



Star Stuff

Ford Amateur Astronomy Club Newsletter

Volume 28, Number 2

February 2018

What is the Ionosphere?

By Linda Hermans-Killiam

High above Earth is a very active part of our upper atmosphere called the ionosphere. The ionosphere gets its name from ions—tiny charged particles that blow around in this layer of the atmosphere.

How did all those ions get there? They were made by energy from the Sun!

Everything in the universe that takes up space is made up of matter, and matter is made of tiny particles called atoms. At the ionosphere, atoms from the Earth's atmosphere meet up with energy from the Sun. This energy, called radiation, strips away parts of the atom. What's left is a positively or negatively charged atom, called an ion.

The ionosphere is filled with ions. These particles move about in a giant wind. However, conditions in the ionosphere change all the time. Earth's seasons and weather can cause changes in the ionosphere, as well as radiation and particles from the Sun—called space weather.

These changes in the ionosphere can cause problems for humans. For example, they can interfere with radio signals between Earth and satellites. This could make it difficult to use many of the tools we take for granted here on Earth, such as GPS. Radio signals also allow us to communicate with astronauts on board the International Space Station, which orbits Earth within the ionosphere.

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Presidents Article

By Liam Finn

Officer Elections

A Salute to Timothy Dey

As you all know, Tim Dey has been the Vice Present for the club for the last three years and has, without any hesitation, served the club well in this role. To most of us he is a bit of a goof, to some of us has served as confidant and others the type of person we home to become. While Tim won't be sitting in an officer's position he will still be our Goof Ball and friend. On behalf of the members of the club I would like to thank Tim for all his work as an officer of the club and look forward to many future observing sessions with him.

Thank you from the President

I would like to thank each and every member of the club who has seen fit to put up with me as President of the FAAC for another year. I promise to do my best as always and with the line of officers we have and the amazing support of the membership it makes this task very easy. I do call on all the members to once again come out in force as our public events such as the beginner nights and show Michigan that the FAAC is a club filled with amazing people who love astronomy and the sciences and are always happy to share their experience and knowledge. I look forward to an event filled 2018.

New Vice President

While greeting Tim Dey, make sure you turn some attention to John McGill who, for his sins, was elected into the position of Vice President in our January meeting. Anyone with a Meade LX200 knows John as the go to guy to repair LX200 scopes and an avid diehard observer.

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Presidents Article

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If you have not attended our beginner nights at Island Lake and observed with him, 2018 is a good opportunity to do so.

First Club Outreach of 2018

Our event is called Shimmer, Shine, Sparkle and Glow Mall Frenzy and will be held the evening of Saturday, March 24th. It is a lock in at Lakeside Mall in Sterling Heights. We anticipate 1,500 people including girls and adults. The event is open to Girl Scouts in 4th-12th grade and their adults. The entire event runs from 10pm-3:00am with many different activities that run from 11:00pm-2:30am.

While there is questions on telescopes it being March and a Mall which may or may not turn off the outside lights. I will be looking for volunteers to assist with indoor events to meet the badge needs of the Girl Scouts. Some of these ladies will be going for their Night Owl badge. Here are some of the requirements:

- Examine the night sky. Take this chance to learn more about an astronomy topic that interests you. You might make a drawing of the Big Dipper and North Star twice in one evening three hours apart as girls in 1963 did to earn their Star badge. Or you could look through a telescope at three or more heavenly objects, such as a star cluster, a galaxy, or a moon, as girls did to earn their Aerospace badge in 1980.

This can be done with Starry Night projected on a screen

- A nighttime legend. For centuries, storytellers, invented legends about the night, like how constellations came to live in the sky. Share one of these stories with friends or find your own constellation and tell how yours came to be.

This can be another presentation on the legends of the constellations, done as a presentation.

- Go Solar. Find five fun facts about stars, planets and the night sky. Share them as you enjoy a planetary show or display.

This can be done as a presentation about how stars form, live and die as well as how solar systems form. Please feel free to contact me if you are interested in presenting at this event

What is the Ionosphere?

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Learning more about this region of our atmosphere may help us improve forecasts about when these radio signals could be distorted and help keep humans safe.

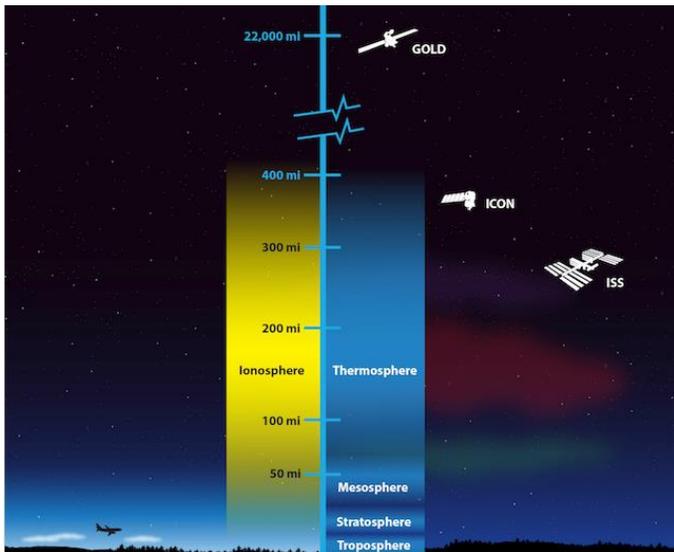
In 2018, NASA has plans to launch two missions that will work together to study the ionosphere. NASA's GOLD (Global-scale Observations of the Limb and Disk) mission launched in January 2018. GOLD will orbit 22,000 miles above Earth. From way up there, it will be able to create a map of the ionosphere over the Americas every half hour. It will measure the temperature and makeup of gases in the ionosphere. GOLD will also study bubbles of charged gas that are known to cause communication problems.

