



# STAR STUFF

Ford Amateur Astronomy Club Newsletter

## Star Stuff

This newsletter is published eleven times per year by:

Ford Amateur Astronomy Club  
P.O. Box 7527  
Dearborn, MI 48121-7527

## Officers

President:	Mike Bruno
Vice President:	John McGill
Secretary:	Cheri Grissom
Treasurer:	Arica Flores

## Departments

Webmaster:	Liam Finn
Membership:	Doug Bauer
Newsletter:	Tim Campbell
Equipment:	Jeff Gorman
Speakers:	Sandra Macika

## Club Information

The Ford Amateur Astronomy Club meets on the fourth Thursday of each month, except for the combined November/December meeting which meets on the first Thursday of December – at Henry Ford College Administration Services and Conference Center in Dearborn.

## President's Corner

*by Mike Bruno*

Happy New Year! How is it 2021 already? I hope your Holidays were happy and relaxing, maybe even some shiny new piece of astronomy equipment has shown up for you too. That would at least explain all the cloudy nights we have been having recently! Be sure to let us know at the next club meeting, so we know who to blame!

As we move into 2021 unfortunately our in-person club activities are still on hold. We have scheduled our beginner's nights, with hope that as time goes on, we can socialize in person. We will continue to monitor the current climate and notify you through the groups.io chat of any changes. Do not let that stop you from observing though! Last summer we launched the FAAC Observers Award & we will have another Seasonal observing challenge for the winter. You can find the program in the files section in Groups.io. See what you can check off from the list of requirements on the next clear night, there are Visual, Binocular and Telescopic targets. Also, share your observing program accomplishments with us at our next meeting.

Speaking of our next meeting. I sure hope everyone can join us for the January Virtual General Meeting on Thursday January 28th at 7 PM. It is the time to elect our board members for 2021. Our virtual meeting attendance has been down of late and I sure hope we see more of our members at this next meeting to vote in our new Board. Our long-term vice president John McGill is term limited & our nominating committee has found a volunteer to continue in John's footsteps, but that does not exclude you from nominating someone else for the position or any other position, at this next meeting. John has done a great job as our VP and I would like to thank John for his dedication and effort in continuing to make the FAAC such a wonderful club.

## Club Information

Refer to our website for a map and directions:

[www.fordastronomyclub.com](http://www.fordastronomyclub.com)

## Observing

The FAAC primary observing location is Spring Mill Pond located within the Island Lake State Recreation Area near Brighton, Michigan. The Club maintains an after-hours permit. Club members can contact any club officer for procedures to enter or exit the park when the main gate is locked.

The club also has use of a private observing site near Gregory Michigan. See the FAAC Groups.io Group for more information.

Inquiries can be directed to [info@fordastronomyclub.com](mailto:info@fordastronomyclub.com)

## Membership

Membership is open to anyone with an interest in amateur astronomy. The FAAC is an affiliate of the Ford Employees Recreation Association (FERA).

### Fees

Annual - New Members: \$30  
Annual - Renewals: \$25  
(\$30 if not renewed by Jan 31)

### Benefits

Membership includes the Star Stuff newsletter, discounts on magazines, discounts at selected

We are still looking for additional nominations for the 2021 Sirius Award. This is a special award, your nomination to recognize the next Shining Star of our club is especially important and welcome. Please send your nomination and a few words on why you are nominating that person to [president@fordastronomyclub.com](mailto:president@fordastronomyclub.com)

Wishing everyone a Very Happy and Healthy 2021!

## Secretary's Report

*by Cheri Grissom*

### FAAC General Meeting – December 3, 2020

Our combined November/December general meeting is traditionally our Holiday Potluck. Unfortunately, with this year's meeting being held via videoconference, we had to forego the usual generous and delicious buffet table selection. Our meeting was called to order by President Mike Bruno at approximately 7:06 p.m. All board members present. A total of approximately 21 people were listed as being in attendance.

