President’s Notes
By David Mathias, 2016-17 President

Happy November, Friends and Fellow AAS Members!

If you have not yet renewed your membership, please take a minute to write us a check or pay online. Our bylaws require us to purge the membership list of lapsed members this month.

Membership Benefits and Expectations: I will be the first person to confess that we have not done well with the mechanics of renewals this year. Our Wild Apricot software is not the most intuitive product I’ve ever seen, and Paypal gave us no end of grief. If you have renewed and you did not receive an acknowledgement and new membership “card” (really, an email with your membership information), please let me know. If you are not renewing this year, could you please let us know why not? We really do want to know.

Girlstart: Thanks to Natally Mendez, Joyce Lynch and Phil Schmidt for helping with this month’s Starry Nights at Girlstart! Turnout was light, but that gave us more of an opportunity to chat about outreach activities we can prepare to present at future events. We have several members who have expressed interest in representing AAS at Girlstart. If you are still interested, please let Jim Lynch or me know.

[By the way, the Google Cardboard virtual reality headset continues to be a huge hit with the youngsters at Starry Nights. If you have a VR set on Android, the app that we usually run is called Titans of Space® Cardboard VR. Produced by the same publisher is Mars Is A Real Place Cardboard. That app is less immersive, but features real photographs of Mars. Try them out with your youngsters at home!]

Ealing Decommissioning: The Ealing has been decommissioned thanks to the hard work of a team led by our Equipment Chair, Domingo. Pictures of the decommissioning were posted on our Facebook page. I’ll see if we can get a few pictures posted to the AAS website as well. (Editor’s note: See Pages 14-16 for photos.) Thank you to Brian Lippincott, Terry Phillips, Marcha Fox, and Bryan Verhoeff for pulling down the Ealing and getting the Larry Forrest 25” Dobsonian installed – all in the same day!
EEO Infrastructure: We had Wild Blue make a service call to EEO to check on the satellite internet service. They determined that the dish was misaligned, and that the dish itself needed replacement. Both tasks were performed last month, and we’re up and running again.

Also, the Executive Committee recently approved my recommendation for restoration of land line telephone service at EEO for emergency purposes. Calibre will be sharing the cost with us for the phone. I’ll present the proposal to the General Assembly for approval this Friday.

Last, Calibre is securing quotes now for repairs to the EEO facility, starting with the flooring. They have also agreed to provide a bookcase for the new AAS lending library that Domingo is creating.

AAS Board Positions: The General Assembly approved Jim Lynch’s nomination as Outreach Chair at last month’s meeting. Welcome onboard, Jim! We have received some expressions of interest in the Member-at-Large position, so I expect we will fill that slot soon.

UBarU/Dark Skies Committee Established: With regards to last month’s presentation of the opportunity for a second dark skies location for AAS members, we have established a committee and given it a statement of scope. Joi Chevalier was initially tapped as Chair, but her social plate is already too full. Bryan Verhoeff will be stepping in and driving this Committee. If you would like to provide input and feedback to the committee, please contact Bryan.

In the interim, we have a standing invitation from San Antonio Astronomical Association and UBarU to visit the facility and check out the skies. If you are interested in a potential SAAA and AAS star party, please let your Executive Committee know. Both SAAA and UBarU are very enthusiastic about getting AAS members out there, and the IDA recently reminded their Facebook followers of the first anniversary of UBarU’s IDA certification: http://ubaru.org/home.

Bylaws Committee: The Bylaws Committee met a second time last Monday. Joyce Lynch, Sean Leary, Phil Schmidt and I reviewed Joyce’s summary of our respective annotations of the current bylaws. Progress is slow, but our discussions were informative and spirited. Other AAS members listened in to our proceedings as they were enjoying their dinners or waiting until the Executive Committee meeting started later in the evening. (Our thanks go out to The Frisco restaurant for allowing us to use their “back room” for AAS board and committee meetings.)

Well, that’s all the news I have for this month. Thanks to all the members and volunteers for helping keep AAS up and running on a monthly basis! Please join us when you have some time to spare.

Clear Skies,
COME TO THE NOVEMBER MEETINGS

When: Friday, November 11, PA @ 6:30 PM, GA @ 7:30 PM
Where: ETC 2.136 - UT Campus
        Engineering Teaching Center
        Dean Keeton and Speedway

General Assembly
Josie Middleton of the American Federation of Mineral Societies (AFMS) will be speaking about meteorites. Recently she drafted rules for exhibiting meteorites for AFMS, a subject of growing interest within that society.

