

# SIDEREAL TIMES

Austin Astronomical Society  
keeping astronomy weird since 1969

## MONTHLY MEETING

Friday, February 8, 2019

ETC 2.136 - UT Campus  
Engineering Teaching Center  
Dean Keeton and Speedway

## NO PRACTICAL ASTRONOMY

7:30 PM  
GENERAL ASSEMBLY

### Featured Speaker

Kurt Chankaya: He will talk about the latest robotic exploration missions, and about what it will take to transition to human missions to the red planet.



## PRESIDENT'S NOTES

By Tim Brown, President

### Fiftieth Anniversary Year of the AAS

In August, if my information is correct, the Austin Astronomical Society will reach the half-century mark of continuous service to amateur astronomy. At our Monday Executive Committee meeting, we agreed to plan a series of events leading to a big "blow-out" party in August.

What events you ask? At this point who knows. In fact, that's where you Ms./Mr. club member come-in. In February we'll organize a planning committee for the party.

It's particularly important that long-time members share their knowledge of the club's history and join in the planning. So, I ask that each member who is interested to send in your name and the year that you joined AAS. Also, if you know any "lapsed" members please invite them to participate.

Please send any correspondence to: [president@austinastro.org](mailto:president@austinastro.org).

### 2019-2020 Executive Committee Elections

Joyce Lynch and Phil Schmidt, the primary authors of our new by-laws, have suggested tweaks to the election process. Lessons learned last year have led to suggested changes to election procedures. Information regarding the suggested changes will be circulated prior to the March meeting. The GA will then vote to accept or reject the



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Banner: Jan. 2019 Image of the Month: Nathan Morgan - Comet 46P and the Pleiades



## PRESIDENT'S NOTES CONTINUED

proposal. Be sure to check the website and your email sometime after mid-January for full information.

### Public and Members only Star Party Sites

Dawn Davis, who with others created the opportunities for new partnerships with the state parks, reports that State Park officials are still reviewing our proposal at Pedernales Falls. At last, we feel close to a final agreement. Fingers crossed.

In the meantime, we have a great working relationship with both Inks Lake and Pedernales. Check the website for dates and times of public and private/public events.

Tim

*"For my part, I know nothing with certainty, but the sight of stars makes me dream". (Vincent Van Gogh)*

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## AAS AFFILIATIONS



<http://darksky.org/>



<https://www.astroleague.org/>



<https://nightsky.jpl.nasa.gov>



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



# FEBRUARY OBSERVING TARGETS

By Brian Cuthbertson

Welcome to February's targets, which this month represent an example of universal building blocks. Start with a star of some flavor - single, multiple, variable - or even all of the above. Now combine a few hundred stars, or thousand, or hundred thousand, to create a cluster, and toss in a couple of planetary nebulae as a nod to stellar evolution. Finally, swirl together more stars, clusters, and all manner of nebulae to build a galaxy.

It's amazing the variety you can get with these basic building blocks; that's part of the appeal of astronomy after all. Enjoy!

**Mekbuda rating: EASY multiple/variable star in Gemini**

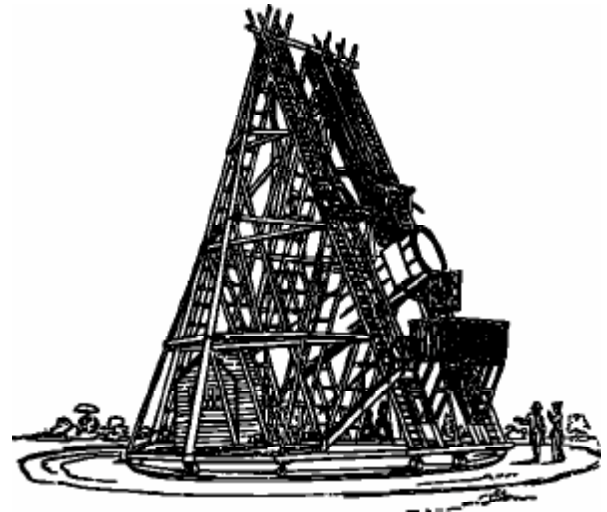
RA 7h 4.1m Dec +20d 34.2' (2000)

Magnitude 3.8

Also known by its more mundane Bayer designation of Zeta Geminorum, Mekbuda lies nearly in the center of Gemini, along its eastern leg which extends from Pollux (Beta Gem) south to Alhena (Gamma Gem).

