www.austinastro.org

SEPTEMBER 2019

SIDEREAL TIMES

Austin Astronomical Society

keeping astronomy weird since 1969

AAS 50th Anniversary Celebration

Friday, Sept. 13, 2019

The University of Texas – John A Wheeler Lecture Hall
Robert Lee Moore Building – room 4.102
2515 Speedway, Austin, TX 78712

NO PRACTICAL ASTRONOMY

Hors d'oeuvre reception starting at 6:30pm
Special presentation at 7:30pm

RSVP
RSVP to memberservices@austinastro.org
We look forward to celebrating with you!

President's Notes

By Jim Spigelmire

Happy Anniversary, AAS

Where were you in September 1969? Can you even remember 50 years ago? Some of you weren't around yet. I was 8 years old, living in a little country home about 30 minutes outside of Akron, Ohio. We had a 20-acre piece of land that could claim the highest hilltop for miles around. Earlier that year, we completed construction on a small observatory for my grandfather who shared it with other members of the Astronomy Club of Akron. I remember the club would hold star parties at our place a couple of times a year to enjoy the dark skies (something I took for granted back then), and they had one in September of that year. I was always excited when the astronomers came out to our home because I got to stay up past my bed time and look through some of the telescopes and listen to all the talk about astronomy and science. This year, of course, everyone was talking about Apollo 11 and the moon landing. What I didn't know was that over a thousand miles away in Texas, another group of folks (having been inspired by the success of Apollo 11) was holding the very first meeting of their new astronomy club in Austin.

I'm grateful for the vision and effort of a few individuals back in 1969 that enabled us to be here fifty years later with membership numbering in the

Banner: Aug. 2019 Image of the Month: William Czaja, M16 Eagle Nebula

Austin Astronomical Society

Sidereal Times
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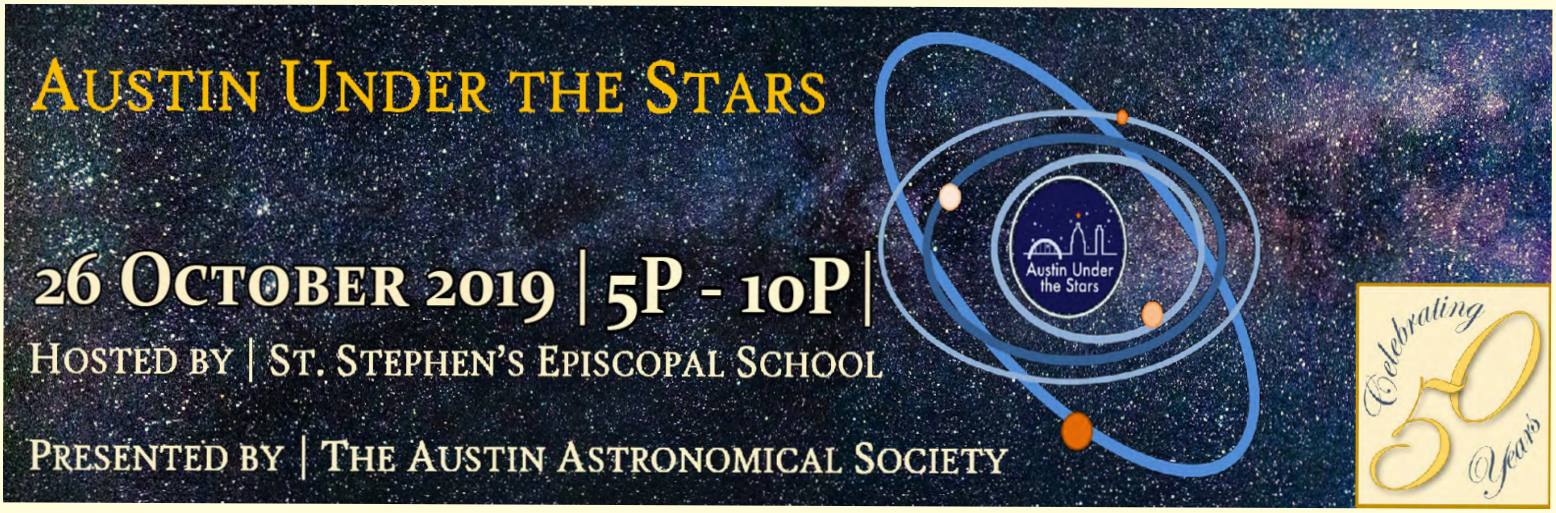
hundreds, and outreach impact in the thousands. I'd like to think they'd be proud of the accomplishments of our organization over the last 50 years, and the contributions made by many of our members to the advancement of the science and practice of astronomy.

I hope that you will all make every effort to attend our Anniversary celebration on September 13. A lot of planning and preparation is going into making it a wonderful evening of remembrance and celebration. There will be special guests and a presentation by Dawn Davies who will reprise the talk she gave on the history of AAS at Astronomy on Tap in August.