Practical Astronomy
Brian Lippincott will speak about “What’s New In Astronomy for Everyday Living.”

HOLIDAY PARTY

December 9, 2016
7:00PM

2600 Pegram (Home of Joi Chevalier and Jon Etkins)

Bring a dish to share and drinks of your choice.

The Image of the Year will be chosen from Image of the Month winners.
Executive Committee Minutes
By Andrea Tole, Secretary

August 29, 2016

Call to Order – 7:33PM

Present: David Mathias, Carl Lindemann, Joi Chevalier, Joyce Lynch, Domingo Rochin, Dhaval Brahmbhatt, Andrea Tole, Sean Leary, Greg Robde, Larry Martin, Terry Phillips, Steve Bingham, Bryan Verhoeff

Priority Business update from David Mathias: Request to catch up on approving minutes. There is a need to look at changing meeting venue and format to accommodate members’ needs. We need to request an agreement with the LCRA to have camping on the EEO field.

Old Business:

camping on the EEO field. to request an agreement with the LCRA to have property of AAS returned. Discussion about the need to rent a storage facility in town. to have surplus inventory belonging to AAS. We need to coordinate as soon as possible for events.

New Business:

Discussion about the need to have an auction to sell surplus inventory belonging to AAS. We need to have property of AAS returned. Discussion about the need to rent a storage facility in town.

Carl updated that there is a high priority on getting more members to attend our meetings by experimenting with venue and meeting times.

Dhaval updated that PayPal issues have resolved. Current bank balance and membership counts announced. Dhaval will update the State on current board members.

Sean updated the Communications activities. Discussion about authority for changing and updating the website. Sean will update Facebook with activities.

Maurice was not present. Larry discussed the volunteer request form updates that fix problems.

Joyce updated that Girlstart resumes this Thursday. Discussed Hot Science Cool Talks outreach event. Joyce will follow up. Wild Basin trip upcoming. Joyce recommended spending to get a canopy for daytime outdoor events. She also requested solar glasses. Joi requested another brochure order.

Domingo certified 11 people at the last training. Joyce will email Domingo the new logo for EEO for training certificates. One member is 30 days past due to return their telescope. One scope needs mirror resurfacing. One C11 is being repaired. EEO upgrading continues. Domingo is taking final inventory on September 10. Domingo requested an email go out requesting members let him know whatever equipment they have in their possession. The Ealing decommissioning discussion continues. Domingo provided documents for review. David recommended a separate meeting for this discussion due to the scope of the issue.

Domingo mentioned that it will cost quite a bit of money to get a phone down to the EEO and the discussion needs to take place with COE, Cindy and Jim. David stated that the certifications need to be updated in Wild Apricot and that he will update this information.

Joi Member Services update: Calendar is published. Camping is not allowed during the Central Texas Star Party (CTSP) field without approval from LCRA and a request needs to be made in time. Swap meet will take place before CTSP. Fast Track scheduled for October and November. Joi will schedule something for the September practical astronomy session for the GA.

Steve with IDA update: Lost Maples is putting together a presentation and their sky quality meter is on par with Enchanted Rock.

No updates from members at large.

Meeting adjourned at 9:16.
General Assembly Minutes
By Andrea Tole, Secretary

September 9, 2016

Call to Order – 7:30 PM

David Mathias: Welcome and New Member Introductions.

Quorum reached.

Reading and approval of the August 2016 minutes. Vote approved at 7:41 PM.

Nominations for open officer positions. Still vacant: Outreach Chair.

No nominations.

Call for committee members for Equipment and Member Services Committees and volunteers for events.

Brian Lippincott: What’s Happening in Astronomy? NASA’s Eyes offers up-to-the-minute updates on missions and satellites.

Presentation by Dr. Rebecca Tippens: Dark Energy and What It Means.

9:10 – 9:15 break

Discussion about structure of general assembly meetings.

Officer Reports

Joi: Approval for tents and camping at the Central Texas Star Party at EEO.

Camp stove but no other fire.

Domingo: Public star party tomorrow.

Meeting adjourned at 9:48.

Fast Track 201 Astrophotography has been rescheduled for Saturday, November 19 at 5:00 PM at Eagle Eye Observatory.

