellites monitoring nuclear blasts, we are finding small to large air blasts happening several times a year all around the world. (735 over 20 years)

Tektites are a type of glass that form from impacts in shallow water. Matt showed a picture of his collection.

The big impact that killed the dinosaurs killed a lot more than just dinosaurs – plants, animals, fungi, and other things. Scientists then found a world-wide layer of iridium-rich layer with shocked-rock. Looking for oil, they discovered the Chicxulub crater on and off the coast of Mexico. The initial crater was 18 miles deep due to its enormous speed on impact. Heat and the resulting fires and acid rain did most of the damage. Matt then recommended a book on this by his friend Riley Black called “The Last Days of the Dinosaurs”. Matt says she really did her homework before publishing the book.

**Gary Thompson**



Moon craters



Rio Cuarto craters in Argentina:  
Two impactors – possibly a binary  
meteorite hitting at a low angle  
gouged out elliptical craters.



Upheaval Dome,  
Utah

Iridium-laced clay layer  
found world-wide.  
Caused by a meteor  
impact.



**Obituary for Eldred F. Tubbs**

Eldred Frank Tubbs, a long-time resident of Claremont, died March 21, 2023. He was born March 31, 1924 in Buffalo, New York. His parents, Frank K. Tubbs and Ruth A. Stone, were both descended from early New-England families. He completed high school in 1942 and like many of his generation entered the Army in 1943. He served first in the Army Air Forces and then saw combat in Europe with the 69<sup>th</sup> Infantry Division.

He graduated from Carnegie Institute of Technology (now Carnegie Mellon University) in 1949 and earned a PhD from Johns Hopkins University in 1956. After a period in industry, he joined the faculty of Harvey Mudd College in 1963 as Professor of Physics continuing there until 1979. During that period, he was involved in laboratory measurements of quantities related to astronomy both at Harvey Mudd and as a visiting scientist at Harvard. He went to the Jet Propulsion Laboratory (JPL) in 1979. He worked at JPL full time until his retirement in 2001 and continued part time until 2005. His work there principally involved optical sensors for spacecraft control systems. During his time at JPL, he also spent 10 years teaching in the laser technology program at Pasadena City College.

He married Virginia A. Lefurgy of Mt. Lebanon, Pennsylvania in 1949. He is survived by his daughter, Rebecca R. Tubbs, his son William M. Tubbs (Phyllis), and two grandsons, Thomas O. Tubbs and Eric A. Tubbs. He was predeceased by his wife Virginia, his son David H. Tubbs, and his sister, Lois R. Tubbs.

He lived in Claremont since 1963 and was an active member of St. Ambrose Episcopal Church. He was a long-time member of the Orange Empire Railway Museum and several professional organizations.

A memorial service will be held at St. Ambrose Episcopal Church in Claremont, CA at a later date.

Another Look - March 2023

Full Moon April 6, New Moon April 20

Native American call this the Red Grass moon, the Budding moon and the Flowering moon.

Other tribes called it the Fish moon, the Frog moon and the Breaking Ice moon.

Northeastern Native American tribes called it the Sugar Bush moon and the Sugar Maker moon.

In Islamic culture the night of the April Full Moon is called the Night of Innocence, Christians refer to the first full moon after Easter as the Paschal moon.

Today, we call the April Full Moon the Pink moon.

Leo Minor wasn't know as such in antiquity. Ptolomy didn't ascribe that area between the feet of Ursa Major and Leo as anything more than amorphous. The faint stars there generally assigned to Leo.



