



# 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: Liam Finn  
Vice President: John McGill  
Secretary: Cheri Grissom  
Treasurer: Mike Bruno

## Departments

Webmaster: Liam Finn  
Membership: Doug Bauer  
Newsletter: Tim Campbell  
Equipment: Dennis Salliotte  
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*

I would like to begin my first presidents corner by thanking our out-going president Liam Finn for all of his hard work over the past three years of guiding our great club. He has gone above and beyond with everything he has contributed for the club's growth and success. His passion for our club (the guy has FAAC as a personalize license plate!) and astronomy is inspiring and very much appreciated. Although not president now, in his spare time, Liam still contributes significantly by managing our website and social media, along with planetarium presentations and numerous outreach events. You will be able to find him at our upcoming beginners nights sharing his passion with the 20" club telescope. I know at times I have had to get out Google translate for Irish to English, but don't let that stop you from thanking Liam for his tireless support of our club when you see him at the next club event.

A big thank you is in order for our two returning officers John McGill, Vice President & Cheri Grissom, Secretary. Both have been dedicated & hard-working members of the board. Also, I would like to thank Arica Flores for stepping into the Treasurers position. She has been a member of the club for a couple years and has already become an active and valued member. You will be able to find Arica out at one of our outreach events and now sitting up front at our General meetings. Make sure to say hi to her and introduce yourself.

There are so many others that do not hold a board position but dedicate their time for our club. It would be hard to name everyone, but appreciation and thanks goes out to all of you! Without your support our club would not be where it is today.

Personally I am proud to become the next president of the Ford Amateur Astronomy Club, I am following a long list of wonderful people. It's hard to believe I have been a member of the FAAC for almost 25 years now.

## 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

Over the years I have truly enjoyed seeing all the familiar faces at the meetings and club events. Also it's great to welcome in all of our new members and see their passion and excitement for this wonderful hobby (or addiction to some!) I hope to follow in Liam's footsteps in the continued success of the FAAC and with all of our great members support and participation I know the FAAC will still be going strong the next 25 years!

## Secretary's Report

*by Cheri Grissom*

### FAAC General Meeting – January 23, 2020

Meeting called to order at 7:00 p.m. by President Liam Finn. All board members present. Introduction of members and guests. We had approximately 36 in attendance.

The club is very saddened by the passing of one of our members, Randy Smith. Pam Smith spoke to us this evening and told us how Randy had become sick on Christmas Day and was taken to the hospital, where he later passed away due to a heart attack. Pam and Randy had been married 42 years. She wanted to assure us that she is okay and has family and friends looking after her. There will be a memorial sometime in the spring. Pam will let us know the date. Randy will be deeply missed by all of us.

Liam explained how our mentoring program and equipment loaner programs work, for the benefit of several guests and new members.

### *Member Observing Experiences:*

Bob Burslem, a guest this evening, has been observing Venus and the Orion Nebula. Sandra Macika had the opportunity to take her meteorite collection and do a presentation for a Girl Scout troop meeting. Sean Pickard has been observing the Andromeda galaxy, the Pleiades, and the Orion Nebula, all naked eye from his suburban location. Tim Campbell has been keeping an eye on Betelgeuse in Orion. John McGill has been in Florida twice to observe Falcon launches from the Kennedy Space Center. Milton French had a beautiful view of the full moon in December.

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

## Club Equipment:

Dennis Salliotte was absent tonight, but after doing a great job as our equipment manager for a long time, he will be handing the reins over to Jeff Gorman.

## What's Up:

Gordon Hansen listed our upcoming meeting dates. For the benefit of some new members and guests who have expressed interest in imaging, he provided details about the monthly meetings of the astrophotography group at the Plymouth Library. Mercury will be at greatest eastern elongation on February 10, just after sunset. On February 18, the moon will occult Mars at 7:18 a.m. Gordon discussed several comets that may be visible in coming months. He also showed us an image he took of Comet Pan-STARRS near the Double Cluster. As far as deep sky objects, Leo is rising in the evenings, where we can see M44, aka the Beehive Cluster, and the Leo Triplet galaxies. We will soon be getting into galaxy season. Sandra Macika mentioned that the Farmington Community Stargazers will be putting on a spectroscopy demonstration on February 25.

## Secretary's Report:

Cheri reminded everyone to see her if they need a plastic sleeve and lanyard for their member name tags. Also, please remember to sign the sign-in sheet that we send around at each meeting.