Mekbuda is a multiple star having three reasonably bright components. Mekbuda-A, at 4th magnitude, is separated from mag. 10.5 Mekbuda-B by 87". Mekbuda-C is brighter at 7.5 and slightly more distant at 96". But alas, Mekbuda-C is just an optical companion, not really physically part of the system. Its high proper motion is gradually taking it elsewhere.

But we're not done with Mekduda-A yet; it has a couple more interesting wrinkles to it. First, it's a suspected occultation double



*William Herschel's telescope. From a drawing in 'The Imperial History of England, comprising the entire work of D. Hume,' David Hume, 1891. Credit: [openclipart.org](http://openclipart.org)*

(estimated separation 0.1"). Secondly, back in 1997 Mekbuda-A made a Sky & Tel list of the top dozen naked-eye variable stars. It's a naked-eye Cepheid variable star which cycles between magnitudes 3.6 and 4.2 over a 10.15-day period, and notable for the fact that its light curve is more symmetrical than those of other bright Cepheids on the list.

So there you have it: an interesting collection of misfits for your viewing pleasure, all just 1400 light-years away as the crow flies (or not).

**M46 rating: MEDIUM open cluster in Puppis**

RA 07h 41.8m Dec -14d 49.0' (2000)

Magnitude 6.1

Roughly an hour west of Sirius lies a zone of the winter Milky Way that spills south from Monoceros through Canis Major, and down into

## FEBRUARY OBSERVING TARGETS, CONTINUED

northern Puppis. The area is peppered with open clusters, listed in Dreyer's NGC in the 2200-2500 range. It's a great winter watering hole for northern deepsky observers. Messier spent some time here in 1771 and found M46.

Later annointed NGC 2437 by Dreyer, M46 is an open cluster containing at least 150 stars magnitudes 8.7 and fainter, with most between magnitudes 10 and 13. Its brightest members are blue giants near spectral class A0, each about 100 times as luminous as the Sun. M46 is roughly 5400 light years distant and about 30 light years in diameter. Visually it appears 25' to 27' in diameter.

A curious feature of M46 is the presence of two planetary nebulae. One of these is planetary nebula NGC 2438, appearing well within the apparent borders of the cluster some 7' north of the center. It's unmistakable at the cluster's edge in a 6-inch scope at 120x. The hollow center can be seen, and a star sits on the planetary's eastern edge. NGC 2438 was first noticed by Sir William Herschel. However, NGC 2438 is estimated to be just 3000 LY away and moves at a different speed than M46 members, seemingly putting it in front of M46. An even fainter planetary nebula, PK231+4.1 lies further out on the cluster's periphery.

For you laptop astronomers, a great image of M46 and both planetaries is available at APOD ( <https://apod.nasa.gov/apod/ap150417.html> ) on the April 17, 2015 page. The rest of you will just have to find some suitable dark skies.

### **NGC 2655 rating HARD spiral galaxy in Camelopardalis**

RA 08h 55.7m Dec +78d 13.1' (2000)

Magnitude 10.1 5.1x4.4'

Also known as Herschel H-288-1 and Arp 225, NGC 2655 lies in the nondescript reaches of northern Camelopardalis within 12 degrees of Polaris. The closest star of any consequence is 4.6-magnitude SAO 1551, 3.5 degrees NNE. Several other galaxies lurk nearby, so be sure of your coordinates when you go hunting here.

NGC 2655 is a relatively nearby face-on multiple-armed spiral galaxy that earned an Arp number due to its oddly shaped dust lanes, which appear on only one side of the nucleus. Classed as type Seyfert 2, the galaxy has a nucleus heavily obscured by dust, an exceptionally large central bulge, faint outer stellar loops, and an extended HII-envelope. Finally, radio studies hint at jetlike extensions SE and NW of the core. Taken together, these clues suggest our target has undergone an interaction or merger with another galaxy at some point in its past.

You can find NGC 2655 even in a 2.4-inch refractor as a small round spot with a bright round center, forming an equilateral triangle with a 7.5 magnitude star SE and a 9th magnitude star NE.

In a 12-inch scope the galaxy sports a very bright inner core around an 8" nucleus. Outside the core, the galaxy appears elongated in PA 90 degrees. On the north side of the 4.2x3' halo darkens abruptly, due no doubt to those oddly shaped dust lanes.