### *Member Observing Experiences:*

John Lines, who was joining us from his home in Colorado, reported some excellent binocular observing he had recently enjoyed in the mountains. John McGill talked about a couple of launches he had observed in Florida recently. I apologize here, as there were some audio difficulties during this portion of the meeting and I could not hear everything being discussed.

### *What's Up:*

Gordon Hansen covered both December and January. See our club calendars online or "StarStuff" for dates of upcoming meetings during both months. On December 13, the Geminids meteor shower will peak. On December 21, the Winter Solstice will arrive. On January 3, the Quadrantids meteor shower will peak. Our asterism of the month is the Butterfly in Hercules. This was a new one for most of us present. There is a visible comet now, C/2020 M3 (Atlas). It has passed its closest approach to Earth and is moving away but should still be visible in dark skies. Check your star charts for position. Planets visible in the evening sky are Jupiter, Saturn, Mars, Uranus, and Neptune. On December 21, excitement is building for a close conjunction of Jupiter and Saturn. Unfortunately, their closest approach will happen at 5:30 p.m., just 29 minutes after sunset, and they will be a low 16 degrees above the horizon in the

area equipment retailers, and after-hours access to the Island Lake observing site and private observing sites.

Astronomy or Sky & Telescope magazine discounts are available by contacting the FAAC club treasurer [treasurer@fordastronomyclub.com](mailto:treasurer@fordastronomyclub.com) for the discount form. The form should be sent to the respective publisher with your subscription request and payment. Do not send money directly to FAAC.

The FAAC has a pool of equipment including telescopes, cameras, and other gear used for outreach. Much of the gear can be borrowed for personal use in the interest of furthering your knowledge and experience in astronomy.

Please see the equipment list for further information.

## Club Wear

Club logo-wear (embroidered with club logo) can be ordered directly through [LLBeanBusiness.com](http://LLBeanBusiness.com)

See the [groups.io](http://groups.io) files section for ordering information and instructions on how to request the correct logo.

## Communication

The FAAC uses Groups.io for our email distribution list (both formal and informal discussion.)

Observing nights & locations (scheduled and unscheduled as weather permits), equipment

southwest. It has been many centuries since these two planets were this close together in our skies, so it would be worth starting to follow them now, getting a feel for where they are, watching as the distance closes, and maybe increasing your chances of seeing them in the post-sunset sky on the 21st. January 10, there will be a close triangle in the sky comprised of Jupiter, Saturn, and Mars. Again, this will happen at 5:30 p.m., and it will be an even-lower 7 degrees above the horizon.

## *Club Elections / Nominating Committee:*

Gordon gave a report as chairman of the nominating committee. Our annual election will be at our next general meeting on January 28, 2021. John McGill, our Vice President, is the only one of our board who is term-limited. The people holding the other three positions have agreed to run again, and Ed Halash has agreed to run for VP. Of course, nominations will still be open right up until the time of the elections, so don't hesitate to speak up if you might be interested in serving the club in any of these positions.

## *Treasurer's Report:*

Arica reports our current balance is \$9,254. The online invoicing for renewals is going very smoothly. Our P.O. box is still being checked regularly for those who are renewing by check. Arica is sending updates to Doug Bauer, our membership chairman, as renewals come in.

## *FAAC Observer's Award:*

Mike talked about our relatively new FAAC Observer's Award. This is a great way to make up for (a little bit anyway) the fact that we have not been able to get together in person or have any public observing sessions. The Observer's Award can be completed on your own, in your own backyard, or anyplace else you observe from. It's new enough that no one has completed it yet. Maybe you can try to be the first! Find the rules and forms in Groups.io, under the "Files" tab.

## *2020 Sirius Award:*

This award should have been presented to the winner back in the spring at our Banquet, but of course that didn't happen, so we postponed the announcement, thinking that the Banquet may still happen, or our annual picnic may still happen, but, unfortunately, neither of those did. So this month's holiday meeting, being the last of the year, turned out to be where the announcement was made that Tim Campbell is the recipient of

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questions, events, outreaches, etc. are normally discussed via this list.

Join by visiting <https://groups.io/g/FordAstronomyClub> to request membership.

