HAPPY HOLIDAYS

Party
Kass and I wish you, your family and friends, well everyone, a very Merry and Happy Holiday season filled with good cheer and the company of good friends. Begin the season tomorrow night by joining your fellow members and their guests for the AAS annual Holiday Party. If past years festivities are any predictor it’ll be a fun evening for all. It’s a Pot Luck dinner so the food and holiday treats are sure to be great. If you haven’t had a chance to create a dish to contribute to the Pot Luck come anyway. Your presence is all that’s required.

The party this year will be held at the club house of the Austin Gem and Mineral Society which has a full kitchen and serving area. Be sure to check out the description of the party and the Austin Gem and Mineral Society’s location on the club’s website or in this issue of the Sidereal Times.

Comet
A big bonus at this year’s party- Comet - 46P/Wirtanen. We’ll view (we hope) this celestial delight at its brightest this weekend. The AGMS facility has a parking lot we’ll use to setup a telescope or two or more. Don’t miss it. It’s a great time to meet old friends and make new ones.

Pedernales Falls and Inks Lake State
Despite bad weather, Joyce, Dawn and Vanessa have managed several
public and one private star party since we departed COE. My personal goal for the Spring is to work with Dawn and others to get us established at Pedernales. I’ll end with my usual call to all members – volunteer.

Volunteer
AAS’s success depends on the willingness of all members to pitch in. Volunteer to help with the activity that most interests you or that you think most needs improvement. Contact the EC member in charge of your area of interest and get involved. You are needed.

Clear Skies (at last) and Happy Holidays,
Tim
“For my part, I know nothing with certainty, but the sight of stars makes me dream”. (Vincent Van Gogh)

AAS Potluck Christmas Party

The annual AAS Holiday Party will be next Friday, Dec 14th, starting at 7:30 pm! Meet your fellow astronomers and enjoy a potluck and Image of the Year. Click here to sign up for the potluck dinner (you must be logged in to view the page). The party will be located at the Austin Gem and Mineral Society Building at 6719 Burnet Lane in Austin. Hope to see you there!
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AAS AFFILIATIONS

http://darksky.org/

https://nightsky.jpl.nasa.gov

https://www.astroleague.org/

http://www.tsgc.utexas.edu/
There’s no time like the present to stick one’s observing neck out into faint night sky areas you might not usually frequent. So this month I poke around a bit in the supremely obscure northern constellation of Camelopardalis, the Giraffe. It’s not a high point of most observing sessions, but there are some interesting corners there, a couple of which are highlighted below. They make for some interesting reading, even if you never quite make it to that part of the sky with your eyepiece. Enjoy!

**Beta Cam**  
-rating: EASY  
star in Camelopardalis  
RA 05h 03.4m Dec +60d 26.5’ (2000)  
Magnitude 4.0

Camelopardalis “the Giraffe” is a huge “modern” constellation invented only about 400 years ago. Because it wraps in a substantial arc around the north pole, it lies north of a number of better known northern constellations including Perseus, Auriga, Lynx, Ursa Major and Draco. Despite this size, Camelopardalis is an “obscure” constellation for most observers, since only 4 of its stars are even as bright as 4th magnitude, and none even carries a proper name - just catalog designations.

Beta Cam, only faintly visible to the eye at magnitude 4.02, is nevertheless the brightest star in Camelopardalis. Intrinsically Beta is bright - a class G0 yellow-white supergiant about 1600 times as luminous as the Sun. However it appears faint for couple of reasons. First is its distance of 1000 light years. Second, it’s close enough to the Milky Way (11 degrees from the galactic plane) that it’s dimmed about 15 percent by intervening interstellar dust.

Beta has two visual companions. The brighter one, 84 arc seconds away and 7th magnitude, is itself double. Little is known about it except that the brighter member is class A5, and the dimmer is likely F. Separated from Beta by at least 25,000 Astronomical Units, this double takes at least a million years to orbit the supergiant. The fainter companion, at 12th magnitude, is closer at just 15 arc seconds.  