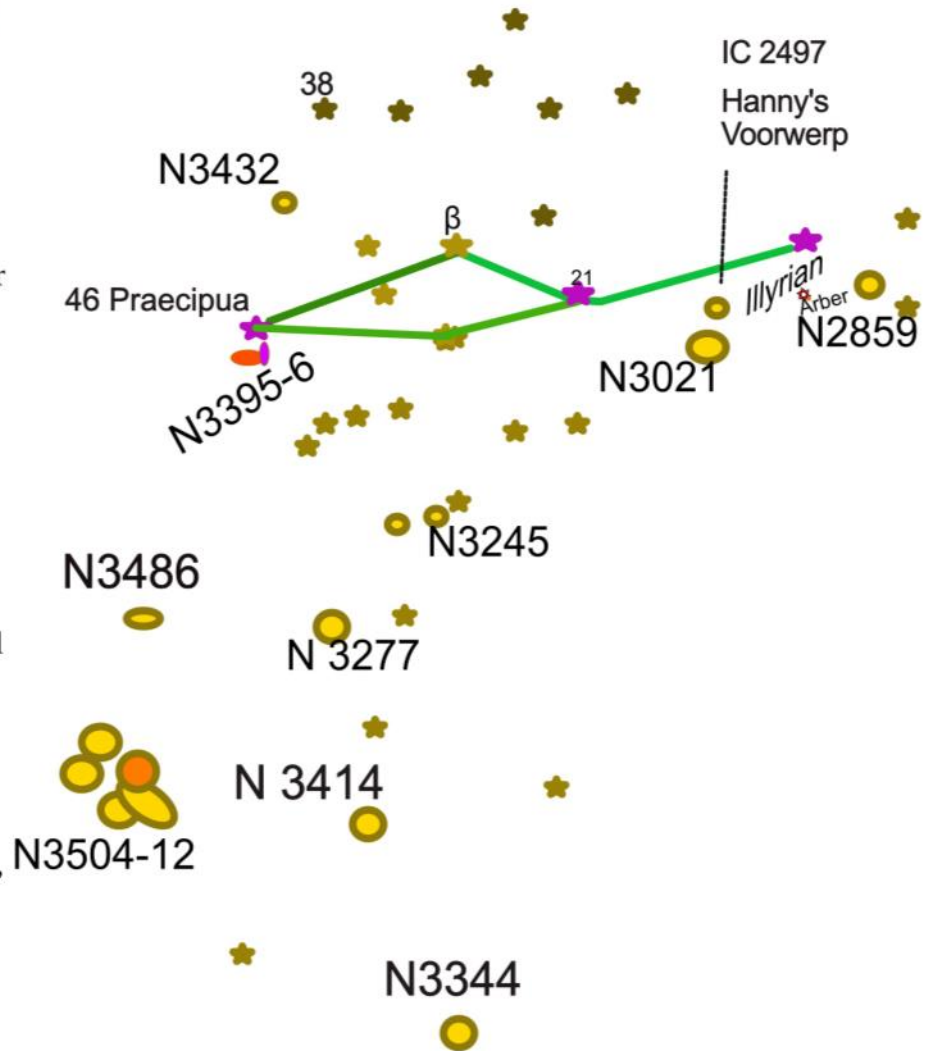
Albrecht Dürer 1515



Hevelius Leo Minor Combined

Polish Astronomer and Cartographer Johannes Hevelius added the outline of a small lion between the drawing of the Great Bear and Leo. Later, Bayer added a Greek letter to one of the stars and Draper numbered many more.

Leo Minor has two named stars. The one, 46 Leonis Minoris has the name Praecipua and is the brightest star in LMi. The other is an 8<sup>th</sup> magnitude star with the Draper designation HD 82886 named Illyrian. The International Astronomical Union thought to give each country its own star and planet and HD 82886 was given to Albania. The Illyria were the ancient people of the Balkans and the Arber, its planet, the medieval name of the people of Albania.



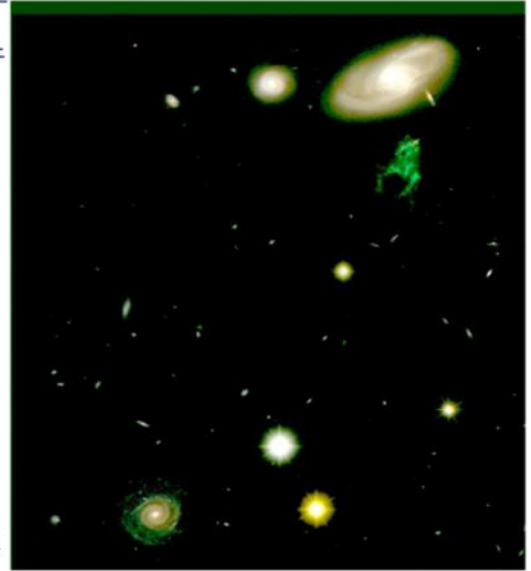
One of the more interesting objects in Leo Minor is Hanny's Voorwerp. IC 2497 is 15<sup>th</sup> magnitude and I read that Hanny's Voorwerp is as faint as 19<sup>th</sup> magnitude. IC 2497 is a possibly great inclusion into our catalog of potential black holes. A decently condensed explanation of the physics can be found at: <http://cseligman.com/text/atlas/ic24a.htm#ic2497>.

