

# San Diego Astronomy Association

Celebrating Over 50 Years of Astronomical Outreach



April 2024

<https://www.sdaa.org/>

A Non-Profit Educational Association  
P.O. Box 23215, San Diego, CA 92193-3215

### Next SDAA Business Meeting

April 16th at 7:00pm  
10070 Willow Creek Rd  
San Diego, CA 92131  
Via Zoom

### Next Program Meeting

April 17th  
Mission Trails Regional Park  
Visitor and Interpretive Center  
1 Father Junipero Serra Trail

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April 2024, Vol LXII, Issue 4

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San Diego Astronomy Association

Incorporated in California in 1963

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### Newsletter Deadline

The deadline to submit articles  
for publication is the  
**15th** of each month.

### April 17th Program

Topic: Open Mic Member Night to Share Totality Eclipse Adventures! Send your photos, (solar and otherwise), to vicepresident@sdaa.org by Sunday, April 14th to have them included in the program slides. Looking forward to seeing everyone's photos and hearing your stories!



The meeting will be held The meeting will be held  
via Zoom. See <https://sdaa.org/program-meeting/>

[https://us02web.zoom.us/meeting/register/tZMude-sqz4sGN1qXv7qSlBwnYp-gaQEZZ8LU#/registration](https://us02web.zoom.us/join/zoom-join?meeting=us02web.zoom.us/meeting/register/tZMude-sqz4sGN1qXv7qSlBwnYp-gaQEZZ8LU#/registration)

Link to SDAA Merchandise Store <https://sdaa28.wildapricot.org/SDAA-Store>

Link to Outreach Calendar <https://calendar.google.com/calendar/embed?src=g-calendar@sdaa.org&ctz=America/Los>



# San Diego Astronomy Association

## *San Diego Astronomy Association Board of Directors Meeting* *March 12, 2024* – Unapproved and subject to revision

### 1. Call to Order

The meeting was held via Zoom and was called to order at 7:05pm with the following board members in attendance: Dave Decker, President; Bee Pagarigan, Vice President; Mike Chasin, Treasurer; Gene Burch, Recording Secretary; David Wood, Corresponding Secretary; Hiro Hakozi, Director; Gracie Schutze, Director; Kin Searcy, Director; Steve Myers, Director; Mark Smith, private pad chairperson.

### 2. Approval of Last Meeting Minutes

The February meeting minutes were approved.

### 3. Treasurers & Membership Report

Mike reported that the annual banquet netted the club nearly \$7,500 and the results from the post banquet survey were generally positive. Gracie recommended that we get together to discuss the results so any comments can be taken into account for next year's banquet. Mike said that membership ticked up a bit and said he's received quotes for Cyber Insurance and Directors & Officers insurance. The Board approved both quotes and Mike will renew those policies.

### 4. Standard Reports

#### a. Site Maintenance Report:

Steve reported that not much has happened with the upgrade to the Lipp/Warming room building due to the inclement weather. He will reach out to the contractor to see what their schedule looks like now. Bee also reported that the electrical issue with pad #69 seems to have been resolved.

#### b. Observatory:

Observatory is in excellent condition.

#### c. Loaner Scope Report:

All but four loaner scopes are out. All are due back March 9, if the weather holds at TDS for an exchange.

A replacement secondary mirror has been procured for the 16" Meade LightBridge. It is a direct replacement for the damaged one that came with the scope. Paul still needs to get a Telrad for it. Next time I'm at TDS I plan to assemble, collimate and test the 16" under the stars to see how she performs. Assuming no major issues, we'll have the 16" available to members soon.



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Paul has assembled a new loaner, SDAA-036, from the iOptron MiniTower Pro, the 8" Meade SCT, and the large Pelican storage box. The entire setup (everything but the tripod) fits in a single Pelican case in custom-fit foam cutouts. I still need to field test the full setup, but initial testing during the day suggests that the hand control is damaged. It does not preserve settings across reboots, and the display is barely legible. But it \*does\* seem to work properly once set up (if you can read the display). More to come as I continue to test out this mount. This loaner will also come with a donated Celestron NexImage 10 for planetary photography, which I have tested and confirmed to work. The iOptron MiniTower Pro has encoders on both axes, which should make its tracking performance adequate for planetary photography.

The (substantial) remaining astrophotography gear that has been donated is pending selection and assembly into a complete loaner setup. LX-85 mount with 8" f/4 Newtonian astrograph, 50mm guide scope, Lodestar X2 guide camera, and Canon DSLR are the highlights. Just need to get the details worked out and find a good way to package it all up safely for members to transport, then test it out under a dark sky to see how it actually performs.

Another Orion XT8 has been donated, which I will likely add to the loaner fleet. I may have to remove another Dob from the fleet to make room in the storage container. And/or figure out some other way to store the scopes -- perhaps a tall shelf near the door so we can "double stack" the 8" and 10" dobs? I think there's enough vertical space to store a set of dobs above the ones standing on the floor, but I'll have to measure. Or, maybe we can clear out enough shelf space to justify removing a lower shelf so more dobs can be stored on the ground.

d. Private Pad Report:

We currently have 7 unleased pads and 10 people on the waiting list. Two of them are new and I expect that at least one of them will choose to lease in the next month or two. I have one new Lessee where I've sent the lease but haven't received it back yet. I've reached out to the Lessee to make sure that he received the e-mail and still wants the pad.

Mark Smith presented the Board with detailed information about pad usage, focusing primarily on 11 chronically underused pads. Mark has already contacted 3 of those pad holders who have agreed to relinquish their leases. Mark recommended that the leases on the remaining 8 be terminated and the Board agreed to have Mark proceed with his recommendations.

A Private Pad Policy Review Committee has been formed, consisting of: Hiro Hakozaki, Bee Pagarigan, Gracie Schutze, Steve Myers and Mark Smith. The goals of the committee are to:

- Conduct a comprehensive review of all current private pad policies and lease agreements.



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- Create a new policy to clarify the club's position regarding building, managing, removing, selling, or donating assets on the pads.

e. Program Meetings Report:

The March 20, 2024 meeting will be in-person at Mission Trails Regional Park and the topic will be Totality Eclipse Prep with discussions led by SDAA in-house experts.

The April program meeting topic will be “Show and Tell Adventures” from Totality SDAA member trips.

Speakers for Science in Space at the ISS National Laboratory confirmation in progress. Possibly large enough topic to span two consecutive programs.

f. AISIG Report:

The first AISIG meeting of 2024 featured Greg Crinklaw, the developer of Sky Tools, as our first guest speaker. Zoom meeting attendance was light but the meeting video will be posted to the SDAA YouTube channel for anyone who'd like to review Greg's presentation. The next meeting will (hopefully!) feature images created by AISIG members and the techniques used to process the images. Our April meeting will feature Russ Croman of RC Astro discussing his advances in A.I. generated process' for PixInsight.

g. Newsletter Report:

All looks great – Thanks, Andrea!

h. Website Report:

The new website for Julian StarFest will be installed and will replace the old website as soon as the reservations on Wild Apricot are updated to 2024. The draft website is at <https://wp.julianstarfest.com/>. Please send any comments.

i. Social Media:

No report

j. Outreach Report:

We had one of the rainiest months in the past few years and cancelled 7 events! Only 3 were completed. The SDAA Outreach Director, donned his black hat and called schools left and right canceling their stargazing events and becoming the most hated Outreach Director this side of the planet Uranus. Highlands Elementary School had their first stargazing event, which was a huge success; they want us back in the fall.



