San Diego Astronomy Association Celebrating Over 50 Years of Astronomical Outreach



July 2023

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

Next SDAA Business Meeting

July 13th at 7:00pm 10070 Willow Creek Rd San Diego, CA 92131 Via Zoom

Next Program Meeting

July 19th at 7:00pm Mission Trails Regional Park Visitor and Interpretive Center 1 Father Junipero Serra Trail

CONTENTS

Program Meeting July 19th

Topic: Signs in the Heavens: A Muslim Astronomer's Perspective on Religion and Science Speaker: Dr. Imad-ad-Dean Ahmad

The talk is based on Dr. Ahmed's book of the same name which reviews some of the scientific achievements of the golden era of Islamic civilization and some



important achievements in astronomy. Islamic astronomy played a significant role in the revival of European astronomy following the early medieval period. The book also describes how the methodology of modern science was developed in the Islamic golden era.

Dr. Ahmad graduated cum laude from Harvard university and holds a PhD in astronomy and astrophysics from the University of Arizona.

The meeting will be online with Zoom.

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

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

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

 $\label{eq:link to Outreach Calendar} \ \underline{https://calendar.google.com/calendar/embed?src=g-calendar@sdaa.org&ctz=America/Los_link to Outreach Calendar (a) \ \underline{https://calendar.google.com/calendar/embed?src=g-calendar (a) \ \underline{https://calendar.google.com/calendar \ \underline{https://calendar \ \underline{$





Register Now for 2023 Julian StarFest

Summer is heating up - and the 2023 Julian StarFest is fast approaching! Mark your calendars to attend the 2023 JSF. The event starts on Friday afternoon, August 11, 2023, and ends on Sunday morning, August 13, 2023.

Astronomical events:

The moon will be a waning crescent so will not interfere with imaging most of the night.

The sun is peaking at maximum and is showing a very active surface.

The Perseids meteor shower will be at its peak that weekend.

The Milky Way will be overhead and offering many nebulas for viewing and imaging.

To register, please visit the Julian StarFest web page: www.julianstarfest.com

This year, we will have door prizes donated by Celestron and by Woodland Hills Telescopes. A special "Thank You" to the Menghini Winery and all of our Sponsors and Donors. This year, JSF activities will include:

- Woody's Mobile Observatory viewing deep sky objects
- Observations of the sun
- Lectures by astronomers
- Guided laser constellation tour
- Raffle of astronomy Equipment, Grand Prize, Celestron 8" Star Sense Dobsonian.
- Astronomy Crafts for Kids
- Mount Laguna Observatory Tour
- Free Public Star Party
- Food vendors offering a variety of offerings

StarFest is one of the premier events in Southern California for astronomy. Julian has dark, steady, skies and at 4,300 feet in elevation, offers superb astronomical viewing. Each year many of the SDAA's 800 active members meet in August on the grounds of the Menghini Winery (think fine wine, fresh baked hot apple pie, and some of the best star viewing around). During the event we are typically joined by over 1000 guests who will attend the free public star party at 8PM on Saturday, August 12.

The San Diego Astronomy Association (SDAA) is a non-profit educational organization established and incorporated in 1963. The purpose of the SDAA is to further the education and enjoyment of its





members and the general public in the subjects of astronomy, space, and physical science. Please show your support for SDAA by registering now for JSF. All JSF proceeds will be used to fund SDAA activities.

To register, please visit the Julian StarFest web page: www.julianstarfest.com

For more information, please email us at info@julianstarfest.com

Special Thanks to the 2023 Julian StarFest Committee: Dan & Sandy Kiser, Arlene Smith, John Heglin, Bill Cecil









Mount Laguna Observatory



In the shadow of Palomar, many people are not aware of the other world class observatory located in our local mountains.

The Mount Laguna Observatory is operated by San Diego State University as the primary research, teaching, and training facility of its Department of Astronomy. It is operated under Special Use Permit from the United States Department of Agriculture Forest Service. Current institutional partners include the University North Carolina (UNC) and the University of Kansas (KU).