Clear Skies,
Jim



Our traditional summer observing event for the public had to be postponed this year, and it is now scheduled for Saturday, October 26, 5:00-10:00pm. We'll be at St. Stephen's Episcopal School as usual. In addition to solar and nighttime viewing, there will be portable planetarium shows presented by our friends at Stars and Science Austin, compressed air rockets, children's art activities, and more. We'll need members to share their binoculars and telescopes, provide help with activities, greet guests, and talk with visitors about astronomy. Mark your calendars now for this wonderful event!

Inside This Issue

1-2	President Notes
4	AAS 50th Anniversary Celebration
5-6	Spot the Stars of the Summer Triangle
7-8	Observing Targets September 2019
9	2019 Eldorado Star Party
10	Outreach Report & Calendar of Events
11	AAS Takeover Of Astronomy On Tap
12	AAS News: New DarkSky Site
13-15	Image Of The Month & Members Image Gallery
16	Treasurer's Report
17-18	GA and EC Minutes
18	Membership Cards
19	Joining AAS
20	2019-2020 Officers List ** Vacant Positions

AAS Affiliations

http://darksky.org/

https://nightsky.jpl.nasa.gov

https://www.astroleague.org/

http://www.tsgc.utexas.edu/

You're Invited

In Honor Of:

Austin Astronomical Society's 50th Anniversary

Join AAS members, past and present, as we celebrate
50 years of our Astronomical Society in Austin, Texas

Hors d'oeuvre Reception 6:30p Special Presentation 7:30p

Friday, 13 September 2019

The University of Texas at Austin – John A. Wheeler Lecture Hall
Robert Lee Moore Building – 4.102
2515 Speedway, Austin, Texas 78712

RSVP to: memberservices@austinastro.org

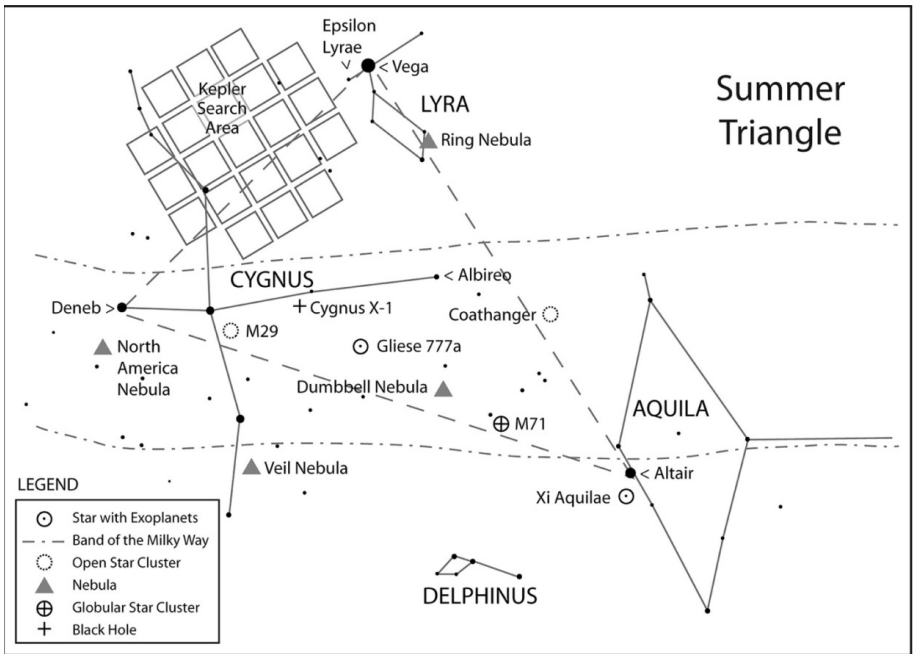
We look forward to celebrating with you!

Spot the Stars of the Summer Triangle

By David Prosper

September skies are a showcase for the Summer Triangle, its three stars gleaming directly overhead after sunset. The equinox ushers in the official change of seasons on September 23. Jupiter and Saturn maintain their vigil over the southern horizon, but set earlier each evening, while the terrestrial planets remain hidden.

The bright three points of the Summer Triangle are among the first stars you can see after sunset: Deneb, Vega, and Altair. The Summer Triangle is called an asterism, as it's not an official constellation, but still a striking group of stars. However, the Triangle is the key to spotting multiple constellations! Its three stars are themselves the brightest in their respective constellations: Deneb, in Cygnus the Swan; Vega, in Lyra the Harp; and Altair, in Aquila the Eagle. That alone would be impressive, but the Summer Triangle also contains two small constellations inside its lines, Vulpecula the Fox and Sagitta the Arrow. There is even another small constellation just outside its borders: diminutive Delphinus the Dolphin. The Summer Triangle is huge!



