MONTHLY MEETING
Shelter in Place Remote
General Assembly Meeting

Friday, June 12, 2020
7:30 PM

You should have received a link via email to join the ZOOM virtual meeting.

If you have not received the Zoom meeting email, contact president@austinastro.org for access information prior to the meeting or call Dawn (512-663-2249) or Tim (512-577-8340) at the start of the meeting for help connecting.

President’s Notes
By Terry Phillips

After five decades in this hobby, I’ve been able to witness many different celestial cycles. We have a doozy of a cycle culminating this year. As Saturn plods along in its 30-year orbit (I’ve lived thru that cycles twice now), Jupiter races along in a 12-year orbit so that every 19.6 years, Jupiter laps Saturn. For the third week of December, for about an hour after sunset, you will be able to see Jupiter and Saturn side by side within the same telescopic eyepiece field. This is a treat not to be missed.

Now, we begin another yearly cycle with a new set of AAS executive committee officers. The past year has been a challenging transition year for the club after leaving Canyon of the Eagles and the Eagle Eye Observatory, we have established a new dark sky site at Bad Wolf Ranch for our club observing and socializing and we have signed an agreement to provide public outreach at Pedernales Falls State park. We have nearly finished out our outreach storage Conex at the park, and plan to start moving in our large telescopes in July. Kudos to Jim Spilgelmire for leading us toward these achievements.

Just as these plans were coming to fruition, we were thrown some curve balls with the Covid-19 situation and a spate social unrest the likes of which we’ve not seen since probably 1968 which if you are old enough to remember was another year we thought might never end. So, we are faced with another challenging year. We do not know yet when we will be able to host public outreach events, we are holding our GA meetings virtually on-line for the time being, and it is unclear when we will be able to gather in force for blessed nights of dark sky observing.

Opportunities often occupy the flip side of challenges for those that are inclined to look. We are looking for innovative ways to carry on our mission despite the difficulties. We are working with the park on outreach...
solutions that respect the need for safe social distancing. For example, we are looking at the use of video cameras to replace telescope eyepieces so that large images can be shown to a group without the need for sharing an eyepiece. We are discovering that virtual meetings can support modes of presentation that are just as interesting as in person meetings and that is possible to reach a wider audience. We are working on protocols for our private star parties to permit safer gatherings to get us under dark skies once again.

On a practical note, our nominating committee did a fine job this year filling most of the key positions on the EC. I believe we had a strong team to tackle the upcoming year. We do have one vacancy that we will need to fill soon. After maybe a decade serving admirably as our webmaster, Maurice Nelson has decided it’s time for him to move on to other things. I don’t know how to express enough appreciation for the job Maurice has done for us. Thank you Maurice. So, if any of our members have the expertise and desire to contribute to this role please contact a member of the EC.

Our virtual GA meeting this month on Zoom will feature the amazing Will Young, Deep Sky Dude, from the Astronomy Society of South East Texas. Will has spent the past several years producing an eclectic library of digital media featuring astronomical and space related objects, events, and music. I can’t wait to see what he’s lined up for us.

You may recall that 1968 ended on a high note of hope, the Apollo 8 mission, the first to reach the moon, and the crew’s reading of the Genesis creation narrative. In this troubled year, I know it’s not much, but I’d like to think of the upcoming conjunction of Saturn and Jupiter as a symbol that we can come together to resolve humanities challenges.

Terry

June Meeting Guest Speaker: Will Young “Deep Sky Dude”

Topic: Sharing astronomy is a powerful experience for the public and for you as an observer.

Seeing these objects through fresh eyes can enhance our own knowledge of astronomy and bring new understanding that we have perhaps glossed over. Outreach is the future of our hobby and is extremely important to inspire the next generation of astronomers. With today’s technology, it’s no longer a requirement to share your passion of astronomy in person. Will Young shares some of the many techniques he has used to help expand amateur astronomy online and bring what we do to the world.
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**AAS AFFILIATIONS**

- [International Dark-Sky Association](http://darksky.org/)
- [Night Sky Network](https://nightsky.jpl.nasa.gov)
- [Astronomical League](https://www.astroleague.org/)
- [Texas Space Grant Consortium](http://www.tsgc.utexas.edu/)
These are trying times we are in for the obvious reasons and because though we may be near our observing gear, constantly, the skies have not been too accommodating. That being said, there are still things you can do with your time indoors.