Beta is most likely in a transition from being a hydrogen fusing dwarf (of hot class B) to a larger helium-fusing red giant. Whatever its status, it falls into a zone of temperature and luminosity in which stars become unstable and pulsate as Cepheid variable stars (like Mekbuda in Gemini, and even Polaris). But Beta Cam (like Draco’s Rastaban and some others) does not vary significantly, though some multiple minor pulsations do exist with periods of tens of days.

No one knows why Beta is stable. But is it? During aircraft observations of meteors in 1967, Beta Cam was seen to suddenly flash, brightening by about a magnitude over only a quarter of a second. A variety of “flashes” have been seen from two dozen stars, including Enif (Epsilon Pegasi) and Cursa (Beta Eridani). Beta Cam is also an X-ray source, suggesting some kind of solar-like magnetic behavior. So it may pay to check on Beta, assuming you have any reason to be poking around in the obscure outback of Camelopardalis.

**NGC 1569**  
-rating MEDIUM  
galaxy in Camelopardalis  
RA 04h 30.8m Dec +64d 54’ (2000)  
Magnitude 11.2

Linhabiting the empty reaches of northern Camelopardalis (the Giraffe), NGC 1569 can be found roughly 6 degrees NW of
4th-magnitude star Beta Cam. Also known as Arp 210, NGC 1569 is a small 4x2’ irregular galaxy with a high surface brightness that’s easily visible in small telescopes. It’s visible even in a 2.4-inch refractor, appearing as a fuzzy patch just south of a 9th-magnitude star. A 10-inch will show a smooth, fairly bright lens with an oval core. It takes magnification well, and larger scopes show intriguing details. A 13-inch Dobsonian will show a bright 2.5x1’ bar studded with bright knots and dark rifts.

NGC 1569 is a starburst galaxy that hosts a unique pair of superluminous blue globular clusters - otherwise known as super star clusters or SSCs, near its center. The clusters, known as NGC 1569A and NGC 1569B, form a strange “double star” separated by about 6”. In addition, studies show arcs of gas moving outward from the galaxy. Each arc was probably ejected from its origin in the nucleus 10-60 million years ago, and may be due to perhaps thousands of supernovae explosions that followed periods of intense star formation.

NGC 1569 is a member of the IC 342/Maffei galaxy group, a loose collection of at least 16 members lying an estimated 10 to 13 million light-years away. The group stretches across Camelopardalis, Cassiopeia and Perseus. Like our own Local Group, the group contains two large spirals, along with several smaller ones and a host of dwarf galaxies. The group can be subdivided into two smaller subgroups, one centered on giant elliptical Maffei 1, and the other surrounding bright spiral IC 342. NGC 1569 is a member of the IC 342 subgroup.

Maffei 1 rating HARD galaxy in Cassiopeia RA 02h 36.3m Dec +59d 39’ (2000) Magnitude 11.1

Discovered by Italian astronomer Paolo Maffei in 1968, galaxy Maffei 1 hides in southeastern Cassiopeia about 3.5 degrees NE of the famous Double Cluster in Perseus. Lying less than 12 million light-years away, Maffei 1 (and its neighbor Maffei 2) would be among the brightest galaxies in the sky were it not for the Milky Way’s intervening clouds of gas and dust.

Maffei 1 was originally classified as an emission nebula in 1953 by Stewart Sharpless (later designated Sh 2-191) before it was recognized as a galaxy by Paolo Maffei. The galaxy’s true nature was effectively clouded by severe extinction (> 5 magnitudes) and the foreground open cluster Czernik (Cz) 11, positioned in front of it. On Palomar Sky Survey images, only the inner 3’ of the giant elliptical are visible, though deep images reveal a far more extensive object, with a diameter > 10’.

Although it shines at 11.1 magnitude, Maffei 1 has an extremely low surface brightness. In spite of this, its core has been observed by amateurs using instruments as small as 12.5 inches. A 20-inch reflector shows the galaxy as a broad misty glow about 3x2’ on the eastern side of cluster Cz 11.

