San Diego Astronomy Association

Celebrating Over 50 Years of Astronomical Outreach

March 2021

https://www.sdaa.org/
A Non-Profit Educational Association
P.O. Box 23215, San Diego, CA 92193-3215

Next SDAA Business Meeting
March 9th at 7:00pm
10070 Willow Creek Rd
San Diego, CA 92131
Via Zoom

Next Program Meeting
March 17th at 7:00pm
Live Stream

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March 2021, Vol LIX, Issue 3
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Newsletter Deadline
The deadline to submit articles for publication is the **15th** of each month.

SDAA Update

SDAA is now actively using online facilities like Zoom and YouTube to provide access to club meetings, events, and outreach programs in keeping with state and local mandates regarding physical distancing requirements during the COVID-19 pandemic. In-person events will start again in 2021 as soon as allowed by said mandates. Look for updates on the Lipp telescope.

Since TDS is private space there is no reason to lock down the facility but there are actions you can take to help keep the site safe for all of us. If you plan to visit and use the facility, please bring along some disinfectant wipes or disinfectant spray cleaner. When you finish using the restrooms or the warming room, please wipe down the areas that you touched in order to help prevent the spread of any viruses. As much as we love sharing the views of the night sky, try to maintain the recommended 6-foot physical distance guideline.

March 17th Program Meeting

Speaker: Dr. Daniel Apai – Steward Observatory
Topic: Exoplanets / Astrobiology

Dr. Daniel Apai is a recent recipient of NASA's ICAR Astrobiology grant. This is an inaugural effort focusing on the challenging questions in astrobiology.

Daniel's research focuses on exoplanets, with a particular emphasis on habitable planets and planetary systems. He leads large programs to understand the formation of habitable planetary systems EOS, search for giant and earth-like exoplanets Scorpion Survey, Project EDEN, and to characterize and map exoplanet and brown dwarf atmospheres Cloud Atlas and ACCESS.

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
February 9, 2021 – Unapproved and subject to revision

1. Call to Order

The meeting was held via Zoom and was called to order at 7:13pm with the following board members in attendance: Dave Wood, President; Melany Biendara, Treasurer; Gene Burch, Recording Secretary; Alicia Linder, Corresponding Secretary; Dave Decker, Director; Hiro Hakozaki, Director; Mike Chasin, Director; Pat Boyce, Director.

2. Priority / Member Business

None

3. Approval of Last Meeting Minutes

The January meeting minutes approved.

4. Treasurers & Membership Report

The treasurer's report was approved. Mel said it's been a relatively uneventful month leading up to the banquet. Several long time members haven't renewed this year and we're going to reach out to them.

5. Standard Reports

a. Site Maintenance Report:

Water tank has been refilled
Women's leaking toilet repaired
Pad #14 has been returned to the club
Septic service will be at TDS on the 12th

b. Observatory/Loaner Scope Report:

Observatory:

The condition of the Lipp telescope remains excellent. No star parties are planned for February or March. Trained hosts continue to utilize it for private observing. This operation provides a minimum exercising of the gears, clutches, etc. It will be good when the scope can get traditional usage.

Loaner Scopes:

We continue to have had a lot of activity in the loaner program. Members have been pretty good at returning on time. We now have a waiting list. I have added a Meade 2080 – 8" SCT, to the program. It's in excellent condition and will be reserved for experienced users.

c. Private Pad Report:

We have 4 free pads (3 if you don't count 36) and 14 people on the waiting list (4 were added in the last week). Two of the people on the waiting list are current pad holders looking to upgrade and one is willing to share a pad so I'm going to look for an underutilized pad to try to partner him with.

One of the free pads is 14, which was just returned to us this week. I haven't offered it yet. That pad has several unapproved modifications. I asked the person who is giving up the pad (and his membership) if he was going to reclaim anything on the pad and have not received a response. The next BOD member (or me) who is out at TDS needs to check on Pad 14 and see if we need to clean it up before leasing it

Pad 5 is due to be returned to the club this month and I believe that it will be leased fairly quickly. I also believe that Pad 14 will be leased fairly quickly once we decide it is safe.

Pad 8 is in the early stages of planning a structure on the pad. No action for the BOD yet as they are still deciding exactly what they want and what they want to use it for.