The Observatory is located forty-five miles east of downtown San Diego on the eastern edge of the Cleveland National Forest at an altitude of 6100 feet (1859 meters). Just to the east is the Anza-Borrego State Park, which is the largest state park in the nation. This remote location remains one of the darker major observatory sites in the continental United States.

Mount Laguna is part of the Southern California Coastal Range, and as such benefits from smooth laminar air flow directly off of the Pacific Ocean, which results in steady atmospheric conditions (or "seeing"). When combined with its dark skies, Mount Laguna Observatory remains one of the truly excellent astronomical sites remaining in North America.

The Observatory is home to several major research instruments:

- 50-inch (1.25-meter) Phillips Claud reflector with KU
- 40-inch (1.0-meter) reflector
- Clifford Smith 24-inch (0.6-meter) reflector
- "Evryscope" 20 x 2.4-inch (6.1 cm) refractor array with UNC

The Reginald Buller 21-inch (0.5-meter) visitors' telescope is used for instructional support and for special SDSU public outreach programs. This classic telescope has superb optics for visual astronomy. The Awona Harrington Visitors' Center, a five-bedroom apartment building, four-





bedroom dormitory, and large shop building are also located on site. Observatory support staff includes a resident astronomer, an engineer, and the observatory superintendent.

More information on the Mount Laguna Observatory can be found at <u>Department of Astronomy - San</u> <u>Diego State University (sdsu.edu)</u>

A special tour is also available on August 12, 2023, through the 2023 Julian StarFest. Please register for this tour by following the links at <u>Julian StarFest</u>





San Diego Astronomy Association Board of Directors Meeting

May 9, 2023 – Unapproved and subject to revision

1. Call to Order

The meeting was held via Zoom and was called to order at 7:07pm with the following board members in attendance: Dave Decker, President; Kin Searcy, Vice President; Mike Chasin, Treasurer; Gene Burch, Recording Secretary; Alicia Linder, Corresponding Secretary; Dave Wood, Director; Bee Pagarigan, Director; Gracie Schutze, Director; Hiro Hakozaki, Director. Also present were Steve Myers, Primary Grid Reconstruction committee and Bill Cecil, JFS Chairperson.

2. Approval of Last Meeting Minutes

The May meeting minutes were approved.

3. Treasurers & Membership Report

The treasurer's report was approved. Mike reported that in addition to moving some of our money to Live Oak Bank (see last month's minutes) we have now opened an account with the San Diego County Credit Union. Our attorney is still working on the necessary documents to sue Chase for the \$5,000 counterfeit check they cashed on our account.

4. Standard Reports

a. <u>Site Maintenance Report:</u>

Summary of the Annual Spring Clean Up which was held May 20, 2023. Seven members with personal equipment arrived on site right at the official start time of 9am, with more than 50 members in attendance arriving throughout the day. The bulk of the group helped with public areas while others worked on their private pads. Around 10am new member, Chris Hodge, arrived with a large truck and plentiful burlap bags to bind clippings. This expanded the initial scope of work because clippings could be more easily gathered and transported for disposed since the dumpster was not available this year. Because the event was so well-attended, all initial targeted areas for weed whacking (public pad area, bathroom/shower building area, main path to LIPP, etc.) were completed by 10:30am. This enabled the initial scope of work to be widened. Smaller groups ventured out to trim hedges around the public parking pad perimeter and along private pad pathways. Other areas of work completed were bathrooms/shower cleaned/floors hosed down, wooden debris broken down/removed from back of Cruzen Observatory, and large dead branches removed along perimeter. New Emergency Contact signs were posted in public areas (bathrooms, warming room, etc.)

A smaller group was treated to all aspects of LIPP Observatory maintenance by Ed Rumsey which included sweeping out the entire observatory, organizing equipment, and cleaning both telescope mirrors and eyepieces with CO2.

One private pad owner expressed concern to directors about long-term absence of power to his pad, #69.