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Here are the numbers for February:

<b>2024</b>	<b>Previous Total</b>	<b>February</b>	<b>YTD</b>
<b>Completed</b>	<b>8</b>	<b>3</b>	<b>11</b>
<b>Canceled</b>	<b>2</b>	<b>7</b>	<b>9</b>
<b>Total Attendance</b>	<b>770</b>	<b>215</b>	<b>985</b>

- k. TARO Report:  
TARO's operation has been limited by the weather.

TARO Project report -  
Current Active projects submitted by SDAA members - 10  
Total programmed image time - Approximately 212 hours  
Project completions last month - 0

We are working on acquiring two specialized JC filters that can be installed in the camera filter wheel. These filters will allow TARO to participate in monitoring the upcoming nova outburst of T Coronae Borealis. Once these filters are installed, TARO will be able to participate in additional spectroscopic studies.

- l. Cruzen Report:  
Cruzen was reserved and utilized zero times in February. The observatory is in working order with no outstanding maintenance issues.

Training for the next "class" of Cruzen certified members will unfortunately not be possible in March, and due to the eclipse in April, it's going to have to push out to May 4. Let's cross our fingers and toes for good weather.



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The CGX mount and tripod were placed inside Cruzen when I was at TDS in February. We'll keep it there for now until it looks like it makes sense to replace the Losmandy mount.

m. Merchandise Report:

We need to update the Wild Apricot store with the merchandise that is on hand. We also need to add the stickers to the store but still need to figure out the pricing and shipping.

n. Astronomical League Report:

Nothing new at this time.

o. JSF Report:

Will be meeting with our "committee" this month to lay out our assignments. Any members interested in participating in the planning phase for Julian StarFest 2024, please contact either:

[info@julianstarfest.com](mailto:info@julianstarfest.com)

[President@sdaa.org](mailto:President@sdaa.org)

p. Primary Grid Reconstruction Report:

Two quotes have been submitted by interested contractors. These quotes were very broad based without much in the way of project details. An updated Request For Proposal (RFP) was created that further defined the requirements for project deliverables. Unfortunately, one of those bidders has indicated they cannot begin work until 3rd/4th quarter of this year. The RFP has been submitted to another possible contractor. Dave Wood has a site visit planned with one of the contractors on March 14<sup>th</sup>.

## 5. Old Business:

- |    |  |           |
|----|--|-----------|
| a. | Pad #69 – should be resolved   | Pagarigan |
| b. | Pad #52 – it seems that the dome/pier are beyond repair and need to be removed. Hiro and the Private Pad Policy Review Committee will evaluate and report back to the Board. | Wood      |
| c. | JSF Committee/Coordinator needed – Gene will send out an email asking for volunteers.  | Decker    |
| d. | Other Old Business – None  | Decker    |

## 6. New Business:

- |    |   |        |
|----|---|--------|
| a. | The observatory on Pad #70 has been offered to the club – the Private Pad Policy Review Committee will review the offer and make a recommendation to the Board on how to handle the donation. | Decker |
|----|---|--------|



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- b. Pad-Non Usage Notification – see Private Pad Report Smith
- c. Insurance Renewal – See Treasurer’s Report Chasin
- d. The Board of Directors voted to accept a settlement offer from Chase Bank. The agreement included a non-disclosure clause that prevents us from discussing the matter any further. Chasin
- e. Gracie is going to look into ways of welcoming new members to the club. Schutze
- f. The annual Spring clean-up is scheduled for June 1<sup>st</sup>. Chasin/Decker
- g. Other new Business – due to the eclipse, the next Board meeting is being moved one week to April 16<sup>th</sup>.

**7. Adjournment:** The meeting was adjourned at 9:13pm.

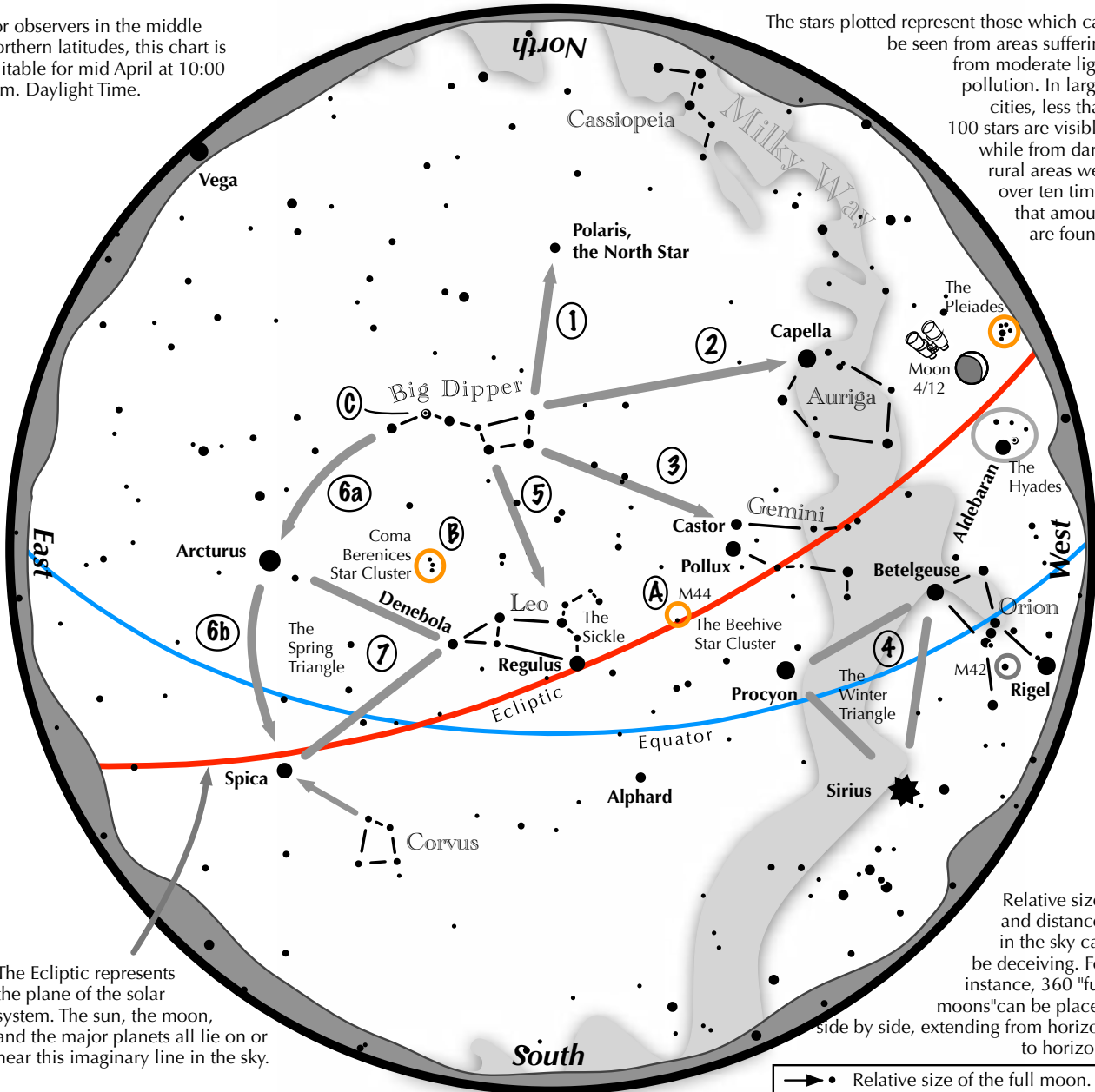


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## Navigating the April Night Sky, Northern Hemisphere

For observers in the middle northern latitudes, this chart is suitable for mid April at 10:00 p.m. Daylight Time.