The board decided to remove Pad 36 since it really isn't leasable. Hiro is going to update the TDS map to reflect that change.

d. Program Meetings Report:

20 Jan 2021 Speaker / Topic:
- Speaker: Maria Galloway-Sprietsma - Steward Observatory
- Presentation: Pulsar Timing
- Attendees: 45

Current Program Meeting Petty Cash as of 6 Aug 2020 = $524
Expenses Since 6 Aug 2020 Report - None

The speaker for February 17th will be Jimmy Lilly from the Steward Observatory. The topic will be Identifying "Prestellar Cores in Molecular Clouds."

e. AISIG Report:
No Report – next Zoom Meeting will be Gary Hawkins will talk about Electronically Assisted Astronomy (EEA) February 24th

f. Newsletter Report:
Current issue looks good – nothing new to report.

g. Website Report:
The website has been set up with links to direct people to the banquet signup, sweepstakes and auction. The website is still new, so please report any problems.

h. Social Media:
People are visiting our YouTube channel and we currently have 377 subscribers.

i. Outreach Report:
On Jan 4, Gary hosted an SDAA YouTube livestream concerning the use of the SharpCap Sequencer Editor tools for live outreach events. Various sequencer scripts have been developed to support different event objectives. The video is posted on the SDAA site.

Good News! There has been a change in the state's policies regarding COVID, and a subsequent review by the County has allowed us to return to OakOasis to host virtual outreach events. On Saturday, Feb 13, we are approved to set up at OakOasis to host a YouTube livestream tribute to Sir Patrick Moore and to image a few of his Caldwell list of objects. The event will be posted on our calendars and to our usual social media accounts.

j. TARO Report:
TARO is operational and is accepting DSO target imaging requests. A new EXO run has been completed and submitted to the AAVSO for verification. We have one project underway at the request of a club member.

k. Cruzen Report:
Gene/Ed are still working on an observatory operations manual. Need to purchase a Telrad sight for the TAK.

l. Merchandise Report:
Added some images from Carl Weber to coincide with the Banquet and have sold 2 so far. Uploaded some TARO images processed by Dave W but won't make them available until after the Banquet.

m. Astronomical League Report:
Nothing new to report for January. We currently have 45 SDAA members who have joined Astro League through the club. There are probably many more who have joined through other clubs or are "members at large".

n. JSF Report:
No report, but currently scheduled for August 2021. There was discussion about the possibility of a virtual event or a "hybrid" event with some onsite and some virtually.

6. Old Business:

a. Observatory/Warming room still needs drywall repair, which is pending.
b. Development of the Downing Observatory donation is moving forward. An observatory development committee will be working to understand the systems, make any recommend changes and develop the asset for the club.
c. The Banquet/Auction/Sweepstakes is moving along and has already exceeded our income projections.
d. Mike Chasin is still working on the Software Assets project but has spent most of his time recently working on the banquet.
e. We still need to find a way to repair the Northwest chain link fence where the ground has eroded, exposing several inches of the cement bases for several posts.
f. Other old business - None

7. New Business:

a. Discussed the responsibilities of the Pad Chairman and will work with Mark Smith on those. Also need to update the pad lease agreement.
b. Going to check with Kin Searcy about the status of the Science Fair.

8. Adjournment: The meeting was adjourned at 8:46pm.

Fence Repair Need at TDS

Do we have any members working or having friends/relatives in the fence business? There is erosion around several of the chain-link fence posts at our dark-sky site near Boulevard. Anyone in the business who can advise us of options? We are asking the membership before reaching out to companies in the area. Please contact treasurer@sdaa.org if you can help.

Magazine Subscription Benefit Ending

It is with regret that we have decided to end our relationship with both Sky & Telescope and Astronomy magazines. As too many of you know, we've had a long series of delayed or lost subscriptions, resulting in you and the SDAA treasurer spending a tremendous amount of time trying to resolve the problems. The process is entirely manual for the publishers and they have no plans to make improvements. The club has never profited from the subscriptions and they were offered solely for the benefit of our members.

On a positive note, Astronomy magazine is offering astronomy club discount rates at this link – you will get the same savings there as you have had before:
https://ssl.drgnetwork.com/ecom/KMB/app/live/subscriptions?org=KMB&publ=AY&key_code=2PA99CL&type=S

Sky & Telescope offers a discounted rate from the published price here:
https://sky.pcdfusion.com/pcd/Order?iKey=4**NEW

When your club membership is renewed, you will be responsible for renewing any subscriptions you have. We're very sorry for the inconvenience - please know we did everything we could to resolve these issues before making this decision.