Maffei 1 is a member of a loose group of galaxies which are nearby (10 to 13 million light-years away) but are all heavily obscured by our own Milky Way. The group, dubbed the IC 342/Maffei galaxy group, stretches across Camelopardalis, Cassiopeia and Perseus. There are two smaller subgroups: one surrounds IC 342, and the other is centered on Maffei 1. Some studies suggest that both IC 342 and Maffei 1 were originally Local Group members, but were ejected after encounters with M31 some 4 billion years ago.
December marks the 50th anniversary of NASA’s Apollo 8 mission, when humans first orbited the Moon in a triumph of human engineering. The mission may be most famous for “Earthrise,” the iconic photograph of Earth suspended over the rugged lunar surface. “Earthrise” inspired the imaginations of people around the world and remains one of the most famous photos ever taken. This month also brings a great potential display of the Geminids and a close approach by Comet 46P/Wirtanen

You can take note of Apollo 8’s mission milestones while observing the Moon this month. Watch the nearly full Moon rise just before sunset on December 21, exactly 50 years after Apollo 8 launched; it will be near the bright orange star Aldebaran in Taurus. The following evenings watch it pass over the top of Orion and on through Gemini; on those days five decades earlier, astronauts Frank Borman, Jim Lovell, and Bill Anders sped towards the Moon in their fully crewed command module. Notice how the Moon rises later each evening, and how its phase wanes from full on Dec 22 to gibbous through the rest of the week. Can you imagine what phase Earth would appear as if you were standing on the Moon, looking back? The three brave astronauts spent 20 sleepless hours in orbit around the Moon, starting on Dec 24, 1968. During those ten orbits they became the first humans to see with their own eyes both the far side of the Moon and an Earthrise! The crew telecast a holiday message on December 25 to a record number of Earthbound viewers as they orbited over the lifeless lunar terrain; “Good night, good luck, a merry Christmas and God bless all of you - all of you on the good Earth.” 50 years later, spot the Moon on these holiday evenings as it travels through Cancer and Leo. Just two days later the astronauts splashed down into the Pacific Ocean after achieving all the mission’s test objectives, paving the way for another giant leap in space exploration the following year.

The Geminids, an excellent annual meteor shower, peaks the evening of December 13 through the morning of the 14th. They get their chance to truly shine after a waxing crescent Moon sets around 10:30 pm on the 13th. Expert Geminid observers can spot around 100 meteors per hour under ideal conditions. You’ll spot quite a few meteors by avoiding bad weather and light pollution if you can, and of course make sure to bundle up and take frequent warming breaks. The Geminids have an unusual origin compared to most meteor showers, which generally spring from icy comets. The tiny particles Earth passes through these evenings come from a strange “rock comet” named asteroid 3200 Phaethon. This dusty asteroid experiences faint outbursts of fine particles of rock instead of ice.

You can also look for comet 46P/Wirtanen while you’re out meteor watching. Its closest approach to Earth brings it within 7.1 million miles of us on December 16. That’s 30 times the average Earth-Moon distance! While passing near enough to rank as the 10th closest cometary approach in modern times, there is no danger of this object striking our planet. Cometary brightness is hard to predict, and while there is a chance comet 46P/Wirtanen may flare up to naked eye visibility, it will likely remain visible only via binoculars or telescopes. You’ll be able to see for yourself how much 46P/Wirtanen actually brightens. Some of the best nights to hunt for it will be December 15 and 16 as it passes between two prominent star clusters in Taurus: the Pleiades and the V-shaped Hyades. Happy hunting!

Catch up on all of NASA’s past, current, and future missions at nasa.gov

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!
Congratulations to

**Chris Foster, NGC 7380 The Wizard Nebula**

The Wizard Nebula was the first target I ever tried with my mono camera and was hooked. I did such a poor job in hindsight, I want to try again with better methods and processing. I still may go back and add RGB stars at some point, but I think that this is a reasonably decent rendering. I applied three rounds of star reduction. There are so many stars in the field that even this was not enough. The field is just full of stars.
by Laurie Allai

**IC1805 Heart Nebula**

To all AAS members and their families - much love to you this holiday season!!