Go to www.austinastro.org to sign up.
September 2016 Treasury Report
By Dhaval Brahmbhatt, Treasurer

Deposits

Dues Payments
Checks $ 465.00
PayPal $2,430.00
Donations received (BBQ Party) $ 174.00
**Dues payments totals** $3,069.00

Interest earned-checking $0.76
Interest earned-special savings $0.30
Interest earned-CD $0.24
Interest earned-CD $0.24
**Total interest earned** $1.54

**Deposit Totals September 1 - 30, 2016** $3,070.54

Expenses

Miscellaneous payments (Bank)-equipment $57.60
Miscellaneous payments (PayPal)-equipment, office supplies $723.85
PayPal fees (donations, BBQ) $ 9.20
PayPal fees (membership renewals) $ 79.26

**Expense Totals September 1 - 30, 2016** $869.91

Bank Balances

University Federal Credit Union Checking $18,202.63
University Federal Credit Union Regular Savings $  5.00
University Federal Credit Union Donations Savings $ 30.00
University Federal Credit Union C.D. $ 5,810.09
University Federal Credit Union C.D. $ 5,790.91
University Federal Credit Union Scholarship $ 463.54
Total PayPal available balance $ 4,822.96

**Total Cash** $35,125.13

Total AAS members as of 8/29/2016: 687 (312 have not renewed as of 10/3/2016)
Total AAS memberships as of 8/29/2016: 410 (202 household bundles have not renewed as of 10/3/2016)
1. EEO training.
   a. Schedule EEO training Saturday, Nov 5th was cancelled due to special training session on the 25” scope to
      selected members of Operations and Executive Committee.
   b. Training for December 10th is tentative schedule for normal training on the observatory and the Harlan only.

2. Loaner scope program
   a. All loaner scopes are out. One is due back this week.
   b. We still haven’t yet purchase new scopes.

3. EEO repairs, maintenance, and modifications.
   a. We continue to advance repairs and improvements to the observatory and its grounds. Anyone who would like
      to help, please let me know. There is an Excel sheet with the status of all pending projects.
   b. EEO computer, and Wi Fi (internet access). Many updates have been installed on the EEO computer and some
      Wi Fi changes continue to be necessary to obtain optimum reception both: In and Outside the observa
      tory. The “main” router is EEO, and it is PW protected, so members must be giving the access code:
      austinastro1969. The public too will be given the access code upon request. David has coordinated the
      upgrade of the service terms, and the service of the hardware.
   c. The phone at EEO. David has details on this.
   d. From now on, no equipment may be borrowed to take outside the observatory grounds without permission
      of the Equipment Chair, President, or Vice-president. This also includes the Fred shed, and the storage
      shed. Exceptions include private property that some members have at the site.

4. Library.
   a. The Library is Open. Marcha Fox is the Library Custodian. Please contact her for questions at
      marcha@kallioperisingpress.com .
   b. We have a small collection (about 60 pieces) of books, reference charts and atlases, and other literature novels
      at EEO inside the metal cabinet –for now until we get a separate bookcase.
   c. An Excel file in the EEO computer has the titles of all current books. Hopefully we will add access to this file
      through the web site. This Excel file also has hyperlinks to photos of the books (or items) so that you can
      see what you are looking for.
   d. The library will function on the honor system to sign out items. There is binder inside the cabinet with a sign
      out sheet form.
   e. An informative page with Sign Out and Return procedure, and ground rules and guidelines that must be fol
      lowered is included in the binder.
   f. It is my intention to launch the access to these books at the GA meeting, and to ask for donations.

5. The Ealing scope is OUT, and the 25” is IN
   a. The exchange was faster than anticipated. However, the installation is still in process since a few operations
      functions are still being de-bugged. Also, added protection to sensitive electronics, the custom fit of the
      shroud and the storage cover is pending.
   b. The whole process is expected to last about 6 months –from the time it was voted to proceed, to the time at
      which we have the essential personnel/operators trained, and the observatory’s new scope access can be
      extended to all AAS members.