Caption: Once you spot the Summer Triangle, you can explore the cosmic treasures found in this busy region of the Milky Way. Make sure to "Take a Trip Around the Triangle" before it sets this fall! Find the full handout at bit.ly/TriangleTrip

The equinox occurs on September 23, officially ushering in autumn for folks in the Northern Hemisphere and bringing with it longer nights and shorter days, a change many stargazers appreciate. Right before sunrise on the 23rd, look for Deneb - the Summer Triangle's last visible point - flickering right above the western horizon, almost as if saying goodbye to summer.

The Summer Triangle region is home to many important astronomical discoveries. Cygnus X-1, the first confirmed black hole, was initially detected here by x-ray equipment on board a sounding rocket launched in 1964. NASA's Kepler Mission, which revolutionized our understanding of exoplanets, discovered thousands of planet candidates within its initial field of view in Cygnus. The Dumbbell Nebula (M27), the first planetary nebula discovered, was spotted by Charles Messier in the diminutive constellation Vulpecula way back in 1764!

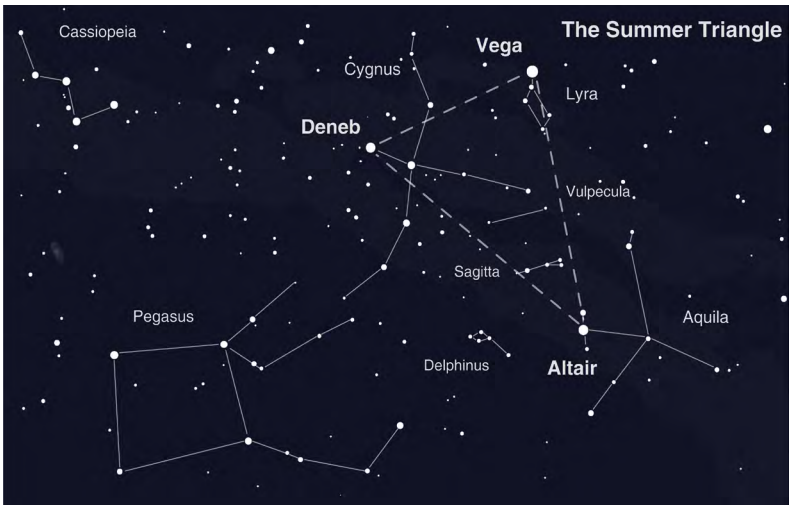
Planet watchers can easily find

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.org to find local clubs, events, and more!

Spot the Stars of the **Summer Triangle**

Jupiter and Saturn shining in the south after sunset, with Jupiter to the right and brighter than Saturn. At the beginning of September, Jupiter sets shortly after midnight, with Saturn following a couple of hours later, around 2:00am. By month's end the gas giant duo are setting noticeably earlier: Jupiter sets right before 10:30pm, with Saturn following just after midnight. Thankfully for planet watchers, earlier fall sunsets help these giant worlds remain in view for a bit longer. The terrestrial planets, Mars, Venus, and Mercury, remain hidden in the Sun's glare for the entire month.

Discover the latest in space science from the NASA missions studying our universe at nasa.gov



Caption: This wider view of the area around the Summer Triangle includes another nearby asterism: the Great Square of Pegasus.

An Austin Astronomy Story

By David C Kupfer

It's Friday night and I'm drinking Topo Chico with my neice and talking astronomy.

My neice, UT Class of 2020, history major, has reviewed the photos I took of the moon near Jupiter earlier tonight.

She kindly told me that I should leave astro-photography to young ones.

So I told her that she would have to uncrate her long lens and take some UT caliber moon shots and send them to you for publication.

She laughed and said, 'For sure!"

When I said tomorrow she could start on moon shots, she smiled.

I'm still hoping for a new recruit.

Observing Targets September 2019

By Brian Cuthbertson

Welcome to fall, when the summer Milky Way slowly sinks into the west to make way for fall skies. I sometimes like to think of the evolving sky as topography: we're now leaving behind the glittering highlands of the summer Milky Way, starting our descent down thru the autumn plains of Pegasus, Pisces and Cetus, eventually to cross the long river Eridanus, which rises in the foothills of the great range of the winter Milky Way near the peaks of Orion and Canis Major. But however you view your celestial observing route, it's never a dull trip. Enjoy!

M14 rating: EASY

globular cluster in Ophiuchus
RA 17h 37.6m Dec -03d 15' (2000)
Magnitude 7.6

M14 is the easternmost of three Messier globular clusters in Ophiuchus. It also lies within a fairly empty area of the sky: your best bet is to start at 3rd magnitude Beta Ophiuchi (Cheleb) and drop 7.5 degrees south, and a tad east. There won't be much else around to mislead you: the globular is bright enough to be visible in a small refractor as an unresolvable "core" with perhaps just a faint sparkle at the center. You can start to see some granularity in a 6-inch scope at high power, but it takes a 10-inch at about 200x to begin to show individual stars. Even a 12-inch class scope will show the cluster only marginally resolved, somewhat unusual considering its brightness.