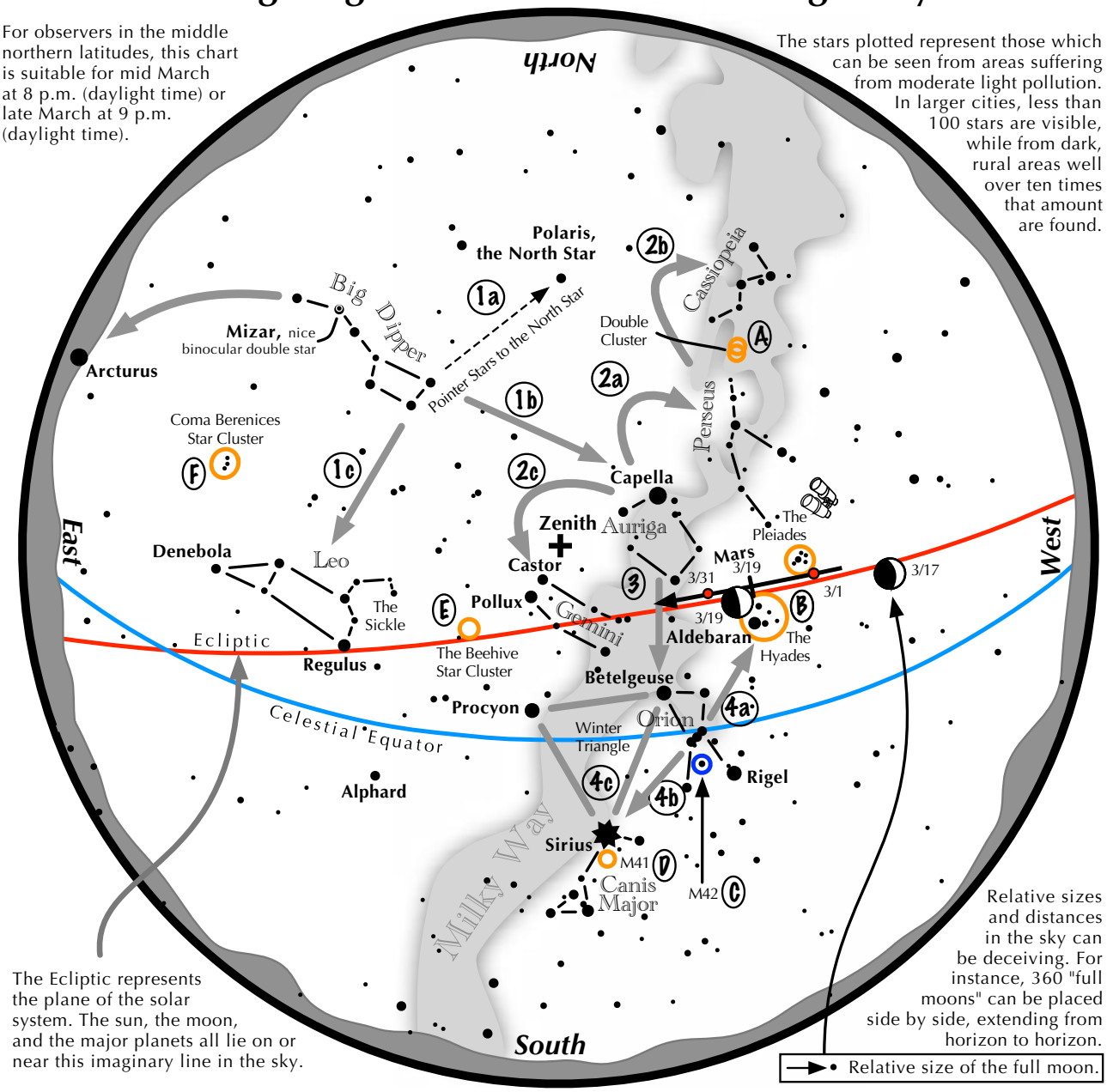
Wishing you clear skies,
Your SDAA Board of Directors

San Diego Astronomy Association

Navigating the mid to late March Night Sky

For observers in the middle northern latitudes, this chart is suitable for mid March at 8 p.m. (daylight time) or late March at 9 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 March night sky: Simply start with what you know or with what you can easily find.