A TDS Site orientation hosted by Ed Rumsey was held at 11:30am with 15 members attending and lasted ~45 minutes. Topics covered were:

- Public pad power outage troubleshooting
- Main gate lock how/when to secure
- Pump house/power/water on/off procedures
- Warming Room/Shipping container supplies, key lock box
- TARO visit
- LIPP visit
- CRUZEN visit

An SOP for TDS Site Orientation will be submitted next month for board review before being entered into the work-in-progress TDS Site Operations Manual.

The BBQ at 1:30PM was well-attended and many new members were able to ask questions both about the site and astronomy in general.

Things that went really well:

• Many new members said one of the main reasons they wanted to attend was because a TDS site orientation was offered as part of the event.

- Members bringing their own equipment really helped speed the work up so the bulk of it was completed in the cooler hours of the morning
- Water bottles available for everyone right at the start was very beneficial

Things we could have done better:

 Vehicle glass damage from a stone thrown by weed whacking - next time vehicles should be parked away from areas being weed whacked

Next on agenda for TDS Operations Committee

- Members to walk TDS site to prioritize hit list items that were submitted last meeting
- TDS Operations Manual ongoing work-in-progress
- b. <u>Observatory:</u>

The Observatory and scope are in excellent condition. We had some problems with the RA encoder wiring which we are confident has been resolved. May gray was tough on us and June gloom seems to be upon us. Other than the weather – everything is good.

c. Loaner Scope Report:

Five loaner scopes are out: SDAA-004 Meade LX-90; SDAA-023 Orion XT10; SDAA-026 8" Zhumell; SDAA-027 beginner astrophotography rig; SDAA-028 Bushnell Voyager. Due to abysmal weather and no backlog of loaner requests, I have extended all loans out to July.

An Orion 8" Dobsonian has been donated to the loaner program. It has been assigned SDAA-031 and is ready to be loaned out. There is one SDAA member in line to loan this scope, but poor weather will likely prevent being able to make the exchange this month.

The 8" Agstrograph and CGX mount are still pending integration and testing for the loaner program. It's in the storage container, I just need to find time to get to TDS and work on it.



d. <u>Private Pad Report:</u>

We currently have 7 pads available and 14 people on the waiting list. We haven't had any new inquiries since last December and the current waiting list appears to be waiting for some more information regarding the Grid Rebuild and exactly how that will affect the pads (at least that's my guess, I can't explain the lack of movement otherwise).

e. <u>Program Meetings Report:</u>

David Wood and Kin need to visit MTRP and check out the connections for the June meeting which will be in person and hopefully live via Zoom. In addition to our great speaker for June, Tim Thompson, the 1st place winner of the Science Fair will make a presentation as well. Kin reported that he has the rest of the year pretty much booked with the exception of October, which he is working on.

f. <u>AISIG Report:</u>

Dave Wood is hoping to get AISIG rolling again next month if possible. He will work with Gene to get an email blast out via Wild Apricot.

g. <u>Newsletter Report:</u>

As always, the newsletter looks great – Thanks, Andrea!

h. <u>Website Report:</u>

Jeff worked with Steve Myers to redirect SDAA emails to Google Workspace. The transition was a simple change to the DNS records at GoDaddy, but the new emails are proving to be quite troublesome and the Board may want to reconsider whether this is the right approach. We need to be able to count on Board members and committee chairs receiving email that is sent to their SDAA addresses in a reasonable period of time.

The problems with the new email addresses are:

1) They can only be accessed through an obscure procedure using the Web interface to Gmail. The email cannot be retrieved on a phone or with an email client such as Outlook.

2) As of last week, some of the delegate accounts, including vice president, have not been set up.

3) Email sent from any of the new SDAA accounts is rejected by almost any server other than Gmail.

4) The user can set up the account to forward to an email address that is easier to access or checked more often, but each user must do this individually – it can't be set up by the administrator. Unless these issues can be resolved quickly, what is likely to happen is that people will bypass the SDAA emails and just use personal emails instead.