Two complimentary reasons help explain this lack of resolution. Most importantly, unlike M10 and M12 (its fellow Messier globulars in Ophiuchus), M14 is 70,000 light-years away, located way beyond the Milky Way's core on the far side of the galaxy. Second, we see M14 looking through a very dusty region of the Milky Way, so there's lots of light loss to contend with. By comparison. M10 is relatively close, lying on our side of the core at 13,000 light-years, while M12 lives in the core itself or just beyond at 18,000 light-years.

Despite its distance, M14 is an interesting character. For one thing, it contains a lot of variable stars (over 70). For another, it's one of just two globular clusters in which a nova has been found. The 1938 discovery was on plates after the fact, but the star may have reached magnitude 10 or 11 at maximum. The only other case of a nova in a globular cluster was a real blast from the past, seen in 1860 in M80 in Scorpius.

NGC 6934 rating: MEDIUM

Globular cluster in Delphinus
RA 20h 34.2m Dec +07d 24' (2000)
Magnitude 8.9

Located below the tail of the Dolphin, NGC 6934 is one of two globular clusters in Delphinus. At a distance of about 50,000 light-years, its distant even for a globular cluster. But it's nowhere near as remote as the other Delphinus globular, NGC 7006, which at 113,000 light-years is one of the most remote Milky Way globulars.

NGC 6934 can be just glimpsed in binoculars. In an 8-inch scope at 175x, it's a dim glow just on the verge of resolution into stars. A 10-inch at 220x shows a slightly oval cluster partially resolved into stars. A 16-inch at 260x can resolve the bright condensed core just slightly, and the cluster's compact halo resolves into about 50 stars. A deep yellow 9.5-magnitude field star lies on the cluster's western edge.

And for us armchair observers who prefer our clusters served on a silver platter, there's a couple of interesting images of NGC 6934 in the Astronomy Picture of the Day (APOD) archive: a beauty by Hubble, and another by the 8.1-meter Gemini North Telescope in Hawaii that zooms in on the cluster core. You can find both by going to https://apod.nasa.gov/cgi-bin/apod/apod_search and entering 6934 in the search field.

IC 5217 rating HARD

Planetary nebula in Lacerta
RA 22h 23.9m Dec +50d 58.2′ (2000)
Magnitude 11.3

Here's a tough little nut to crack in the dim little constellation of Lacerta, which sits on the eastern border of northern Cygnus. IC 5217 can be found just over a degree due south of 4th-magnitude Beta Lac.

IC 5217 is a very compact, bright, but neglected, planetary that can try the patience of sky-hoppers, since it's located in a region of the sky populated with dozens of similarly bright stars. Blinking the planetary with a nebula filter can make identification easier, however.

You can see IC 5217 in scopes as small as 4-inches. It appears slightly oval in 6-inch scopes and larger. In a 10-inch scope at 200x, it is elongated N-S and has a stellar nucleus. Its south tip has a sharp taper like a football. A 12-inch scope reveals a brighter core and a blue-grey color, with a bright spot just west of the center. Finally, a 16-inch pumped up to 855x shows a bright inner disk with an obvious N-S elongation.

Exploring Amateur Astronomy

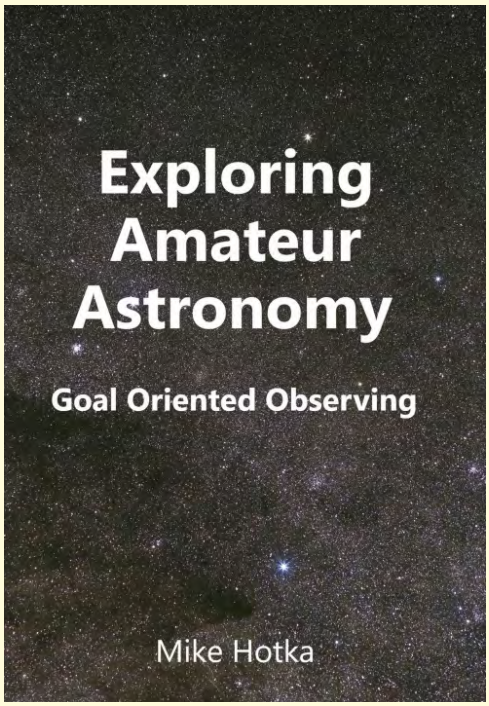
Goal Oriented Observing by Mike Hotka

Have you ever wanted to start and complete more of the Astronomical League's observing programs but just didn't know how? Mike Hotka's new book, Exploring Amateur Astronomy – Goal Oriented Observing, will not only help you start more observing programs, but will also share an observing methodology to help you get more out of your observing sessions. Mike is a Platinum Master Observer and has completed all but three of the currently existing observing programs. In his book, he shares tips and tricks he learned throughout the years of how to overcome some of these program's learning curves, so that you can start recording observations sooner. He wrote this book because of his love of astronomy and his desire to share his knowledge of observing celestial objects with others.