The stars plotted represent those which can be seen from areas suffering from moderate light pollution. In larger cities, less than 100 stars are visible, while from dark, rural areas well over ten times that amount are found.



The Ecliptic represents the plane of the solar system. The sun, the moon, and the major planets all lie on or near this imaginary line in the sky.

Relative sizes and distances in the sky can be deceiving. For instance, 360 "full moons" can be placed side by side, extending from horizon to horizon.

→ • Relative size of the full moon.

### Navigating the April night sky: Simply start with what you know or with what you can easily find.

- 1 Extend an imaginary line north from the two stars at the tip of the Big Dipper's bowl. It passes Polaris, the North Star.
- 2 Draw another imaginary line west across the top two stars of the Dipper's bowl. It strikes Capella low in the northwest.
- 3 Through the two diagonal stars of the Dipper's bowl, draw a line pointing to the twin stars of Castor and Pollux in Gemini.
- 4 Look in the west-southwest for the bright Winter Triangle stars of Sirius, Procyon, and Betelgeuse.
- 5 Directly below the Dipper's bowl reclines the constellation Leo with its primary star, Regulus.
- 6 Follow the arc of the Dipper's handle. It first intersects Arcturus, then continues to Spica.
- 7 Arcturus, Spica, and Denebola form the Spring Triangle, a large equilateral triangle.

#### Binocular Highlights

- A: M44, a star cluster barely visible to the naked eye, lies to the southeast of Pollux.
- B: Look nearly overhead for the loose star cluster of Coma Berenices.
- C: In the Big Dipper's handle shines Mizar next to a dimmer star, Alcor.





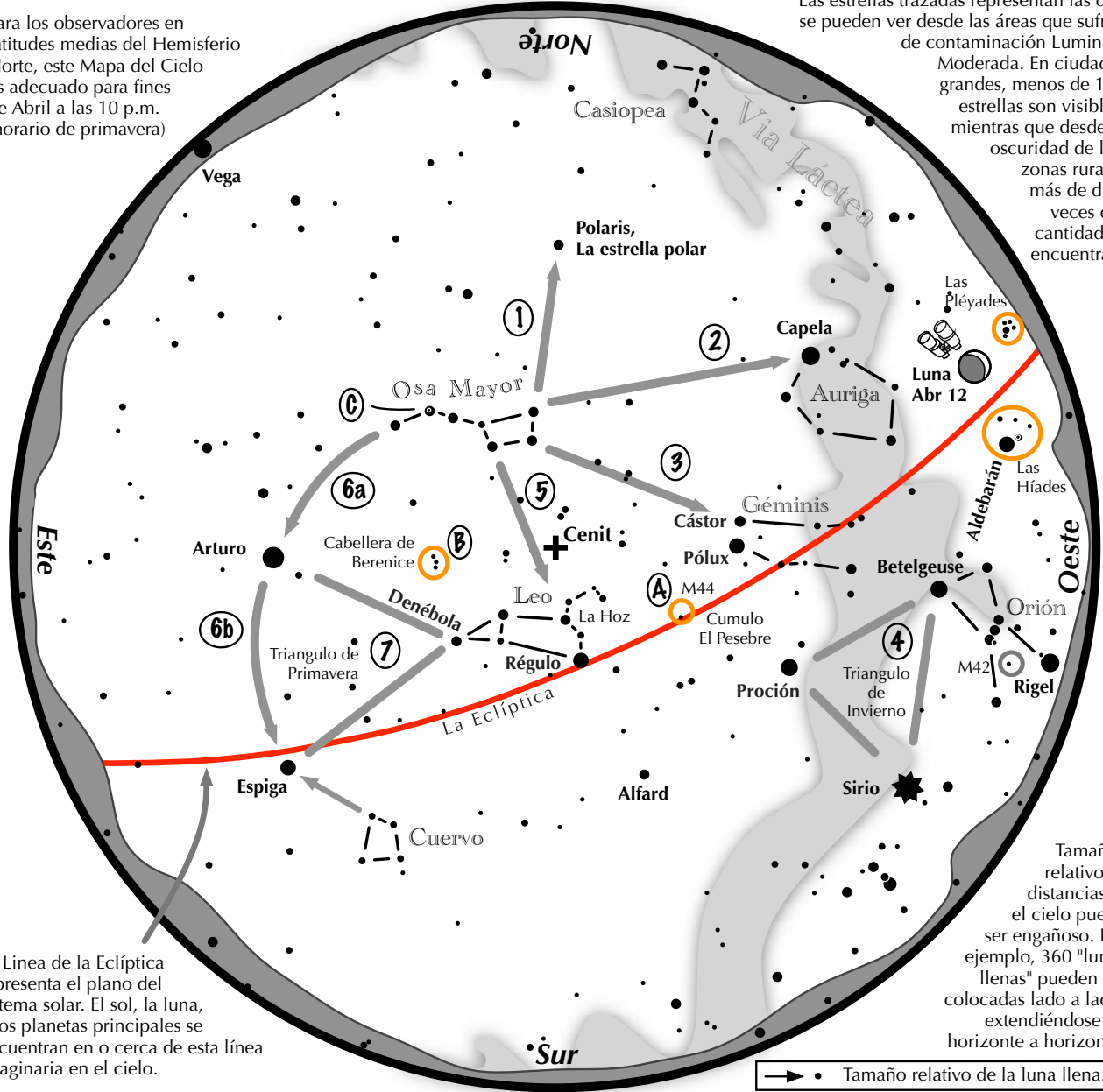


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## Navegando por el cielo nocturno de Abril

Para los observadores en latitudes medias del Hemisferio Norte, este Mapa del Cielo es adecuado para fines de Abril a las 10 p.m. (horario de primavera)

Las estrellas trazadas representan las que se pueden ver desde las áreas que sufren de contaminación Luminica Moderada. En ciudades grandes, menos de 100 estrellas son visibles, mientras que desde la oscuridad de las zonas rurales más de diez veces esa cantidad se encuentran.



La Línea de la Eclíptica representa el plano del sistema solar. El sol, la luna, y los planetas principales se encuentran en o cerca de esta línea imaginaria en el cielo.

Tamaños relativos y distancias en el cielo pueden ser engañosos. Por ejemplo, 360 "lunas llenas" pueden ser colocadas lado a lado, extendiéndose de horizonte a horizonte.

→ • Tamaño relativo de la luna llena.

### Navegando por el cielo nocturno: simplemente comience con lo que sabe o con lo que puede encontrar fácilmente.

- 1 Haz una línea hacia el norte desde las dos estrellas en la punta de la Osa Mayor. Pasa por Polaris, la estrella polar.
- 2 Haz una línea a través de las dos estrellas superiores de la punta del tazón de la Osa Mayor. Llegaras a Capela en el noroeste.
- 3 A través de las dos estrellas diagonales de la Osa Mayor, dibuja una línea que apunta a las estrellas gemelas de Cástor y Pólux en Géminis.
- 4 Busque en el oeste-suroeste las brillantes estrellas del Triángulo de Invierno de Sirio, Proción y Betelgeuse.
- 5 Directamente debajo del tazón de la Osa Mayor se encuentra Leo con su estrella principal, Régulo.
- 6 Siga el arco del mango del tazón de la Osa Mayor. Primero cruza Arturo, luego continúa hacia Espiga, luego Cuervo.
- 7 Arturo, Espiga y Denébola forman el triángulo de primavera, un gran triángulo equilátero.