<https://www.flickr.com/photos/avdhoeven/15741726033/in/photolist-5nqpdg-8ZPDoH-qsIEyW-rpiZp2-nn3TTY-99ABqD-wuaz1n-r1K45z-wM7mJh-6VwnkE-pZ3sHx-99uoLC-nrH8r7-ff7cPa-rEYeRY-rXu547-qxqvAq-F6DV6Y-kjHA1M-s91CpL-QZPzSC-r1x1So-ovEpXp-rF5XRg-LL5aAW-rF61fV-r1wZY9>



There are a couple of 10<sup>th</sup> magnitude galaxies in Leo Minor: NGC 3344 and NGC 3486. Both galaxies are face on and may be slightly barred in the case of N3486. N3344 is great but will take some star hopping skills to find it out there in the reaches of no-man's land.

[hla.stsci.edu/cgi-bin/display?image=hst\\_09042\\_44\\_wfpc2\\_f8...\(color\)%20NGC3486](http://hla.stsci.edu/cgi-bin/display?image=hst_09042_44_wfpc2_f8...(color)%20NGC3486)



On the other side of Leo Min is Abell 779 and NGC 2859. A cluster of galaxies close to 11<sup>th</sup> magnitude N2859 and also alpha alpha Lyncis.

<https://www.flickr.com/photos/113933437@N06/11961961204/in/photolist-2mzX9HH-2npX8y3-fH4csT-SxBHrX-Riyrkp-2kKM6du-riq6LG-2hsMriW-sVFvXW-2hsQaXh-exXzEZ-je3bjq-GoEwcJ-RLd5Nv>

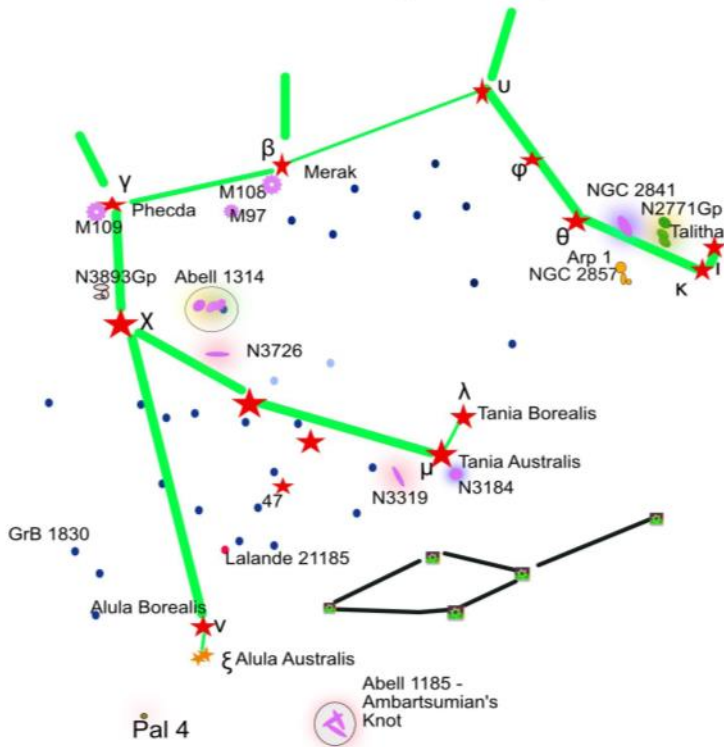
It is common knowledge that Ursa Major has from prehistoric times been known as a Bear. I have read, however, that apparently this knowledge is uncommonly wrong. Among the different civilizations that grew in and around the confluence of the Tigris and Euphrates rivers that we typically think of as Mesopotamia and Babylonia, the asterism was known as "the constellation of the Long Chariot." (The Origin of Ursa Major, Davis, G.A. Jr. 1946.) Likewise, per Davis, neither the Chinese, Egyptians, Arabs or Persians had a bear. Also, even the Anglo-Saxon and Teutonic almost universally referred to it as a "Wain", Wagon or in modern idiom, a plow. Whence then, you ask, the bear? Per Davis, a series of linguistic misconceptions and misspellings going as far back as Sanskrit has caused the constellation's parts, identified in antiquity as "stars" to become "bears". This isn't an unusual



circumstance, actually. We can find translation errors in our star names and constellations even as recently as Arabic to Latin and vice-versa.