1. Above the northeast horizon rises the Big Dipper. Draw a line from its two end bowl stars upwards to the North Star. Its top bowl stars point west to Capella in Auriga, nearly overhead. Leo reclines below the Dipper's bowl.
2. From Capella jump northwestward along the Milky Way to Perseus, then to the "W" of Cassiopeia. Next jump southeastward from Capella to the twin stars of Castor and Pollux in Gemini.
3. Directly south of Capella stands the constellation of Orion with its three Belt Stars, its bright red star Betelgeuse, and its bright blue-white star Rigel.
4. Use Orion's three Belt stars to point northwest to the red star Aldebaran and the Hyades star cluster, then to the Pleiades star cluster. Travel southeast from the Belt stars to the brightest star in the night sky, Sirius. It is a member of the Winter Triangle.

Binocular Highlights

A: Between the "W" of Cassiopeia and Perseus lies the Double Cluster. **B:** Examine the stars of the Pleiades and Hyades, two naked eye star clusters. **C:** M42 in Orion is a star forming nebula. **D:** Look south of Sirius for the star cluster M41. **E:** M44, a star cluster barely visible to the naked eye, lies to the southeast of Pollux. **F:** Look high in the east for the loose star cluster of Coma Berenices.

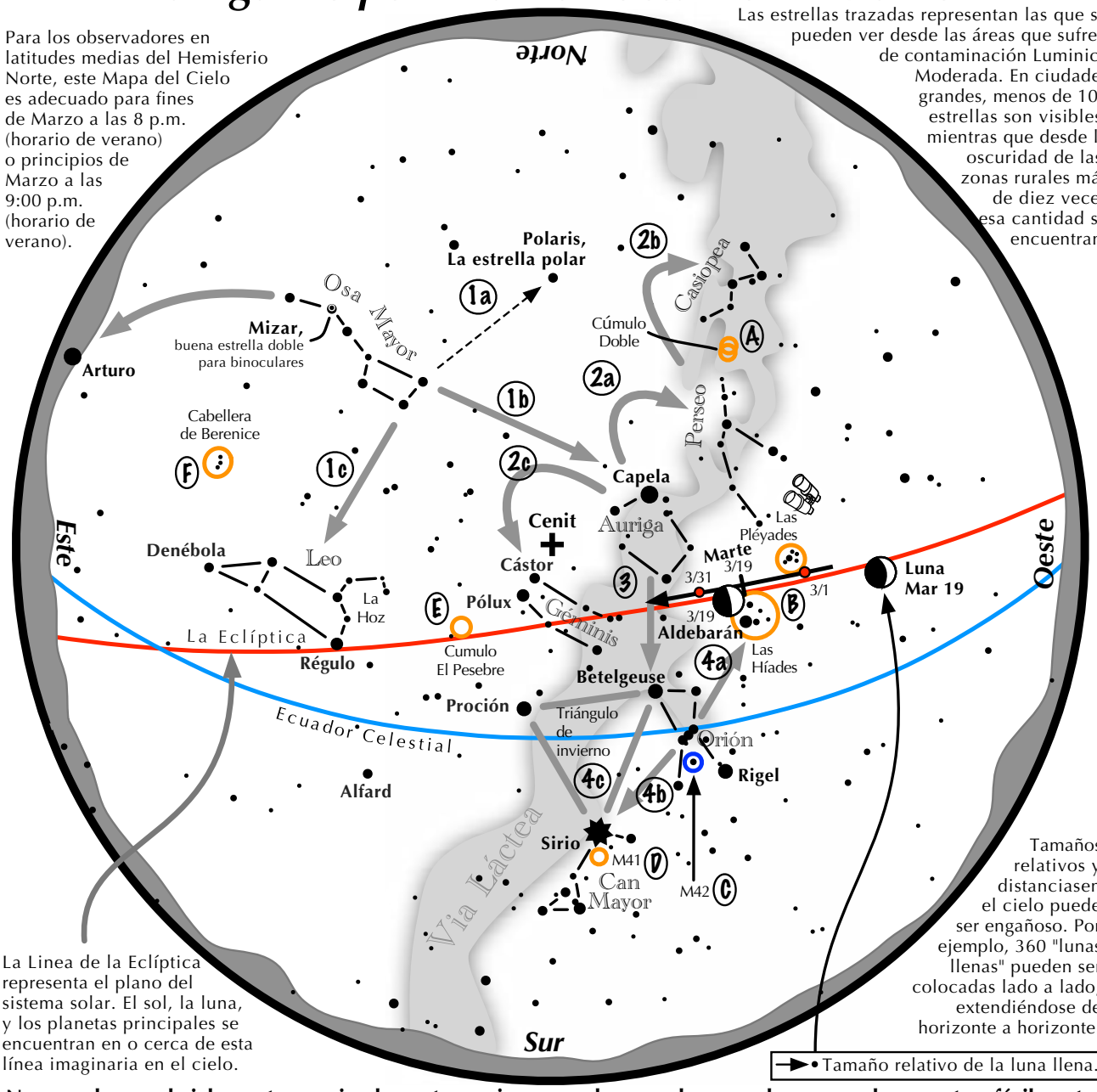
Astronomical League *www.astroleague.org/outreach; duplication is allowed and encouraged for all free distribution.*