## Treasurer's Report:

Mike reports that the club currently has \$7,632. If you sent a check in for your membership and it has not been cashed yet, it will be very soon. At least half of our membership has already renewed for 2020. For the benefit of new members, Mike reminded us that Doug Bauer will send out your club intro packet.

Liam reminded us that tonight's meeting is the last chance to submit a nomination for the annual Sirius Award. He also advised that 2020 club events are now up on our calendars on social media and the website.

Our annual elections were conducted by Bob McFarland. We do have a quorum present, as required by our by-laws. Jim Frisbie presented the slate of nominees for the four board positions. We have just one person nominated for each position. Bob opened the floor for further nominations. None were made. Since no positions were contested, voting was conducted by show of hands. The unanimous results were: President,

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).

Mike Bruno. Vice President, John McGill. Secretary, Cheri Grissom. Treasurer, Arica Flores. Bob welcomed the new board and thanked the 2019 board for their service.

**Main Speaker:** Dr. Dan Durda of the Southwest Research Institute in Colorado gave a remote video presentation on the topic of "The Science and Exploration of Little Rocky Worlds." Asteroids are fossil building blocks left over from the formation of the terrestrial planets. There are approximately one million asteroids in the main asteroid belt between Mars and Jupiter. There are about one thousand that are larger than a kilometer in diameter in near-Earth space. Scientists gather information about asteroids from telescopes, radar, and meteorites that fall to Earth, as well as spacecraft that have studied several asteroids to date. Dr. Durda has a special interest in studying collisions, both the effects of impacts between asteroids, as well as the results of collisions with planets and moons. While some asteroids are a solid material, many are collections of fragments that have reformed from previous collisions (the term is "rubbilized"), and they have a much lower density. Our members had lots of questions which Dr. Durda was happy to answer during and following this interesting talk.

## February Board Meeting Summary

(Please note that these summaries published each month are a condensed and abbreviated form of the full slate of topics and discussions that take place at our board meetings. Full board meeting minutes are taken each month and kept for club records.)

Our board meeting was held on February 6, 2020. All board members were present, as well as six additional members. Our next general meeting will be February 27, and Sandra Macika will be our guest speaker on the topic of the Dragonfly Mission to Titan. We had discussion about what kind of things we might do going forward, in addition to or occasionally in place of our traditional guest speaker. Some suggestions were a segment on cleaning optics, an ask-the-astronomer Q&A, or various tech talks. There was interest in all of these ideas and they will be discussed more.

Mike Bruno gave his final summary as treasurer. Our balance is \$8,650. Mike and Arica Flores will be getting together at the DFCU to make the necessary signature authorizations so Arica can begin treasurer duties.

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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	4th	8:02pm EDT	Island Lake
May	2nd	8:34pm EDT	Island Lake
May	30th	9:02pm EDT	Island Lake
June	27th	9:13pm EDT	Island Lake
July	25th	8:59pm EDT	Island Lake
August	8th Club Picnic Meteors & S'mores	8:43pm EDT	Island Lake
August	22nd	8:22pm EDT	Island Lake
September	25th & 26th Astronomy at the Beach	7:24pm EDT 7:22pm EDT	Island Lake
October	24th	6:36pm EDT	Maybury State Park

## Upcoming Club Meeting Topics & Speakers

Meeting	Speaker	Topic
February 27th	Sandra Macika	Dragonfly Mission to Titan
March 26th	TBD	TBD
April 23rd	Jenny Pon	Our Place in Space
May 28th	Don Klaser	Antikythera Mechanism
June 25th	Jim Shedklowsky	The LSST: Faster, Wider, Deeper

