San Diego Astronomy Association

Celebrating Over 50 Years of Astronomical Outreach

September 2023

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

Next SDAA Business Meeting
September 12th at 7:00pm
10070 Willow Creek Rd
San Diego, CA 92131
Via Zoom

Next Program Meeting
September 20th at 7:00pm
Mission Trails Regional Park
Visitor and Interpretive Center
1 Father Junipero Serra Trail

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September 2023, Vol LXI, Issue 9
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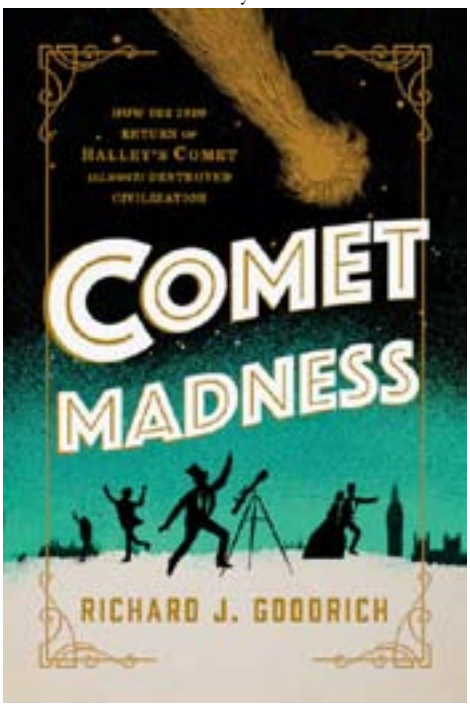
San Diego Astronomy Association
Incorporated in California in 1963

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

Program Meeting September 20th

Topic: Fear and Loathing in the Heavens: The 1910 Return of Halley's Comet
Speaker: Richard J. Goodrich



Richard J. Goodrich (Ph.D., University of St Andrews) is an author and historian. After twenty years teaching in British and US universities, Richard resigned his position to pursue a full-time writing career. His interests range from Ancient History (the Roman Empire and early Church history) to the modern age. Learn more at his website: https://RichardJGoodrich.com.

In 1705, Edmond Halley liberated humanity from the belief that comets were portents of doom; two centuries later, in 1910, as Halley's Comet returned to perihelion, newspapers and magazines, religious leaders, misguided theorists, and shameless grifters managed to rekindle that fear. When astronomers announced that the earth would pass through the comet's tail, opportunists exploited human anxiety—often with fatal consequences.
The meeting will be online with Zoom.

https://sdaa.org/program-meeting/

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
August 8, 2023 – Unapproved and subject to revision

1. **Call to Order**
   The meeting was held via Zoom and was called to order at 7:02pm with the following board members in attendance: Dave Decker, President; Kin Searcy, Vice President; Mike Chasin, Treasurer; Hiro Hakozaki, Director Beta; Gracie Schutze, Director Delta; Bee Pagarigan, Director Gamma; Dave Wood, Director Alpha.

2. **Approval of Last Meeting Minutes**
   The July meeting minutes were approved.

3. **Treasurers & Membership Report**
   Mike reported the following:
   ● Paid $1,375 deposit to Handlery Hotel for 2024 banquet
   ● JSF 2023 Current net $2,113
   ● Reimbursements to Wood ($120) for TARO repairs, Chasin ($102) JSF expenses, Stevens ($50) for .biz renewal
   ● Derek Lillie reimbursed $180 for OPT raffle award, he refunded $90 as duplicate payment, Kinghorn declined reimbursement
   ● SDCCU declined to issue credit card, due to SDAA lack of Accountant auditor signature on Books and Records

4. **Standard Reports**
   a. <u>Site Maintenance Report:</u>
   TDS Operations Committee Report for August 2023 Pagarigan/Myers/Kennedy

   Items Completed:
   • Members established a method of communication for both routine meetings (Zoom) and spontaneous updates (WhatsApp)

   Work in progress items:
   • TDS hit list items being prioritized, goal is to create a time line to complete 1-2 high priority projects
   • Updated TDS Site Orientation draft completed. To be submitted to TDS committee members via TDS Group Google Drive for comments/revisions.
   • TDS Operations Manual - ongoing work-in-progress (long term)

   b. <u>Observatory:</u>
   Observatory is in excellent condition. Weather has been fantastic and we are seeing more activity at the star parties. Scope is also utilized by hosts for personnel observing. We did have an issue with the digital setting circles which has been fixed satisfactorily. Additional changes are contemplated to make the fix more secure and make reoccurrence of the issue (nearly) impossible.

c. Loaner Scope Report:
Two scopes are currently out (SDAA-023, Orion XT10; SDAA-031, Orion XT8). SDAA-028 (Bushnell Voyager) expected to be checked out on Aug 19.

SDAA-027 (5" Astroview newt + CG-5 astrophotography rig) is in for maintenance. A CG-5 in better condition has been donated and I need to update the SDAA-027 documentation and photos to reflect the new equipment.

SDAA-032 (8" Orion astrograph + CGX mount) is still pending onboarding. I need to assemble the kit, make a full list of accessories needed to bring it into loan-able state, and submit to the board for purchase approval. I'll also continue watching for suitable donations to avoid having to spend club funds. If anybody has a line on a compact all-in-one guidescope+camera (e.g. Orion Magnificent Mini autoguider) that is a significant chunk of what is needed. Also going to need T-rings and/or 2" bayonet mounts for Canon and Nikon bodies. A QHY PoleMaster would be superb.

d. Private Pad Report:
There are currently 7 unleased pads, (4, 10, 12, 15, 30, 32, and 34). The waiting list is currently at 14, but the "active" waiting list, those who only recently expressed interest in a pad, is at 5.

e. Program Meetings Report:
Next unscheduled program meeting is October ZOOM. I am working on a banquet speaker and a February speaker to help the next VP.

I met the program manager for JWST last weekand at Palomar Observatory and he offered to be a speake for SDAA. David Wood has already asked someone to be a banquet speaker so he has first dibs on that date, but I believe that this speaker would be interesting and a big draw if David's speaker is not available.

f. AISIG Report:
Michael VanderVorst is going send out an announcement on how to sign up for the AISIG Groups IO group. The Groups IO discussion group will be the communication channel for AISIG Kin Searcy, Ed Rumsey and myself will host a "in person" beginning imaging session demonstrating a "simple" refractor/GEM system set up locally in San Diego. Time and date TBD

g. Newsletter Report:
All looks great – Thanks, Andrea!

h. Website Report:
The full schedule for Julian StarFest is now posted on julianstarfest.com.

i. Social Media:
No report

j. Outreach Report:

Not much going on for the month of July, mostly because of summer vacation. There were no 'private' events, only the regularly scheduled monthly 'public' events. For the most part, the weather allowed for stargazing, some of the public events suffered from partly cloudy skies or high humidity. As always, our most popular event is 'Stars-in-the-Park' because of the Fleet Science Center's monthly show, 'The Sky Tonight' with Dr. Lisa Will. The audiences from her two shows at 8:00 and 9:00 pm provide most of the spectators, plus summer vacationers and hikes add to the totals.