OTA: Stellarvue SVQ100 F-5.8  
Mount: Celestron CGX  
Camera: Canon 5D MkII, modified by Hap Griffin  
Guided by: Stellarvue SV60 EDS and Starshoot Autoguider, PHD2.6  
27 frames of 300 Sec at ISO2500  
Captured with Images Plus Camera Control 6.0  
Processed with Images Plus 6.5, Photoshop CS 6.0

by Sadaf Syed

**Milky Way over Yosemite**

NGC5248 Magnitude 10.97  
Camera: Canon EOS Rebel SL1  
Lens: Tokina 11-20mm  
Shot at f/2.8, 11.0mm, 3200 ISO  
Exposure: 30 sec

by Chris Foster

**M31**

This was my second attempt at M31. My first image was using a poorly match flattener/reducer and had poor stars at the edge of the image. As with the first image, this was captured with my ASI071MC-PRO camera on my SV80ST2 but with a SFF6-25-42 flattener only so its with a smaller FOV. This flattener performed really well and the star shape is much improved. I also took 4 hours of Ha that I added to highlight the star forming regions.
by Robert Van Gulick
Cave Nebula
This is the Cave Nebula (SH2-155) in the constellation Cepheus. I shot this with Ha only for 2 hours which is why it’s monochrome. I have some OIII as well so I may try to apply the Hubble palette later to get some colors. Stacked with DSS, processed in StarTools and Photoshop.

by Robert Van Gulick
Cygnus Widefield
Here’s a widefield photo of the constellation Cygnus. I have about 2.5 hours of data in this image, taken with a Vixen Polarie and a modded Canon T2i DSLR camera. You can see many objects here, but highlights include: The North America Nebula, Veil Nebula, Pelican Nebula and the Gamma Cygni Nebula. Stacked with DSS, processed in StarTools and Photoshop.

by Rathijit Banerjee
M31
Imaging Scope: AstroTech AT60ED
Imaging Camera: ZWO ASI1600MM-Pro
Imaging Filters: Optolong LRGB + Astrodon 3nm Ha
Imaging Duration: 20hrs (600 x 2minute subexposures, equally split between each filter)
Processing Software: AstroPixel Processor, Photoshop, PixInsight
Mount: Losmandy G-11G
Location: My suburban backyard.
The constellation most famous object is M31, the great Andromeda galaxy, a sister” to the Milky Way. M31 is similar in size and shape to our own galaxy in addition to galaxies, Andromeda contains a fine assortment of double stars of varying brightness, separation and colors as well as a couple of open star clusters. including among its treasures is the lovely blue planetary nebula, NGC 7662.

The tale of Andromeda is one of the most famous Greek Myths. The beautiful princess was changed to a rock by her royal father, Cepheus as sacrifice to appease the angering sea monster Cetus. The hero Perseus, slayed the monster and married Andromeda.

Showpiece Objects:
Gamma 57 DS, M31, M32, M110 Galaxies. There are plenty more Galaxies and more Double Stars if one just takes time and has a good Atlas.
We've had several outreach events in the last month.

On November 10 we had our regular star party at Inks Lake State Park. It was cloudy when my husband Jim and I started out, but the sky cleared enough for Terry Phillips and us to help dozens of visitors observe, until it was time to leave and the clouds returned. Excellent timing!

The next night John and Cindy Luongo Cassidy did a presentation on dark skies to a neighborhood group near Bertram. Jim and I were there for stargazing, but the weather did not cooperate.

On November 30 Emmaus Catholic Parish in Lakeway hosted us for a star party. The organizer was particularly interested in Saturn, and we were able to show it to guests for a short while right before it set. Joining Jim and me were members Gordon Schaefering and Richard Harbin.

Our public star party at Pedernales Falls State Park was scheduled for December 8. One forecast did not look promising, but we decided to go ahead and hope another prediction of improvement was correct. It took a couple of hours, but we did have some off-and-on clear patches of sky for showing visitors (just 5 of them—it was cold!) various objects. Jim Moyle came out, and the park interpreter, Stephen Garmon, was helping also.

Probably because of the holiday season, there is nothing scheduled during the rest of this month, but January and February are filled with events, mostly star parties at schools. We have agreed to go to the Austin Zoo and UT Girl Day again during the day on the last two Saturdays of February. I’ll be sending out more information about all of these as we get closer to the dates.