# HEXAGON AT NIGHT, QUARTET IN THE MORNING

By DAVID PROSPER

The stars that make up the Winter Hexagon asterism are some of the brightest in the night sky and February evenings are a great time to enjoy their sparkly splendor. The Winter Hexagon is so large in size that the six stars that make up its points are also the brightest members of six different constellations, making the Hexagon a great starting point for learning the winter sky. Find the Hexagon by looking southeast after sunset and finding the bright red star that forms the “left shoulder” of the constellation Orion: Betelgeuse. You can think of Betelgeuse as the center of a large irregular clock, with the Winter Hexagon stars as the clock’s hour numbers. Move diagonally across Orion to spot its “right foot,” the bright star Rigel. Now move clockwise from Rigel to the brightest star in the night sky: Sirius in Canis Major. Continue ticking along clockwise to Procyon in Canis Minor and then towards Pollux, the brighter of the Gemini twins. Keep moving around the circuit to find Capella in Auriga, and finish at orange Aldebaran, the “eye” of the V-shaped face of Taurus the Bull.

Two naked-eye planets are visible in the evening sky this month. As red Mars moves across Pisces, NASA’s InSight Mission is readying its suite of geological instruments designed to study the Martian interior. InSight and the rest of humanity’s robotic

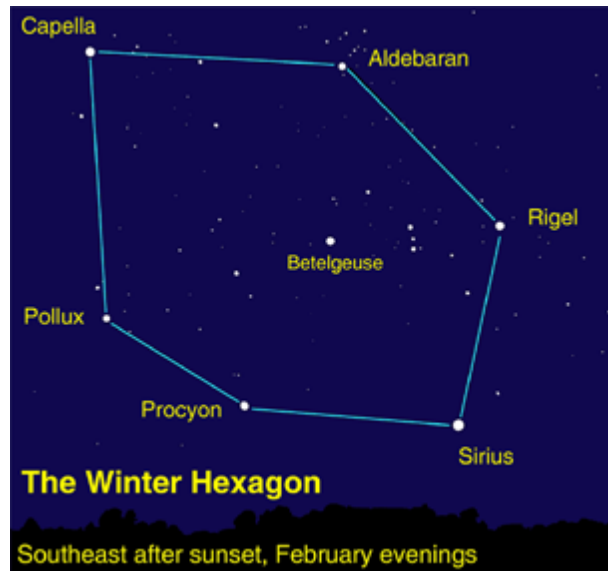
Martian emissaries will soon be joined by the Mars 2020 rover. The SUV-sized robot is slated to launch next year on a mission to study the possibility of past life on the red planet. A conjunction between Mars and Uranus on February 13 will be a treat for telescopic observers. Mars will pass a little over a degree away

ulars will greatly help in catching Mercury against the glow of evening twilight.

The morning planets put on quite a show in February. Look for the bright planets Venus, Jupiter, and Saturn above the eastern horizon all month, at times forming a neat

lineup. A crescent Moon makes a stunning addition on the mornings of February 1-2, and again on the 28th. Watch over the course of the month as Venus travels from its position above Jupiter to below dimmer Saturn. Venus and Saturn will be in close conjunction on the 18th; see if you can fit both planets into the same telescopic field of view. A telescope reveals the brilliant thin crescent phase of Venus waxing into a wide gibbous phase as the planet passes around the other side of our Sun. The Night Sky Network has a simple activity that helps explain the nature of both Venus and Mercury’s phases at [bit.ly/venusphases](http://bit.ly/venusphases)

You can catch up on all of NASA’s current and future missions at [nasa.gov](http://nasa.gov)



Caption: The stars of the Winter Hexagon Image created with help from Stellarium

from Uranus and larger magnifications will allow comparisons between the small red disc of dusty Mars with the smaller and much more distant blue-green disc of ice giant Uranus.

Speedy Mercury has a good showing this month and makes its highest appearance in the evening on February 27; spot it above the western horizon at sunset. An unobstructed western view and binoc-

**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](http://nightsky.jpl.nasa.org) to find local clubs, events, and more!

# AAS GUEST SPEAKER IN FEBRUARY

## Our featured speaker will be: **Kurt Chankaya**

“The time has come for humanity to journey to the planet Mars. We’re ready. Though Mars is distant, we are far better prepared today to send humans to the Red Planet than we were to travel to the Moon at the commencement of the space age. Given the will, we could have our first crews on Mars within a decade.”