Take this time to:

- Catch up on reading the Astronomical League’s quarterly publication, The Reflector. Current and past issues can also be found on the AL’s website.
- Complete those observing program logs you keep saying you are going to finish.
- Submit a proposal for a new observing program, details and instructions here.
- If you are working on your Herschel II, click here to read about upgrades to the list.

As most of you may know, the Astronomical League Convention in Albuquerque has been cancelled. And while we were unable to hold our Messer Marathon last month, rest assured that the first chance for us to meet in person and observe together again at Bad Wolf Ranch will be a night to celebrate.

Until then consider working on one of the AL observing programs that does not need clear and dark skies:

- Analemma
- Astronomy Before the Scope
- Citizen Science
- Constellation Hunter – Northern Skies
- Dark Sky Advocate
- Hydrogen-Alpha Solar
- Lunar and Lunar II
- Radio Astronomy
- Spectroscopy
- Sunspotters

Feel free to reach out if you have any questions about all things AL related, and even those that are not. Stay healthy, be well, and as always…

Clear Skies,

Dawn
If you live in the Northern Hemisphere and look up during June evenings, you’ll see the brilliant star Vega shining overhead. Did you know that Vega is one of the most studied stars in our skies? As one of the brightest summer stars, Vega has fascinated astronomers for thousands of years. Vega is the brightest star in the small Greek constellation of Lyra, the harp. It’s also one of the three points of the large “Summer Triangle” asterism, making Vega one of the easiest stars to find for novice stargazers. Ancient humans from 14,000 years ago likely knew Vega for another reason: it was the Earth’s northern pole star! Compare Vega’s current position with that of the current north star, Polaris, and you can see how much the direction of Earth’s axis changes over thousands of years. This slow movement of axial rotation is called precession, and in 12,000 years Vega will return to the northern pole star position. Bright Vega has been observed closely since the beginning of modern astronomy and even helped to set the standard for the current magnitude scale used to categorize the brightness of stars. Polaris and Vega have something else in common, besides being once and future pole stars: their brightness varies over time, making them variable stars. Variable stars’ light can change for many different reasons. Dust, smaller stars, or even planets may block the light we see from the star. Or the star itself might be unstable with active sunspots, expansions, or eruptions changing its brightness. Most stars are so far away that we only record the change in light, and can’t see their surface. NASA’s TESS satellite has ultra-sensitive light sensors primed to look for the tiny dimming of starlight caused by transits of extrasolar planets. Their sensitivity also allowed TESS to observe much smaller pulsations in a certain type of variable star’s light than previously observed. These observations of Delta Scuti variable stars will help astronomers model their complex interiors and make sense of their distinct, seemingly chaotic, pulsations. This is a major contribution towards the field of astroseismology: the study of stellar interiors via observations of how sound waves “sing” as they travel through stars. The findings may help settle the debate over what kind of variable star Vega is. Find more details on this research, including a sonification demo that lets you “hear” the heartbeat of one of these stars, at: bit.ly/DeltaScutiTESS

Interested in learning more about variable stars? Want to observe their changing brightness? Check out the website for the American Association of Variable Star Observers (AAVSO) at aavso.org. You can also find the latest news about Vega and other fascinating stars 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!
UBarU Star Party this August 13-16 2020 to the AAS membership

Full details about the event are available on the UBarU website (www.ubaru.org) by following the link from the Events Tab to the star party or by going directly to: https://ubaru.org/home/starParty

The event is going ahead as scheduled with measures in place to adhere to at least the national and state recommendations for preventing the spread of Covid-19. The format and featured speakers as described on our website have not changed, and the full details of the Covid-19 precautions are also on the website.

A major feature of these measures is how we are promoting social distancing in on-site housing. Cottages and private rooms are only assigned to those who normally cohabit with each other (e.g., families, couples and others who live together in close proximity,) and we are using no more than two widely-spaced bunks in each of the four bunk areas. Our staff will be wearing masks when dealing the public, and we strongly recommend that the participants do so as well.

As a result of the above precautions we will only be able to accommodate a smaller number of participants than in the past, however since we did not encourage new registrations since early March we still have one cottage, several private rooms, a hand-full of single bunks, and limited camping available for reservations.