ASTRONOMY FOR PAY

Recently we have received several requests for star parties from commercial entities. Since we focus on non-profits such as schools and libraries, we offered these groups the option of paying astronomers to conduct the event. There could be similar requests in the future, so we are compiling a list of members who might be interested in participating. If you would like to have your name on the list of people interested in doing events for pay, please send an email to outreach@austinastro.org Include your name, contact information, where in Central Texas you are willing to go, any specific areas of astronomy that interest you, and a little bit about your experience with observing.
Our Psalm 19 Astronomy team had another banner year for our sidewalk astronomy outreach program. We applied for and were accepted by the Astronomical League as a club in March, Psalm 19 Astronomy Society, based out of Austin, Texas. We hosted 25 events in 2018 in six locations in Texas and Vermont and our first international event in Cruzeta, Brazil in July. Most events were held in Austin but we also had events throughout Texas in Georgetown, Horse Shoe Bay, Hudson Oaks, and Fort Worth. And we hosted an event in North Pownal, VT.

Since its inception in June 2016 Psalm 19 Astronomy has hosted 51 events with approximately 5500 guests peering into our telescopes to see the Moon, planets, nebulae, clusters and the Sun. We applied for the Outreach Observing Award from the Astronomical League. There are three observing level of awards:

- The Basic Outreach Award is given for hosting five events and ten hours of outreach time
- The Stellar Outreach Award is given for meeting the Basic Award and hosting an additional 50 hours of outreach time (60 hours total)
- The Master Outreach Award is given for meeting the Stellar Award and hosting an additional 100 hours of outreach time (160 hours total)

We were granted the Master Outreach Observing Award and the award was made official by the Observing Program Director, Dr. Maynard Pittendreigh, on December 10, 2018. In addition to the sidewalk astronomy outreach events we also give educational astronomy presentations to various groups. Talks were given on the intersection of astronomy and faith in Fort Worth in April, the Reasons to Believe Austin, Texas Chapter in June, the American Scientific Affiliation’s 2018 Conference in Gordon, MA in July, and the Reasons to Believe San Antonio, Texas Chapter in October.

We look forward to another exciting year with our first event slated to occur in mid-February 2019. You can learn more about our sidewalk astronomy events and team at our Psalm 19 Astronomy Society Facebook group page at https://www.facebook.com/groups/psalm19astronomy/.
Executive Committee Minutes
October 1, 2018
The meeting was called to order by Tim Brown at 7:00 PM at Tim’s home. Present were EC members: Tim Brown, Terry Phillips, Dana Leary, Sean Leary, Joyce Lynch, Vanessa Perez, Greg Rohde, Frank Mikan, Jim Spigel-mire, Domingo Rochin, and Jessica Cofrancesco. Also present was Cass Brown.

Main topics on the Agenda handout were:

1) Reports on arrangements for Pedernales State Park and Inks Lake State Park

2) Members Only Star Parties

3) AUTS October 2018

4) Officer’s reports

5) Other reports, new business

Officer Reports (combined)

Tim provided a written report on the state park progress from Dawn.

Question of offering a hotel room for Larry Mitchell (October featured speaker). Terry will proceed with agreement of the EC. November speaker is Renee James on the topic of Collisions in Space: Things that go bump in the night.

Possible change of venue for GA meetings. Extensive discussion of Austin Gems and Minerals Society (AGMS) building off of Burnet. EC decided to try it out for the December holiday party. Terry will find out if it is available. Expected cost is about $75 per night. Building has a kitchen, main room sits at least 75 chairs with better layout than UT, and parking for 60+ cars should be available. Other possibilities include ACC Highland campus, St. David’s Episcopal, and St. Martin’s Lutheran. Discussion of making another attempt to use permit parking spaces at UT.

EC voted to give the 6” dobsonian from Wild Basin to AISD; will post in Si-
dereal Times before transfer. Society has several SCTs, none of which are in working order: 2 x 8”, 2 x 10”, 2 x 11”, 1 x 12”. Discussion of offering a training class for teachers on how to operate a telescope.

Eyepieces were purchased to see how they will work with the loaner scopes.