These are the opening lines of the Founding Declaration of the Mars Society (marsociety.org). Founded in 1998, with chapters across the US, this is an organization of individuals who are seriously engaged in making human exploration of Mars a reality.

Our speaker this month, visiting us from their Dallas chapter, is Kurt Chankaya. He will talk about the latest robotic exploration missions, and about what it will take to transition to human missions to the red planet. Come join us and listen to this passionate speaker detail the challenges of human exploration and how we will meet them.



## CONGRATULATIONS TO ROB PETTENGILL

Austin astrophotographer Rob Pettengill has been selected a NASA Jet Propulsion Lab Solar System Ambassador for 2019. SSA volunteers are trained by NASA JPL for public presentation of the latest solar system discoveries and science. Ambassadors give talks, workshops, and star parties for community groups wanting the latest information on space exploration. Fewer than 1000 volunteers have been selected for this NASA public engagement program over the past two decades.

Rob is an award winning astrophotographer and a longtime Austin resident. After an engineering career at Texas Instruments, MCC, and Schlumberger, he has been an active sidewalk astronomer. He offers views of the solar system to Austin area residents at busy locations including Lady Bird Lake and Central Park. He organizes lunar and solar observation in Austin for International Observe the Moon Night and International Sun Day. His popular <http://BadAstroPhotos.com> web site includes astrophotography tutorials, information on the best Texas star gazing sites, and an astronomical weather dashboard to help find clear skies. He also organized the Facebook Austin Urban Stargazers group and the Google Austin512Astronomy calendar of local astronomical events. He works with other Austin area astrophotography and astronomy groups including Austin Astrophotographers, AAS, Psalm 19 Astronomy, and local schools.

If you would like Rob to give a Solar System Ambassador event at your organization, contact him at [astro@RobPettengill.org](mailto:astro@RobPettengill.org) or via his <http://BadAstroPhotos.com> web site. Learn more about the Solar System Ambassadors program at: <https://solarsystem1.jpl.nasa.gov/ssa/>