Mike's book explains the concept of setting SMART goals to ensure you observe on a regular basis. The book goes on to explain a methodology that Mike has developed and refined over the years of how to plan an observing session, find the resources you will need in the field and the importance of keeping a good observing log of your observations.

The remainder of the book contains a chapter for each of the observing programs that Mike has completed. These chapters describe how Mike approached each observing program and he shares the techniques that were effective in completing the observations for each program. With this knowledge, you will be able to start making observations from the very beginning for even the most difficult of observing programs.

This book emphasizes learning and refining astronomical observing techniques. It is designed to aid the beginner as well as the experienced amateur astronomer to train their eye to see faint celestial objects. This book is dedicated to those that would like to start and complete more Astronomical League observing programs.



Exploring Amateur Astronomy – Goal Oriented Observing can be purchased in a paperback or eBook version from Amazon.com.

2019 Eldorado **Star Party**

You can save by registering before October 1, when our rates go up...

Join us at the annual Eldorado Star Party (ESP), October 21-26, 2019.

Just for amateur astronomers who want dark skies and a protected environment, the 7,100 acre X-Bar Ranch is 20 miles WNW of Sonora,Texas.
Sponsored by the Austin, San Antonio, and Fredricksburg astronomy clubs, and assisted by volunteers throughout Texas, this event brings dark skies closer to the amateur astronomer... ESP's central location is within easy driving distance of many Texas cities... 3 hours west of San Antonio, and 5 1/2 to 6 hours from Dallas and Houston.

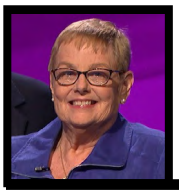
The site is eight miles north of Interstate-10, and has a convenient all-weather road and nearby light-shielded parking area at the observing fields. The main observing area includes power for telescopes and equipment, and is organized so that you may drive on-off from the nearby parking area at night without impacting the observers on the fields.
The same darkout rules that you see at TSP will be in effect here!

Here's some of what you will find at this year's ESP:

- Celebrate the start of Standard Time (It gets darker one hour earlier!)
- Star party activities including special observing programs, afternoon speakers, and doorprizes. And don't miss the nearby Caverns of Sonora
- Camping (and hot water showers), special rates at nearby motels, catered meals.
- nternet available at Lodge and observing field.
- Convenient ONLINE registration and payment via credit card or Paypal!

Want to learn more? There's lots of information on the ESP web site!

Register online NOW at:
https://eldoradostarparty.org/register-me/
Pre-register soon, to save money before our rates go up!



Outreach Report **September 2019**

By Joyce Lynch, Outreach Chair

On August 3 we went to Sweetwater Community west of Bee Cave for a star party for about 40 people. Besides my husband Jim and me, Cathy Rosenthal and Jamie Canfield were there, showing Jupiter, Saturn, and the moon once it came out from behind the clouds.

The following Saturday, August 10, Lockhart State Park used our help with a star party highlighting the Perseid meteor shower. AAS volunteers included Brad Walter, Gordon Schaefering, Domingo Rochin, Lawrence and Christina Young, Justin Elliott, Rick Ingels, Lester and Margaret Wetherell, and Jim Lynch.

The August 24 star party at Pedernales Falls State Park was attended by about 140 people, but unfortunately there was very little to see due to clouds until a few objects were visible at the very end of the evening. The sunset (pictured) was probably the most impressive view of the evening. Thanks to the members who came anyway and did talk with visitors about their scopes and what they were missing in the sky: Steven Bingham, Ravi Vellore, Ramon Salvania, Christine White (who helped at the welcome table), Brian Lippincott, Greg and Michelle Rohde (and Michelle's friend), Terry and Darcy Phillips, and Jim Lynch. A special shout-out goes to Chris Bernhardt, who helped all the kid visitors make stomp rockets.

Our public star party for September will be on the 28th at Inks Lake. And be sure to mark your calendar for Austin Under the Stars at St. Stephen's Episcopal School on October 26.

Saturday, September 28 (7:00pm-9:30pm)
Public star party at Inks Lake State Park.

Saturday, September 28 (7:30pm-11:00pm)
Members Only Star Party @ Alan Carruth's Ranch

Saturday, October 26 (5:00pm-10:00pm)
Austin Under the Stars at St. Stephen's Episcopal School

Calendar of Events

13 Sept. 2019
NAAS 50th anniversary celebration
6:30 PM - 9:00 PM
@ John A Wheeler Lecture Hall,
RLM building room 4.102

28 Sept. 2019
Public Star Party
7:00 PM - 9:30 PM
@ Inks Lake

28 Sept. 2019
Members Only Star Party
7:30 PM - 11:00 PM
@ Alan Carruth's Ranch

7 Oct. 2019
Executive Committee Meeting
7:00 PM - 8:30 PM
@ Tim Brown's House

11 Oct. 2019
No Practical Astronomy
General Assembly Meeting
7:30 PM
@ ETC 2.136 - UT Campus
Engineering Teaching Center
Dean Keeton and Speedway