## Articles & Submissions

Your submissions to Star Stuff are welcome! Send your story and/or images to the editor at: [starstuff@fordastronomyclub.com](mailto:starstuff@fordastronomyclub.com)

## Observatory

The FAAC maintains and operates the Hector J Robinson Observatory (HJRO) at Lincoln Park Schools.

The observatory houses a 14" Celestron C14 Schmidt Cassegrain Telescope as well as other instruments and can be used by club members.

The observatory is adjacent to the athletic field situated between the Lincoln Park Middle School and High School buildings near

1701 Champaign Rd.  
Lincoln Park, MI 48146

The school system has designated four "key-holders" within the club who have the ability to open the observatory.

Call (313) 444-5850 to learn when the observatory is opening (or request an opening).

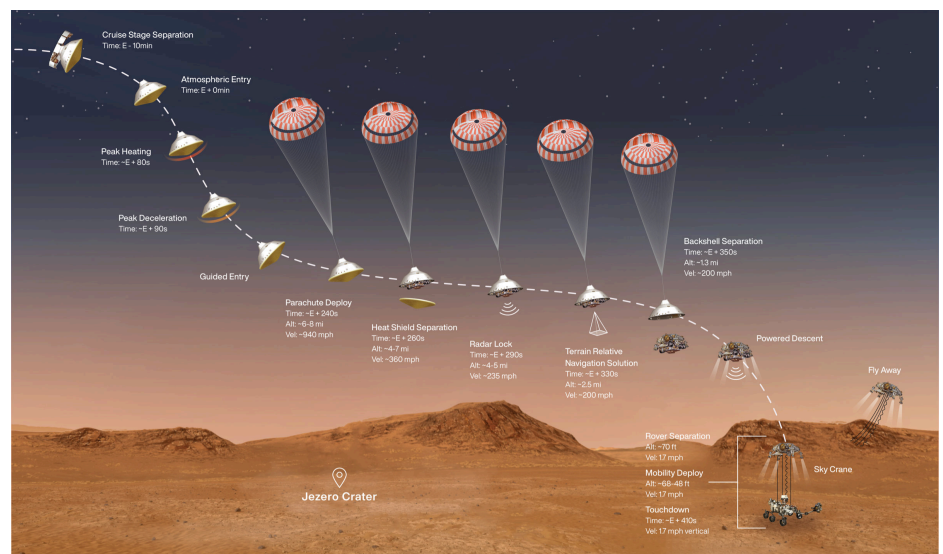
# Landing On Mars: A Tricky Feat!

*by David Prosper*



The Perseverance rover and Ingenuity helicopter will land in Mars's Jezero crater on February 18, 2021, NASA's latest mission to explore the red planet. Landing on Mars is an incredibly difficult feat that has challenged engineers for decades: while missions like Curiosity have succeeded, its surface is littered with the wreckage of many failures as well. Why is landing on Mars so difficult?

Mars presents a unique problem to potential landers as it possesses a relatively large mass and a thin, but not insubstantial, atmosphere. The atmosphere is thick enough that spacecraft are stuffed inside a streamlined aeroshell sporting a protective heat shield to prevent burning up upon entry - but that same atmosphere is not thick enough to rely on parachutes alone for a safe landing, since they can't catch sufficient air to slow down quickly enough. This is even worse for larger explorers like Perseverance, weighing in at 2,260 lbs (1,025 kg). Fortunately, engineers have crafted some ingenious landing methods over the decades to allow their spacecraft to survive what is called Entry, Descent, and Landing (EDL).



The Viking landers touched down on Mars in 1976 using heat shields, parachutes, and retrorockets. Despite using large parachutes, the large Viking landers fired retrorockets at the end to land at a safe speed. This complex combination has been followed by almost every mission since,

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## Planetarium

FAAC members are volunteer operators for the Hammond Planetarium at Henry Ford College.

Planetarium shows are free and open to the public.

Four seasonal planetarium shows are offered per year with the stars and constellations of the current season as well as a multi-media presentation featuring select planets.