# IMAGE OF THE MONTH

February 2019

Congratulations to  
RATHIJIT BANERJEE, JAN 2019 TOTAL LUNAR ECLIPSE COLLAGE





# MEMBERS' GALLERY



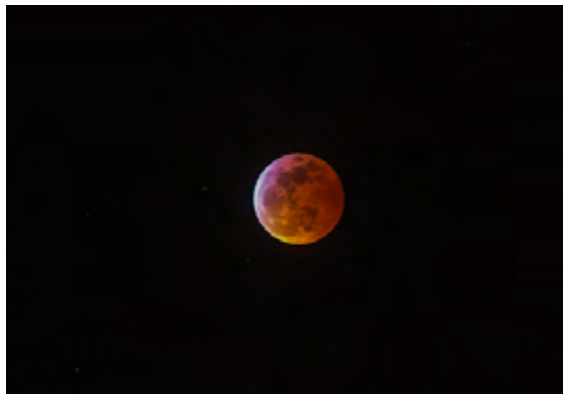
▲ by Laurie Allai



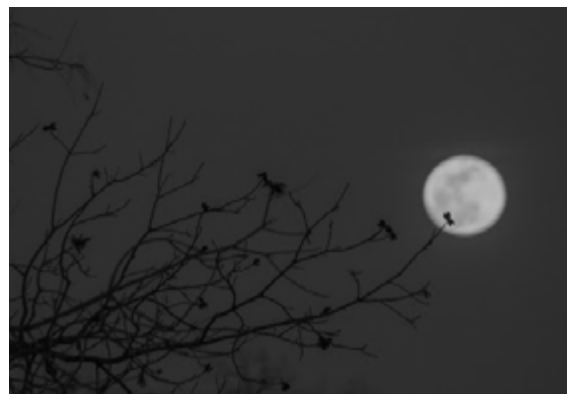
▲ by Rick Glasebrook ▼



*Venus and Jupiter are rising with Scorpius over the Twin Sisters*



▲ by Sadaf Syed ▲ *Wolf Moon*

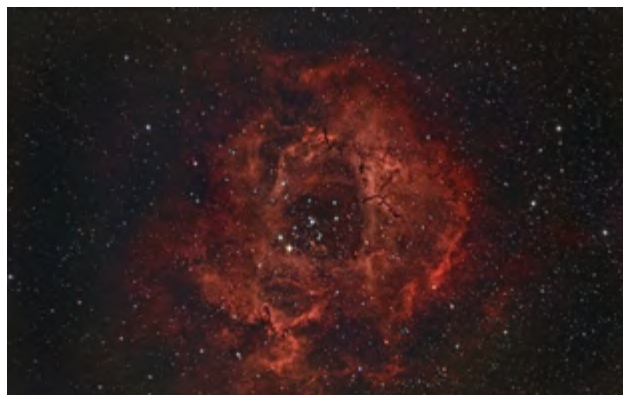


# MEMBERS' GALLERY



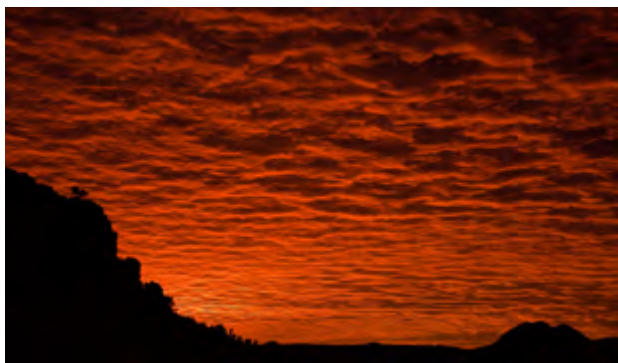
**by Laurie Allai**  
**Rosette Nebula**

OTA: Celestron Edge 9.25 F/2.3 Hyperstar  
Mount: iOptron CEM60  
Camera: Canon T2i, modified by Hap Griffin, IDAS D1 filter  
Guided by: Stellarvue SV60EDS and Starshoot Autoguider, PHD2.6  
51 frames of 240 Sec at ISO800  
Captured with Images Plus Camera Control 6.0  
Processed with Images Plus 6.5, Photoshop CS6.1



**by Rick Glasebrook**  
**Sunrise**

The sunrise was a conciliation prize after a poor night night for astronomy.



**LRGB filters**

**SHO filters**

**LRGB + SHO filters  
combined**



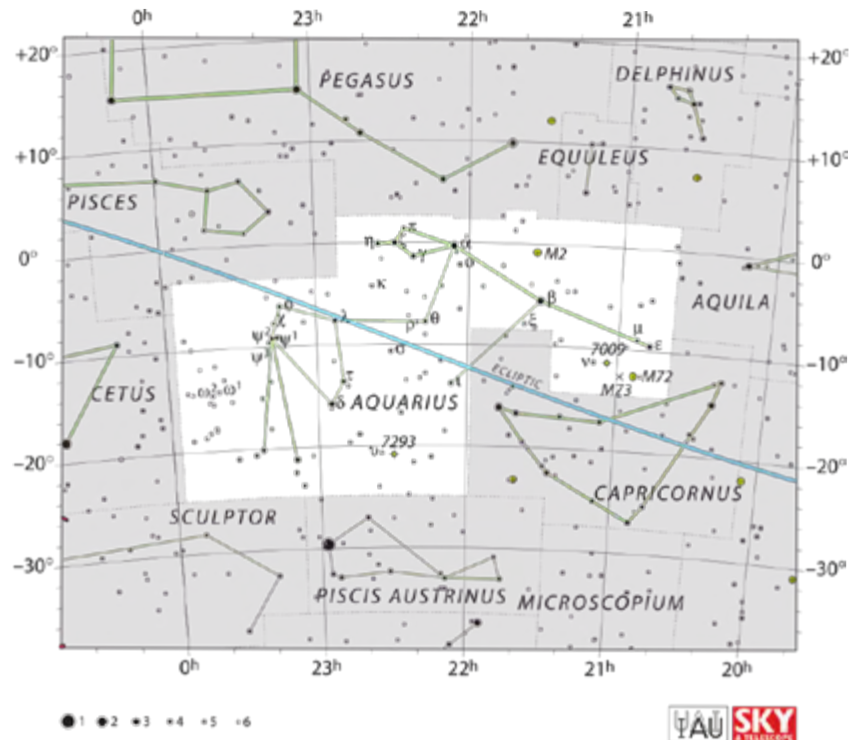
**by Chris Foster**  
**M42**

Here are three different capture and processing versions using 7 different filters. The Three is in Nb combined with LRGB with 40 hours of data acquisition.