Common or uncommon knowledge aside, the idea of a bear in the sky permeated the beliefs of cultures throughout history. I find it unlikely that the concept of a nation descending from an animal would pop up all over the world without social dissemination. Historians list too many native American nations identifying with animal ancestors for it to be coincidence. In the thousands of years of humanity's existence from Lucy to the pyramids of the Aztecs; ideas, knowledge and concepts traveled along with their herds up into Europe, west as far as Iceland and Greenland, and east and across the land bridge into the Americas. <http://judy-volker.com/StarLore/Art/HarmoniaMacrocosmica.html> -

This is some awesome astronomy artwork, you should take a look.



So, that brings us to the Greeks and Callisto and Arcas, mother and son transported into the heavens to become the greater and the lesser bear.

*Jove — snatched them through  
the air  
In whirlwinds up to heaven and  
fix'd them there;  
Where the new constellations nightly  
rise,  
And add a lustre to the northern  
skies.*

**Ovid's "Metamorphoses"**

Normally we look at Ursa Major and see only the ladle. There are so many objects near, on and in the asterism that we can spend hours searching for large, small and interesting galaxies and globular clusters as well as a famous planetary nebula. But as you can see by the chart I made and the drawing of Ursa Major by Jordanis (<http://judy-volker.com/StarLore/Art/HarmoniaMacrocosmica.html>) showing his Jordan River between UMa and Leo, the legs and feet of Ursa are a treasure trove of bright, interesting and unusual stars and galaxies.

One very interesting star in Lalande 21185, at 7<sup>th</sup> magnitude the brightest red dwarf in the northern skies. Its down by the left rear foot of Ursa, close to Alula Borealis and Alula Australis. L21185 is very close to us and in the next ice age should be almost as close Alpha Centari. L21185 also has a couple of planets with long histories of discovery, disapproval and rediscovery.

Another very interesting star is Groombridge 1830. Also near but on the other side of Ursa's paw, Gmb 1830 has a big proper motion and based on its distance from the sun, the highest proper

motion we've measured so far. Gmb 1830 is a "halo" star, meaning it is rotating counter to our galaxies rotation and has probably an eccentric orbit around the Milky Way.

Alula Borealis is Nu  $\nu$  Ursae Majoris and Alula Australis is Xi  $\xi$  Ursae Majoris and their names come from the Arabs as the "first leaps of the gazelle". Both Nu and Xi are double. Nu is 3<sup>rd</sup> mag. And Xi is 4<sup>th</sup>. Nu is an easier double to split with our backyard telescopes.

Two objects also by the paw is Palomar 4, a very challenging globular and Abell 1185 a swarm of 13<sup>th</sup>, 14<sup>th</sup> and fainter galaxies. At least one, NGC 3550 appear to be a merge of at least two galaxies. Part of Abell 1185 is Ambartsumian's knot, a small dot under 14<sup>th</sup> magnitude NGC 3561 that they think is a dwarf companion galaxy. Pol 4, like all Palomar globulars is tough. Its combined magnitude is given as 14, so your big scopes can find it, seeing it is another thing. It is faint and diffuse, but once you've identified it visually all you can say is "Wow".

Tania Borealis and Tania Australis –  $\lambda$  (Lambda) and  $\mu$  (Mu) Ursae Majoris – "the second leap", mark the right rear paw. They are both 3<sup>rd</sup> magnitude.

Talitha Borealis and Talitha Australis –  $\iota$  (Iota) and  $\kappa$  (Kappa) Ursae Majoris – "the third leap", mark the front paw of Ursa. Both stars are 3<sup>rd</sup> magnitude. Kappa is a double system while Iota is a system with two double stars. The main star is 3<sup>rd</sup> magnitude while the companions are 9<sup>th</sup>, 10<sup>th</sup>, and spectroscopic.