Both the public and outreach calendars should work and be visible on the website now.

i. <u>Social Media:</u> No report



j. <u>Outreach Report:</u>

May Gray lived up to its name this month. We learned if we have a little altitude, we can escape it somewhat, case in point Oakoasis County Park, May 13th, Barona Indian Charter School, May 19th and K.Q. Ranch. May 20th. Always an excellent turn out at Oakoasis each month, the sky was semi-clear and dark until about 1 hour after sunset and the May Gray kicked in. As for the Barona Indian Charter School, it was nice and clear up there, with Dave Whigham and Dennis Ammann showing the children Venus, Mizar, and other deep space objects Dave could find with his *Go To* telescope. Interestingly, this school brought in a children's science education group that offered them 'hands on' science experiences, such as: magnetism, electric circuits, and how to make slime (chemistry). By 8:30 pm, the coastal marine layer was upon us, but we were successful, not wishing to cancel. K.Q. Ranch was wonderful, we had the most SDAA members this year participate, William 'Prince' Oliver, Jose Magsaysay, Astro Jennie Koles, Sonny Adams, Dennis Ammann, and Wild Bill Cecil (Julian StarFest Czar). The May Gray was nowhere to be seen up there at 4,500'. 40 campers were walked across the dark starry night sky until 11:00 pm. What a wonderful escape from the May Gray at those three places.

2023	May	YTD
Events Completed	4	35
Events Canceled	4	24
Total Attendance	135	3059

Here are the numbers:

k. <u>TARO Report:</u>

After several trips to the observatory, the primary control computer was found to have failed. A replacement is being configured and tested. If all goes well, we expect to have the Observatory back on line in the next 30 days.

A description of the observatory and how to request observation time is now listed on the SDAA Website.



I. <u>Cruzen Report:</u>

Feedback from our Cruzen "guinea pigs" has been sparse but helpful. Based on their feedback, we have made minor improvements to the observatory and updated the documentation.

The RA encoder issue on the Schaefer mount has been resolved (for now). Multiple reports that the DSCs are now pointing accurately throughout the night. There is still an issue with balance and RA gear lash that needs to be resolved, but it's not a show-stopper. I'll work on that the next time I'm at TDS.

We are expecting to have the first "open" training session on August 19, after which the Cruzen will be officially "open" to SDAA members (who have completed training and meet the membership requirements). As we get closer to August 19, I propose sending out an e-mail using Wild Apricot, to eligible members (those with >= 1 year of contributing full membership) to build the roster for the August training. The next training opportunity will not be until February.

m. <u>Merchandise Report:</u>

A few hats and a license plate frame sold last month.

n. <u>Astronomical League Report:</u>

With Mike's help I have updated our official roster on the Astronomical League database, which is used as their mailing list for The Reflector magazine. There is also a correction, the actual club invoice is based on a single \$10 club fee and individual fees of \$7.50 for each of our members participating in AL. We are set until next Spring.

o. JSF Report:

The plaque honoring the Menghini's is almost complete.

-Distributed flyers and spoke at the Pine Hills Community annual meeting announcing the JSF.

-Distributed flyers at the Julian Chamber of Commerce and posted it on their bulletin board. -Printed brochures for JSF.

-Sent program information to Sky and Telescope to add to their calendar.

-Have received offers for additional food vendors who will attend Saturday.

-Edited the rules for JSF attendees.

-Visited the Menghini Winery. Michele will take our flyer and post it on their Facebook page. -Sent article to Andrea for publishing in our newsletter.

-Sent JSF article to Gene to publishing in our newslett

-Dan and Sandy have been amazing. Could not have done this without them.

p. <u>Primary Grid Reconstruction Report:</u>

Paul Ericson is hoping to have the design completed in the next 30 days.