# CONSTELLATION OF THE MONTH AQUARIUS, THE WATER-POURER

BY MARK STAR\*MAN JOHNSTON

Aquarius, is the 11th sign of the Zodiac, representing a man pouring water from an urn. The Star pattern originated in early Babylonian times. Aquarius is only one of several constellations in this region of the heavens with watery associations. The "Age Of Aquarius" heralded by astrologers will not take place for another 600 years when the vernal equinox will be located in Aquarius.



Credit: Wikipedia / Sky & Telescope

Galaxies are the most numerous type deep-sky objects in Aquarius, but most are faint. Aquarius contains three globular clusters, two of which are Messier objects, M2 and M72. A third Messier object, M73 is only an asterism. There are many fine double and multiple stars within Aquarius, and the constellation contains two notable planetaries, Saturn and Helical Nebulae. The Helical is quite faint, it is enormous and impressive when viewed through a large aperture telescope with an O-III filter.



# OUTREACH REPORT, FEBRUARY 2019

By Joyce Lynch, Outreach Chair

Outreach Report  
Joyce Lynch, Outreach Chair

In the past month we had to cancel several events due to clouds and rain. My husband Jim and I did work (indoors) with Girl Scouts at Becker Elementary. On two consecutive nights, we had clear skies for star parties at Round Rock ISD schools. At Kathy Caraway Elementary, Domingo Rochin, Bob Van Gulick, and Mike Marotta joined us, and the next night at Great Oaks Elementary, Domingo helped out again. We thought we might be able to observe at Inks Lake State Park on January 26, but once again clouds and rain forced Jim and me to do a program using the computer at a pavilion. At Dessau Middle School, we let students work with Stellarium on the computer and look through a scope at a photo of the Whirlpool Galaxy that was still on the wall from the star party a year ago when we also had to move indoors.

Let's hope for better weather on the 23rd of this month when we participate in Girl Day at UT for the third time. In addition to teaching about how a telescope works, we want to have telescopes to observe the sun or the UT tower if the sky is cloudy. The event runs from 11:30 to 5:00, and we need at least 5-6 volunteers at all times, some with scopes and some to work at the table. Volunteers need to commit in advance because there is a safety video that each volunteer is required to view before the event. Volunteers will receive a t-shirt, and free food and drinks will be available. So, if you are interested in helping for the entire time or just a couple of hours, email [outreach@austinastro.org](mailto:outreach@austinastro.org)

And be sure to put March 30 on your calendar for the Texas Night Sky Festival in Dripping Springs. We'll have solar viewing and an information table during the day and participate in a star party in the evening.

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## 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](mailto: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.

# NIGHT SKY FESTIVAL



AAS is now a partner of the Texas Night Sky Festival® (TNSF)! This free to attend, family oriented, biannual Festival is a not-to-miss event. This year's Festival is scheduled for March 30, 2019.

The last TNSF had over 2800 attendees and more are expected this year. As before, the Festival will be held at Dripping Springs Ranch Park and Event Center on RR 12 north of Highway 290. AAS will staff a double-sized exhibitor table during the Saturday event, and will host solar and night-sky star



parties.

The Saturday Festival will feature guest speakers, numerous night sky related exhibitors, great food trucks, live music, solar observing and an evening star party. Kids of all ages can earn the Dark Sky or Midnight Defender patches. Speakers will include Irene Pease from the New York Hayden Planetarium and Bill Wren from McDonald Observatory. Terri Hendrix and Lloyd Maines will headline the live music stage.

A public star party will follow the daylight portion of the Festival. The public part of the star party officially ends at 11:00 p.m., but all astronomers are invited to stay and observe all night. The observing site is a short distance north of the exhibit building but is well shielded by trees. Tent camping will be available near the observing field and a limited number of RV sites with hookups are available to reserve near the main festival build-

ing. Moonrise will not occur until around 3:00 a.m., so there will be lots of deep sky targets to observe.

On Sunday, March 31, the Festival, in conjunction with the International Dark-Sky Association (IDA), will host a workshop on dark sky advocacy, with a focus on how to apply to be recognized by IDA as an International Dark Sky Place. Anyone with a passion for dark skies should attend. There will be a small charge to cover lunch at the Sunday event.

As a TNSF Partner, AAS will be listed above Sponsors in TNSF publications where Partners, Sponsors, and/or Exhibitors are all listed, and the AAS logo and name is already included in Festival advertising.

All AAS members are encouraged to come and share their love of the sky!

Stay abreast of details about the event by visiting [www.Texas-NightSkyFestival.org](http://www.Texas-NightSkyFestival.org).