### Puntos destacados con binoculares

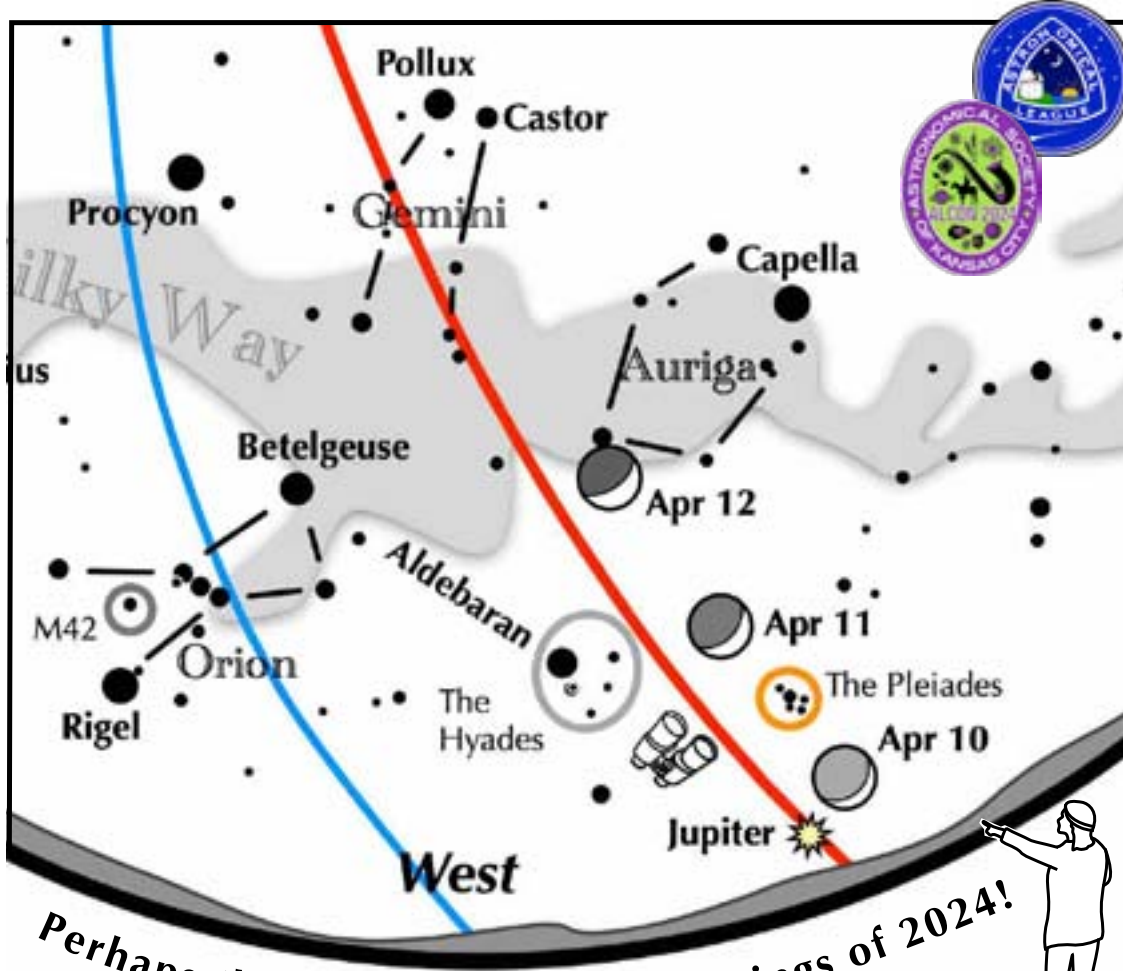
A: M44 (Cumulo El Pesebre), un cúmulo de estrellas apenas perceptible a simple vista, se encuentra al sureste de Pólux. B: Mira alto en el este para ver el cúmulo de estrellas perdidas de Cabellera de Berenice. C: Mizar brilla junto a una estrella más tenue, Alcor.



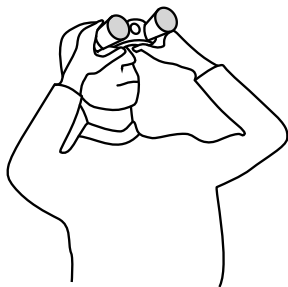


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If you can see only one celestial event this April, see this one.



Perhaps the most enchanting evenings of 2024!



Enhance the scene – use binoculars!

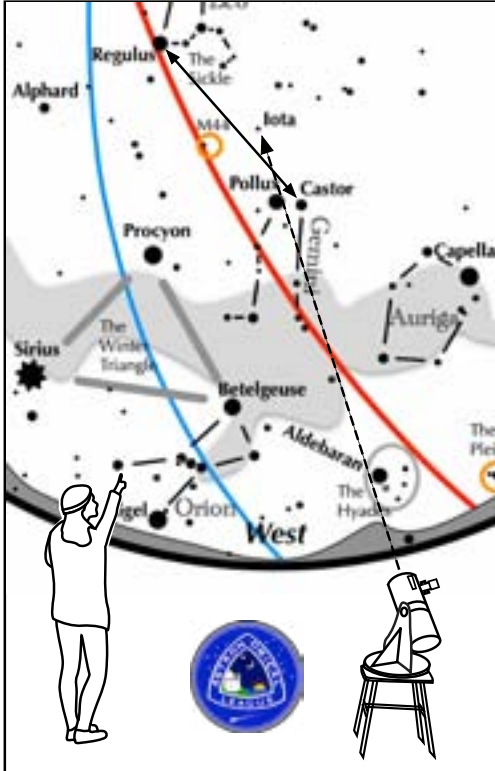
On April 10, 11, and 12, look low in the west-northwest 60 minutes after sunset.

- The crescent moon, glowing full with earthshine, floats just above the horizon in the bright twilight on April 10. Next to it shines Jupiter, and above it lies the pretty Pleiades star cluster.
- On April 11, the slightly thicker, but more pronounced crescent moon moves between the Pleiades and the Hyades star clusters.
- On the third night, the crescent moon stands commandingly above the scene.



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## ASTRONOMICAL LEAGUE Double Star Activity



### Other Suns: Iota Cancri

#### How to find Iota Cancri on an April evening

Face west. Look for the twin stars of Gemini, Castor and Pollux. Find Regulus. Iota lies about mid way between Castor and Regulus. It will be a moderately dim star.