Moving up into Ursa Major we have three Messier's near the stars marking the hips of the bear. Messier 97, Messier 106 and Messier 108

[https://ocaastronomers.org/wp-content/uploads/2018/12/M97-108\\_LA\\_31012007.jpg](https://ocaastronomers.org/wp-content/uploads/2018/12/M97-108_LA_31012007.jpg)

[Larry Arnold](#)

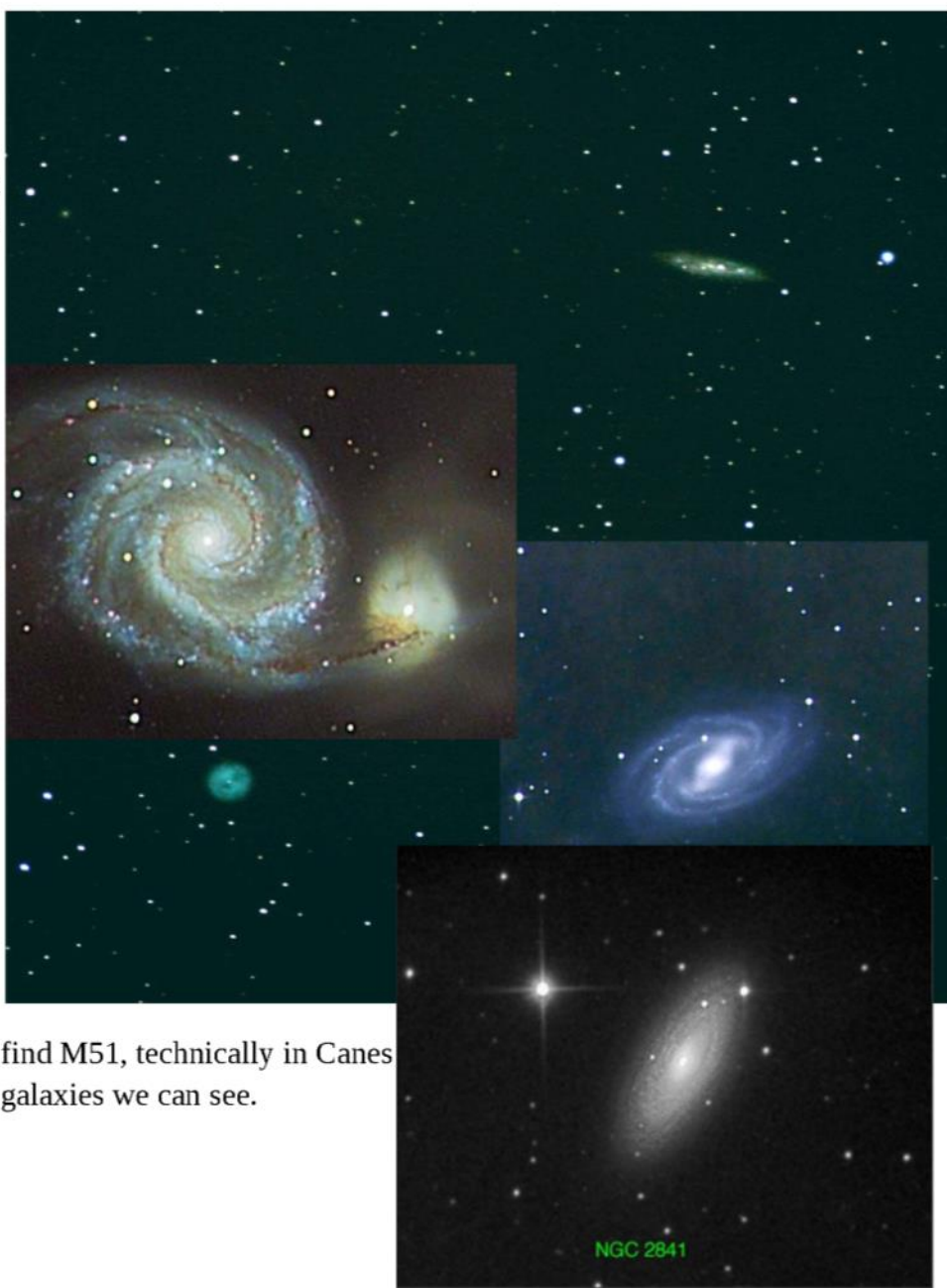
[Arnie Rosner](#)