2023	JULY	YTD
Events Completed	7	45
Events Cancelled	0	29

k. TARO Report:

The observatory is back in manual operation. Some minor automated scripting errors have been discovered but quickly dealt with. The weather station sensor has been replaced with a new unit provided at minimal cost by Interactive Astronomy. The new sensor is being calibrated with automated operations expected to resume sometime in mid-August.

l. Cruzen Report:

Aug 19 will be the first official training/onboarding for SDAA Full Contributing members. Nearly 200 invitations were sent via Wild Apricot to eligible members. Of those, 17 responded with an RSVP to attend the training.

Assorted updates and edits to the operations manual have been completed ahead of the Aug 19 training and the updated manual has been printed and bound, to be delivered to the observatory on Aug 19. Additional comfort items (dry erase board, foam bumpers for the counterweight shafts, etc.) are being finished up ahead of the Aug 19 training as well.

The only outstanding maintenance item is to address the tracking slipping / gear lash issue on the Schaefer mount. After discussion with other members familiar with the mount, it sounds like I may just need to adjust the RA clutch tension (it may have been loosened while I was repairing the RA encoder). If that doesn't resolve the problem, I'll look into adjusting the gear lash and perhaps biasing the counterweights slightly.

m. Merchandise Report:

We sold a few more hats last month. I picked up the hats and beanies that had been ordered and gave them and some SDAA t-shirts and license plate frames to Dan Kiser so it will be available for sale at JSF.

n. Astronomical League Report:

For July, we have 60 Astronomical League members.
Our AL dues have been paid through the 2023/2024 FY.

o. JSF Report:

Services:

Restrooms: They are scheduled to arrive 8/10.
Golf Cart: Arriving 8/10
First Aid: Will send representative for 8/11, 8/12.
Tents: Will arrive 8/10.
Trash: Will arrive 8/10 and remove 8/14.

Donations/Raffle Prizes:

Have received all donations and will deliver to site 8/10.

MLO:

Reservations closed. Dave Decker with host at site.
Collected required waivers and forwarded to Dr. Quimby.

Misc:

Met with Ray at Jack's Deli. He will be serving sandwiches, salads and drinks 8/11 from 3-7+ and 8/12 from 1-8.
Met Mike and Toni Menghini and informed them they will be receiving plaque at 6:00 8/12. They will be attending. Dave Decker to make presentation.
Picked up projector and speaker system from Dave Woods. Tested and in working order.
Dan, Sandy and I will be going to TDS 8/9 to pick up remainder of equipment for set up 8/10.

p. Primary Grid Reconstruction Report:

After not hearing from our electrical design engineer for quite some time, we contacted another electrical design firm, Robinson Electric. Initial conversations were quite positive. Site documents were passed along for review during a 2-hour meeting. No substantive communications have occurred in the past two weeks.

5. Old Business:

a. By-Laws Clarification – Schedule Meeting — Decker
The Clarification Meeting was held, and the Board Resolution has been posted on the SDAA website under Members\SDAA Documents\SDAA Legal Documents.

b. Banquet/Handlery Date & Contract — Chasin
The contract is in place, for the Banquet on January 27, 2024. Unfortunately with a bit higher prices.

c. Year End review of Budget — Chasin
This has been completed by the audit committee with a few recommendations under review for implementation.

d. Other Old Business - None

6. New Business:

a. Discussion regarding club stickers or patches — Pagarigan
We did have in the past, but not currently available; checking vendors

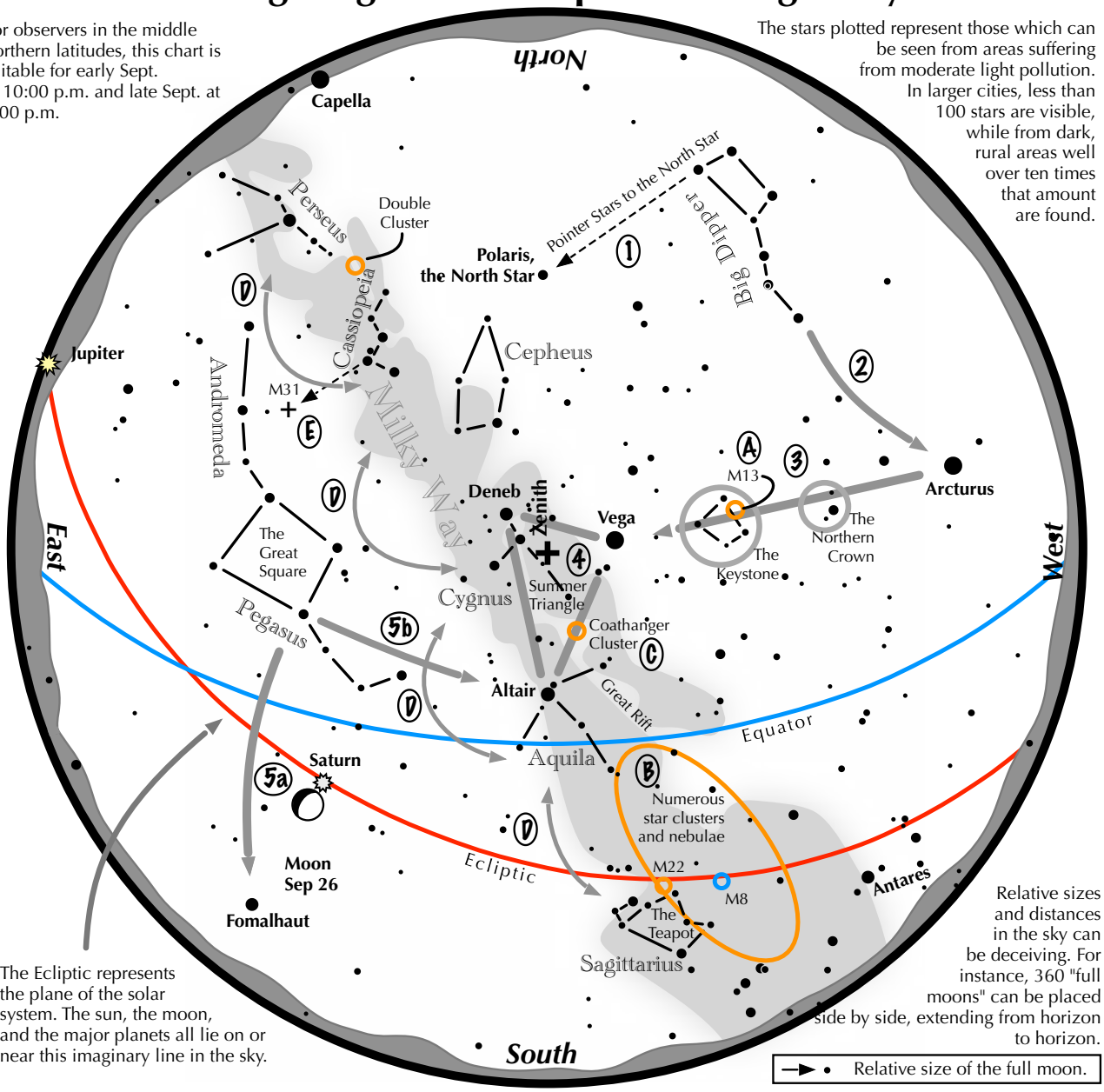
7. Adjournment: The meeting was adjourned at 7:56pm.