Suggested magnification: >20x  
Suggested aperture: >3 inches

#### Iota Cnc

A-B separation: 31 sec

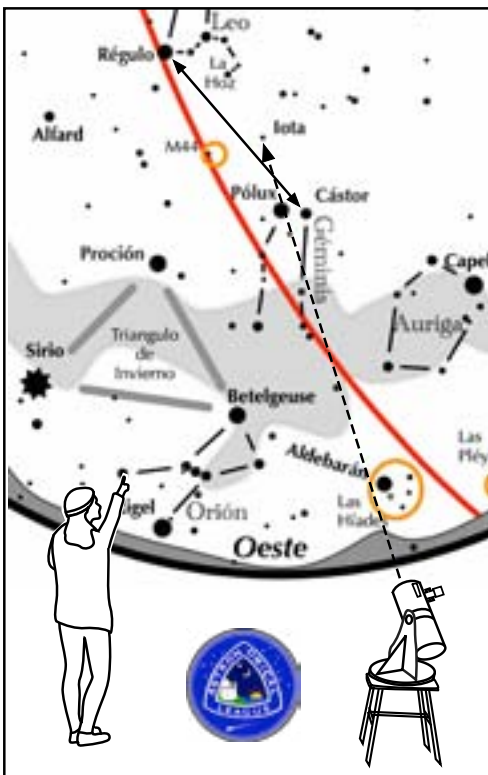
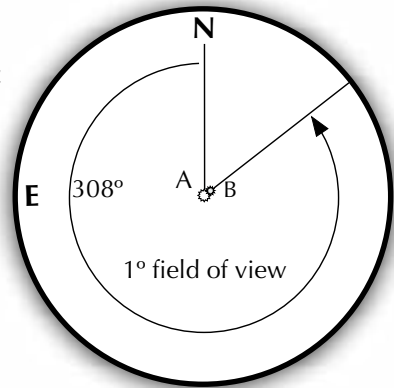
A magnitude: 4.1

B magnitude: 6.0

Position Angle: 308°

Colors:

yellow  
blue



### Otros Soles: Iota Cancri

#### Cómo encontrar a Iota Cancri en una tarde de Abril

Mire hacia el oeste. Busque las estrellas gemelas de Géminis, Castor y Pólux. Encuentra a Regulus. Iota se encuentra a medio camino entre Cástor y Régulo. Será una estrella moderadamente tenue.

Ampliación sugerida: >20x,  
Apertura sugerida: >75 mm

#### Iota Cancri

A-B separación: 31 sec

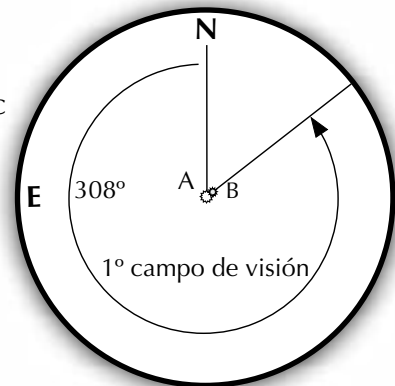
A magnitud: 4.1

B magnitud: 6.0

PA: 308°

Colores:

amarilla  
azul





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The poster features a purple background with a central oval containing various astronomical symbols like galaxies, planets, and a horse. The text 'ALCON 2024 STARS AND ALL THAT JAZZ!' is written in large, bold, yellow-green letters. Below it, the dates 'JULY 17-20, 2024' are displayed. Two circular logos are in the bottom right corner.

To register for ALCon, first click on the link, then choose "buy tickets."  
**<https://www.tickettailor.com/events/astronomicalsocietyofkansascity/1187693#>**

It's ASKC's 100th anniversary! We are honored to be the official host for this year's Astronomical League Convention – ALCon 2024 – this July.

*Held at the beautiful Overland Park DoubleTree Hotel*

**See you at ALCon!**

**Astronomical Society of Kansas City**

<https://www.tickettailor.com/events/astronomicalsocietyofkansascity/1187693>





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April 2024 Another Look  
Leo and Leo Minor

New Moon April 8 @1121, Full Pink moon the 23rd @ 1648.  
In Old English it is the Moon after Yule and also the Snow moon  
Native American names include the Breaking ice Moon, Broken Snowshoe Moon, Budding Moon, When the Ducks come back Moon and when the Geese lay eggs Moon. In different parts of the continent we find the Sucker Moon, Sugar Maker Moon and in the Dakota's, When the Streams are Navigable Moon. The Celts have Hare Moon and Growing Moon.



April 6, lunar occultation of Saturn visible from Antarctica.  
April 8 Total Solar Eclipse visible in the US  
April 9, lunar occultation of Venus visible from Florida



In Spanish its León y León Menor, in German Löwe und Kleiner Löwe.  
In French its Lion et Petit Lion, Italian Leone e Leone Minore and in Greek Its Λιοντάρι και μικρότερο λιοντάρι or Liontári kai mikrótero liontári.

<https://ras.ac.uk/media/932>

*This incredible image is an embroidery created by Professor Shirin Haque, Professor in Astronomy at the Department of Physics at the University of the West Indies on the island of Trinidad and Tobago. The embroidery was done to celebrate the naming of HD 96063 (host star) and HD 96063b (exoplanet) as Dingolay and Ramajay. Her website is found on: [Prof. Shirin Haque | The Department of Physics \(uwi.edu\)](http://Prof.ShirinHaque@TheDepartmentofPhysics(uwi.edu))*

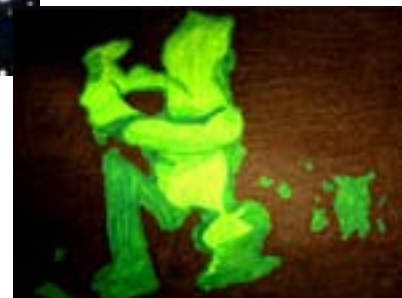
Leo Minor was created by the Polish astronomer Johannes Hevelius in 1687 and included it in his *Catalogus Stellarum Fixarum*. The constellation's name means "the smaller lion" in Latin. Hevelius created the constellation from 18 stars between the larger constellations Leo and Ursa Major.

In 1870, the English astronomer Richard A. Proctor renamed the constellation "Leaena", or the Lioness, in an attempt to shorten constellation names to make them easier to manage on star charts, but sadly, we have no lady lion constellation anymore.

Le Petit Lion contains two formally named stars. Those approved by the International Astronomical Union (IAU) are Illyrian- HD 82886 and Praecipua aka 46 Leonis Minoris. The Illyrians are a Balan people now inhabiting Albania. Illyrian has a planet named Arber, the original name for the Albanians

Leo Minor has at this counting nine exoplanet systems, three of which are HD 87883, HD 82886 (G0D), and Kelt-3 (F2D).

Hanny Van Arkel is a Dutch schoolteacher who in 2007 noticed an unusual object in an image from the Hubble. The image was of IC2497, an 11<sup>th</sup> magnitude spiral in Leo Minor about 4x4 arcmins in size.



Hanny was studying I2497, when she discovered her Voorwerp as part of a project developed by Galaxy Zoo, a citizen/scientist program. Amateurs were assigned objects imaged by Hubble and studied the objects to determine classification and characteristics. [Lars Zetterlund https://www.flickr.com/search/?text=hanny's voorwerp](https://www.flickr.com/search/?text=hanny's%20voorwerp)  
Hanny's Voorwerp is a quasar ionization echo. I have several links below help you search for understanding.

[https://en.wikipedia.org/wiki/Hanny's\\_Voorwerp#/media/File:Hs-2011-01-d-print.jpg](https://en.wikipedia.org/wiki/Hanny's_Voorwerp#/media/File:Hs-2011-01-d-print.jpg)  
[https://en.wikipedia.org/wiki/Hanny's\\_Voorwerp%23/media/File:Hs-2011-01-d-print.jpg](https://en.wikipedia.org/wiki/Hanny's_Voorwerp%23/media/File:Hs-2011-01-d-print.jpg) and  
<https://www.zooniverse.org/projects/zookeeper/galaxy-zoo/about/research> and

Read more about Galaxy Zoo at: <https://www.zooniverse.org/projects/zookeeper/galaxy-zoo/about/research> and  
<https://www.zooniverse.org/>



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Check here for more images of quasar ionization echos or Vorwerpjes:

[https://en.wikipedia.org/wiki/Hanny's\\_Voorwerp#/media/File:Extended\\_Gas\\_In\\_Active\\_Galaxies.jpg](https://en.wikipedia.org/wiki/Hanny's_Voorwerp#/media/File:Extended_Gas_In_Active_Galaxies.jpg)

I used the image by Gary Imm <https://www.astrobin.com/2efji6/?q=voorwerp> because I was looking for something close to what you will see visually. IC 2497's magnitude is in the 11's and the Voorwerp is around 17. But if you look at I2497 telescopically you will see a galaxy with an active nucleus hiding a black hole about 10 million times the size of our sun. When the black hole was going crazy and created the Voorwerp, its size was 10 trillion times the size of our sun and just think, we are get to look at it.