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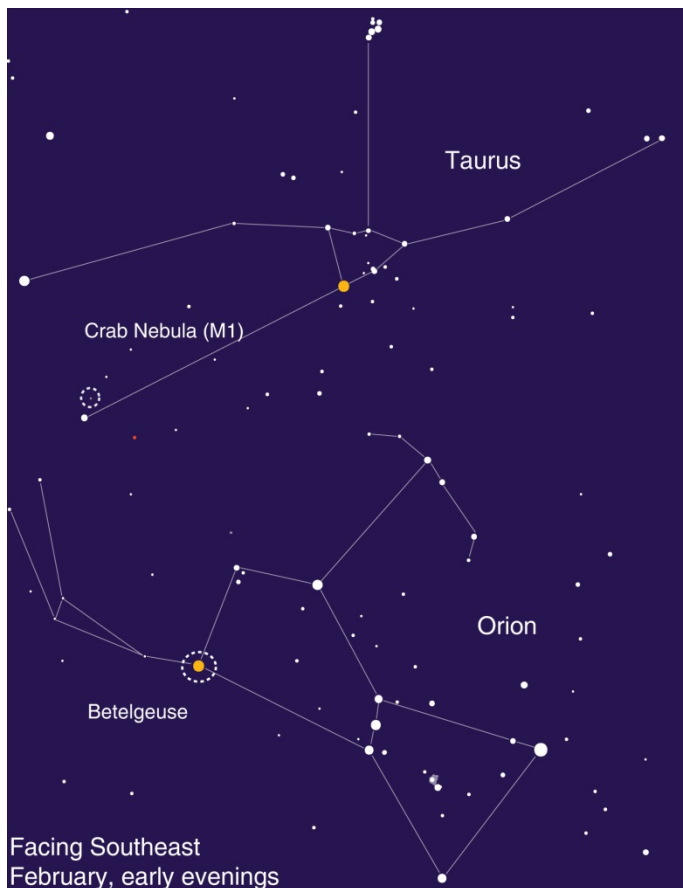


# Betelgeuse and the Crab Nebula: Stellar Death and Rebirth

by David Prosper

What happens when a star dies? Stargazers are paying close attention to the red giant star Betelgeuse since it recently dimmed in brightness, causing speculation that it may soon end in a brilliant supernova. While it likely won't explode quite yet, we can preview its fate by observing the nearby Crab Nebula.

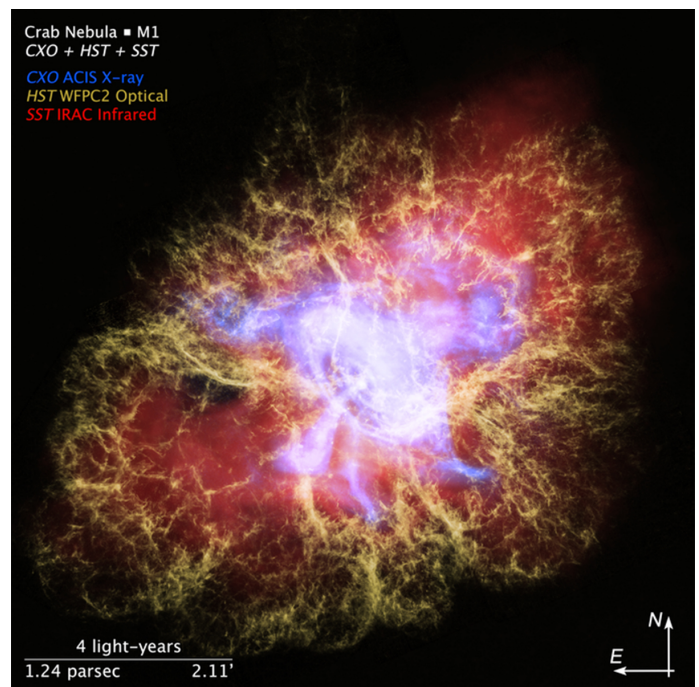
Betelgeuse, despite its recent dimming, is still easy to find as the red-hued shoulder star of Orion. A known



*Caption: Spot Betelgeuse and the Crab Nebula after sunset! A telescope is needed to spot the ghostly Crab.*

variable star, Betelgeuse usually competes for the position of the brightest star in Orion with brilliant blue-white Rigel, but recently its brightness has faded

to below that of nearby Aldebaran, in Taurus. Betelgeuse is a young star, estimated to be a few million years old, but due to its giant size it leads a fast and furious life. This massive star, known as a supergiant, exhausted the hydrogen fuel in its core and began to fuse helium instead, which caused the outer layers of the star to cool and swell dramatically in size. Betelgeuse is one of the only stars for which we have any kind of detailed surface observations due to its huge size – somewhere between the diameter of the orbits of Mars and Jupiter – and relatively close



*Caption: This image of the Crab Nebula combines X-ray observations from Chandra, optical observations from Hubble, and infrared observations from Spitzer to reveal intricate detail. Notice how the violent energy radiates out from the rapidly spinning neutron star in the center of the nebula (also known as a pulsar) and heats up the surrounding gas. More about this incredible “pulsar wind nebula” can be found at [bit.ly/Crab3D](http://bit.ly/Crab3D) Credit: NASA, ESA, F. Summers, J. Olmsted, L. Hustak, J. DePasquale and G. Bacon (STScI), N. Wolk (CfA), and R. Hurt (Caltech/IPAC)*

distance of about 642 light-years. Betelgeuse is also a “runaway star,” with its remarkable speed possibly triggered by merging with a smaller companion star. If that is the case, Betelgeuse may actually have millions

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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, Dennis Salliotte, 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 Spectrascope	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

### *Betelgeuse and the Crab (Cont'd from page 6)*

of years left! So, Betelgeuse may not explode soon after all; or it might explode tomorrow! We have much more to learn about this intriguing star.