San Diego Astronomy Association

Navigating the mid September Night Sky

For observers in the middle northern latitudes, this chart is suitable for early Sept. at 10:00 p.m. and late Sept. at 9:00 p.m.

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 mid September night sky: Simply start with what you know or with what you can easily find.

1. Extend a line north from the two stars at the tip of the Big Dipper's bowl. It passes by Polaris, the North Star.
2. Follow the arc of the Dipper's handle. It intersects Arcturus, the brightest star in the September evening sky.
3. Nearly overhead shines a star of similar brightness as Arcturus, Vega. Draw a line from Arcturus to Vega. It first meets "The Northern Crown," then the "Keystone of Hercules." A dark sky is needed to see these two dim stellar configurations.
4. The stars of the summer triangle, Vega, Altair, and Deneb, shine overhead.
5. The westernmost two stars of the Great Square, which lies high in the east, point south to Fomalhaut. The southernmost two stars point west to Altair.

Binocular Highlights

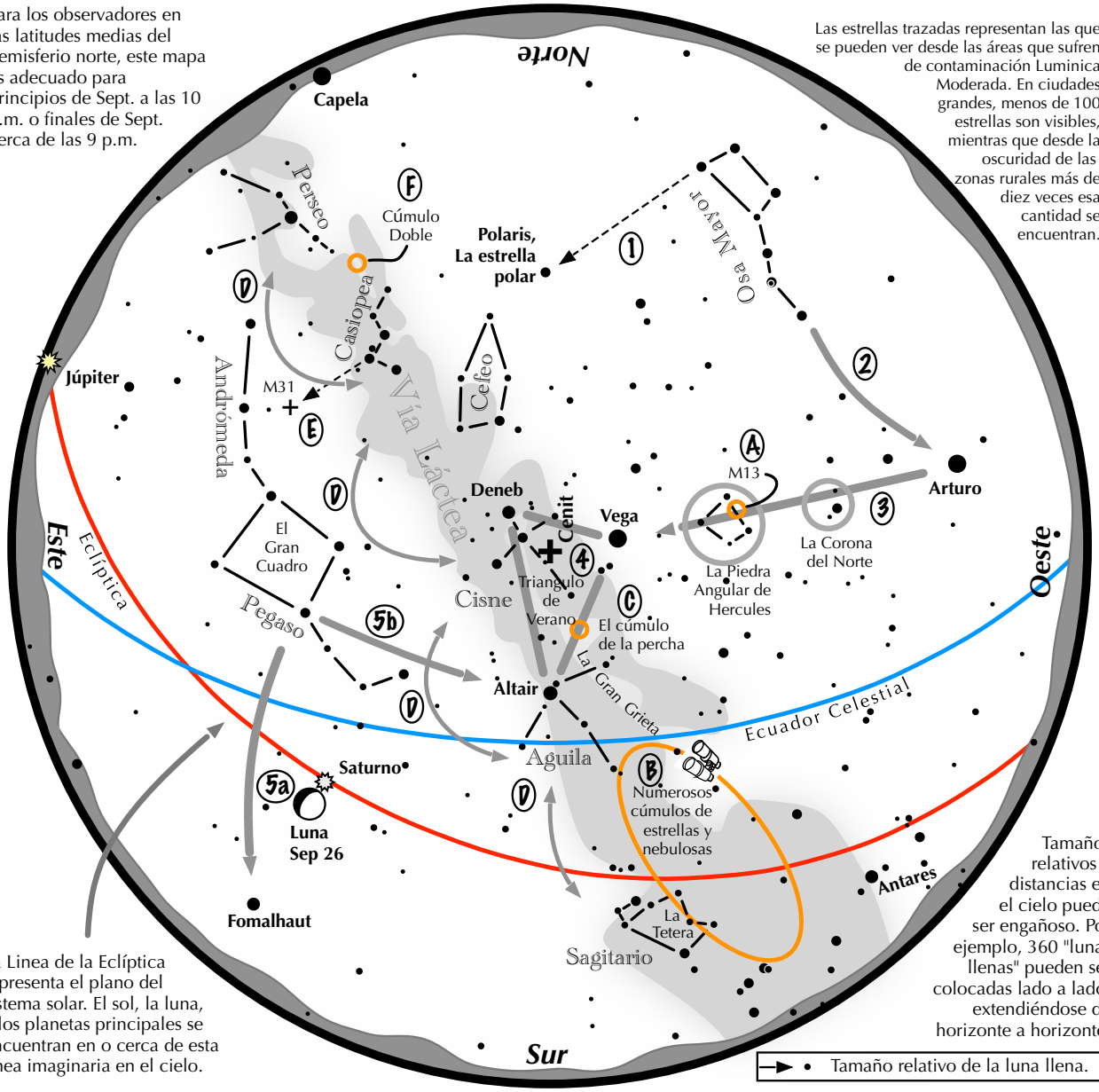
A: On the western side of the Keystone glows the Great Hercules Cluster.
B: Between the bright stars Antares and Altair, hides an area containing many star clusters and nebulae.
C: 40% of the way between Altair and Vega, twinkles the "Coathanger," a group of stars outlining a coathanger.
D: Sweep along the Milky Way for an astounding number of faint glows and dark bays, including the Great Rift.
E: The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval.

San Diego Astronomy Association

Navegando por el cielo nocturno de Septiembre

Para los observadores en las latitudes medias del hemisferio norte, este mapa es adecuado para principios de Sept. a las 10 p.m. o finales de Sept. cerca de las 9 p.m.