Anyone with questions may contact me or our Executive Director, Robyn Stout (Director@ubaru.org).

Thanks, and Clear skies,

Roy Ellzey (210-637-9969)
Even though many members of the Austin Astronomical Society seemed pleased with the 2014 television series *Cosmos: A Spacetime Odyssey*, I was disappointed. Watching this on DVD with the captions on allowed me to identify failures of science, reason, and fact. I found *Cosmos: A Spacetime Odyssey* to be an unchallenging dumbing down of a few intriguing ideas interspersed among long rhapsodies of imaginative astronomical photography and simplistic cartoon stories. The factoids themselves are misleading, incomplete, out of context, and sometimes just plain wrong.

The curtain opened with a quote from Carl Sagan: "The cosmos is all that is or ever was or ever will be." The rest of the series denies that and betrays Sagan's legacy with frequent allusions to "alternate universes" and "alternate realities." Vague assertions and imaginative claims are touted as "great mysteries" and even "miracles." The essence of the problem is the lack of objective standards.

Consider the story of Giordano Bruno. He was a contemporary of Galileo Galilei but he was no scientist. However far-ranging his imaginings and fancies about the worlds in the sky, he never performed a single experiment to test a theory. Galileo, of course, did exactly that. Many other people also tagged Cosmos for this egregious error. Soon after that first episode aired, *Discover magazine* and the National Center for Science Education were among the mob of angry villagers with torches and pitchforks.

The failure to adhere to the scientific method led to a cascade of ignorant statements about evolution and the origin of species. Contrary to the narrative about how wolves and humans learned to get along ("Episode 2: Some of the Things that Molecules Do"), the fact is that all dogs and all crosses of wolves and dogs can produce fertile offspring. They are not species. Neither are polar bears. Dr. Tyson offered the story of the white polar bear as an example of selective adaptation. But they can still produce fertile offspring with other bears. They are not a species. Moreover, "Pizzlies" or "grolars" have brownish fur. Where, then, is the selective adaptation for white fur? The scientific truth is in the genetics of coloration: the genes that enable melanocytes are dominant over albinism.

Contrary to the limited theory of Darwinian natural selection, another force seems at work in evolution: epigenetics, the modification of heritable characteristics by environmental factors. First identified in the 1940s, epigenetics was the subject of a BBC/PBS Nova presentation, *Ghost in Your Genes* (PBS Nova; BBC 2006; WGBH 2007, 2008). The evidence is compelling and easy to understand. That lacuna is just one of far too many examples of *Cosmos's* thematic presentation of comfortable clichés.

Discussing the life and work of Sir Isaac Newton, ("Episode 3: When Knowledge Conquered Fear") Dr. Tyson never mentions the fact that Newton's theory of gravity—powerful as it was in defining not just a branch of science, but the worldview of a civilization—cannot be extended beyond two bodies in empty space. Any 3-body or n-body problem can only be solved for restricted cases or by repetitive numerical methods or compiled tables of direct observations. If we represent our galaxy as a point-source of mass, about which a single star orbits, the actual measurements of that particle's orbital velocity contradict the Newtonian prediction. Stars at the periphery orbit ever faster, not slower, as Newtonian physics predicts. (See the illustration which was built from slides presented by Dr.
Sabine Hossenfelder’s lecture, “Modified Gravity, Demystified” available on YouTube.) Yet Newton’s work was and is highly applicable to the range of problems that most often interest us: our industrial machines, urban structures, and space travel close to home. Rather than explore why that is true, they delivered a cartoon about Sir Isaac Newton’s contempt for Sir Robert Hooke.

If you stop to read the words and reflect on the content, you realize that there is at once more and less to Cosmos than meets the eyes and ears. That is a message from the opening of “Episode 6: Deeper and Deeper Still,” and it is presented in a way that denies the legacy of Carl Sagan. Dr. Tyson says: “Seeing is not believing. Our senses deceive us. Even the stars are not what they appear to be. The cosmos as revealed by science is stranger than we ever could have imagined. Light, and time, and space, and gravity conspire to create realities which lie beyond human experience.” But discovering the cosmos is the human experience as we extend our senses with powerful and subtle instruments. Our senses are just as valid as those of bees, birds, and bears. Cosmos: A Spacetime Odyssey stands on the post modernist assumption that humans are specially cursed and have no rightful place in Nature.