19 Oct. 2019
Public Star Party
6:30 PM - 9:30 PM
@ Pedernales Falls State Park

19 Oct. 2019
Members Only Star Party
7:00 PM - 11:00 PM
@ Alan Carruth's Ranch

26 Oct. 2019
Austin Under The Stars
5:00 PM - 10:00 PM
@ Stephen's Episcopal School

AAS Takeover Of **Astronomy On Tap**

Caption: Greg "Dob the Builder" Rohde presenting on Innovations in Amateur Telescope Design | photo credit Dawn Davies

Caption: Terry "Starry Sky Lord" Phillips presenting the Toolkit for the Modern Amateur Astronomer | photo credit Michael Albrecht

Caption: Jim"Scruffy Looking Nerd Herder" Spigelmire receiving a signed Proclamation by the Mayor of Austin, Steve Adler; declaring August 20, 2019 as the 50th Anniversary of the Austin Astronomical Society | photo credit Michael Albrecht

Caption: Rebecca "Chaos Cloud" Lawson, Astronomy on Tap ATX Host) introducing Jim Spigelmire and presenting him with his very own Astronomy-on-Tap Space-Cadet Name. | photo credit Michael Albrecht

Caption: Dawn "Earthbound Astronomer" Davies presenting on A Brief History of the Austin Astronomical Society | photo credit Amy Jackson

Image taken by Sadaf Syed

AAS News: **New Dark Sky Site**

Great News!

Thanks to AAS members, Alan and Caroline Carruth, we have a fantastic new **Dark Sky Site** for the use of all members.

A porta potty serviced frequently is available. There is no power or water available so plan accordingly.

Come on out and enjoy great observing with friends under dark skies.

If you have questions, please contact Tim Brown (me) at: memberservices@austinastro.org.

Members Only star party - September 28, 2019

Members' access rights and responsibilities

We must always remember that this site is the private property of Alan and Caroline and we can use it for the club only by their gracious consent. Always take care to follow the few, very reasonable rules below:

Members in good standing have access for:

- Members only star parties
- Non-public, **members only** astronomical observing
- Members may camp overnight in connection with such activities

Duties:

- Individual AAS members must first give Alan email notification of their plan to observe and receive approval by owner.

Prohibited Activities

- Discharge of firearms or fireworks
- Loud music
- Tampering with fences or gates
- Hunting of any sort
- Activities which materially interfere with owners use and enjoyment of his/her adjacent lands.
- No access to owner's structures
- Don't damage, deface or destroy any property or improvements
- AAS members are responsible for closing and locking all gates when leaving

Image of the Month

September 2019

Congratulations to

Chris Foster

Sagittarius Mosaic M8 The Lagoon Nebula in Narrowband

Imaging telescope or lens:Orion EON 115mm ED APO Triplet Refractor
Imaging camera:ZWO ASI1600MM-PRO
Mount:ORION HDX-110 EG-G
Guiding telescope or lens:Stellarvue SV80mm finder
Guiding camera:ZWO ASI290mm Mini
Focal reducer:William Optics 0.8x Flattener IV
Frames:
Astrodon 36mm Ha 5nm: 264x240" (gain: 200.00) -15C bin 1x1
Astrodon 36mm Ha 5nm: 240x60" (gain: 200.00) -15C bin 1x1
Astrodon 36mm O3 5nm: 264x240" (gain: 200.00) -15C bin 1x1
Astrodon 36mm O3 5nm: 240x60" (gain: 200.00) -15C bin 1x1
Astrodon 36mm SII 5nm: 264x240" (gain: 200.00) -15C bin 1x1
Astrodon 36mm SII 5nm: 240x60" (gain: 200.00) -15C bin 1x1

Integration: 64.8 hours

Members' Gallery

by Jeff Hargis
M16, the Eagle Nebula
Photographed September 1, 2019.

by Rathijit Banerjee
The Wizard Nebula (NGC7380) in Narrowband

Telescope: Celestron EdgeHD 1100 with 0.7x Reducer

Camera: ZWO ASI1600MM-Pro

Mount: Losmandy G-11GFT Gemini 2

Software: AstroPixel Processor, Adobe Photoshop CC

Filters:

> Astrodon Ha 36mm 5nm: 90x300"

> Astrodon Oiii 36mm 3nm: 60x300"

> Astrodon SII 36mm 3nm: 48x300"

Total Integration: 16.5 hours

by Nathan Morgan
NGC 7023 (Iris Nebula)

William Optics FLT 110 DDG Triplet APO

Starlight Xpress Trius SX814 Mono

Orion Atlas EQ-G

Astrodon Blue : 28x300"

Astrodon Green : 29x300"

Astrodon Luminance: 71x600"