5. Old Business:

6.

a.	Google Workspace Email/Calendar Update	Myers
	Steve is working on final touches and hopes to be finished soon.	
b.	By-Laws Clarification – Mike will send out the proposed wording	Decker/Chasin
	and we'll set a date for a special meeting.	
с.	Dumpster Reimbursement – Mike reported that we have been	Decker/Chasin
	reimbursed for the dumpster that we paid for but wasn't delivered.	
d.	Check Fraud – see Treasurer's report	Decker/Chasin
New B	usiness:	
a.	The proposed budget for 2023/2024 was approved as presented	Decker/Chasin
b.	OPT Gift cards – it was learned that neither of the banquet	
	raffle winners of the \$500 OPT gift cards were able to use them	
	so, it was decided that we would reimburse the winners for the	
	money they paid for their raffle tickets and also offer them a \$50 gift ca	rd.
с.	2024 Banquet reservations – it was agreed that we use the Handlery	Decker/Chasin
	Hotel again for the 2024 banquet and Mike is authorized to make	
	reservations, tentatively for February 24 th , 2024.	
d.	Contact list update – since OPT auctioned off their contact list to	Decker
	an unknown buyer, we are going to try and purge any OPT contacts	
	from Wild Apricot.	
e.	New Business – none.	
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7. Adjournment: The meeting was adjourned at 8:51pm.





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

12





13



ASTRONOMICAL LEAGUE Double Star Challenge



Other Suns: Delta Serpentis How to find Delta Serpentis on a July evening

Find bright Arcturus, nearly overhead. To its northeast is a similarly bright star, Vega. One-third the distance between the two is Alphecca. Delta Serpentis lies the same distance from Arcturus as Alphecca, but to the southeast.

Delta Serpentis

A-B separation: 4 sec A magnitude: 4.2 B magnitude: 5.2 Position Angle: 175° A & B colors: white





Otros Soles: Delta Serpentis Cómo encontrar Delta Serpentis en una tarde de julio

Encuentra Arturo brillante, casi arriba. Al noreste hay una estrella igualmente brillante, Vega. Un tercio de la distancia entre los dos es Alphecca. Delta Serpentis se encuentra a la misma distancia de Arcturus que Alphecca, pero al sureste.

Delta Serpentis

A-B separación: 4 sec A magnitud: 4.2 B magnitud: 5.2 PA: 175° A & B color: blanca







If you can see only one celestial show

All the rocky planets, all at once!

On the evenings of July 19 and 20, look towards the west 30 minutes after sunset.

• Brilliant Venus will be seen as a tiny crescent in steadily held binoculars.

• On the first evening, the thin crescent moon, full with earthshine, hangs above Mercury. The little planet might be lost in the bright twilight.

• On July 20, the moon forms a triangle with Regulus

and Mars. Venus sinks



below them. Mars, having lost its splendor from last fall, might be difficult to spot in the bright twilight. Binoculars will help.

• Mercury climbs somewhat higher over the remaining evenings in July. On July 28, it lies directly next to Regulus, which has dropped much closer to the horizon. Venus may lie too close to the horizon to be spotted. Because of their low alittude, very clear skies and a low horizon are needed to see this.





2023 July Another Look

New moon July 17th. Full moon July 3rd

July's new moon is called the Buck Moon. Some Native American tribes called it the Thunder Moon and the Hay Moon.

In Europe the full moon is also referred to the as Budding and Birth of Spring. The Anglo-Saxons called it Egg Moon, the Celts had names like New Shoots Moon, Seed Moon, and Growing Moon, Claiming Moon and Horse Moon. In France its Pleine Lune de Juillet, in Germany Juli Vollmond and in Spain, Luna Ilena de Julio.

Check your ephemeris. There are a number of lunar-planet and planet-planet conjunctions this month and a lunar occultation of Delta δ Scorpii.

I have always liked July astronomy. It is finally shirtsleeve weather and we can do galaxy and globular hunting hopping up and down the sky.

Looking up we see two constellations centrally located for us at 8:00 pm in the middle of the month: Libra and Corona Borealis.