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 distancias en 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. Haz una línea hacia el norte desde las dos estrellas en la punta de la Osa Mayor. Pasa por Polaris, la estrella polar.
2. Siga el arco del mango de la Osa Mayor. Se cruza con Arturo, la estrella más brillante en el cielo de la noche de septiembre.
3. Dibuja una línea desde Arturo a Vega. Un tercio del camino se encuentra "La Corona del Norte". Dos tercios de esa distancia llevan a la "piedra angular de Hércules." Se necesita un cielo oscuro para ver estas dos configuraciones estelares tenues.
4. Las estrellas del Triángulo de verano, Vega, Altair y Deneb, brillan en el Cenit.
5. Las dos estrellas más al oeste del Gran Cuadro, que se encuentra en el este, apuntan al sur hacia Fomalhaut. Las dos estrellas más al sur apuntan al oeste hacia Altair.

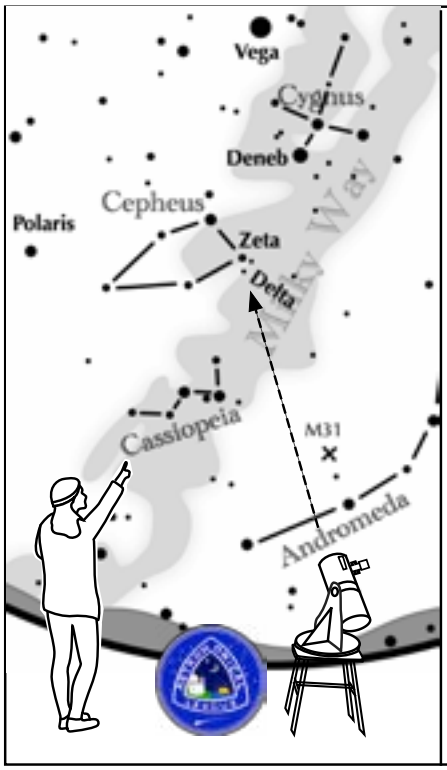
Puntos destacados con binoculares

A: En el lado occidental de la Piedra Angular brilla el Gran Cúmulo de Hércules. **B:** Entre las brillantes estrellas Antares y Altair, se esconde un área que contiene muchos cúmulos de estrellas y nebulosas. **C:** Casi a la mitad de la distancia entre Altair y Vega, Brilla la "Percha," un grupo de estrellas que describe un perchero.
D: Recorre la Vía Láctea en busca de un número asombroso de destellos tenues y bahías oscuras, incluido La Gran Grieta. **E:** Las tres estrellas más occidentales de las "W" de Casiopea apuntan hacia el sur hasta M31, la Galaxia de Andromeda, un óvalo "borroso." **F.** Entre la "W" de Casiopea y Perseo se encuentra el Doble Cúmulo.

Traducción al español por Dr. Salvador Aguirre

Liga Astronómica

ASTRONOMICAL LEAGUE Double Star Activity



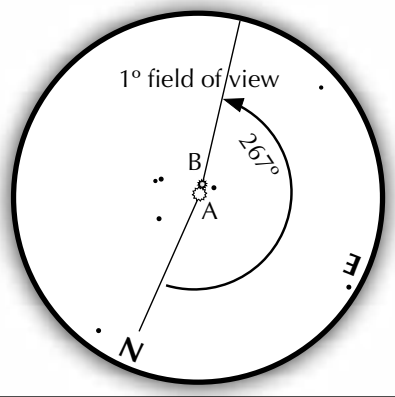
Other Suns: Delta Cephei

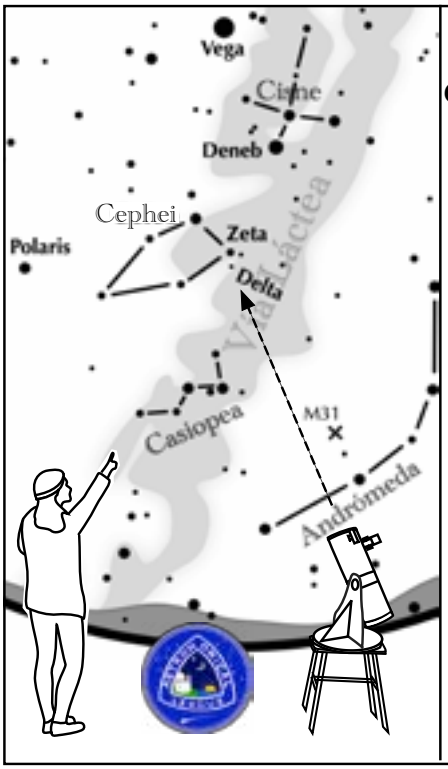
How to find Delta Cephei on a September evening

Face northeast and find bright Deneb, the northernmost star of Cygnus. It is nearly overhead. Between Deneb and the "W" shaped Cassiopeia lies the house-shaped constellation Cepheus. Find Zeta, the lower left star of the "house." Dimmer Delta shines just below it.

Suggested magnification: >20x
Suggested aperture: >2 inches

Beta Capricorni
A-B separation: 41 sec
A magnitude: 4.2
B magnitude: 6.1
Position Angle: 191°
A & B colors:
yellow, blue