[https://ocaastronomers.org/wp-content/uploads/2018/12/m109\\_01-28-03\\_150.jpg](https://ocaastronomers.org/wp-content/uploads/2018/12/m109_01-28-03_150.jpg)

[https://ocaastronomers.org/wp-content/uploads/2018/12/M51\\_LRGB\\_12-08-02\\_150.jpg](https://ocaastronomers.org/wp-content/uploads/2018/12/M51_LRGB_12-08-02_150.jpg)

[Arnie Rosner](#)

Two very nice galaxies and one of the most famous planetary nebulas in the sky. As long as you are up there, move 14 degrees west to the area around the tail star, Alkaid, and find M51, technically in Canes Venatici, one of the most spectacular galaxies we can see.





All three images in the mosaic can be found by following the links to the OCA website.

<https://ocaastronomers.org/wp-content/uploads/2018/12/spring-galaxies2008-r3.Jpg> Bill Hall

Moving over to the 3<sup>rd</sup> magnitude theta  $\theta$  Ursae Majoris, the front “knee” are three objects of interest, one quite bright and the other two a bit of a challenge. NGC 2841 is 10<sup>th</sup> magnitude and tilted obliquely to us as the image by Bill Hall shows. Very close is the NGC 2771 group halfway between  $\theta$  and  $\iota$ , 3<sup>rd</sup> magnitude Talitha. I don’t suppose this group of galaxies has ever been officially named after NGC 2771, but a look though the NGC or Simbab will show four galaxies from, 12<sup>th</sup> to 15<sup>th</sup> magnitudes clustered together. Be sure to check out NGC 2769, a close neighbor, lenticular with a large dark lane.

Across from theta about 40 percent of the way to kappa, also 3<sup>rd</sup> magnitude, is number one on Arp’s List of Peculiar Galaxies. NGC 2857, it is a 2’ by 2’ face on open spiral that made Arp’s list because of its low surface brightness.

The left rear paw of UMa is made up of 3<sup>rd</sup> magnitude Tania Boraelis,  $\lambda$ , and 3<sup>rd</sup> magnitude double Tania Australis,  $\mu$ . There are a number of galaxies around the two stars, among the brightest are NGC’s 3202, 3205 and 3207. A little further up the leg is NGC 3319, an 11<sup>th</sup> magnitude barred spiral.

<https://www.flickr.com/people/detterline/>

Right next to mu  $\mu$ , is the magnificent 10<sup>th</sup> magnitude NGC 3184, the little pinwheel. This 7’ by 7’ face on spiral even has its own NGC’s embedded, just like its large cousin. Joel Kuiper at <https://astrophotography.nl/>

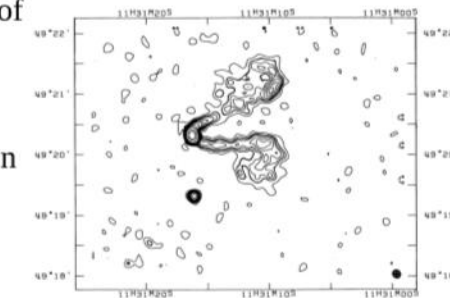
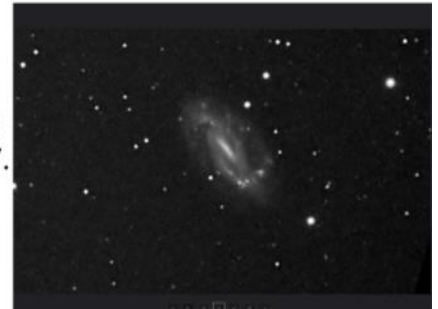
Up near Xi,  $\chi$ , Uma are three areas of interest. Abell 1314 is a cluster of hundreds of galaxies centered on a trio of 13<sup>th</sup> and 14<sup>th</sup> magnitude galaxies, one with the unusual name of Papillon, IC 708 and next door to IC 709 and IC 712. Papillon is 13<sup>th</sup> magnitude, IC 709 is almost 14<sup>th</sup> magnitude and IC 712 is 14<sup>th</sup>. Papillon is unremarkable visually, but got its name from its energy intensity map.