# EXECUTIVE COMMITTEE MINUTES, DEC. 2018

By John Cassidy, Secretary

December 3, 2018

The meeting was call to order by Tim Brown at 7:00 PM at the Brown residence.

Present were:

Tim Brown  
Kathy Brown  
Terry Phillips  
Frank Mikan  
Gregory Rohde  
Nathan Morgan  
John Cassidy  
Dana Leary  
Joyce Lynch  
Brian Lippincott  
Jim Spigelmire  
Dawn Davies  
Domingo Rochin  
Jessica Cofrancesco  
Vanessa Perez

## Main topics on the Agenda handout were:

1. Christmas Party.
2. January Meeting.
3. \$5,000 CD.
4. Changes to Bylaws.
5. Officer and Member at Large Reports.

## Officer and Member at Large Reports

### Vice-President. Terry

1. January's GC will be member presentation night.
2. The Committee discussed possible ways to participate in the 100 Hours of Astronomy Event at St. Stephens and the need for publicity.
3. The Christmas Party will be held at the Austin Gem and Mineral Society building.

## CALENDAR OF EVENTS

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

8 Mar. 2019  
Practical Astronomy  
6:30 PM  
General Assembly Meeting  
7:30 PM  
@ ETC 2.136 - UT Campus  
Engineering Teaching Center  
Dean Keeton and Speedway

23 Mar. 2019  
Public Star Party  
7:30 PM - 10:00 PM  
@ Inks Lake State Park

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

12 Apr. 2019  
Practical Astronomy  
6:30 PM  
General Assembly Meeting  
7:30 PM  
@ ETC 2.136 - UT Campus  
Engineering Teaching Center  
Dean Keeton and Speedway

## EXECUTIVE COMMITTEE MINUTES, CONTINUED

### **Treasurer. Dana**

1. Dana asked for approval to purchase a \$5,000. A motion to approve the purchase was made, seconded and approved unanimously

### **Outreach. Joyce**

1. The Society will participate in Girls Day at UT in February.

### **Equipment. Brian & Dawn**

1. The committee discussed a proposed donation to the Society of a 20-inch reflector. The Committee agreed that we need more information to make a decision.
2. The EC discussed the use of a portable dome at Inks Lake, but no action was taken.

### **Secretary. John**

1. Minutes of the November 5 EC meeting were approved unanimously.

### **Member Services. Vanessa**

1. There are several scheduled member star parties over the next few months.

Meeting was adjourned at 8:45 PM

John Cassidy, Secretary



# COMMUNICATIONS REPORT, FEB. 2019

By Sean Leary, Communications Chair

Communications Chair: Sean Leary  
For the Executive Committee meeting in February 2019

- Update events for January general assembly and practical astronomy with correct location and maps.
- Add post for St. Stephen's Ga/Pa meeting
- Add vice president admin role on midphase
- Scrubbed all occurrences of COE and Canyon of the Eagles from the website.
- Updated stars-at-night astronomy page for Inks Lake
- Sidereal Times Jan 2019 page update, banner, link
- Image of the month Jan 2019 banner, link
- Convert absentee ballot for bylaws to pdf, upload to wildapricot
- Updated event, added post for Feb GA meeting featured speaker