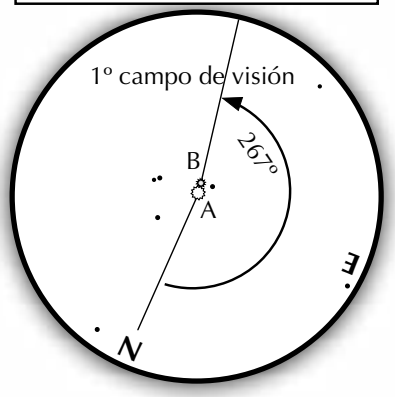
Otros Soles: Delta Cephei

Cómo encontrar Delta Cephei en una tarde de Septiembre

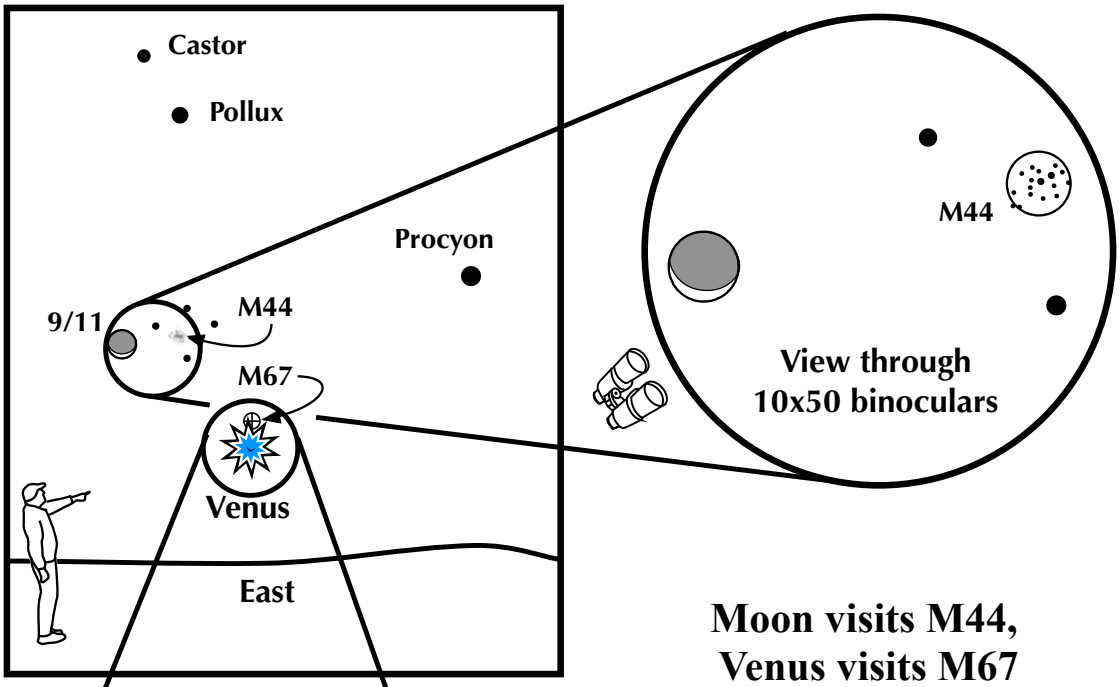
Mire hacia el noreste y encuentre a la brillante Deneb, la estrella más al norte de Cisne. Está casi arriba. Entre Deneb y Casiopea en forma de "W" se encuentra la constelación de Cefeo en forma de casa. Encuentra a Zeta, la estrella inferior izquierda de la "casa". La Delta con brillo debil, esta justo debajo de ella.

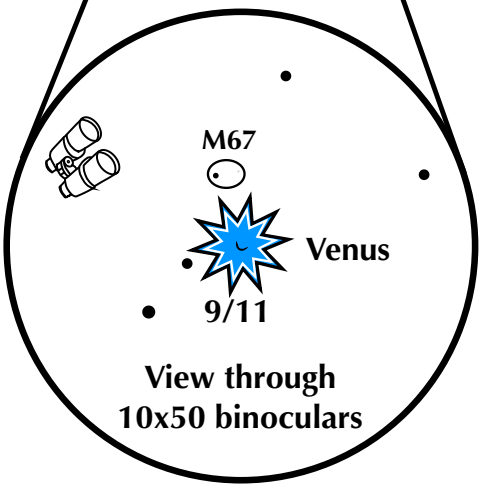
Ampliación sugerida: >20x,
Apertura sugerida: >50 mm

Delta Cephei
A-B separación: 41 sec
A magnitud: 4.2
B magnitud: 6.1
PA: 191°
A & B color:
amarilla, azul



If you can see only one celestial event in the morning this September, see this one.

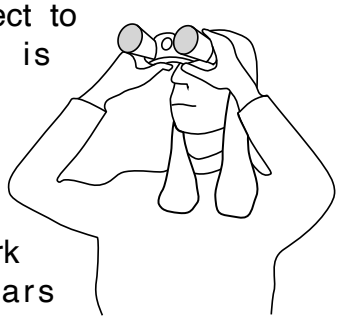




Moon visits M44, Venus visits M67

On the morning of Sep 11, look to the east 90 minutes before sunrise.

- The crescent moon, full with earthshine, glows left of M44, the Beehive cluster.
- M44 can easily be seen in binoculars.
- The dazzling object to their lower right is Venus.
- Just above Venus lies another star cluster, M67. If viewed from a dark location, binoculars should reveal its fuzzy presence.
- If the binoculars are securely mounted, the tiny crescent of Venus should be barely discerned amid the planet's glare.



ALCON

September Another Look Lyra
Lyra

September 15 - New Moon. September 29 - Full Moon, Supermoon

Autumnal equinox occurs at 06:43 UTC on September 23. (2343hrs. 9/22/23 west coast time.)

The Harvest Moon is the full moon that occurs closest to the Autumnal equinox each year. This full moon was known by early Native American tribes as the Corn Moon and the Harvest Moon.

Other Native American names are Autumn Moon, Rutting Moon and Mating Moon (Cree), Child Moon (Tlingit), Falling Leaves Moon (Ojibwe), Leaves Turning Moon (Anishinaabe),Moon of Brown Leaves (Lakota), Moon When the Rice is Laid Up to Dry (Dakota) and Yellow Leaf Moon (Assiniboine)

In French - Pleine Lune de Septembre, in German - Vollmond im September, in Spanish - Luna llena de Septiembre and in Greek - πανσέληνος Σεπτεμβρίου i.e Pansélinos Septembríou

Lunar close approach to Antares this month. An occultation will occur over the western pacific.

I have found no constellation with as much written imagery as Lyra. From Sappho and Pindar at some 500 or 600 BC up through Shakespeare, the Lyre was honored as magical and as the precursor of the stringed instrument, from the original tortoise shell with seven strings representing the Pleiades to our modern day Welsh and Irish Harps.

The Greeks seem to have confused the stories behind the harp, however, we may also be accused of telescoping history or maybe more literately historical myth.

As it begins, the Lyre was invented by Hermes who gifted to his half-brother Apollo. From there, the most famous of those associated with the Lyre is Orpheus, son of a Muse and a prince, or maybe Apollo. Orpheus was gifted the talent of music.

"Everything that heard him play,
Even the billows of the sea,
Hung their heads, and then lay by…"Shakespeare

So Orpheus;
...and when determined to have his wife released from Hades he:
" E'en to the dark dominions of the night
He took his way, through forests void of light,
And dared amid the trembling ghosts to sing.
And stood before the inexorable king.
The infernal troops like passing shadows glide,
And listening, crowd the sweet musician's side;
Men, matrons, children, and the unmarried maid,
r The mighty hero's more majestic shade,
And youth, on funeral piles before their parents laid.
E'en from tlie depths of hell the damn'd advance;
The infernal mansions, nodding, seem to dance;
The gaping three-mouth'd dog forgets to snarl;
The furies hearken, and their snakes uncurl;
Ixion, seems no more his pain to feel,
But leans attentive on his standing wheel.
All dangers past, at length the lonely bride
In safety goes, with her melodious guide." Virgil

Alas, he was only human, he erred and he failed

Orpheus married Eurydice, who depending on the legend, was frolicking with her maids at her wedding or running from a man who wished to do her harm; she stepped on or was bitten by a viper and died.
She went to Hades.