<https://articles.adsabs.harvard.edu/pdf/1979A&A....77..183V>

Nearby is NGC 3726, 10<sup>th</sup> magnitude and 7 min. NGC 3893, is an 11<sup>th</sup>-magnitude spiral galaxy. The small faint galaxy to the upper right is NGC 3896, a 14<sup>th</sup> magnitude spiral, while the small round galaxy in the lower right corner is MCG 8-22-9. This is a 60-second image taken on 12 March 1994 at 07:55 UT.

Image at: [https://ocaastronomers.org/wp-content/uploads/2018/12/NGC3893\\_20150418\\_CE\\_01.jpg](https://ocaastronomers.org/wp-content/uploads/2018/12/NGC3893_20150418_CE_01.jpg)

Dark Skys  
Dave Phelps





This article is distributed by NASA's Night Sky Network (NSN). The NSN program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit [nightsky.jpl.nasa.gov](https://nightsky.jpl.nasa.gov) to find local clubs, events, and more!

## Solar Eclipses Are Coming!

David Prosper

Have you ever witnessed a total solar eclipse? What about an annular solar eclipse? If not, then you are in luck if you live in North America: the next twelve months will see two solar eclipses darken the skies for observers in the continental United States, Mexico, and Canada!

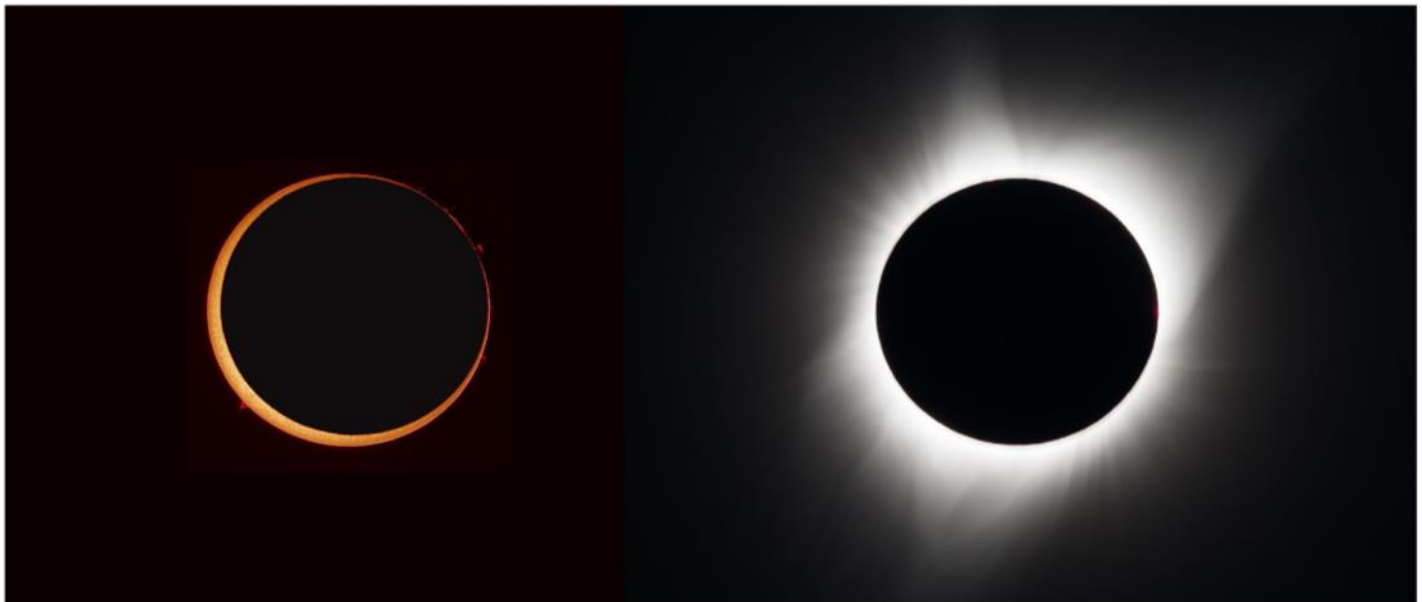
Solar eclipse fans get a chance to witness an **annular eclipse** this fall. On **Saturday, October 14, 2023**, the Moon will move exactly in front of the Sun from the point of view of observers along a narrow strip of land stretching across the United States from Oregon to Texas and continuing on to Central and South America. Since the Moon will be at its furthest point in its orbit from Earth at that time (known as *apogee*), it won't completely block the Sun; instead, a dramatic "ring" effect will be seen as the bright edge of the Sun will be visible around the black silhouette of the Moon. The distinct appearance of this style of eclipse is why it's called an annular eclipse, as *annular* means *ring-like*. If you are standing under a tree or behind a screen you will see thousands of ring-like shadows projected everywhere during maximum eclipse, and the light may take on a wan note, but it won't actually get dark outside; it will be similar to the brightness of a cloudy day. This eclipse must only be observed with properly certified eclipse glasses, or other safe observation methods like pinhole projection or shielded solar telescopes. Even during the peak of the eclipse, the tiny bit of the Sun seen via the "ring" can damage your retinas and even blind you.