Going from the sublime to the sublime, Arp 107 is a pair of interacting galaxies in the process of merging. They have an apparent magnitude of 14.6. <https://www.flickr.com/search/?text=arp+107>

NGC 3432, sometimes known as the Knitting Needle Galaxy, lies 3 degrees southeast of the star 38 Leonis Minoris. It appears almost edge-on and can be observed in amateur telescopes. Its about 11<sup>th</sup> mag.

NGC 3003 is a barred spiral. It is 5.8 arc minutes in size and is about 12<sup>th</sup> magnitude, as you will see, its almost edge-on. <https://www.astrobin.com/search/?q=ngc+3003>

NGC 3344 is a spiral galaxy seen face-on. It is approximately 25 million light years distant and 7.1x6.5 arc minutes in size. Its about 10<sup>th</sup> mag.

<https://www.astrobin.com/search/?q=ngc+3344>

NGC 3504 is an 11<sup>th</sup> mag. barred spiral. It is a starburst galaxy, a region of massive star formation. Two supernovae were observed in the galaxy in recent years, one in 1998 and another in 2001. The other galaxy is 3512.



[Mantrap Catalog](#)



Arp 206 is NGC 3432/UGC 5983. 3432 is an intriguing object well worth additional study. We call it a starburst galaxy because it is being disturbed by its neighbor, dwarf galaxy UGC 5983, that blot at the bottom right of the two images. U5983 is part of the focus this month...

faint, dwarf galaxies. We are lucky in this one because the two are interacting. Be sure to study 3432 for bright variable outbursts, knots of star formation and, of course, its tail. 3462 is in the 11<sup>th</sup> magnitude, but work hard to pick up U5983. By the way, a rule of thumb is that a 12.5 inch telescope can find every NGC object.

<https://images.mantrapskies.com/search?designation=arp+206>

<https://www.astrobin.com/search/?q=ngc+3432>

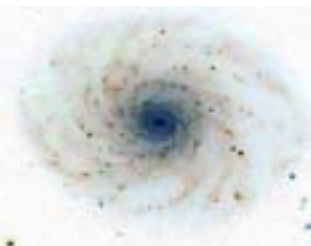
U5983 is 17<sup>th</sup> magnitude. All things being equal and average, your 30" F/5 Dobsonian will just barely reach 17<sup>th</sup> magnitude. I you take an image of these guys, please let me know. Thanks, Dave

NGC 3486 is a nice almost appearing face-on galaxy. It is in the 10<sup>th</sup> magnitude range. I inverted the image to show the extended spiral arms and the bright specs of star formation, areas you can pick up. <https://images.mantrapskies.com/catalog/NGC/NGC3486/index.htm>

<https://images.mantrapskies.com/search?designation=ngc+2859>

NGC 2859 is a little small, with an apparent magnitude in the 11's and about 4'x4'. Is is described as a barred lenticular galaxy but its big deal is its ring.

NGC 3158, 59, 63 is a group in the northern part of LMi. It is found by looking at the apex of an equilateral triangle with Beta LMi and 21 Lmi.





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You will need some glass for this grouping, 3158 is in the 13<sup>th</sup> and the others exist around the 14<sup>th</sup>. 3160 is an odd galaxy, probably do to a collision and possible merging. 3163,59 and 31 seem to be grouped together and close in images will show them surrounded by a ring and a tail on 3159. <https://images.mantrapskies.com/search?designation=ngc+3158>

The proper names of stars in Leo that have been officially approved by the International Astronomical Union (IAU) are:  
Adhafera—Arabic- Lock of hair,  
Algieba-Arabic Al jeb-bah- the forehead ,  
Alterf- Arabic-the Glance.

Let it be noted that many of the Arabic names are for stars in their particular constellation of Leo, which stretched from Virgo through to Gemini.

Chertan – Ribs

Denebola-*Deneb Alased* -tail of the Lion,

Formosa, Formosa is the historical name of Taiwan used in the 17th century, meaning beautiful in Portuguese.

Subra- right knee, and

Zosma-girdle.

Regulus-Prince or Little King,

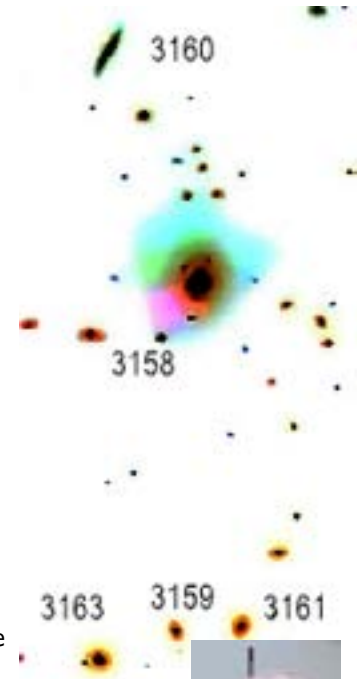
There are over 50 exoplanetary systems in Leo, several named.

Sagarmatha-HD 100777-is the Nepali name of Mt. Everest and the exoplanet revolving it was named as Laligurans, the Nepali name of the flower Rhododendron.

The star HD 99109 is named Shama. The name was selected in the NameExoWorlds campaign by Pakistan, during the 100th anniversary of the IAU. Shama is an Urdu literary term meaning a small lamp or flame. The exoplanet companion is called Perwana, meaning 'moth' in Urdu, alluding to the eternal love of an object circling a source of light.

Dingolay means to dance, twist and turn in elaborate movements, symbolizing the culture and language of the ancestors of the people of Trinidad and Tobago. Ramajay means to sing and make music in a Steelpan. The Steelpan is a musical instrument invented in Trinidad and Tobago. Steelpan musicians are called Pannists, image off of the Internet.

Noquisi is the Cherokee for star, Rasalas is the northern star of the lion's head. Noquisi and Awohali come from the Cherokee language, meaning "star" and "eagle," respectively. These are the first that a star or exoplanet has officially carried a name in the indigenous language of a North American people. <https://www.flickr.com/search/?text=Leo I galaxy> Tom Wildoner



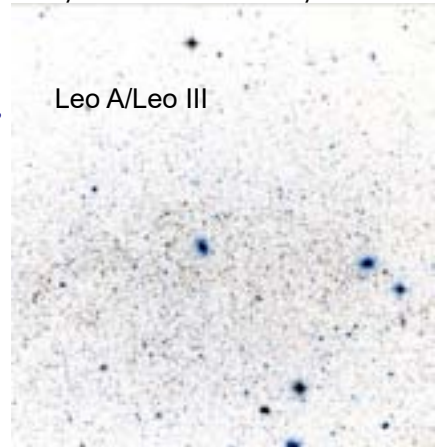
Leo I is 11.2 magnitude and is one of the most distant satellites of the Milky Way galaxy. It was discovered in 1950 on plates from the *Palomar Observatory Sky Survey*, taken with the 48-inch Schmidt camera. I found it rather easily in my 17.5. You will need to put Regulus outside the field of your eyepiece. This technique was used by OCA's own Barbara Toy and her team to observe Sirius B. Leo I could be the youngest dwarf spheroidal satellite galaxy of the Milky Way. Just look at that image, ain't it pretty.