“Episode 14: The Immortals” includes several errors across the curricula of general science. Attempting to explain that we are broadcasting messages into the cosmos, Dr. Tyson offers Project Diana, an effort of the US Army Signal Corps to reflect radar off the Moon, as the first case. However, our electrical signals were already going out for a hundred years because just closing and opening the DC circuits of telegraphs from the 1840s caused electro-magnetic pulses. And radio transmissions began in the next generation. Anyone who knows the work of Carl Sagan knows that Contact gave the honor of the first the television broadcast into outer space to the opening of the 1936 Olympics. (See “The Women of Harvard and the Horsehead Nebula,” Sidereal Times, December 2019.) Also known in nebulae are long cyanopolyynes, molecular strings of nitrogen, carbon, and hydrogen. Dr. Tyson’s script correctly identified carbon as the key to life on Earth. Carbon compounds seem plentiful in free space. That simple truth would have been the more fruitful exploration.

Dr. Tyson says that bacteria from outer space are constantly and continuously landing on Earth in meteorites. He suggests that perhaps all life on Earth evolved from such bacteria. But they are complex lifeforms. How could simpler life have devolved from them? If you stop and think about it, was it those alien organisms and not their host asteroids that eradicated life on Earth in sweeping extinctions? Is another plague coming? That possibility suggested by their own premise seems not to have occurred to Ann Druyan and Steven Soter who wrote the scripts that Neil Degrasse Tyson spoke to us.

I could continue at length. These were not a few egregious errors in an otherwise exemplary effort. Cosmos: A Spacetime Odyssey was a second-hand effort by copyists who lacked the depth of understanding that informed Carl Sagan’s original.
This is the season that star clouds begin creeping up on the eastern horizon, a sure sign that the Milky Way will soon reign supreme this summer with its gorgeous star clusters and endless binocular star fields. Before it arrives however, this month let's investigate a few objects in the springtime deepsky window that's closing. Milky Way or not, there's always an interesting corner of the sky to target. Enjoy!

**R Serpentis**.rating EASY
**variable star in Serpens Caput**
RA 15h 50.7m Dec +15d 08.0’ (2000)  
Magnitude 5.2-14.4  dia 12’

Those of you who detest having to hunt for variable stars should appreciate R Serpentis: it's about as easy to find as it gets. You do need to be able to find Serpens Caput, however. Serpens is our only non-contiguous constellation, meaning it exists in two separate pieces. These are Serpens Caput (Latin for “the head of the Serpent”) and Serpens Cauda (“the tail of the Serpent). Think of Serpens as the Michigan of the sky.

Three stars in an equilateral triangle mark the actual head of Serpens, none of them terribly bright. Beta Serpentis at magnitude 3.7 is the brightest, followed by 3.8-magnitude Gamma and 4.3-magnitude Kappa 2+ degrees N. R nestles roughly between Beta and Kappa, a tad closer to Beta and just south of a line connecting the two. Because of this, and because R is an orange-red long-period variable, you can envision it as the flickering red tongue of the Serpent.

At maximum R is barely naked-eye. It was recognized as a variable in 1826, though at least one of its maxima was recorded as early as 1783 on French charts. R is a typical Mira long-period variable with a period of 357 days, just 9 days shy of a year. All Miras are low-density red giants with diameters averaging several hundred times that of the Sun. R is about 600 light-years distant, well beyond neighboring Beta, which lies 95 light-years away.

**IC 4593** rating: MEDIUM
**planetary in Hercules**
RA 16h 12.2m Dec +12d 4.4’ (2000)  
Magnitude 10.9

What do you think of when you think of Hercules, other than globular clusters M13 and M92? How about planetary IC 4593, in western Hercules about halfway between Beta Herculis and Alpha Serpens? Of course! Also known as the White Eyed Pea, IC 4593 is a small bright planetary that appears stellar at low power. An 8-inch at 175x shows a very small, round, bluish gray disk about 10” in diameter with a bright center. The 11.3 magnitude star at this bright center is a white dwarf of 0.7 solar masses with the relatively low temperature of 35,000 Kelvin. The star, designated HD 145649 - is surrounded by an inner shell and outer nebula. The inner shell is probably due to the interaction between a fast 1600 km/sec hot wind from the central star and the outer nebula.