Just six months later, a dramatic **total solar eclipse** will darken the skies from Mexico to northeast Canada, casting its shadow across the USA in a strip approximately 124 miles (200 km) wide, on **Monday, April 8, 2024**. While protection must be worn to safely observe most of this eclipse, it's not needed to witness totality itself, the brief amount of time when the Moon blocks the entire surface of the Sun from view. And if you try to view totality through your eclipse viewer, you won't actually be able to see anything! The Moon's shadow will dramatically darken the skies into something resembling early evening, confusing animals and delighting human observers. You will even be able to see bright stars and planets - provided you are able to take your eyes off the majesty of the total eclipse! While the darkness and accompanying chilly breeze will be a thrill, the most spectacular observation of all will be the Sun's magnificent *corona*! Totality is the only time you can observe the corona, which is actually the beautiful outer fringes of the Sun's atmosphere. For observers in the middle of the path, they will get to experience the deepest portion of the eclipse, which will last over four minutes - twice as long as 2017's total solar eclipse over North America.

While some folks may be lucky enough to witness both eclipses in full – especially the residents of San Antonio, Texas, whose city lies at the crossroads of both paths – everyone off the paths of maximum eclipse can still catch sight of beautiful partial eclipses if the skies are clear. The Eclipse Ambassadors program is recruiting volunteers across the USA to prepare communities off the central paths in advance of this amazing cosmic ballet. Find more information and apply to share the excitement at [eclipseambassadors.org](https://eclipseambassadors.org). NASA has published a fantastic Solar Eclipse Safety Guide which can help you plan your viewing at [bit.ly/nasaclipsesafety](https://bit.ly/nasaclipsesafety). And you can find a large collection of solar eclipse resources, activities, visualizations, photos, and more from NASA at [solarsystem.nasa.gov/eclipses](https://solarsystem.nasa.gov/eclipses)



This detailed solar eclipse map shows the paths of where and when the Moon's shadow will cross the USA for the upcoming 2023 annular solar eclipse and 2024 total solar eclipse, made using data compiled from multiple NASA missions. Where will you be? This map is very detailed, so if you would like to download a larger copy of the image, you can do so and find out more about its features at: <https://svs.gsfc.nasa.gov/5073> Credits: NASA/Scientific Visualization Studio/Michala Garrison; eclipse calculations by Ernie Wright, NASA Goddard Space Flight Center.



Photos of an annular total solar eclipse (left) and a total solar eclipse (right). Note that the annular eclipse is shown with a dark background, as it is only safe to view with protection – you can see how a small portion of the Sun is still visible as the ring around the Moon. On the right, you can see the Sun's wispy corona, visible only during totality itself, when the Moon completely – or totally - hides the Sun from view. A total solar eclipse is only safe to view without protection during totality itself; it is absolutely necessary to protect your eyes throughout the rest of the eclipse! Credits: Left, Annular Eclipse: Stefan Seip (Oct 3, 2005). Right, Total Eclipse, NASA/Aubrey Gemignani (August 21, 2017)

**PVAA Membership Renewal for April 30, 2023**

- \_\_\_\_\_ \$30 - Individual Membership
- \_\_\_\_\_ \$40 - Family Membership
- \_\_\_\_\_ \$18 Student Under age 18 Membership

Name: \_\_\_\_\_

Email address for Newsletter delivery: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Please send check payable to PVAA to:

PVAA  
Attention: Treasurer  
P.O. Box 162  
Upland, CA 91785

Thank you for your continued membership!