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**AAS Library**

- For now just a cabinet with about 40 books at EEO. Calibre will donate a bookcase.
- Members can bring donations to GA meetings or to EEO during public star parties or members nights.
- Preferably, books should be about science but not just astronomy.
- Science fiction novels, biographies of scientists, magazines, and more are welcome.
1. Website:
   a. Access to website SSH and CPanel obtained
   b. Retired the Gallery plug-in
   c. Verified alcor and outreach redirects are working
   d. Removed Oct star party banner
   e. Added, then removed Pedernales star viewing banner
   f. Added Pedernales star viewing event
   g. Added Fast Track 201 banner, fixed volunteer sign-up, removed banner
   h. Added Oct Sidereal Time and Image of the Month banner
   i. Added Jim as Outreach Chair
   j. Removed Amy as member-at-large
   k. Added a default AAS image for Facebook
   l. Create unique Practical Astronomy events
   m. Investigate and compare HAS website for possible move
   n. Updated events to match Oct Sidereal Times
   o. Removed EEO training events
   p. Updated Nov GA meeting with featured speaker

2. Email blasts:
   a. News and notes for Oct
   b. Cancel FT 201

3. Facebook posts
   a. Cancelled FT 201
   b. Featured speaker for Nov GA meeting

4. Processes documented:
   a. Document how a new EC member gets added

5. Shared folders
   a. Cleaned up access by 3rd parties (Tribeza and Austin Monthly folks)

Agenda items:
1. Continuing email redirect questions. Cannot connect to CPanel from my home IP, but able to connect from work. Sent redirect emails to everyone on the list. None delivered.
Let's face it: November is galaxy time.

To be sure, the Milky Way's outer rim dominates the far north, and its winter spectacles are rising with Orion and friends in the east. But a vast swath of the November sky is a deep space window - Pegasus, Aquarius, Pisces, Cetus, Eridanus - all are galaxy lands. So we'll go with the flow, and it's all fascinating, if not a bit humbling; egos don't fare too well against an endless sea of galaxies. Below are pointers to a few, but there's an infinity of more if you're up for it. Enjoy!

M74 rating: EASY
NGC 628, face-on spiral galaxy
RA 1h 36.7m Dec +15d 47.0' (2000)
Magnitude 9.2

Easily found less than 2 degrees west of 3.6-magnitude ETA Piscium, M74 is a nearly perfect example of a face-on type Sc spiral galaxy. Partly because of this face-on orientation and low surface brightness, it is among the faintest and most elusive galaxies in Messier's catalog, and is often seen best with low-power, wide-field instruments. For this reason it is sometimes nicknamed the "Phantom galaxy."

M74 is notable for its bright starlike nucleus, surrounded by a diffuse glow about 5' in diameter. The nucleus is so starlike that it was cataloged in the 19th century Bonner Durchmusterung (BD) star atlas as a star!

Visually similar in many ways to better known spiral M101, M74 is somewhat more regular and symmetrical. In digital images its spiral arms can be traced around the system for 500 degrees. Both M74 and M101, as well as Messier galaxies M51 and M81, are called "grand design" spirals typically have prominent and well-defined spiral arms - usually two - as opposed to multi-armed and flocculent spirals which have subtler structural features. Only 10% of all spirals are "grand design" spirals. Multi-armed spirals are the most common spiral type, composing about 60% of spirals. Flocculent spirals, characterized by discontinuous arms, make up the remaining 30% of spirals.

M74 lies about 35 million light-years away and is about the same size as the Milky Way (100,000 light-years across).

NGC 1052 rating MEDIUM
active galaxy in Cetus
RA 02h 40.4m Dec -8d 26.1' (2000)
Magnitude 10.8

NGC 1052 is an active radio galaxy that lies in Cetus about 7.5 degrees SE of well-known long-period variable Mira (Omicron Ceti). Visually the galaxy is unimpressive in smaller amateur scopes. A 6-inch shows only a small circular spot with a sharply brighter stellar nucleus. A 10-inch shows a spot about 1' in diameter with a stellar nucleus. A 12-inch will pick up a 25" core centered on the nucleus.

NGC 1052's nucleus is the LINER type. LINER (low ionization nuclear emission region) galaxies are very common, composing about 1/3 of all nearby galaxies (within 20-40 Mpc). LINER energy sources have been a matter of debate. Some professionals propose supermassive black holes as the energy source. Others believe that star formation regions are responsible.

Visually similar in many ways to better known peculiar galaxy M101, M74 is somewhat more regular and symmetrical. In digital images its spiral arms can be traced around the system for 500 degrees. Both M74 and M101, as well as Messier galaxies M51 and M81, are called "grand design" spiral galaxies. "Grand design" spirals typically have prominent and well-defined spiral arms - usually two - as opposed to multi-armed and flocculent spirals which have subtler structural features. Only 10% of all spirals are "grand design" spirals. Multi-armed spirals are the most common spiral type, composing about 60% of spirals. Flocculent spirals, characterized by discontinuous arms, make up the remaining 30% of spirals.