Distance calculations to the planetary range from 3 K to 10 K light years, with the best estimate of 3400 light years, which would give the nebulaa diameter of 0.2 light years.

**UGC 9749** rating HARD
**dwarf spheroidal galaxy in Ursa Minor**
RA 15h 08.8m Dec +67d 11.0’ (2000)  
Magnitude 11.9

Here's a toughy way up north in Ursa Minor. Its neighborhood is about 5 degrees SSW of 3.1-magnitude Pherkad, alias Gamma UMi, the southernmost star the Little Dipper. The immediate vicinity is dominated by 5th magnitude SAO 16660, and the galaxy is centered roughly 36 minutes WSW of this star, although its large extent (half a degree or so) makes this only approximate.
9749 is very elusive, barely at the threshold of visibility, but has been found at dark-site star parties like the Oregon Star Party.

Discovered by A.G. Wilson during the Palomar Sky Survey in 1955, UGC 9749 is a satellite galaxy of the Milky Way, located about 225,000 light years from Earth. Web images illustrate immediately why this galaxy is such a challenge: it appears, roughly, as a very distended dim globular cluster. In fact, studies of the dwarf’s variable star population show that its variables consist almost exclusively of RR Lyrae variable stars and anomalous Cepheid variables - evidence that the galaxy is populated by very old stars (about 14 billion years), as old as the oldest globulars.

This stellar population suggests that UGC 9749 has led a relatively simple life, experiencing just a single star-forming event early in its existence. While it probably had enough gas to sustain this initial burst of star formation, subsequent stellar winds and supernova explosions dissipated all the lightweight galaxy’s remaining raw materials, preventing any further star formation. The single period of star formation probably lasted about 2 billion years.

All this dovetails with the belief...
OUTREACH REPORT JUNE 2020
By Joyce Lynch, Outreach Chair

Obviously we haven’t had any events recently, but we’re looking to the future.

Texas Parks and Wildlife has indicated that we may have to cancel the next few star parties. The EC will be working with the rangers at Pedernales Falls and Inks Lake State Parks to figure out some ways to have safe activities once we do return, such as using Mallincams, doing laser sky tours, utilizing Stellarium for virtual observing, and more.

If you have other thoughts or idea, please email me at outreach@austinastro.org

Other Up Coming Events

AGM
Mark your calendar for the November 12 -15, 2020 IDA Annual General Meeting (AGM) in San Antonio!

UBarU Star Party
August 13-16 2020 open to the AAS membership
Congratulations to

TYLER CURTIS

The Milky Way Over Fredericksburg

Lens: Rokinon f/2.8 14 mm Lens for Canon RF
Camera: Canon EOS Ra
Mount: iOptron Skyguider Pro
Software: Photoshop
Congratulations to **TYlER cuRTis**

**Members’ Gallery**

**by Tyler Curtis**

*The Whirlpool Galaxy M51*

Telescope: Celestron Edge HD 8  
Camera: Canon EOS Ra  
Software: Photoshop, DeepSkyStacker  
Frames: 50x180”  
Integration: 2.5 hours

**by Tom Richter**

*Mercury*

A couple of photos of Mercury during its very favorable evening appearance lately, with an explanatory S&T chart. The photos were both taken the evening of June 7 (3 days after maximum elongation) at about 9:30 pm from the school yard down the street from my Cedar Park residence. The wide field photo was taken with an iPhone 7 augmented with the Nightcap Camera app. The narrower field photo was taken with my ancient point-and-shoot Samsung L77. Mercury is to the lower right in the twilight with Pollux and Castor above it, and Procyon to the far left in the wide field photo. Mercury was at about magnitude 0.8 for these.