Public planetarium shows are normally offered each Wednesday at 7:30pm and every 2nd Saturday at 3:00pm – however there are some exceptions. Please see the planetarium schedule for specific times. It is posted here:

[fordastronomyclub.com/hfc-planetarium](http://fordastronomyclub.com/hfc-planetarium)

## Social Media

The FAAC has several social media accounts. Members are encouraged to join and follow them.

### Facebook

[facebook.com/FordAstronomyClub](https://facebook.com/FordAstronomyClub)

### Twitter

[twitter.com/Ford\\_Astro](https://twitter.com/Ford_Astro)

### MeetUp

[meetup.com/Ford-Amateur-Astronomy-Club](https://meetup.com/Ford-Amateur-Astronomy-Club)

## Scheduled Club Events

Month	Date	Sunset	Location
April	17th	7:17pm	Island Lake
May	15th Int'l Astronomy Day	7:48pm	Island Lake
June	19th	8:12pm	Island Lake
July	17th	8:06pm	Island Lake
August	14th	7:35pm	Island Lake
September	11th (Tentative)	6:49pm	Island Lake
October	9th	6:00pm	Maybury State Park

## Upcoming Club Meeting Topics & Speakers

Meeting	Speaker	Topic
January 28th	Ed Cackett	Mapping a Black Hole
February 25th	John McGill	Mars Perseverance 2020
March 25th		
April 22nd	Don Klaser	Skylore & Mythology

## January Talk Details

### Mapping a Black Hole

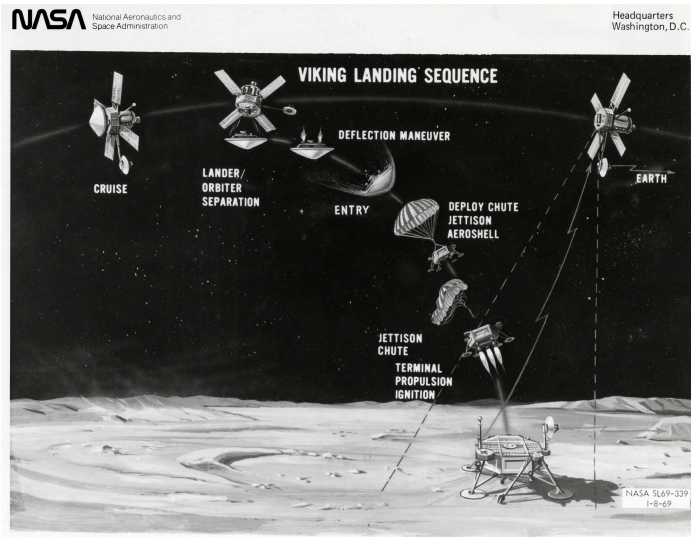
*Dr. Ed Cackett*

*Associate Professor, Wayne State University*

Strong observational evidence confirms the existence of black holes — objects whose gravity is so strong even light cannot escape. But how do we observe them? The vast majority of black holes have angular sizes that are far too small to be imaged directly, so indirect methods must be used. One way is to rely on the fact that as a black hole sucks up surrounding gas, that gas get extremely hot and emits large numbers of X-rays. X-ray observations of black holes therefore give us a glimpse of gas just before it passes the Event Horizon — the point of no return. I will discuss the different types of black holes and how using X-rays we can try

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*Landing on Mars (Cont'd from page 4)*

*Illustrations of the Entry, Descent, and Landing (EDL) sequences for Perseverance in 2021, and Viking in 1976. Despite the wide gap between these missions in terms of technology, they both performed their landing maneuvers automatically, since our planets are too far apart to allow Earth-based engineers to control them in real time! (NASA/JPL/Caltech)*