As it aged the Arabs called Lyra "the Swooping Eagle," to distinguish it from Aquila, which was regarded as "the Flying Eagle. The Persian also called it Harp, but later, as national boundaries solidified, we find that the Bohemians called it The Fiddle, Teutons Harapha, and the Anglo-Saxons Hearpe. Britons named it Arthur's Harp, the Egyptians Vulture, then came the Christians.

Also, Lyra is the “Stone Eagle of the Desert,” which shows the bird with half-closed wings versus the outspread wings of Cygnus and the aforementioned Aquila.

The lyre had multicolored identities to go with its multicultural legacy. It was a Ram, a Mule, a tripod, a bowl and a scroll. Many cultures considered it Avian. Most commonly an Eagle or a Vulture as is shown on some globes. The bird reference is even found in Australia where to the aboriginal, Lyra was called Neilloan and represented a ground dwelling bird. Lyra was known as Urcuchillay by the Incas and was worshiped as an animal deity.

Returning to theinvention of the Lyre by Hermes, the story tells of him finding a dried tortoise shell on the shore of the sea, with its tendons stretched across. This allusion stayed with the Greeks and Arabs who referred to the constellation as Testudo; in Spanish Galapago orTesta.

The symbiosis of the Greek and the Arab is seldom seen better than in the constellation of the Lyre.

An alternate tale records Amphion, a son of Zeus and Antiope, Who built the walls of Thebes with the help of his twin brother Zethus. To move the heavy stone he started singing and playing the Lyre. The stones began to follow him, transported by his voice and the music of the Lyre.

Four and five thousand years ago in the Euphrates valley, a goat and a dog where placed in the sky where Lyra and Hercules are now. These were almost certainly identified as special to the goddess Gula.

Mercurii philosophici firmamentum firmianum Corbinian Thomas

In its history, the asterism has been almost universally described as a bird or a musical instrument.

“For Orpheus' lute was strung with poet's sinews ;
Whose golden touch could soften steel and stone,
Made tigers tame, and huge leviathans
Forsake unsounded deeps to dance on sands.”

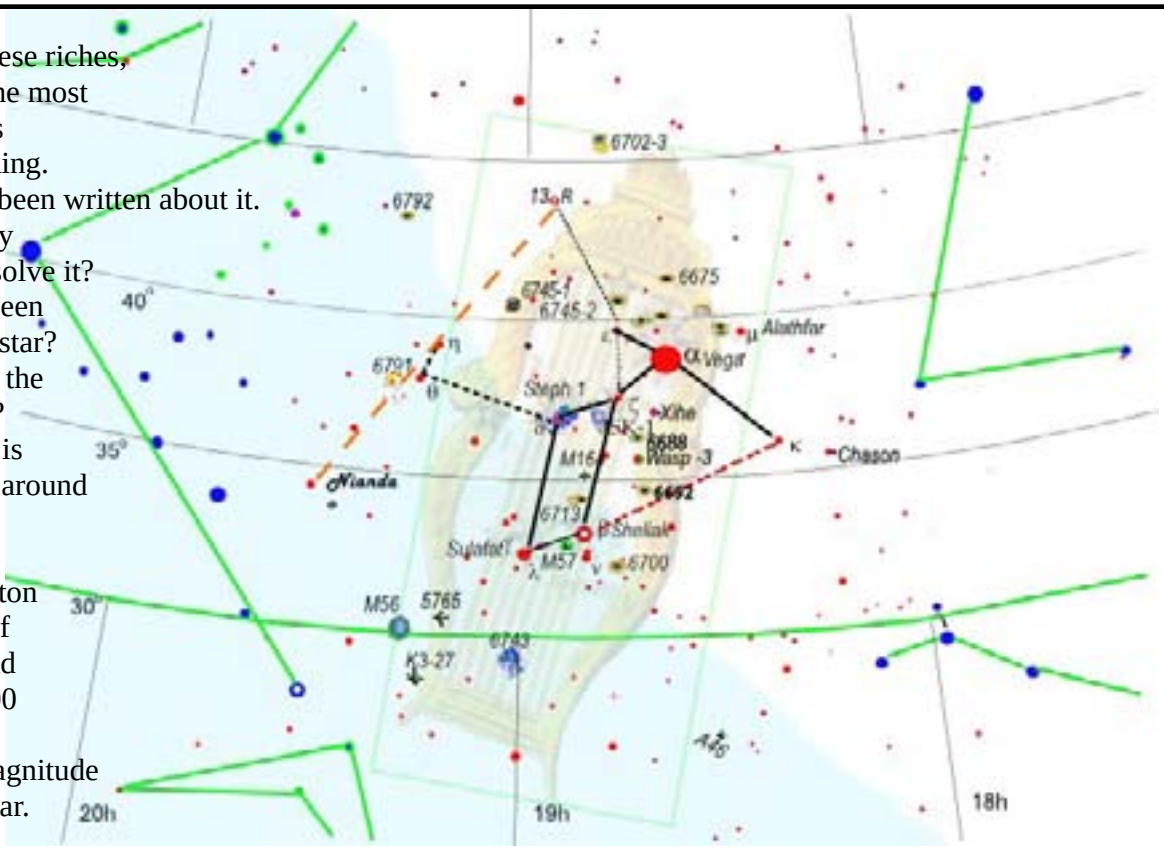
“I saw with its celestial keys,
Its chords of air, its frets of fire,
The Samian's great iEolian lyre
Rising through all its sevenfold bars
From earth into the fixed stars”
The Occultation of Orion Longfellow

Simon Dawes flickr

The Chinese also have a rich relationship with Lyra. She has lovers, working girls, a bureau of standards and, as I drew on the chart, Niandao, a route the Emperor chose while moving between palaces. **(Ian Ridpath)**

As it is rich in poetry, so is Lyra rich in astronomy. There is, for the amateur, over a hundred variable and multiple star systems. Lyra is rich in galaxies, planetaries, open star clusters, extraterrestrial planets, a corner of the milky way *“The graceful form, amid the lucid stream Of the fair Milky Way”* and a globular cluster.

Of all of these riches, however, the most looked at is M57, the Ring. Plenty has been written about it. How crisply can you resolve it? Have you seen the central star? How about the outer shell? Then there is the region around the ring.