* iPhone: f/1.8, 8.3 sec exposure, ISO-1760  
  L77: f/3.8, 15 second exposure, ISO-50

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_Dusk, June 5_  
**30 minutes after sunset**
by Laurie Allai

Markarian’s Chain

OTA: Celestron Edge 9.25 F/2.3 Hyperstar
Mount: Celestron CGX-L
Camera: Canon T2i, modified by Hap Griffin,
IDAS D1 filter
38 frames of 300 Sec at ISO800

M3

OTA: Stellarvue SVQ100 F-5.8
Mount: Celestron CGX
Camera: Canon 60Da, IDAS D1 filter
64 frames 180 Sec at ISO 1600

by Terry Standefer

Trifid and Lagoon nebula

Photo was taken the same week that the Texas Star Party was to take place in the Davis Mountains State Park. I had clear weather for 4 out of five nights that week.
The photo is a accumulation of 45min in red, green, blue for a total of 135 minutes.
Equipment- paramount myt, takahashi fsq F5, QHY600 cold camera, QHYCFW, and FLI Atlas focuses.
Processed in pixinsight.

by Miles Parker

Memorial Day Weekend Moon

OTA - Celestron C11, Mount - CGX, Camera for the second pic - Canon EOS, Camera for close up - ASI224MC
# Treasurer’s Report 4/30/2020

## Checking Account

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## Donations Account

- No Activity: $2,211.24

## Scholarship Account

- No Activity: $2.60

## CD #1

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## Category Summary

**Date Range:** Custom Dates (6/1/2019 – 5/4/2020)

**Accounts:** All Accounts

**Categories:** All Categories

**Tags:** All Tags

**Type:** Custom

### Money In

- **Donations:** $185.00
- **Interest Inc:** $194.91
- **Membership Dues:** $7,235.95

**Total:** $7,615.86

### Money Out

- **Anniversary Party:** -$1,488.19
- **Astronomy League Dues:** -$2,400.00
- **Astronomy on Tap:** -$1,200.00
- **Bad Wolf Observing Site:** -$400.52
- **Business Expenses:** -$324.00
- **Donation - IDA:** -$400.00
- **Equipment Expense:** -$119.06

**Total:** -$19,319.65
Virtual Meeting hosted on Zoom by Jim Spigelmire President
Attending: Brian Lippincott, Joyce Lynch, Greg Rohde, Michael Marotta, Terry Phillips, Tim Brown, Dawn Davies, Gordon Schaefering, Maurice Nelson

Call to order at 7:00 PM.
March EC minutes were unavailable for approval. Have been recovered, will be forwarded.

**Treasurer – John Cassidy**
Our bank balance stands at $23,675.00. Our member roster totals 426 with 416 active.

**Equipment – Brian Lippincott**
The new donor telescope 20” with John Hall mirror is ready to be shipped to Texas. Need a landing spot for it such as the Conex storage unit. Pedernales Falls State Park (PFSP) is ready to receive our Conex. We need to wait a few days for the ground to dry out. We need to determine that we can get it delivered with Covid-19 restrictions in place.

**Outreach – Joyce Lynch**
Pretty much shut down due to Covid-19 restrictions. No scheduled star party at any park in April. Probably May as well. Question asked if we could do anything in May for the Comet C2000/Y4 (ATLAS). Appears there are too many unknowns with Shelter in Place draw down to make any commitments. Some neighborhood association was asking if we could support a party for Lyrids meteor shower 21st April. Looks like it would have to be shower in place. AUTS at this time is still on for July 11th.

**Member Services – Tim Brown**
Again, mostly shutdown. Tim proposed looking into webinar-based services programs. Tim is also looking for pics of Bad Wolf Ranch (BWR) in order to promote the site. Jim indicated he would like to emphasize webinars. Can something be done this week?
No Mansfield Dam excursion this month.
The question was asked if it was ok for members to visit BWR individually. Decision was the it would be ok only if something needed to be worked on at the site, otherwise visiting BWR is discouraged at this time.

**ALCOR – Dawn Davies**
This year’s ALCON has been canceled. Noted that good information is available on the Astronomical
League sites for clubs dealing with Covid-19. These might be useful when we want to start ramping up again. Texas StaraParty still not canceled, however we expect an announcement to cancel on the 13th. The virtual NEAF conference was judged to have worked pretty well. Astronomy on Tap, the Mars Society, and others are setting up virtual meetings.

Tim asked about how far back can one may reach back in their outreach history to qualify for the various outreach pins. Answer was not definite but suggested probably as far back as the initiation of the various programs.

