

# 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 Brunc
Vice President:	Ed Halasł
Secretary:	Jesse Godsey
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.

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Ford Amateur Astronomy Club Newsletter

# **Secretary's Report**

# by Jesse Godsey

# FAAC General Meeting – March 24, 2022

The meeting was called to order by our club Vice President, Ed Halesh. Sixteen club members were in attendance as well as our guest speaker, Gerald Dunifer.

Ed started the meeting with a conversation about a cruise and a star gazing story on the ship. We then moved onto member introductions. Ed also discussed the availability of our club equipment to everyone.

## Member Observing

Club members Tim Dey, Tim Campbell, and Cheri Grissom used the Lincoln Park observatory to view Hind's Crimson Star. This is a carbon star in the constellation of Lepus various over a 400+ day cycle. During this cycle it varies in brightness and color intensity - from orange to intense red. See: Hind's Crimson Star - EPOD - a service of USRA

Arica Flores discussed a visit with a school where she discussed meteorites and how to find objects in the night sky.

#### What's Up

Gordon discussed next the What's Up part of the meeting. We get two new moons in April. Board meeting on the 7th and Club meeting on the The 22nd is the Lyrid Meteor Shower. Club observing is 28th. scheduled for the 9th of April - (This will be a public event) There are a couple of Comets around, Comet 2021 03 (PanSTARRS) on the 23rd -24th of April. Planets were discussed next and the best time to view them.

# **Club Information**

Refer to our website for a map and directions:

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

# 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

# Club Business

Jesse Godsey gave the secretary's report. The Sirius Award was discussed. A discussion about the club banquet & picnic being combined this year outside. Arica Flores gave the treasurer report.

Liam discussed some security updates that were done on the Social Media update.

Ed mentioned the club banquet and picnic will be on the 13th of August.

# Speaker

Gerald Dunnifer discussed "The Story of Two Stars" — Barnard's Star, a star with a noticeable movement from year to year, and Binary Pulsar 1913+16. This is a binary star system with *two* neutron stars.

# FAAC Board Meeting Summary – April 7, 2022

Meeting called to order with three board members present (Club Treasurer was unable to attend) and seven additional club members.

#### Old Business

- The club is running low on member lanyards and is looking into ordering new lanyards and badges. Most vendors want a minimum order of 250 to allow custom lanyards with club number printed on them. Mike Bruno is looking into this
- We have received six nominations for Sirius Award.
- Island Lake Picnic/Banquet we are looking into the possibility of renting a larger tent vs. the smaller canopies we used last year.
- The first public club observing night at Island Lake is scheduled for the Saturday following the board meeting. Weather does not currently appear favorable. We will wait to within 24 hours of the event to determine if we need to cancel.

#### New Business

- We reviewed the processes and forms for borrowing club equipment. Everything is in order.
- The Edsel & Eleanor Ford House have requested a viewing event for Friday, April 29th.

area equipment retailers, and afterhours 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 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

See the 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

# Night Lights: Aurora, Noctilucent **Clouds, and the Zodiacal Light**

by David Prosper



Have you spotted any "night lights"? These phenomena brighten dark skies with celestial light ranging from mild to dazzling: the subtle light pyramid of the zodiacal light, the eerie twilight glow of noctilucent clouds, and most famous of all, the wildly unpredictable and mesmerizing aurora.

Aurora, often referred to as the northern lights (aurora borealis) or southern lights (aurora australis), can indeed be a wonderful sight, but the beautiful photos and videos shared online are often misleading. For most observers not near polar latitudes, auroral displays are relatively rare and faint, and without much structure, more gray than colorful, and show up much better in photos. However, geomagnetic storms can create auroras that dance and shift rapidly across the skies with several distinct colors and appear to observers much further away from the poles - on very rare occasions even down to the mid-latitudes of North America! Geomagnetic storms are caused when a magnetic storm on our Sun creates a massive explosion that flings a mass of particles away from its surface, known as a Coronal Mass Ejection (CME). If Earth is in the path of this CME, its particles interact with our planet's magnetic field and result in auroral displays high up in our ionosphere. As we enter our Sun's active period of its 11-year solar cycle, CMEs become more common and increase the chance for dazzling displays! If you have seen any aurora, you can report your sighting to the Aurorasaurus citizen science program at aurorasaurus.org.

Have you ever seen wispy clouds glowing an eclectic blue after sunset, possibly towards your west or northwest? That wasn't your imagination; those luminescent clouds are noctilucent clouds (also called Polar Mesospheric Clouds (PMC)). They are thought to form when water vapor condenses around 'seeds' of dust from vaporized meteorites - along with other sources that include rocket launches and volcanic eruptions - around 50 miles high in the mesosphere. Their glow is caused by the Sun, whose light still shines at that altitude after sunset from the perspective of ground-based observers. Noctilucent clouds are increasing both in frequency and in how far south they are observed, a development that may be related to climate change. Keeping in mind that observers closer in latitude to the poles have a better chance of spotting them, your best opportunity to spot noctilucent clouds occurs from about half an hour to

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

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

## Articles & Submissions

Your submissions to Star Stuff are welcome! Send your story and/or images to the editor at: <u>starstuff@fordastronomyclub.com</u>

#### **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). two hours after sunset during the summer months. NASA's AIM mission studies these clouds from its orbit high above the North Pole: <u>go.nasa.gov/</u><u>3uV3Yj1</u>



A sampling of some of the various patterns created by aurora, as seen from Iceland in 2014. The top row photos were barely visible to the unaided eye and were exposed for 20-30 seconds; in contrast, the bottom row photos were exposed for just 4 seconds- and were clearly visible to the photographer, Wikimedia contributor Shnuffel2022.