The Crab Nebula (M1) is relatively close to Betelgeuse in the sky, in the nearby constellation of Taurus. Its ghostly, spidery gas clouds result from a massive explosion; a supernova observed by astronomers in 1054! A backyard telescope allows you to see some details, but only advanced telescopes reveal the rapidly spinning neutron star found in its center: the last stellar remnant from that cataclysmic event. These gas clouds were created during the giant star's violent demise and expand ever outward to enrich the universe with heavy elements like silicon, iron, and nickel. These element-rich clouds are like a cosmic fertilizer, making rocky planets like our own Earth possible. Supernova also send out powerful shock waves that help trigger star formation. In fact, if it wasn't for a long-ago supernova, our solar system -

along with all of us - wouldn't exist! You can learn much more about the Crab Nebula and its neutron star in a new video from NASA's Universe of Learning, created from observations by the Great Observatories of Hubble, Chandra, and Spitzer: [bit.ly/CrabNebulaVisual](https://bit.ly/CrabNebulaVisual)

Our last three articles covered the life cycle of stars from observing two neighboring constellations: Orion and Taurus! Our stargazing took us to the "baby stars" found in the stellar nursery of the Orion Nebula, onwards to the teenage stars of the Pleiades and young adult stars of the Hyades, and ended with dying Betelgeuse and the stellar corpse of the Crab Nebula. Want to know more about the life cycle of stars? Explore stellar evolution with "The Lives of Stars" activity and handout: [bit.ly/starlifeanddeath](https://bit.ly/starlifeanddeath).

Check out NASA's most up to date observations of supernova and their remains at [nasa.gov](https://nasa.gov)



*Meeting Topics & Speakers (cont'd from page 5)*

## February Talk Details

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### Dragonfly Mission to Titan

*Sandra J. Macika*

*Member of FAAC, WAS, and FCS*

The Dragonfly Mission, planned to launch in 2026, will explore Titan, the place in our solar system most comparable to early Earth. Titan has a thick Atmosphere, a liquid water sub-surface ocean and liquid methane surface lakes. It has also had liquid water on the surface in the past.

#### Bio:

Meteor Studies at NASA from 1996 to 2002, Lick Observatory Public Outreach from 1997 to 2006, Purchased 14.5 inch reflecting Starmaster Telescope in 1999, Telescope Observing and Meteorite Presentations to Scouts, Schools & Other Events, I own a collection of over 160 Meteorites, Tektites, and Impactites, Wayne Oakland Science Olympiad Astronomy Event Supervisor since 2015.

### *Secretary's Report (cont'd from page 5)*

Our webmaster, Liam Finn, has made some changes to our website to eliminate the members-only sections, since they were not being used. Liam also asks that anyone with suggestions for improvements to the website contact him. Liam will also fix the issue with double postings on Facebook.

Jeff Gorman is our new club equipment manager. Before turning over his duties, Dennis Salliotte did one final inventory and found no discrepancies. There had been previous discussion about donating items CA2, CA3, and CA5 to the HJRO. This was made official by motion, second, and unanimous vote of approval.

Our Swap Meet and Conference is coming up fast, on March 21. Lots of member participation is needed to make this event a success. If you are interested in volunteering to help with the registration table, food, or other miscellaneous tasks, please contact chairman Jim Frisbie.

Our presenters are all lined up for SWAN (State-Wide Astronomy Night), April 17.

John McGill is again serving as chairman for our banquet, this year set for April 25, a Saturday, same location as last year, Tanglewood Golf Club, in South Lyon. More details to follow.

## Classifieds

StarStuff will run classified advertisements for club members. Each classified advertisement will be run in up to two consecutive editions of the StarStuff Newsletter. Submit your listing to [starstuff@fordastronomyclub.com](mailto:starstuff@fordastronomyclub.com)