San Diego Astronomy Association

Navegando por el cielo nocturno de Marzo

Para los observadores en latitudes medias del Hemisferio Norte, este Mapa del Cielo es adecuado para fines de Marzo a las 8 p.m. (horario de verano) o principios de Marzo a las 9:00 p.m. (horario de verano).

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 Linea 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 distanciasen el cielo puede ser engañoso. 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. Sobre el horizonte noreste se alza la Osa Mayor. Dibuja una línea desde sus dos estrellas finales hasta la estrella polar. Las estrellas superiores del tazón apuntan al oeste a Capela, casi por encima. Leo yace debajo del tazón de la Osa Mayor.
2. Desde Capela, salte hacia el noroeste a lo largo de la Vía Láctea hacia Perseo, luego hacia la "W" de Casiopea. Siguiente salto hacia el sureste desde Capela a las estrellas gemelas de Cástor y Pólux en Géminis.
3. Directamente al sur de Capela se encuentra la constelación de Orión con sus tres estellas del Cinturón de Orión, su brillante estrella roja Betelgeuse y su brillante estrella azul-blanca Rigel.
4. Usa las tres estrellas del Cinturón de Orión para apuntar al noroeste hacia la estrella roja Aldebarán y el cúmulo estelar Hiades, y luego hacia el cúmulo estelar de las Pléyades. Viaja hacia el sudeste desde las estrellas del cinturón hasta la estrella más brillante en el cielo nocturno, Sirio. Es un miembro del Triángulo de invierno.