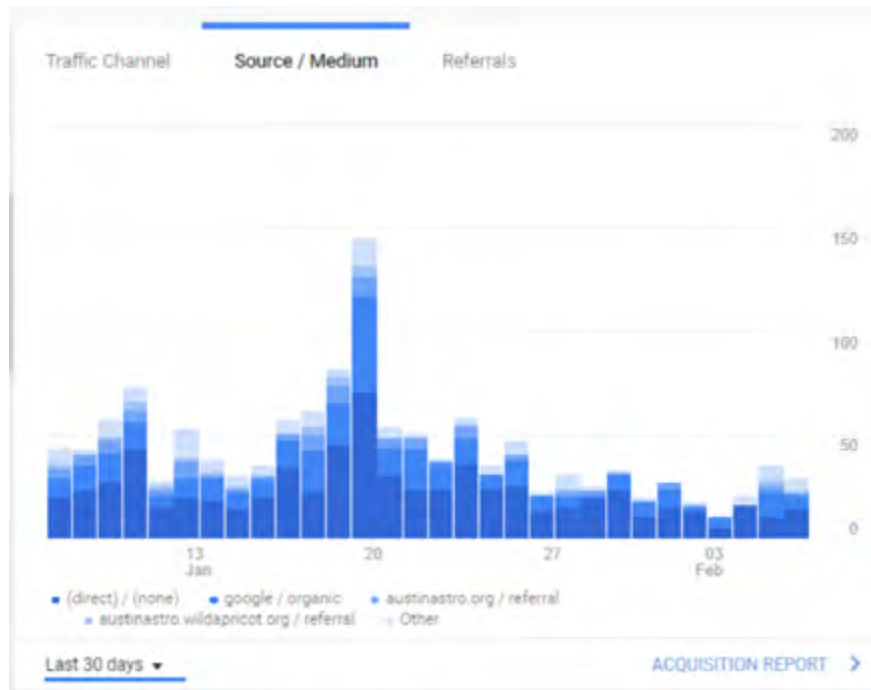
## Website traffic for the past month





# COMMUNICATIONS REPORT CONTINUED

How many people are visiting the site?



Who is sending us traffic?

What pages do your users visit?

Page	Pageviews	Page Val
/	1,230	\$0.
/JoinAAS	145	\$0.
/index.php/event/mem...e-at-mansfield-dam/	130	\$0.
/index.php/events/	80	\$0.
/index.php/event/publ...rty/?instance_id=837	70	\$0.
/Sys/Profile	63	\$0.



# TREASURER'S REPORT, JANUARY 2019

By Dana Leary, Treasurer

## January 2019 Treasurer's Report

### Deposits:

Dues payments		
Checks	\$ 40.00	
Paypal	\$ 1,500.00	
Dues payments in checking acct.		\$ 1,540.00
Interest earned - reg. (donations)	\$ 0.00	
interest earned - scholarship	\$ 0.00	
Interest earned-checking	\$ 0.99	
Interest earned - CD - A	\$ 5.44	
Interest earned - CD - B	\$ 5.44	
Total interest earned		\$ 11.87

**Deposit Totals for Jan 2019: \$ 1,551.87**

### Expenses:

Life Storage - telescope storage	\$ 65.00
Check #2192 - Mercer Consumer - liability ins.	\$ 720.00
Check #2193 - Post Office for PO box - one year rental	\$ 96.00
Postage stamps	\$ 5.00
USB to RS-232 cable, NexStar RS-232 Cable, & STEX Glass	\$ 467.95

**Expenses for Jan 2019: \$ 1,353.95**

### Bank Balances:

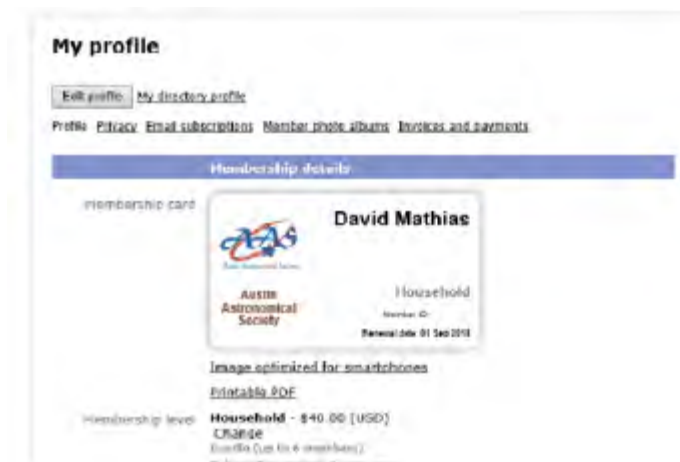
UFCU donations - 523.42 1/4/19 transferred from checking	\$ 2,045.99
UFCU scholarship special **	\$ 1,001.91
UFCU checking **	\$ 24,008.34
UFCU CD - A	\$ 5,855.65
UFCU CD - B	\$ 5,834.41
Paypal account	\$ 113.43

**Total cash as of 1/31/2019: \$38,859.73**

AAS members	647
AAS memberships	471

# 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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## WELCOME NEW MEMBERS!

Fiero, PAUL  
Jepson, Craig  
Jones, Geri  
Leczynski, Michelle  
Madhura, Dole  
Maxfield, David

Nelson, Maurice  
Robert, Ettel  
Rohde, Gregory  
Saraf, Ravindra  
Wieland, Susan  
Wilder, Jeneve

# 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.



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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>

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](mailto:outreach@austinastro.org)

# OFFICERS OF THE SOCIETY, 2018-2019

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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/>