but subsequent missions have innovated in the landing segment. The 1997 Mars Pathfinder mission added airbags in conjunction with parachutes and retrorockets to safely bounce its way to a landing on the Martian surface. Then three sturdy “petals” ensured the lander was pushed into an upright position after landing on an ancient floodplain. The Opportunity and Spirit missions used a very similar method to place their rovers on the Martian surface in 2004. Phoenix (2008) and Insight (2018) actually utilized Viking-style landings. The large and heavy Curiosity rover required extra power at the end to safely land the car-sized rover, and so the daring “Sky Crane” deployment system was successfully used in 2012. After an initial descent using a massive heat shield and parachute, powerful retrorockets finished slowing down the spacecraft to about 2 miles per hour. The Sky Crane then safely lowered the rover down to the Martian surface using a strong cable. Its job done, the Sky Crane then flew off and

crash-landed a safe distance away. Having proved the efficacy of the Sky Crane system, NASA will use this same method to attempt a safe landing for Perseverance this month!

You can watch coverage of the Mars Perseverance landing starting at 11:00 AM PST (2:00 PM EST) on February 18 at [nasa.gov/nasalive](https://nasa.gov/nasalive). Touchdown is expected around 12:55 PM PST (3:55 PM EST). NASA has great resources about the Perseverance Rover and accompanying Ingenuity helicopter on [mars.nasa.gov/mars2020](https://mars.nasa.gov/mars2020). And of course, find out how we plan to land on many different worlds at [nasa.gov](https://nasa.gov).

*Secretary's Report (Cont'd from page 3)*

the 2020 Sirius Award. Congratulations to Tim, who has always been so generous with his time and energy, his knowledge and expertise, and his friendship and congeniality in furtherance of promoting amateur astronomy through FAAC!

*Speaker:*

Gary Gibson gave a very nice talk where he shared his history and experience with "Some Classic Telescopes." Gary got his first telescope, a 3" f9 reflector, for Christmas in 1964, and to this day, he has a tremendous appreciation for the many beautiful styles of older classic telescopes. Refractors in the 60 mm size used to be very common and popular, and some of them had very good optics. Unfortunately, a lot of those also had bad yoke style mounts. Unitron manufactured some excellent telescopes on very good equatorial mounts. Other classic telescopes that remain sought after even today were made by Tasco, Sears, Royal Astro Optics, Swift, and Apogee. Gary owns or has owned a number of models from each of those. Another interesting thing is that many of these classic refractors came in very nice, solid wooden boxes, which has probably helped to preserve many of them in good shape still today.

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# Equipment

The FAAC maintain an equipment pool of telescopes, binoculars, cameras, and other equipment used for special events. Much of this equipment is available to members.

Each piece of equipment is either stored by a club volunteer who offers to be the caretaker of the item, or by the person who last borrowed the item.

Most equipment can be borrowed for one-month durations. At the end of the month, the borrower can extend the loan if no other members have requested it.

Some items are reserved for special events use and are not normally available to be borrowed.

If you are interested in borrowing an item, please contact either the current holder of the equipment, or contact the club equipment manager, Jeff Gorman, at [equipment@fordastronomyclub.com](mailto:equipment@fordastronomyclub.com)

Item	Held by	Item	Held by
<b>Telescopes</b>		<b>Display Items</b>	
TK1 Coronado Personal Solar Telescope (Doublestack) w/Meade Autostar Goto Mount	Jessica Edwards	Astronomy Event Sign (3' x 6')	Gordon Hansen
TK5 4.5" Reflector on Fitz GEM mount	Bob MacFarland	Astronomy Event Signs 18x24" (x8)	Liam Finn
TK6 8" Orion XT8i Dobsonian	Sean Pickard	PVC Display Board - Folding	Sandra Macika
TK7 TPO 8" f/4 Newtownian Astrograph (OTA Only - no mount)	Gary Gibson	Banner - Small (24" x 32")	George Korody
TK8 20" f/5 Obsession Dob, Ladder & EP Kit	Liam Finn	Banner - Medium (24" x 72")	Sandra Macika
<b>Presentation Tools</b>		Banner - Large (32" x 16')	George Korody
Projector (older)	Jim Frisbie	Tri-Fold Presentation Boards	George Korody
Projector (newer)	Gordon Hansen	<b>Other</b>	
Projection Screen 8'	John McGill	Canopy (10' x 10')	Liam Finn
Projection Screen 6'	Liam Finn	Pop Cooler	Sean Pickard
Bullhorn	George Korody	TA Sky Quality Meter	Liam Finn
Speaker System w/Wireless Mic	Liam Finn	<b>Demonstration Tools</b>	
DVD Player	Dennis Salliotte	Weigh on Planets Scale	George Korody
		Lunar Phase Kit	Bob MacFarland
		100' Scale Model Solar System Kit	Bob MacFarland
		NSN Meteorite (Outreach) kit	Sandra Macika