Scott Houston wondered if you can find NGC's 6700 and 6713, two 13th magnitude galaxies near. He also wrote of IC 1296 and if anyone had ever seen it visually. It's a 15th magnitude barred spiral in the same wide field view of your eyepiece. The image by Bruce and Gayelee Waddingtonshows it beautifully.

www.astrobin.com/full/yfu2o9/0/

Equally as difficult will be NGC 6745 a&b. A pair, or triple?, of interacting galaxies with a distinctive bird's head shape. It's small, though, good luck.

Up near the top of Lyra are NGC's 6702 and 6703. Elliptical and Lenticular, they look somewhat alike. N6703 is about a mag. brighter than its cousin at 11th. The eastern side of Lyra is also hunting ground for NGC's 6688 and 6692 interesting galaxies in their own right. I am equally interested in large, sparse

open clusters around Lyra. Steph 1, as opposed to Steph 2 in Scutum, is superimposed over delta δ Lyrae, a multiple star.

I have no information about Dr. Sofik Iskudarian, except that is an astronomer at Byurakan Astrophysical Observatory in Armenia. He also has an open star cluster Isk 1, named after him near zeta, ζ. Its claim to fame is that its 110' in size. From the obscure to the sublime is N6791 over by theta, θ. 6791 is 10th magnitude and rather rich and a fairly good size. Two more open clusters are ASCC101and N6743, though somewhat sparse as are most OC's. Both clusters will be visible in your finder.

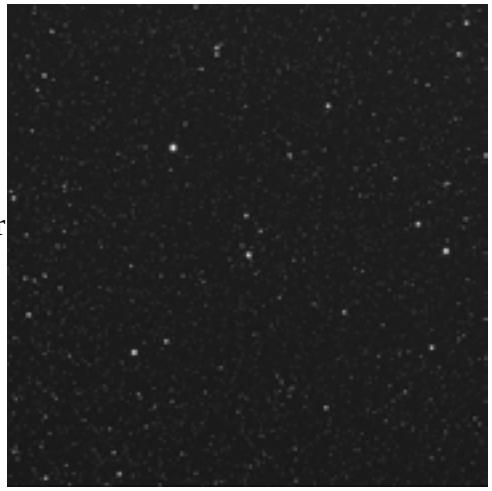
www.coldphotons.com/zen_astro/astro_images/M57_HaLRGB_Final.jpg

https://webda.physics.muni.cz/cgi-bin/ocl_page.cgi?dirname=ascc10L

Lyra also has interesting individual stars and planets. Vega is a close double, not related, but the contrast between 1st and 10th magnitude is difficult. Epsilon ε, is the double-double. R lyrae and T lyrae are variable stars. T is a carbon star and very red. Beta β, named Sheliak, is one of the brighter stars in Lyra. It is a six star system. How many can you see?

https://ocastronomers.org/wp-content/uploads/2018/12/M56-OCA.jpg

Named stars with planets are Wasp 3 with one planet, Kepler 37-3 planets, K102 is interesting. It has 5? planets and two red dwarf companions. Can you imagine the sights you'd see standing on one of those planets? K138 is a 13th magnitude red dwarf with three or four planets and HD 173416 is named Xihe. Xihe, a sun goddess, is 6th magnitude and has one planet. Others are Hat-P-5 named Chason. Gliese 758 is a close 6th magnitude star with a "brown dwarf" companion. Gliese 747 is very red and 11th magnitude.



Historically named stars in Lyra are Vega α, relating to the swooping of an eagle. In modern Spain a vega is a large pasture or field. Aladfar η is a talon of that swooping eagle and Sulafat γ returns us to the shell of a tortoise.

https://www.flickr.com/search/?text=ngc 6743

We need not forget Lyra's lone globular, M56. You will need some glass to see it well. It is 9' across, but at 8th magnitude and quite loose and sparse, an "X", per Shapley-Sawyer, it will be a tough find in binoculars from your back yard.

There are a couple of planetary nebula in Lyra bright enough for us to see though none brighter than 13th magnitude. Close to M57, halfway to Vega is 13th magnitude Minkowski 1-64, a small cousin to its brighter neighbor. Then look for N6765, 13th magnitude and half a minute is size, the images show it to have an irregular shape. Kohoutek 3-27 is 15th magnitude and Abell 46 is 13th. Images of these object can be found on Astrobin.

Dark Skys

Dave Phelps

San Diego Astronomy Association

SDAA Contacts

Club Officers and Directors

President	Dave Decker	President@sdaa.org	(619) 972-1003
Vice President	Kin Searcy	VicePresident@sdaa.org	
Recording Secretary	Gene Burch	Recording@sdaa.org	(858) 926-9610
Treasurer	Mike Chasin	Treasurer@sdaa.org	((858) 210-1454
Corresponding Secretary	Alicia Linder	Corresponding@sdaa.org	
Director Alpha	Dave Wood	DirectorAlpha@sdaa.org	(858) 735-8808
Director Beta	Hiro Hakozaki	DirectorBeta@sdaa.org	(858) 869-9507
Director Delta	Gracie Schutze	DirectorDelta@sdaa.org	(619) 857-0088
Director Gamma	Bee Pagarigan	DirectorGamma@sdaa.org	(760) 703-6183

Committees

Site Maintenance	Ben Grunbaum	TDS@sdaa.org	
Observatory Director	Ed Rumsey	Observatory@sdaa.org	(858) 722-3846
Private Pads	Mark Smith	Pads@sdaa.org	(858) 484-0540
Outreach	Dennis Ammann	Outreach@sdaa.org	(619) 247-2457
N. County Star Parties	-*Vacant*-	NorthStarParty@sdaa.org	
S. County Star Parties	-*Vacant*-	SouthStarParty@sdaa.org	
E. County Star Parties	Dave Decker	EastStarParty@sdaa.org	(619) 972-1003
Central County Star Parties	Dennis Ammann	CentralStarParty@sdaa.org	(619) 247-2457
Camp with the Stars	-*Vacant*-	CampWiththeStars@sdaa.org	
K.Q. Ranch Coordinator	Dennis Ammann	KQ@sdaa.org	(619) 247-2457
Newsletter	Andrea Kuhl	Newsletter@sdaa.org	(858) 547-9887
New Member Mentor	Dan Kiser	Mentor@sdaa.org	(858) 922-0592
Webmaster	Jeff Stevens	Webmaster@sdaa.org	(858) 566-2261
AISIG	Dave Wood	AISIG@sdaa.org	
Site Acquisition	-*Vacant*-	SecondSite@sdaa.org	
Field Trips	-*Vacant*-	FieldTrips@sdaa.org	
Grants/Fund Raising	-*Vacant*-	Grants@sdaa.org	
Julian StarFest	Bill Cecil	info@julianstarfest.com	
Merchandising	Gene Burch	Merchandising@sdaa.org	(858) 926-9610
Publicity	Jeff Flynn	Publicity@sdaa.org	(619) 806-6505
Loaner Scopes	Paul Krizak	loanerscopes@sdaa.org	
Cruzen Observatory Director	Paul Krizak		
TARO Observatory Director	Dave Wood	TARO@sdaa.org	
Governing Documents	TBD		
TDS Network	Dave Wood	TDSNet@sdaa.org	(858) 735-8808
Amateur Telescope Making	-*Vacant*-		
ALCOR (Astronomical League Correspondent)	Dave Decker	ALCOR@sdaa.org	(619) 972-1003