<https://www.flickr.com/search/?text=Leo II galaxy>

Leo II will be harder. It is smaller and dimmer but still find-able. Last I read, Leo I and apparently most dwarf galaxies have very high stellar masses but

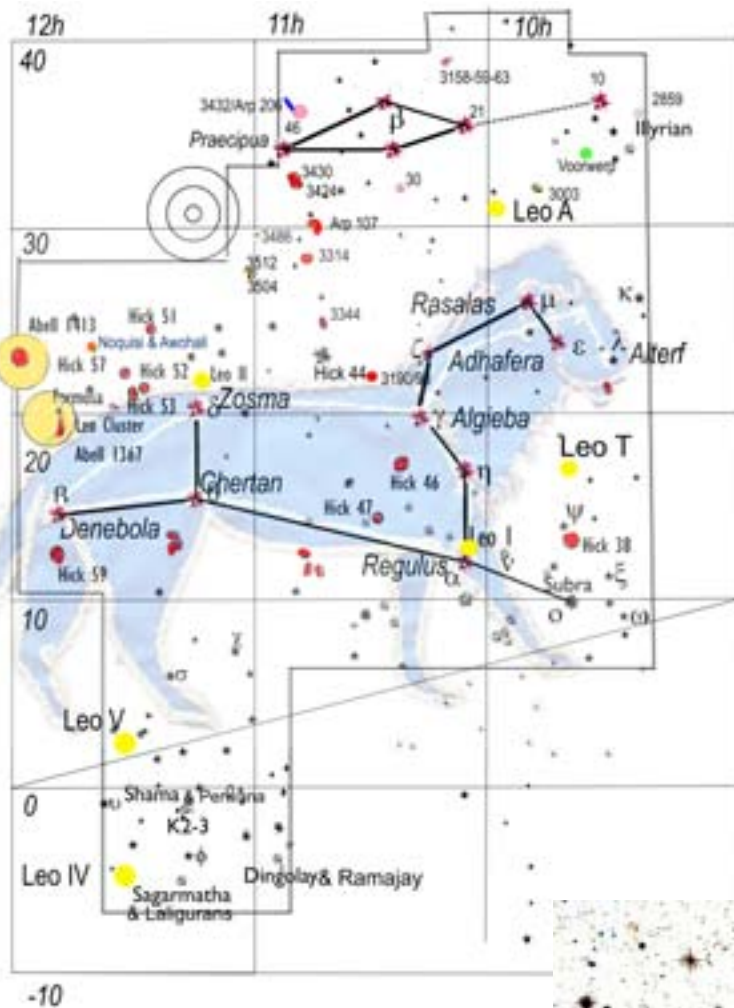
Leo A/Leo III







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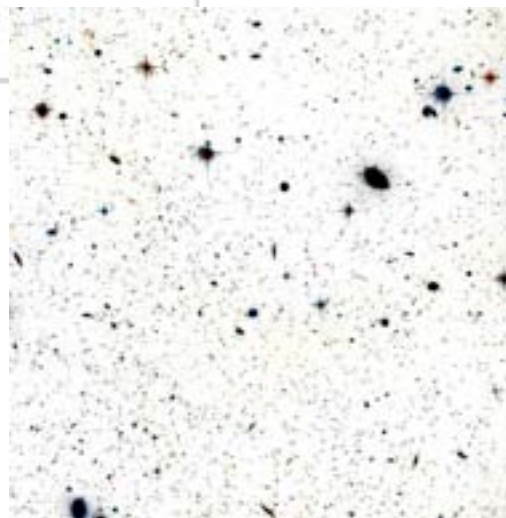
relatively low stellar counts. Professionals are positing they are the best source to study Brown dwarfs and the enigmatic Dark Matter. **The circles on the chart represent 1", 2.5" and 5".**

The other dwarf galaxies in Leo are challenging to unobtainable to most of our amateur telescopes. When you get an opportunity to use some big glass under a dark sky, try them out.

Leo III, also known as Leo A, is mag 12 but I never searched for it. It is also metal poor and irregular. Leo III is a see through galaxy.

I couldn't find any amateur images of Leo III, Leo VI, Leo V and Leo T. You will find an image of Leo III taken by Subaru. Leo IV and V are down near the southern tip of Leo under his rear paws. Leo IV is a dwarf discovered in 2006 by the Sloan Digital Sky Survey. It has an approximately round shape.

<https://apod.nasa.gov/apod/ap041110.html>. Also look at this image by Judy Schmidt on flickr. [https://www.flickr.com/search/?text=Leo III galaxy](https://www.flickr.com/search/?text=Leo+III+galaxy) a Hubble image amateur processed by Judy Schmidt



Leo IV



<http://resonaances.blogspot.com/2016/>

Leo IV and Leo V are two of the smallest and faintest satellites of the Milky Way. When dark matter is discussed in reference to these two galaxies, its because each galaxy shines with only about 10 or 15 thousand times the luminosity of our sun but have masses of of 1.5 million in the case of Leo IV and 330,000 in the case of Leo V. I have a Hubble image of IV but V is apparently made of unobservableium. Best I could do is get you is a finder image from Simbad.

I went to the Sloan Digital Sky Survey to see this guy but all I got is the same basic finder chart I got from Simbad. Overall magnitude is less than 16. I went into the Sloan image as far as I could, but still could not pull anything identifiable from the background.

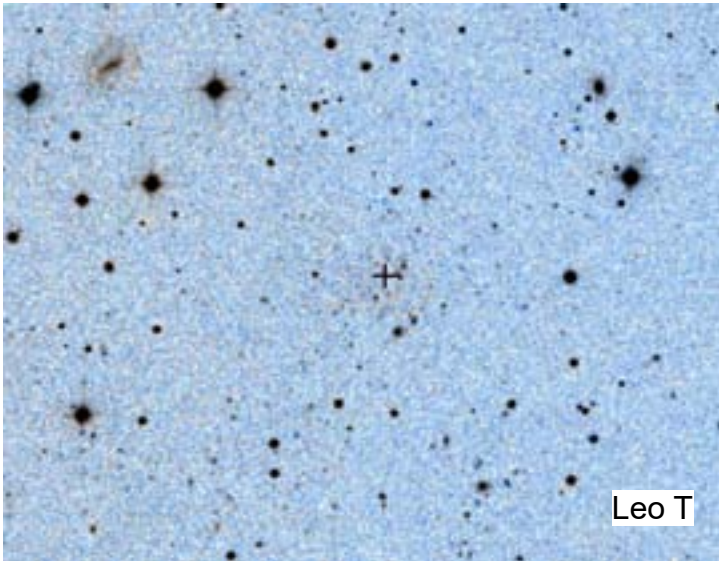




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These two guys are only a few degrees from each other, so theoretically they could be partners. A least one survey suggests a bridge between the two. Both images have been manipulated.

Much like VI and V, faint, sparse and metal poor, Leo T is found under Leo's nose. It was discovered by Sloan. This is not much more than a finders chart. Its probably less than 16<sup>th</sup>. Once again, T has a mass to light ratio of about 140, making it another prime candidate <http://simbad.u-strasbg.fr/simbad/sim-basic?Ident=NAME+Leo+V> for dark matter.