M74 lies about 35 million light-years away and is about the same size as the Milky Way (100,000 light-years across).

William Herschel’s telescope
From a drawing in ‘The Imperial History of England, comprising the entire work of D. Hume,’
David Hume, 1891.
openclipart.org

NGC 520 rating HARD
interacting galaxies in Psc
RA 01h 24.6m Dec +3d 47.6' (2000)
Magnitude 11.2

NGC 520 is perhaps the best-known peculiar galaxy in the autumn evening sky, and one of the brightest interacting systems in the entire sky. It’s a bizarrely warped system in SW Pisces; you can find it just under 10 degrees (~35 minutes) west of 3.8 magnitude Alrischa - Alpha Piscium, which itself sits almost exactly in the SW corner of Pisces.
Also known as Arp 157, NGC 520 consists of a distorted main disk that supposedly represents the partial merger of two similar-sized disk galaxies seen edge-on, a collision that began roughly 300 million years ago. In addition, the system has tidal tails apparently caused by the close passage of a third galaxy, UGC 957.

Seeing the wealth of detail in this system generally requires dark skies and larger scopes. A 10-inch class scope will show an irregular 1.2x0.5’ glow with a squarish outline, composed of two brighter lobes separated by a slight darkening. The NW lobe is the brighter, and contains several bright spots. A 17-inch scope at 260x will pick up the irregular dust lane bisecting a bright, roughly polygon-shaped disk, and a 24-inch can detect hints of delicate tidal plumes coming off the ends of the bright disk.

Not surprisingly, NGC 520 is in the IRAS catalog of infrared sources, which indicates massive star formation as the combined system evolves toward what will probably be an elliptical galaxy. Some astronomers predict that this is the same fate that awaits our Milky Way and the Andromeda galaxy M31 in about 5 billion years. NGC 520 has a diameter of roughly 150,000 light-years and lies about 100 million light years away.

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**Image of the Month**

C**ongratulations!**

**NATHAN MORGAN**

**Veil Nebula**

Williams Optics 81GTF 81mm Refactor
Nikon D90 Mono TEC Cooled
Ha 47x1200s (15.6 Hours)
OIII 34x1200s (11.3 Hours)
SII 19x1200s (6.3 Hours)
Total Integration = 33.3 Hours
30 Dark Frames
30 Flat Frames
200 Bias Frames
Lake Tahoe, Nevada, 2016
By Michael Schaffer

Canon 6D, Canon 24mm f/1.4 L II
f/1.8, ISO 3200, 20 seconds x 3 (untracked)
Aligned and stacked separately for sky/foreground in Photoshop
Additional processing in Lightroom.

M17, the Omega or Swan Nebula
By Chase Kincannon

August 8, 2016
900 seconds @ 6400 ISO with an I/R modded Canon T2i,
lens 10” Meade SCT
Processed with DSS and PS.
Above: This is M16 which is commonly called the Eagle Nebula. I shot this early each night for 30-45 minutes at ESP 2016 and ended up with 3.5 hours of data. In the center of this image you can see the “Pillars of Creation” which is a star-forming gas and dust region. Stacked in DSS and processed in Photoshop.

Left: This is a portion of the North America Nebula (NGC7000) in the constellation Cygnus as captured at ESP 2016. I have 2 hours of data in this image, stacked in DSS and processed in Photoshop.

This is the Horsehead Nebula (Barnard 33) in the constellation Orion from ESP 2016. You can also see the Flame Nebula (NGC 2024 and Sh2-277) here. I was able to capture 2hrs 20 min of data in this image as Orion rose slowly in the south. Stacked in DSS and processed in Photoshop.
Is Proxima Centauri’s ‘Earth-like’ Planet Actually Like Earth at All?

By Ethan Siegel

Just 25 years ago, scientists didn’t know if any stars—other than our own sun, of course—had planets orbiting around them. Yet they knew with certainty that gravity from massive planets caused the sun to move around our solar system’s center of mass. Therefore, they reasoned that other stars would have periodic changes to their motions if they, too, had planets.