SDAA Editorial Staff
Editor - Andrea Kuhl
newsletter@sdaa.org
Assistant Editor: Craig Ewing

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Looking Beyond the Stars

Brian Kruse

Looking up in awe at the night sky, the stars and planets pop out as bright points against a dark background. All of the stars that we see are nearby, within our own Milky Way Galaxy. And while the amount of stars visible from a dark sky location seems immense, the actual number is measurable only in the thousands. But what lies between the stars and why can't we see it? Both the Hubble telescope and the James Webb Space Telescope (Webb) have revealed that what appears as a dark background, even in our backyard telescopes, is populated with as many galaxies as there are stars in the Milky Way.

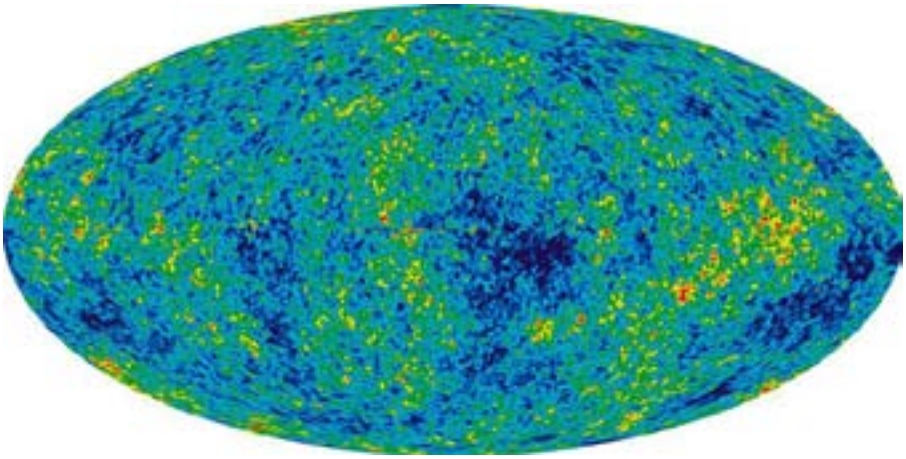
So, why is the night sky dark and not blazing with the light of all those distant galaxies? Much like looking into a dense forest where every line of sight has a tree, every direction we look in the sky has billions of stars with no vacant spots. Many philosophers and astronomers have considered this paradox. However, it has taken the name of Heinrich Wilhelm Olbers, an early 19th century German astronomer. Basically, Olbers Paradox asks why the night sky is dark if the Universe is infinitely old and static – there should be stars everywhere. The observable phenomenon of a dark sky leads us directly into the debate about the very nature of the Universe – is it eternal and static, or is it dynamic and evolving?

It was not until the 1960s with the discovery of the Cosmic Microwave Background that the debate was finally settled, though various lines of evidence for an evolving universe had built up over the previous half century. The equations of Einstein's General Theory of Relativity suggested a dynamic universe, not eternal and unchanging as previously thought. Edwin Hubble used the cosmic distance ladder discovered by Henrietta Swan Leavitt to show that distant galaxies are moving away from us – and the greater the distance, the faster they're moving away. Along with other evidence, this lead to the recognition of an evolving Universe.

The paradox has since been resolved, now that we understand that the Universe has a finite age and size, with the speed of light having a definite value. Here's what's happening – due to the expansion of the Universe, the light from the oldest, most distant galaxies is shifted towards the longer wavelengths of the electromagnetic spectrum. So the farther an object is from us, the redder it appears. The Webb telescope is designed to detect light from distant objects in infrared light, beyond the visible spectrum. Other telescopes detect light at still longer wavelengths, where it is stretched into the radio and microwave portions of the spectrum. The farther back we look, the more things are shifted out of the visible, past the infrared, and all the way into the microwave wavelengths. If our eyes could see microwaves, we would behold a sky blazing with the light of the hot, young Universe – the Cosmic Microwave Background.

The next time you look up at the stars at night, turn your attention to the darkness between the stars, and ponder how you are seeing the result of a dynamic, evolving Universe.

NASA's James Webb Space Telescope has produced the deepest and sharpest infrared image of the distant universe to date. Known as Webb's First Deep Field, this image of galaxy cluster SMACS 0723 is overflowing with detail. This slice of the vast universe is approximately the size of a grain of sand held at arm's length by someone on the ground. (Image Credit: NASA, ESA, CSA, STScI) https://bit.ly/webbdeep



The oldest light in the universe, called the cosmic microwave background, as observed by the Planck space telescope is shown in the oval sky map. An artist's concept of Planck is next to the map. The cosmic microwave background was imprinted on the sky when the universe was just 380,000 years old. It shows tiny temperature fluctuations that correspond to regions of slightly different densities, representing the seeds of all future structure: the stars and galaxies of today. (Image credit: ESA and the Planck Collaboration - D. Ducros) https://go.nasa.gov/3qC4G5q

2023 TDS Star Party Schedule

Date	Type	Sunset	Astro. Twi.	Moonrise(set)	Closing	Illum.†	Hosts
9/9/2023	Public	7:02 PM	8:26 PM	2:17 AM	10:00 PM	24.5%	Joe Fox (need a trainer)
9/16/2023	Member	6:53 PM	8:16 PM	(7:52 PM)	10:00 PM	3.0%	
10/7/2023	Public	6:25 PM	7:47 PM	1:07 AM	9:30 PM	40.2%	Paul Krizak
10/14/2023	Member	6:16 PM	7:38 PM	(6:22 PM)	9:30 PM	0.0%	Igor von Nyssen
11/4/2023	Public	5:55 PM	7:18 PM	11:54 PM	9:00 PM	57.8%	
11/11/2023	Member	4:49 PM	6:14 PM	5:34 AM	8:00 PM	2.8%	
12/9/2023	Member	4:42 PM	6:10 PM	4:22 AM	8:00 PM	12.0%	
12/16/2023	Public	4:44 PM	6:12 PM	(8:54 PM)	8:00 PM	20.1%	

† Illumination at meridian crossing.

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