**Other Business**

Memorandum of Agreement (MOA) with PFSP: Jim to submit a copy with the minutes. Jim reviewed phrasing about our commitments to provide the specified number of public start parties whenever parties were cancelled due to adverse conditions. Jim will contact the park for some clarifications otherwise we are comfortable with the wording as it is. Once clarifications are in, EC can meet to vote to sign the MOA and return to PFSP.

**Speakers:**

Tim noted that with virtual meetings it may be easier to engage non-local speakers. Tim indicated he was working to bring in planetary astronomer Mike Brown from Caltech.

**Nominating Committee:** No candidate for president yet. Candidates for treasurer and secretary have come forward. Joyce indicated she would take the Outreach Chair but can't be nominated while she is on the nominating committee.

**GA Zoom Call:**

Jim is setting up the Zoom invitations for our virtual April GA meeting. Discussed if we want to make use of the waiting room features to screen attendees, and other security features to put in place. The first virtual meeting will be members only until we figure the right setups to include general public.

**Website:**

Maurice indicated his work situation allows him more time which he can devote to website work. Gordon has drawn up a list of issues with our website that need to be addressed. Gordon will share his list with EC, Maurice will pick up the low hanging fruit. The EC will put an action plan together for addressing more intense issues.

Dawn asked to beef up user forums to make them more attractive to draw more member discussion.

Adjourned sometime after 9:00PM

Respectfully submitted,

Terry Phillips
GA MINUTES  APRIL 2020
By Terry Phillips, Secretary

Call to order: 7:30 pm Location: Zoom video conference password protected with waiting room.
President Jim Spigelmire presiding
Approximately 36 members attended. Quorum did not apply to a remote meeting. No items were voted on.

March meeting was cancelled due to statewide Shelter-in-Place (SIP) mandate. No March GA minutes to approve.

John Cassidy (Treasurer): Bank accounts at $23,675. 426 members on the roster.

Brian Lippincott (Equipment): Memorandum of Agreement (MOA) with Pedernales Falls State Park (PFSP) is very close to sign off, and our Conex storage unit should land at the park within the next week. The park has been preparing the landing site.

To answer public questions about possible sky conditions improvement due to the statewide shelter in place now in effect, Brian planning to visit Bad Wolf Ranch (BWR) and several other dark sky sites in the area to take Sky Quality meter readings. Follow up readings will be taken some time after SIP ends.
Brian to make maintenance check on BWR while there.

As soon as the Conex is finished out at PFSP, Brian will schedule delivery of the newly donated Mighty Half-Meter telescope.

Joyce Lynch (Outreach): No outreach activity with the parks and schools closed. Next possible park visits likely to be in June. Joyce reminded members to go on-line and start their state park’s background check if they planned to provide outreach at the parks.

Tim Brown (Member Services): Tim was absent. No private star parties currently scheduled due to SIP.

Dawn (ALCOR): Our March Messier Marathon had to be cancelled due to SIP. The 2020 ALCON convention scheduled for July has been cancelled. The conference has been rescheduled for August 4-7, 2021 still to be held in Albuquerque.
Reminded members to “Update your logs!”

Brian (What’s Up in Astronomy): Discussed the helicopter scout that will attend the Mars rover Perseverance, the wind speed of brown dwarfs, and an Astrobites article on high schooler’s projects at the observatory sites located on Mauna Kea, Hawaii.

Old Business: Joyce reminded us that April is the month for AAS officer elections. Given our inability to meet in person this month, and possibly for a few months to follow, and since only a single candidate existed for each position on the executive committee roster, and no opposition expressed, we declared the entire roster elected.

New Business: Jim reviewed the Memorandum of Agreement (MOA) as it was last received from PFSP. We discussed the language involving the number of public star parties we committed to and how the count was impacted when parties were cancelled e.g. for inclement weather. We also agreed we’d like to have some language to deal with reasons for cancelling star parties that considered things like the current pandemic SIP that we are currently experiencing. We sent the MOA back to PFSP for clarification and expect to be able to sign off upon their reply.

Dawn presented her talk on how constellations have been imagined by different cultures across the globe: Across Space, Place, and Time.
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.

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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](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/](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/](https://www.earthboundastronomer.com/)


Rob Pettengill’s site can be found at [http://astronomy.robpettengill.org/](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/](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/](http://manorcommunitynews.com/)
## Officers of The Society 2020-2021

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