Item	Held by
<b>Imaging Cameras</b>	
C2 Meade Deep Sky Imager Pro III w/Autostar Suite	Gordon Hansen
C6 Canon 60Da Astrophotography DSLR and accessories	Tim Dey
<b>Other Imaging Equipment</b>	
CA1 Rigel Systems Spectrascopes	Gordon Hansen
C7 Canon EOS EF 70-200mm f/1.4L IS USM lens & tripod mounting ring (for Canon EOS cameras)	Gordon Hansen
Rokinon 8mm f/3.5 Fish-Eye Lens (Canon EOS Mount)	John McGill
<b>Special Event Items - Not available for Loan Out</b>	
BK2 Zhumell 25x100 Binoculars, hard case, & Zhumell TRH-16 tripod w/soft fabric bag	Sandra Macika
TAK1 Night Vision Image Intensifier for telescopes (2" barrel size)	George Korody

### *Secretary's Report (Cont'd from page 6)*

#### *Astro Jeopardy!*

Gordon Hansen was our host for our first-ever online version of Astro-Jeopardy! We all had a good time; we played for points, not money. Congratulations to our winner, Sean Pickard, who I believe ended up with 3600 points, if I was reading the screen correctly.

#### *More Club Business:*

January is the last speaker that we have scheduled as of this date. After some discussion, John McGill volunteered to put on a talk in February about the Mars Perseverance mission, which will be landing on the planet in February 2021. Mike will email Sandra with that information.

Meeting was adjourned at approximately 9:00.

### **Board Meeting – January 7, 2021**

(Videoconference meeting.) All board members present. Nine additional members attended.

The main topics of discussion at this month's board meeting included: Upcoming speakers for our General Meetings. January and February are taken care of, as well as a few other months later in the year, and Sandra is working hard to fill in the remaining months.

Arica reports that we currently have a little over \$10,000 in our account. Membership renewals are coming in steadily both online and through the PO box. Those who wish to renew online should go to <https://fordastronomyclub.square.site/>

We are currently accepting nominations for the 2021 Sirius Award winner. Nominations must be received by the upcoming January General Meeting. Email your nomination to [President@fordastronomyclub.com](mailto:President@fordastronomyclub.com). Note that anyone who is a 2020 or 2021 officer is ineligible, as is anyone who has previously received the award.



Our election of officers will be held at the January meeting. We currently have one person running for each of the four offices, but nominations can be made from the floor the night of the meeting. If you nominate yourself or somebody else, that person must accept the nomination and there must be a second. We encourage everyone to attend our virtual meetings. You do not need a video cam, or even a computer, you can join by phone if you wish. If you are on the Groups.io site, you will automatically receive an invitation to all virtual meetings.

### *January Talk (Cont'd from page 3)*

and map out the region surrounding black holes.

#### **Bio:**

Ed Cackett grew up in the suburbs of Manchester, England and studied Physics at the University of Durham before pursuing his PhD in Astrophysics at the University of St Andrews in Scotland. After that he spent 4 years as a postdoctoral researcher at the University of Michigan where he was a NASA Chandra Fellow, and 1.5 years as a research fellow at the Institute of Astronomy, University of Cambridge. In 2012 he made the permanent move back to south-east Michigan to become a faculty member at Wayne State University, where he is currently an Associate Professor. He has published over 150 articles in peer reviewed journals. He is an expert in X-ray observations of black holes and neutron stars.