Integral to a modern discussion of Corona Borealis (CrB) has to be the Corona Super Cluster, concentrated near Beta and roughly enclosed by the larger circle. Thankfully to George Abell (I met him in the early 60's) we have smaller discrete groupings to help us organize at least a portion of the structure, though much of what we know is not in optical wavelengths. Even with our telescopes, though, we can see and image foundation galaxies and patterns of galaxies in every Abell object. A job once reserved for pros but now an objective well within the range of many of our members. For the record, Scotty Houston would consider this a worthy endeavor.





The CrB supercluster contains the galaxy clusters Abell 2056, Abell 2061, Abell 2065, Abell 2067, Abell 2079, Abell 2089, and Abell 2092.

Of these, Abell 2056, 2061, 2065, 2067 and 2089 are gravitationally bound and in the process of collapsing to form a single massive cluster.

There are in excess of 400 galaxies in the supercluster, Abell 2065 being the largest galaxy cluster within the supercluster,

There are individual galaxies in CrB. Abell 2162 has NGC's 6085 and 6086. Others like 6001, 5961 and 5974 can be seen. Remarkably about the CrB supercluster is its membership in a much bigger picture. The **X** marks the apparent center of the Hercules-Corona Super Cluster, i.e. the Great Wall, the largest structure we have found in the observable universe, about 11% of our current size of the universe. I have also placed an **X** on the Sidney Hall painting of Hercules and CrB showing the approximate location of the center of the great wall.

The story of Corona Borealis is rather standard myth, but the circlet has been around as an identifiable asterism since Babylonian times when it was called a bowl. In Australia, the aborigines called the constellation after their boomerang and American Indians pointed the stars out as the "Celestial Sisters", one being the wife of the hunter White Hawk, our Arcturus and to the Celts she was a Fairy Princess

The Greeks, of course, managed to confuse the whole matter with conflicting characters and stories. The nexus of the legend revolves around a woman named Ariadne. Spencer in the "Fairy Queen" says

Look: how the crowne which Ariadne wore

Upon her yvory forehead...

Being now placed in the firmament,

Through the bright heavens doth her beams display,

And is unto the starres an ornament,

Which round about her move in order excellent.

Ariadne was the lady who gave Theseus the spool of yarn used to escape the labyrinth after his fight with the Minotaur. So Theseus takes Ariadne to the Greek island Nexus (Naxos) where he promptly abandons her. A real jewel he turned out to be. All is not lost for fair Ariadne, however. She found another guy. Some say Bacchus, some say Dionysus. Upon their nuptials, she was given a crown that was placed in the sky in her honor.

There are two stars and two galaxies worth-while to look up. In Abell 2162 are 12th magnitude galaxies NGC 6085 and 6086. You should be able to place both in your field of view. 6086 is one of those huge elliptical galaxies with a bright nucleus. N6065 is identified as spiral/elliptical. You choose. There are two variable stars worth your notice, also. T Coronae Borealis is a recurring nova. It is nicknamed the Blaze star. Usually it sits down near 10th magnitude, but suddenly can rise to as bright as 2nd magnitude. It is quite near Epsilon, so check it out visually and if you see a star there email the AAVSO. R Coronae Borealis is a variable because of its cloud of dust that obscures its face. It normally sits at 6th magnitude before abruptly plunging down to 14th, then recovering slowly and erratically.

Over 3000 years ago, in Babylon, the stars we now know as Libra were called the "Balance of the Heavens" while the Egyptians showed a set of scales on the Denderah Planisphere. It is also interesting that the Egyptians did not include the beam of the scales in their cosmology. Rather the beam, termed Milometer or Nilometer, was used as a measure of the flooding of the Nile.

Up north in Persia and surrounding regions Libra was a man holding a scale in one hand and a lamb in the other, it was the usual form of weight at that time in the east.

Later Chinese called it the "Celestial Balance", but in early China it was the Dragon.



Greeks called it $\underline{Epa\phi_{loc}}$, Weigh-beam. The sacred books of India mention it as Tula, the Tamil, Tulam or Tolam somewhat translated as a Balance, plus, on the zodiac of that culture it portrays a man bending on one knee and holding pair of scales.