This change in motion first led to the detection of planets around pulsars in 1991, thanks to the change in pulsar timing it caused. Then, finally, in 1995 the first exoplanet around a normal star, 51 Pegasi b, was discovered via the “stellar wobble” of its parent star. Since that time, over 3000 exoplanets have been confirmed, most of which were first discovered by NASA’s Kepler mission using the transit method. These transits only work if a solar system is fortuitously aligned to our perspective; nevertheless, we now know that planets—even rocky planets at the right distance for liquid water on their surface—are quite common in the Milky Way.

On August 24, 2016, scientists announced that the stellar wobble of Proxima Centauri, the closest star to our sun, indicated the existence of an exoplanet. At just 4.24 light years away, this planet orbits its red dwarf star in just 11 days, with a lower limit to its mass of just 1.3 Earths. If verified, this would bring the number of Earth-like planets found in their star’s habitable zones up to 22, with ‘Proxima b’ being the closest one. Just based on what we’ve seen so far, if this planet is real and has 130 percent the mass of Earth, we can already infer the following:

- It receives 70 percent of the sunlight incident on Earth, giving it the right temperature for liquid water on its surface, assuming an Earth-like atmosphere.
- It should have a radius approximately 10 percent larger than our own planet’s, assuming it is made of similar elements.
- It is plausible that the planet would be tidally locked to its star, implying a permanent ‘light side’ and a permanent ‘dark side’.
- And if so, then seasons on this world are determined by the orbit’s ellipticity, not by axial tilt.

Yet the unknowns are tremendous. Proxima Centauri emits considerably less ultraviolet light than a star like the sun; can life begin without that? Solar flares and winds are much greater around this world; have they stripped away the atmosphere entirely? Is the far side permanently frozen, or do winds allow possible life there? Is the near side baked and barren, leaving only the ‘ring’ at the edge potentially habitable?

Proxima b is a vastly different world from Earth, and could range anywhere from actually inhabited to completely unsuitable for any form of life. As 30m-class telescopes and the next generation of space observatories come online, we just may find out!

Looking to teach kids about exoplanet discovery? NASA Space Place explains stellar wobble and how this phenomenon can help scientists find exoplanets: http://spaceplace.nasa.gov/barycenter/en/

This article is provided by NASA Space Place. With articles, activities, crafts, games, and lesson plans, NASA Space Place encourages everyone to get excited about science and technology. Visit spaceplace.nasa.gov to explore space and Earth science!
Ealing Is Out, 25-inch Dob Is In
Ealing/Dob (continued)

Photos by Domingo Rochin
The Society’s Officers for June 2016 through May 2017

President   David Mathias    president@austinastro.org
Vice-President   Carl Lindemann               vicepresident@austinastro.org
Secretary   Andrea Tole   secretary@austinastro.org
Treasurer   Dhaval Brahmbhatt    treasurer@austinastro.org
Communications Chair  Sean Leary   communications@austinastro.org
Outreach Chair   Jim Lynch   outreach@austinastro.org
Equipment Chair  Domingo Rochin  equipment@austinasstro.org
Member Services Chair  Joi Chevalier   memberservices@austinastro.org
Member-at-Large   vacant    membersatlarge@austinastro.org
Member-at-Large   Tara Krzywowski
Member-at-Large   Terry Phillips
Member-at-Large   Gregory Rohde
Member-at-Large   Phil Schmidt
Member-at-Large   Alan Winter

Appointed positions

Historians    Brian Cuthbertson
             Kelley Knight
             Ron Carman
Parliamentarian   Lauren Gonzalez
ALCor (Astronomical League)  Steven Bingham
IDA Rep (Dark Skies)     Joyce Lynch
Newsletter Editor   Maurice Nelson
Webmaster    

Monthly deadline for Sidereal Times submissions is the 1st of the month of publication. Please send submissions to joycedelynch@gmail.com

AAS memberships run from 9/1 to 8/31 and there are five membership levels to choose from:

Household $40.00 (USD)
Bundle (up to 6 members)
Subscription period: 1 year on September 1st
No recurring payments. For members of a household living at the same address.

Junior $15.00 (USD)
Subscription period: 1 year on September 1st
No recurring payments. For members up to age 18.

Students $15.00 (USD)
Subscription period: 1 year on September 1st
No recurring payments. For members age 18 and older.

Regular $25.00 (USD)
Subscription period: 1 year on September 1st
No recurring payments. For individual members.

Seniors $15.00 (USD)
Subscription period: 1 year on September 1st
No recurring payments. For members 65 years of age or older.

To join or renew your membership to AAS, please visit: http://austinastro.wildapricot.org/JoinAAS