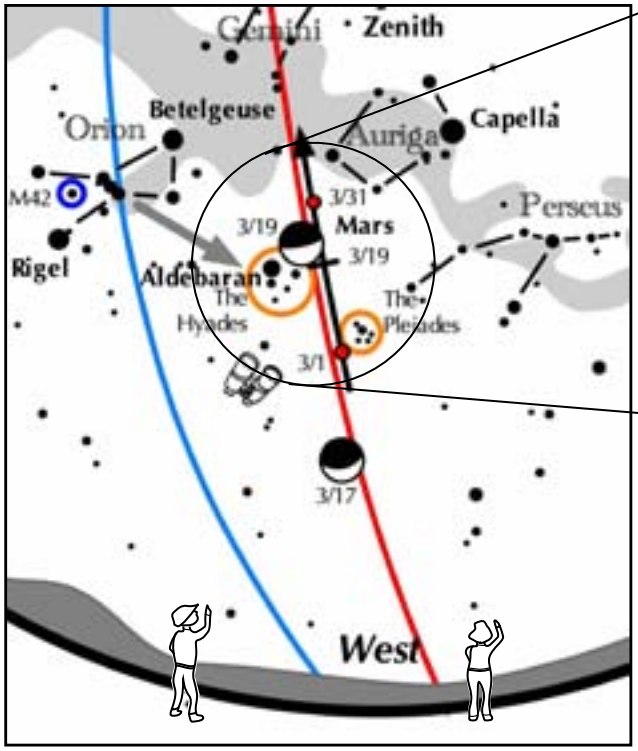
Puntos destacados con binoculares

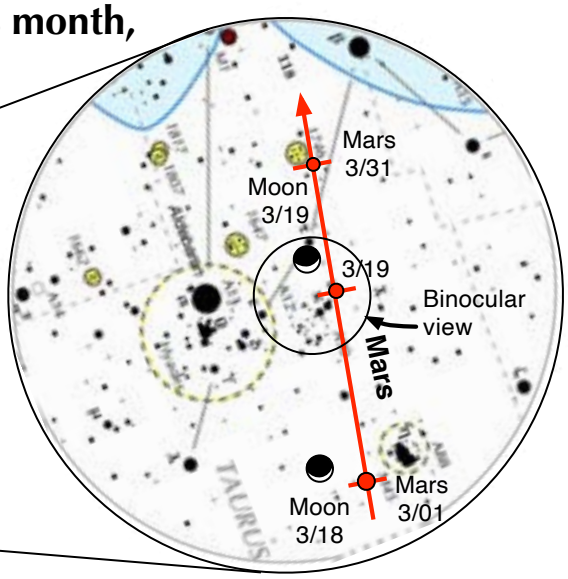
A: Entre la "W" de Casiopea y Perseo se encuentra el Doble Cúmulo. **B:** Examina las estrellas de las Pléyades y las Híades. **C:** M42 en Orión es una nebulosa formadora de estrellas. **D:** Mire al sur de Sirio para el cúmulo estelar M41. **E:** M44, un cúmulo de estrellas apenas perceptible a simple vista, se encuentra al sureste de Pólux. **F:** Mira alto en el este para ver el cúmulo de estrellas perdidas de Cabellera de Berenice.

Liga Astronómica

Liga Astronómica *www.astroleague.org/outreach;* Duplicación permitida y fomentada para toda distribución gratuita Traducción al español por Dr. Salvador Aguirre

If you can observe only one celestial event this month, view this one:





West-northwest
90 minutes after sunset on
March 1 – 20

The Scene: Crescent Moon and Mars slide between the Hyades and Pleiades

In the early evening just as darkness settles from March 1 through March 20, look low in the west-northwest for a fascinating celestial interplay.

- Mars, far dimmer than it was last October, still shines noticeably in the west. For much of March, it slides between the Pleiades and Hyades star clusters.
- On March 8, Mars lies between the two clusters.
- On March 18, the crescent Moon full with earthshine hangs magically next to the Pleiades.
- On March 19, the crescent Moon joins the Red Planet by moving near the bright star Aldebaran.

San Diego Astronomy Association

SDAA Contacts

Club Officers and Directors

President	Dave Wood	President@sdaa.org	(858) 735-8808
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newsletter@sdaa.org
Assistant Editor: Craig Ewing

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.

This article is distributed by NASA Night Sky Network

The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.gov to find local clubs, events, and more!

Taking the Dog Stars for a Springtime Walk: Sirius and Procyon

David Prosper

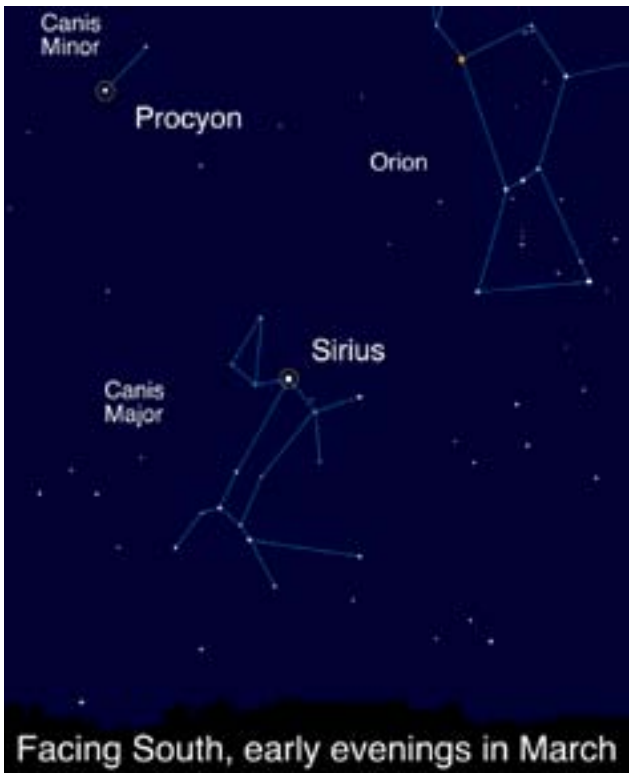
March skies feature many dazzling stars and constellations, glimmering high in the night, but two of the brightest stars are the focus of our attention this month: Sirius and Procyon, the dog stars!