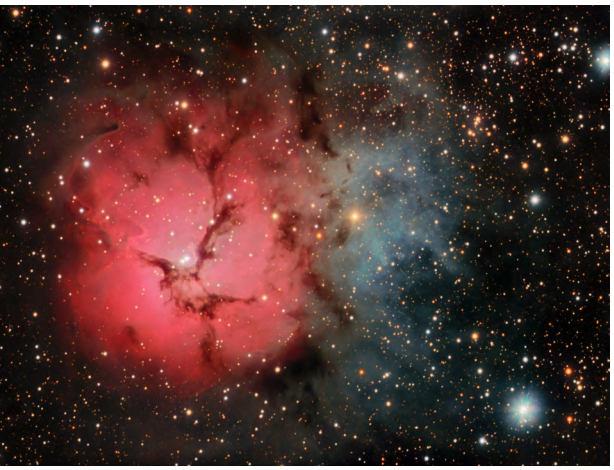
Astrodon Red: 26x300"

Integration: 18.8 hours

Members' Gallery

by Chris Foster
Rosetta Nebula

Imaging telescope or lens:Orion EON 115mm ED APO Triplet Refractor
Imaging camera:ZWO ASI1600MM-Cool
Mount:ORION HDX-110 EG-G
Guiding telescope or lens:Orion 70 mm Multi-Use Finderscope
Guiding camera:ZWO ASI290mm Mini
Focal reducer:William Optics 0.8x Flattener IV
Astrodon 36mm Ha 5nm: 68x240″ (gain: 200.00) -20C bin 1x1
Astrodon 36mm O3 5nm: 60x240″ (gain: 200.00) -20C bin 2x2
Astrodon 36mm SII 5nm: 71x240″ (gain: 200.00) -20C bin 1x1



by Chris Foster
M20 - The Trifid Nebula in HaRGB

by Chris Foster
M20 - The Trifid Nebula in LSHO

Treasurer's Report September 2019

By John Cassidy, Treasurer

AAS Treasurers Report 8-26-19

Regular Savings (Contributions)	$2,147.16
Scholarship Fund	$2.60
Checking	$20,142.16
CD 1	$5,894.39
CD 2	$5,871.95
PayPal	$2,833.05
Total	**$36,891.31**

EC Minutes June 2019

By Terry Phillips, Secretary

20th June 2019
Meeting Notes:

Present were Brian Lippincott, Tim & Cass Brown, Jim Spiglemire, John Cassidy, Joyce & Jim Lynch, Jessica Cofrancesco, Will Czaja, Greg Rhody, and Terry Phillips.
EC voted to affirm Terry Phillips as this term's Secretary, and Mike Marotta as Member at Large
Discussed 50th anniversary of Apollo 11 landing celebration with a star party when moonrise will be at 11:43 PM 4 day s post full moon.
Agreement with Alan Carruth is ready to sign.
Looking at July 13th workday at Alan's prior to star party
Working with Central Texas Astronomical Society (Waco) for joint CTSP at their observatory 14801 FM 182, Valley Mills, TX 76689 Date???
Paul Hoffman director at YMCA camp Moody near Buda is interested in starting an outreach relationship
Pedernales State Park awaiting one final approval signature to begin process of establishing observing storage unit onsite. Greg Rhody will take lead in ongoing discussions.
For now we've decide it best to focus on Pedernales and put Ink's Lake on back burner while they are recovering from last year's fire.
Astronomy on Tap will throw AAS a 50th birthday party on August 20th. We will provide the slate of speakers.
In principle, we authorized approximately $1,000 to pay for travel expenses to bring in former NASA astronaut "Dottie" Dorothy Marie "Dottie" Metcalf-Lindenburger to speak at our August meeting, or in September if we decide to do our 50th in that month.
Tim will look at getting James Bryan first president of the society to the 50th celebration , Also asking Brian Cuthbertson our historian to present some of our history. We should issue a call for pictures and slides from the membership for presentation.
50th anniversary t-shirts: Jim has colleague who can produce. Talk to Tara about a design.
Joyce will look at producing a birthday cake for AAS celebration
Tim checking on having City of Austin issue a proclamation.
Still seems open issue if celebration will fall in August or September. Need to resolve.
Frank Miken has offered October 26th as date for next Austin Under the Stars at St. Stephen's.
Jim will be driving talks with Austin High to move our GA meeting venue to their location on Lady Bird Lake.
Jim's goals
1) No future elections without candidates. Have VP or other role act as president in waiting to succeed current president. Discussion about 1yr terms too short, about other means of achieving the goal
2) Get the meetings off UT campus
3) Unclear in notes. Maybe In-Close member observing similar to Mansfield Dam.
Tim > Website Interactive Content. Will Czaja to help as web developer. Tim & Will to gather requirements
Joyce > Behind the firewall Events Calendar
Discussed how to take best advantage of social media capabilities. Talk about things that work better with the younger generations. Will or Steven Bingham will look at Instagram
Contact Rebecca Larson re AAS to sponsor Astronomy on Tap and maybe play a more active role.

Joyce Outreach
Need to build up group willing to do outreach
Chris Bernhardt?
Mad Dogs and Englishmen?