Both the Greeks and the Arabs identified the stars as the Scorpion's claws and that identification can still be found in its brightest stars names, Zanenelgenubi and Zubeneschamali, in Arabian meaning the northern and southern claw. The Romans named her for a set of balances though even Ptolemy in 150AD still referred to the stars as a scorpion's claws.

Centuries were interesting times in Libra's life. Early Romans likened her to a token, believing Rome was founded under her auspices. From the Greeks to the Farnese Atlas (https://sci.esa.int/web/gaia/-/53265-sculpture-of-atlas-with-farnese-globe), some 200 years AD the constellations was transformed to the set of scales we now know. Eventually Libra became associated with the scales held by Virgo, representing either Dike or Astraeia, the goddess of Justice.



During Rome's founding and ascension Libra was favorably placed as the balance between day and night and the seasons.

"Then Day and Night are weigh'd in Libra's Scales Equal,"

<u>Manilius,</u>

Longfellow

and, "bear the Scales, when hang in equipoise The night and day."

Also for the Romans per <u>Virgil</u>:

" But when Astraea's balance, hung on high, Betwixt the nights and days divides the sky, Then yoke your oxen, sow your winter grain, Till cold December comes with driving rain."

The sun was in Libra at the autumnal equinox up until 3000 years ago when precession moved it to Virgo.

NGC 5897 is an 8th magnitude globular cluster found on the line from gamma to sigma (Brachium). You will find it interesting because it is rather loose. The image shows it to be a little more concentrated than it actually is. It's XI on the SHS classification which is about as loose as you can go. It would be great if one of our CCD experts were to image 5897 across the whole frame of the chip. I imagine that would be a spectacular shot.

Near 5897 is Merrill 2-1, PK 342+27.1, a very small 11th magnitude planetary. I never found it. The charts show it next to a star (9th mag.?) https://www.astrobin.com/goxcku/?q=5897 Finding it visually will be a bear and I have no idea how you .would image it. The catalogs tell us its 16" of arc across. That's about ¹/₃ the apparent diameter of Tycho in your telescope.

NGC's 5903 and 5898 are two elliptical galaxies very close in your field of view. They are not perfect, but certainly fraternal



NACHE PA



twins, both 11th magnitude and 2_{ish} to 3_{sh} min. of arc. They are classified E1, so they are almost perfect circles. https://kosmoved.ru/get_ngcic.php?ID=NGC-5898&lang=eng



10 magnitude open face spiral with wide arms. Resolution will be diffi

Quite some years ago Walter Scott Houston wrote:

"At first, time spent under crystalline starlight has all the flush and romance of a soft embrace on a warm summer's eve".

He spoke of moving past the romance of astronomy and challenging ourselves with binoculars, then smaller and then larger and even more massive telescopes. He would be just as much in love today when so many amateur astronomers have moved from huge mirrors to Richey-Chretien optics to apochromates with stunning optical performance and larger and more sensitive CCD chips. We have amateur astronomers and astro-photographers today who are producing images that rival the best of the professionals 50 years ago. We have others who have used larger instruments that vault over the NGC and IC to visually observe fainter and more difficult objects.

We have amateurs who study the massive amounts of data collected by the professionals and discover previously unknown planetary, emission, globular and any and all types of extra-galactic object.



Scotty would be 110 years old this year. He felt immense gratification at the promises of amateur astronomy while he was still with us and I have no doubt he would feel the same gratification at the place amateur astronomy is at today.

Dark Skys, Dave Phelps



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Camp with the Stars	-Vacant-	CampWiththeStars@sdaa.org		
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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	
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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	

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SDAA Editorial Staff

Editor - Andrea Kuhl 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?

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NASA Night Sky Notes

July 2023



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 to find local clubs, events, and more!