Sirius is the brightest star in the nighttime sky, in large part because it is one of the closest stars to our solar system at 8.6 light years away. Compared to our Sun, Sirius possesses twice the mass and is much younger. Sirius is estimated to be several hundred *million* years old, just a fraction of the Sun's 4.6 *billion* years. Near Sirius - around the width of a hand with fingers splayed out, held away at arm's length - you'll find Procyon, the 8th brightest star in the night sky. Procyon is another one of our Sun's closest neighbors, though a little farther away than Sirius, 11.5 light years away. While less massive than Sirius, it is much older and unusually luminous for a star of its type, leading astronomers to suspect that it may "soon" – at some point millions of years from now – swell into a giant star as it nears the end of its stellar life.

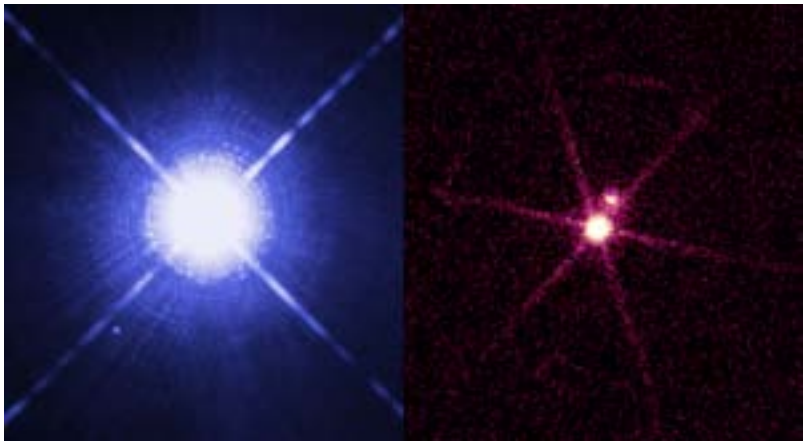
Sirius and Procyon are nicknamed the "Dog Stars," an apt name as they are the brightest stars in their respective constellations – Canis Major and Canis Minor – whose names translate to "Big Dog" and "Little Dog." Not everyone sees them as canine companions. As two of the brightest stars in the sky, they feature prominently in the sky stories of cultures around the world. Sirius also captures the imaginations of people today: when rising or setting near the horizon, its brilliance mixes with our atmosphere's turbulence, causing the star's light to shimmer with wildly flickering color. This vivid, eerie sight was an indication to ancient peoples of changes in the seasons, and even triggers UFO reports in the modern era!

Both of these bright stars have unseen companions: tiny, dense white dwarf stars, the remnants of supermassive companion stars. Interestingly, both of these dim companions were inferred from careful studies of their parent stars' movements in the 1800s, before they were ever directly observed! They are a challenging observation, even with a large telescope, since their parent stars are so very bright that their light overwhelms the much dimmer light of their tiny companions. The white dwarf stars, just like their parent stars, have differences: Sirius B is younger, brighter, and more energetic than Procyon B. Careful observations of these nearby systems over hundreds of years have helped advance the fields of: astrometry, the precise measurement of stars; stellar evolution; and astroseismology, the study of the internal structure of stars via their oscillations. Discover more about our stellar neighborhood at nasa.gov!