AAS needs to provide proof of liability insurance for St. Stephen’s. This is a yearly requirement. Dana will send a copy to Tim.

AUTS Observe the Moon Night will be Oct 20. St. Stephen’s is handling press releases. Joyce will reach out to the Austin Chronicle, Spectrum News, and others. St. Stephens may require additional ID checks for visitors. Frank will get more information.

Practical Astronomy should be held each month if possible. Vanessa will contact potential speaker about asteroid occultations.

The next public star party is Oct 13.

EC agreed to put up a booth for March Dripping Springs IDA event. Joyce will follow up.

Request from El Dorado Star Party for AAS to donate a prize. EC voted to furnish one from storage, or to purchase a nice eyepiece if nothing is suitable. Terry will follow up.

Discussion of building up an online gallery for astrophotographers. Jim will investigate.

Domingo talked about the recent star chart gift and will present a show and tell at the Oct GA meeting. Joyce will talk about AUTS at the meeting as well.

Meeting was adjourned at 8:41 PM
Sean Leary
Communications Chair: Sean Leary
For the Executive Committee meeting in December 2018

Save the date holiday party banner added
Sidereal Times page update for Dec issue
Banner and link for Dec Sidereal Times
Banner and link for Dec image of the month
Final holiday party banner and link added
Holiday party page and potluck signup added
Final holiday party event updated.
Dec EC meeting event updated for location

Website traffic for the past month
How many people are visiting the site?

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Who is sending us traffic?

[Chart showing traffic sources and mediums]
General Assembly Minutes
October 12, 2018

President Tim Brown called the meeting to order at 7:35pm. A quorum was present.

Tim asked visitors and new members to introduce themselves.

The September minutes were not available for review and approval.

Officers gave their reports.

Upcoming events include a public star party on October 13 at Pedernales Falls State Park, weather permitting. Austin Under the Stars: “International Explore the Moon Night” Edition is scheduled for October 20.

Brian Lippincott presented Space News.

Tim showed off a recent gift to the club--the 3-volume set of Antonin Becvar’s Atlas Australis 1905.0 (Copyright 1964), Atlas Borealis 1950.0 (Copyright 1962), and Atlas Eclipticalis 1950.0 (Copyright 1964) and the 2-volume set of Vehrenberg’s Stern-Atlas I and II. He said he is open to suggestions about places that might be interested in having these materials for display.

The evening’s program on Edward Emerson Barnard was presented by Larry Mitchell.

The meeting was adjourned at 9:37.

Minutes taken by Joyce Lynch
Nov. 2018 Treasurer’s Report

Deposits:

Dues payments
  Checks $0.00
  Paypal $0.00
Dues payments in checking acct. $0.00
interest earned - scholarship $0.00
Interest earned-checking $0.98
interest earned - donations $0.00
Interest earned - CD - A $5.26
Interest earned - CD - B $6.18
Total interest earned $12.44

Deposit Totals Nov. 2018 $12.44

Expenses:
Life Storage - telescope storage $65.00
Guest speaker lodging, payable to T. Phillips $135.69
Wild Apricot Inc Co. annual fee, paid thru checking acct. $1,728.00

Expenses Total Nov. 2018 $1,928.69

Bank Balances:
UFCU donations $971.92
UFCU scholarship special ** $1,001.27
UFCU checking ** $22,934.32
UFCU CD - A $5,844.77
UFCU CD - B $5,821.62
Paypal account $552.14
Total Cash as of 11/30/18: $37,126.04

AAS members 614
AAS memberships 443
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.

Welcome New Members!

Sawyer, George
Shelton, Steve
Elrod, Grayson
Harbin, Richard

Mussett, Michelle
Sato, Haku
Schaefering, Gordon
Seanleary, Seanleary
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.

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
OFFICERS OF THE SOCIETY, 2018-2019

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<thead>
<tr>
<th>Position</th>
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<td>Tim Brown</td>
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<tr>
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<td>Terry Phillips</td>
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<td>Secretary</td>
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Joseph Macry writes a weekly column for Manor Community News: “This Week in Astronomy”. You can read the online edition here: http://manorcommunitynews.com/