Find A Ball of Stars – M55 Linda Shore, Ed.D

French astronomer Charles Messier cataloged over 100 fuzzy spots in the night sky in the 18th century while searching for comets – smudges that didn't move past the background stars so couldn't be comets. Too faint to be clearly seen using telescopes of the era, these objects were later identified as nebulas, distant galaxies, and star clusters as optics improved. Messier traveled the world to make his observations, assembling the descriptions and locations of all the objects he found in his *Catalog of Nebulae and Star Clusters*. Messier's work was critical to astronomers who came after him who relied on his catalog to study these little mysteries in the night sky, and not mistake them for comets.

Most easily spotted from the Southern Hemisphere, this "faint fuzzy" was first cataloged by another French astronomer, Nicholas Louis de Lacaille in 1752 from Southern Africa. After searching many years in vain through the atmospheric haze and light pollution of Paris, Charles Messier finally added it to his catalog in July of 1778. Identified as **Messier 55 (M55)**, this large, diffuse object can be hard to distinguish unless it's well above the horizon and viewed far from city lights.

But July is great month for getting your own glimpse of M55 – especially if you live in the southern half of the US (or south of 39°N latitude). Also known as the "Summer Rose Star," M55 will reach its highest point in northern hemisphere skies in mid-July. Looking towards the south with a pair of binoculars well after sunset, search for a dim (mag 6.3) cluster of stars below the handle of the "teapot" of the constellation Sagittarius. This loose collection of stars appears about 2/3 as large as the full Moon. A small telescope may resolve the individual stars, but M55 lacks the dense core of stars found in most globular clusters. With binoculars, let your eyes wander the "steam" coming from the teapot-shaped Sagittarius (actually the plane of the Milky Way Galaxy) to find many more nebulas and clusters.

As optics improved, this fuzzy patch was discovered to be a globular cluster of over 100,000 stars that formed more than 12 billion years ago, early in the history of the Universe. Located 20,000 light years from Earth, this ball of ancient stars has a diameter of 100 light years. Recently, NASA released a magnificent image of M55 from the Hubble Space Telescope, revealing just a small portion of the larger cluster. This is an image that Charles Messier could only dream of and would have marveled at! By observing high above the Earth's atmosphere, Hubble reveals stars inside the cluster impossible to resolve from ground-based telescopes. The spectacular colors in this image correspond to the surface temperatures of the stars; red stars being cooler than the white ones; white stars being cooler than the blue ones. These stars help us learn more about the early Universe. Discover even more: https://www.nasa.gov/feature/goddard/2023/hubble-messier-55

The Hubble Space Telescope has captured magnificent images of most of Messier's objects. Explore them all:

https://www.nasa.gov/content/goddard/hubble-s-messier-catalog/



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The large image shows just the central portion of M55 taken by the Hubble Space Telescope. Above Earth's atmosphere, this magnificent view resolves many individual stars in this cluster. How many can you count through binoculars or a backyard telescope?

Original Image and Credits: NASA, ESA, A. Sarajedini (Florida Atlantic University), and M. Libralato (STScI, ESA, JWST); Smaller image: Digital Sky Survey; Image Processing: Gladys Kober



Look to the south in July and August to see the teapot asterism of Sagittarius. Below the handle you'll see a faint smudge of M55 through binoculars. More "faint fuzzies" can be found in the steam of the Milky Way, appearing to rise up from the kettle.

Image created with assistance from Stellarium: stellarium.org



2023 TDS Star Party Schedule

Date	Туре	Sunset	Astro. Twi.	Moonrise(set)	Closing	Illum. [†]	Hosts
7/8/2023	Public	7:59 PM	9:39 PM	12:07 AM	11:00 PM	67.3%	Per Martin
7/15/2023	Member	7:57 PM	9:35 PM	4:36 AM	11:00 PM	3.9%	Igor von Nyssen
8/12/2023	Public	7:36 pm	9:06 PM	3:26 AM	11:00 PM	12.2%	Ed Rumsey
8/19/2023	Member	7:29 PM	8:57 PM	(9:23 PM)	10:30 PM	10.9%	
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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