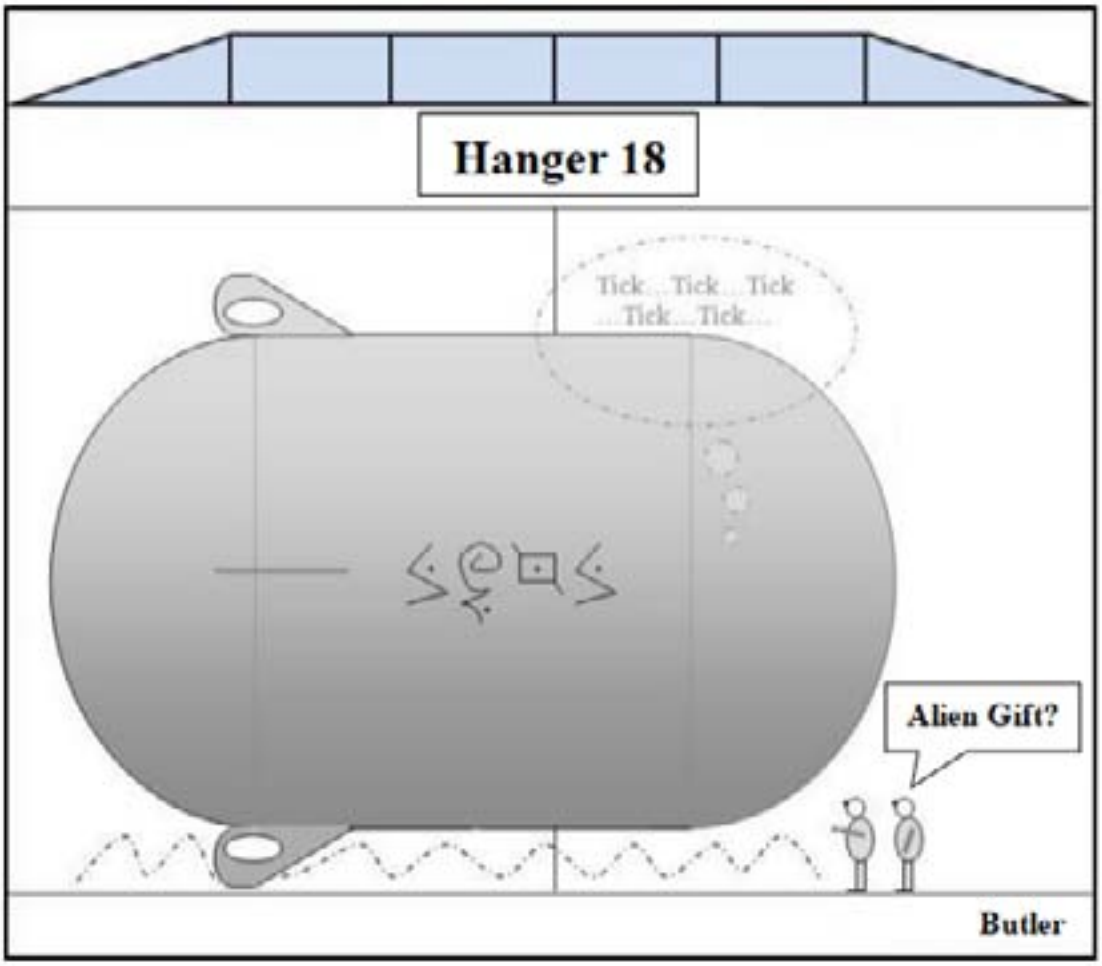
NASA Night Sky Notes March 2021



Sirius and Procyon, the loyal hunting dogs of nearby Orion the Hunter! What other stories can you imagine for these stars? Learn about "Legends in the Sky" and create your own with this activity: https://bit.ly/legendsinthesky *Image created with assistance from Stellarium.*



Sirius A and B imaged by two different space telescopes, revealing dramatically different views! Hubble's image *(left)* shows Sirius A shining brightly in visible light, with diminutive Sirius B a tiny dot. However, in Chandra's image *(right)* tiny Sirius B is dramatically brighter in X-rays! The "Universe in a Different Light" activity highlights more surprising views of some familiar objects: http://bit.ly/different-light-nsn *NASA, ESA, H. Bond (STScI), and M. Barstow (University of Leicester) (left); NASA/SAO/CXC (right)*



AmazonSmile Donations

The SDAA board wants to thank members for using the AmazonSmile donation link as you've helped us raise over $300 in 2020 at no cost to you. This is three times the amount we received in 2019. Our URL is smile.amazon.com/ch/51-0183640 and, if you are an Amazon user, we hope you will encourage your family to use this option.

MEMBERSHIP INFORMATION

Send dues and renewals to P.O. Box 23215, San Diego, CA 92193-3215. Include any renewal cards from Sky & Telescope or Astronomy magazine in which you wish to continue your subscription. The expiration date shown on your newsletter's mailing label is the only notice that your membership in SDAA will expire. Dues are $60 for Contributing Memberships; $35 for Basic Membership; $60.00 for Private Pads; $5 for each Family membership. In addition to the club dues the annual rates for magazines available at the club discount are: Sky & Telescope $32.95 and Astronomy $34. Make checks payable to S.D. Astronomy Assn. PLEASE DO NOT send renewals directly to Sky Publishing. They return them to us for processing.