EC Minutes Continued

Outreach to commercial orgs – prompted big discussion yes or no not resolved
John warned about legal gray areas e.g. "Lending your name"
Bylaw changes to support outreach
Possible two outreach chairs: one for state parks and similar orgs, one for regular outreach
Gordon Sheffering?? Visit EC Meeting??
Brian Equipment
    Pedernales storage
    Build out Alan's location

General Assembly Minutes July 2019

By Terry Phillips, Secretary

Call to order: 7:30 pm at UT campus, ETC II 2.136
Quorum was met. (Overflow crowd 110 in attendance estimated)
A motion to approve May GA minutes was made and approved.

Work Day declared for 13th July at Alan Carruth's Ranch

20th July Member's only star party celebrating 50th anniversary of the Apollo 11 moon landing to be held at Alan Carruth's Ranch with catered BBQ dinner.

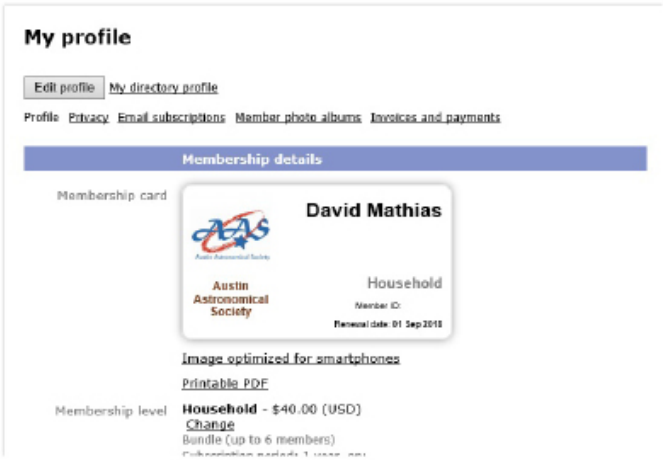
Outgoing President Tim Brown was presented with a token of the club's appreciation, a high resolution 12" lunar globe.

Professor Steven Weinberg, Nobel Laurate, UT Director Theory Research Group. Particle physics, unification of fundamental interactions, cosmology, astrophysics, supersymmetry, and supergravity, presented a talk on "Gravitational Wave Astronomy".

Meeting adjourned at 9:30

Membership Cards Now in Your Profiles

At last, Wild Apricot, our membership database vendor, has made available to its customers membership card templates. Now, under your AAS membership profile you will see a mockup of a card with your name, Membership ID and membership expiration date. You are offered two options for displaying your card: one which is suitable for displaying from a smartphone, and another printable PDF which you can cut and laminate to your heart's delight.



NIGHT SKY NETWORK

The Night Sky Network is a nationwide coalition of amateur astronomy clubs bringing the science, technology, and inspiration of NASA's missions to the general public. AAS members can register with NSN and receive the NSN newsletter and email about upcoming webinars and any additional information or announcements created by the NSN for members. They will be able to search for resources, view all of the toolkits and the files, and access the downloads in each kit.

If you are interested in registering, here is the procedure.

Go to https://nightsky.jpl.nasa.gov/index.cfm
Enter your zip code in the upper right box for CURRENT LOCATION.
Scroll down to CLUBS NEAR YOU and click on AAS.
Click on Register in the toolbar on our page.
Fill out the form and submit.

Your form will be sent to the club for approval.

If you have any questions, email outreach@austinastro.org

Joining AAS or Renewing Membership

To join or renew your membership to AAS, please visit: http://austinastro.org/index.php/why-should-you-be-a-member/ There are six membership levels to choose from:

Household Bundle (up to 6 members) $40.00 (USD)
Renewal: Every one year, starting from join date
No recurring payments. For members of a household living at the same address.

Household With Senior (up to 6 members) $28.00 (USD)
Renewal: Every one year, starting from join date
No recurring payments.
For members of a household living at the same address and at least one member is over 65 years of age.

Junior $15.00 (USD)
Renewal: Every one year, starting from join date
No recurring payments. For members up to age 18.

Students $15.00 (USD)
Renewal: Every one year, starting from join date
No recurring payments. For members age 18 and older.

Regular $25.00 (USD)
Renewal: Every one year, starting from join date
No recurring payments. For individual members.

Seniors $15.00 (USD)
Renewal: Every one year, starting from join date
No recurring payments. For members 65 years of age or older.

Visit Dawn Davies' *Earthbound Astronomer* website at https://www.earthboundastronomer.com/

Amy Jackson's website is http://www.starryskyaustin.com/. Learn more about her children's book about astronomy at http://www.starryskyaustin.com/childrens-book-project/

Rob Pettengill's site can be found at http://astronomy.robpettengill.org/. Rob's material shared per CC BY-NC-SA 4.0 license.

Celestial Teapot's product catalog can be found at http://messierplanisphere.com/

Joseph Macry writes a weekly column for Manor Community News: "This Week in Astronomy". You can read the online edition here: http://manorcommunitynews.com/

Officers of The Society **2019-2020**

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