License and source: CC BY-SA 4.0 https://commons.wikimedia.org/wiki/File:Aurora\_shapes.jpg



Comet NEOWISE flies high above a batch of noctilucent clouds in this photo from Wikimedia contributor Brwynog. License and source CC BY-SA 4.0 https://commons.wikimedia.org/wiki/ File:Comet\_Neowise\_and\_noctilucent\_clouds.jpg

You may have seen the zodiacal light without even realizing it; there is a reason it's nicknamed the "false dawn"! Viewers under dark skies have their best chance of spotting this pyramid of ghostly light a couple of

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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/hfcplanetarium

# **Social Media**

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

#### *Facebook* facebook.com/FordAstronomyClub

*Twitter* twitter.com/Ford Astro

# **Scheduled Club Events**

Month	Date	Sunset	Location
May	7th	8:39pm	Spring Mill Pond
June	4th	9:05pm	Spring Mill Pond
July	9th	9:11pm	Spring Mill Pond
August	13th Perseid Meteors & Club Picnic	8:46pm	Spring Mill Pond
September	16 & 17th AatB	7:40pm	Kent Lake Beach
October	1st	7:14pm	Spring Mill Pond

# **Upcoming Club Meeting Topics** & Speakers

Meeting	Speaker	Торіс
April 28th	Ed Cackett	Science with the JWST: Searching of the First Stars
May 26th	Ryan Challener	Exoplanets in the JWST Era
June 23rd	Jason Gunsel	TBD
July 28th	Jim Shedlowsky	Searching for the Dark Universe
August 25th	Paul Lynam	History & Science of Lick Observatory

# March Talk Details

# Science with the JWST: Searching for the First Stars

Ed Cackett, Associate Professor at Wayne State University

James Webb Space Telescope (JWST), the successor to NASA's famous Hubble Space Telescope, will be launched on December 22, 2021. The 6.5m diameter mirror and sensitive infrared detectors will allow astronomers to get an unprecedented view of the universe. In this talk Ed will discuss the main science goals of JWST, from searching back into the very early universe to search for light from the first stars to learning about the atmospheres around extrasolar planets and the search for the building blocks of life elsewhere in the universe.

#### Night Lights (Con't from page 4)

hours after sunset around the spring equinox, or a couple of hours before dawn around the autumnal equinox. Unlike our previous two examples of night lights, observers closer to the equator are best positioned to view the zodiacal light! Long known to be reflected sunlight from interplanetary dust orbiting in the plane of our solar system, these fine particles were thought to originate from comets and asteroids. However, scientists from NASA's Juno mission recently published a fascinating study indicating a possible alternative origin: dust from Mars! Read more about their serendipitous discovery at: go.nasa.gov/3Onf3kN



The zodiacal light extends into the Pleiades, as seen in the evening of March 1, 2021 above Skull Valley. Utah. The Pleiades star cluster (M45) is visible near the top.

Credit and source:: NASA/Bill Dunford .https://www.flickr.com/photos/ gsfc/51030289967

Curious about the latest research into these night lights? Find news of NASA's latest discoveries at <u>nasa.gov</u>.

#### Speaker Info (Cont'd from Page 5)

#### 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 southeast 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.

# 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 <u>equipment@fordastronomyclub.com</u>

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Telescopes		Display Items	
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)	Bhru Patel	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
Presentation Tools		Banner - Large (32″ x 16′)	George Korody
Projector (older)	Jim Frisbie	Tri-Fold Presentation Boards	George Korody
Projector (newer)	Gordon Hansen	Other	
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	Demonstration Tools	
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

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Imaging Cameras	
C2 Meade Deep Sky Imager Pro III w/Autostar Suite	Gordon Hansen
C6 Canon 60Da Astrophotography DSLR and accessories	Tim Dey
Other Imaging Equipment	
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
Special Event Items - Not available for Loan Out	
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)	Tim Dey

#### Secretary's Report (Cont'd from Page 2)

• Tim Dey mentioned that the computer in the observatory has been replaced with a newer model with thanks to Tim Campbell.

#### **Open Discussion**

- Opening conversation started with Michael stating that Gordon will continue to do *What's Up*.
- We also discussed filling the June 23rd speaker position. Tim will reach out to Jesse Mason at Henry Ford College as a possible speaker. Tim and Liam are on the Webb "First Images" team and could do a presentation on the images (if available in time). Ed brought up the possibility of doing "Ask the Astronomer" but was also interested in a talk on orbital mechanics for spacecraft. Tim Dey's has a friend at JPL, Neil Mottinger, who does this for NASA. Tim will reach out to inquire if he would be willing to present.