Leo T



<https://simbad.u-strasbg.fr/simbad/sim-id?Ident=Leo+T&NbIdent=1&Radius=2&Radius.unit=arcmin&submit=submit+id>

This reverse image of Leo T is from Simbad. I was pleasantly surprised to find enough information in the image to bring it out. The galaxy, which isn't apparent on the original image is Leda 87165. Leda is the Lyon-Meudon Extragalactic Database, the data

from Leda was used to create the PGC catalog. More info at Wikipedia - [https://en.wikipedia.org/wiki/Lyon-Meudon\\_Extragalactic\\_Database](https://en.wikipedia.org/wiki/Lyon-Meudon_Extragalactic_Database)  
Dark Skys Dave



# San Diego Astronomy Association

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Have a great new piece of gear? Read an astronomy-related book that you think others should know about? How about a photograph of an SDAA Member in action? Or are you simply tired of seeing these Boxes in the Newsletter rather than something, well, interesting?

Join the campaign to rid the Newsletter of little boxes by sharing them with the membership. In return for your efforts, you will get your very own byline or photograph credit in addition to the undying gratitude of the Newsletter Editor. Just send your article or picture to [Newsletter@SDAA.Org](mailto:Newsletter@SDAA.Org).



**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!

## Participate in Eclipse Science

By Kat Troche

April is NASA's Citizen Science Month, and there is no shortage of projects available. Here are some [citizen science projects](#) that you can participate in on April 8th, on and off the path of totality right from your smartphone!



Eclipse Soundscapes, ARISA Lab / NASA

### Eclipse Soundscapes

**Eclipse Soundscapes** will compare data from a 1932 study on how eclipses affect wildlife – in this case, crickets. There are a number of ways you can participate, both on and off the path. NOTE: you must be 13 and older to submit data. Participants 18+ can apply to receive the free Data Collector kit. Learn more at: [eclipsesoundscapes.org/](https://eclipsesoundscapes.org/)

### GLOBE Eclipse

Folks that participated in the **GLOBE Eclipse** 2017 will be glad to see that their eclipse data portal is now open! With the GLOBE Observer smartphone app, you can measure air temperature and



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NASA Night Sky Notes

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clouds during the eclipse, contributing data to the GLOBE program from anywhere you are. Learn more at: [observer.globe.gov/](https://observer.globe.gov/)



HamSCI, The University of Scranton / NASA

## HamSCI

HamSCI stands for **Ham Radio Science Citizen Investigation**. HamSCI has been actively engaged in scientific data collection for both the October 14, 2023, annular solar eclipse and the upcoming April 8, 2024, total eclipse. Two major activities that HamSCI will be involved in around the solar events will be the **Solar Eclipse QSO Party (SEQP)** and the **Gladstone Signal Spotting Challenge (GSSC)** which are part of the HamSCI Festivals of Eclipse Ionospheric Science. Learn more about these experiments and others at: [hamsci.org/eclipse](https://hamsci.org/eclipse)



SunSketcher, Western Kentucky University / NASA



# San Diego Astronomy Association

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NASA Night Sky Notes

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## SunSketcher

If you're traveling to totality, help the **SunSketcher** team measure the oblateness, or shape, of the Sun during the eclipse by timing the flashes of Baily's Beads. You will need a smartphone with a working camera for this, along with something to hold the phone in place - don't forget a spare battery! NOTE: The app will need to run from five minutes *before* the eclipse starts until the end of the eclipse. Any additional phone use will result in Sun Sketcher data loss. Learn more at: [sunskecher.org/](https://sunskecher.org/)

Don't stop at the eclipse - NASA has citizen science projects you can do all year long – from [cloud spotting on Mars](#) to [hunting for distant planets](#)! By contributing to these research efforts, you can help NASA make new discoveries and scientific breakthroughs, resulting in a better understanding of the world around us, from the critters on the ground, to the stars in our sky.

We'll be highlighting other citizen science projects with our mid-month article on the [Night Sky Network](#) page, but we want to wish all you eclipse chasers out there a very happy, and safe solar eclipse! For last minute activities, check out Night Sky Network's [Solar Eclipse Resources section](#)!



# San Diego Astronomy Association

## 2024 TDS Star Party Schedule

Date	Type	Sunset	Astro. Twi.	Moonrise(set)	Closing	Illumination
Jan-06-24	Public	4:57 PM	6:24 PM	3:07 AM	9:30 PM	26.5%
Jan-13-24	Member	5:03 PM	6:30 PM	(7:50 PM)	9:30 PM	8.5%
Feb-03-24	Public	5:22 PM	6:47 PM	1:55 AM	9:30 PM	44.0%
Feb-10-24	Member	5:29 PM	6:52 PM	(6:39 PM)	9:30 PM	1.4%
Mar-02-24	Public	5:47 PM	7:09 PM	12:46 AM	10:00 PM	61.4%
Mar-09-24	Member	5:52 PM	7:14 PM	5:52 AM	10:00 PM	0.6%
Apr-06-24	Member	7:12 PM	8:37 PM	5:20 AM	11:00 PM	6.0%
Apr-27-24	Public	7:27 PM	8:57 PM	11:36 PM	11:00 PM	88.3%
May-04-24	Member	7:33 PM	9:04 PM	4:20 AM	11:30 PM	16.0%
May-11-24	Public	7:38 PM	9:12 PM	(11:53 PM)	11:30 PM	17.7%
Jun-01-24	Public	7:51 PM	9:31 PM	2:50 AM	11:30 PM	28.5%
Jun-08-24	Member	7:55 PM	9:36 PM	(10:31 PM)	11:30 PM	6.8%
Jul-06-24	Member	7:59 PM	9:40 PM	(9:07 PM)	11:30 PM	1.1%
Jul-27-24	Public	7:50 PM	9:24 PM	11:58 PM	11:30 PM	56.6%
Aug-03-24	Member	7:44 PM	9:17 PM	(7:44 PM)	11:30 PM	0.6%
Aug-31-24	Public	7:13 PM	8:38 PM	4:59 AM	11:00 PM	5.2%
Sep-07-24	Public	7:04 PM	8:28 PM	(9:20 PM)	11:00 PM	20.0%
Sep-28-24	Member	6:36 PM	7:58 PM	3:52 AM	10:30 PM	14.5%
Oct-05-24	Member	6:27 PM	7:48 PM	(7:54 PM)	10:30 PM	8.6%
Oct-26-24	Public	6:02 PM	7:25 PM	2:42 AM	10:30 PM	28.1%
Nov-02-24	Public	5:56 PM	7:19 PM	(6:30 PM)	10:00 PM	1.7%
Nov-30-24	Member	4:42 PM	6:09 PM	7:11 AM	9:30 PM	0.4%
Dec-21-24	Public	4:47 PM	6:15 PM	11:15 PM	9:30 PM	63.2%
Dec-28-24	Member	4:51 PM	6:19 PM	6:00 AM	9:30 PM	5.2%

SDAA is now registered with the employer fund-matching platform Benevity. If your workplace offers matching charitable donations for non-profits and uses Benevity to distribute funds, you can now designate the San Diego Astronomy Association. Thank you for supporting the SDAA!

### MEMBERSHIP INFORMATION

Send dues and renewals to P.O. Box 23215, San Diego, CA 92193-3215 or renew on-line. The notice that your membership in SDAA will expire is sent by email. Dues are \$60 for Contributing Memberships; \$40 for Basic Membership; \$70 for Private Pads; \$5 for each Family membership.