A second NASA mission, called ICON, short for Ionospheric Connection Explorer, will launch later in 2018. It will be placed in an orbit just 350 miles above Earth—through the ionosphere. This means it will have a close-up view of the upper atmosphere to pair with GOLD's wider view. ICON will study the forces that shape this part of the upper atmosphere.

Both missions will study how the ionosphere is affected by Earth and space weather. Together, they will give us better observations of this part of our atmosphere than we have ever had before.

To learn more about the ionosphere, check out NASA Space Place:

<https://spaceplace.nasa.gov/ionosphere>



This illustration shows the layers of Earth's atmosphere. NASA's GOLD and ICON missions will work together to study the ionosphere, a region of charged particles in Earth's upper atmosphere. Changes in the ionosphere can interfere with the radio waves used to communicate with satellites and astronauts in the International Space Station (ISS). Credit: NASA's Goddard Space Flight Center/Duberstein (modified)

Vice President's Report

By John McGill

First off I want to thank everyone that voted for me and I'm looking forward to serving the club in the role of vice president. I was told this is the easiest job for any officer but right off the bat, I got my first assignment...Plan the annual banquet. So first things first, save the date of May 5th for the banquet to be held at the Tanglewood Golf and Country Club in Lyon Twp. The officers decided to try a new venue primarily because of rising costs at Carl's Cabin. As usual there will be a choice of steak, chicken or fish and the chef will make available a vegetarian or gluten free option upon request. The cost of the meals won't be more than last year and likely will cost a bit less when all's finalized.

Tee time will start at 6pm with soft drinks and coffee with option of a cash bar if you prefer during this social hour.

At 7pm we will be *Trapped* in our seats for dinner.

After dinner, we will take a slight *Dogleg* right into the main talk given by (TBD).

Next we are in for a *Rough* game of Astro Jeopardy.

Now we're in *FORRRRRE* a treat...door prizes!

Then a little *Birdie* arrives to announce the Sirius Award Winner.

By 11pm we will be on *Parr* to find our way home.

*all puns intended

Secretary's Report

By Jessica Edwards

What's Up and Member Observations

Cloudy conditions continue to make regular observations difficult. The highlight of January was a large meteor that was seen all across Metro Detroit. It caused a bright flash of light and windows and doors to rattle. Many also heard what was first thought to be thunder, but was actually the sonic boom as the meteor entered the atmosphere. February is one of the best months to try and observe zodiacal light either in the morning or evening. On 31 January there will be a lunar eclipse. Evening planets are Mercury, Venus, Uranus, and Neptune. Morning planets are Mars, Jupiter, and Saturn.

Officer Elections

Liam Finn was nominated and elected to be President of the club. John McGill was nominated and elected as Vice-President of the club. Mike Bruno was nominated and elected as Treasurer of the club. Jessica Edwards was nominated and elected as Secretary of the club.

Main Talk – Gathering Meteor Fragments – Tony Licata

The bright Meteor seen over Detroit on 16 January 2018 put on a spectacular show. Many security and dashboard cameras caught the meteor as it light up the skies over the Metro area. Weather radar was able to pick up the pieces of the meteor as they fell

to the ground. Since it fell over an area with many frozen lakes, people were eager to get out and see if they could find fragments that made it to the ground. Bass Lake and Strawberry Lake all yielded small fragments. It is estimated that the original meteoroid was 6 feet in diameter and the largest surviving pieces may be the size of a softball.



Telescope Support Systems



FAAC Astronomy Conference & Swap Meet

Saturday, April 7, 2018 9:00 am - 3:00 pm

General Astronomy

9:30 am: **Deep Sky Wonders** – Tony Licata, FAAC
10:45 am: **Meteorites** – Todd Slisher, Longway Plt.
12N: **Eclipses, Geysers and Stars** – Axel Mellinger, CMU
1:30 pm: **TBD?**

Technical Talks

9:30 am: **Ideas in Equipment** – Clay Kessler, TSS
10:45 am: **How it is Really Made** – Tim Cambell, FAAC
12N: **The Road to Totality** – Liam Finn, FAAC
1:30 pm: **TBD?**

Planetarium Shows

10:00am, 11:30am & 1:00pm FAAC Members

Interactive Solar System Tour

10:45am John McGill – NASA Solar System Ambassador

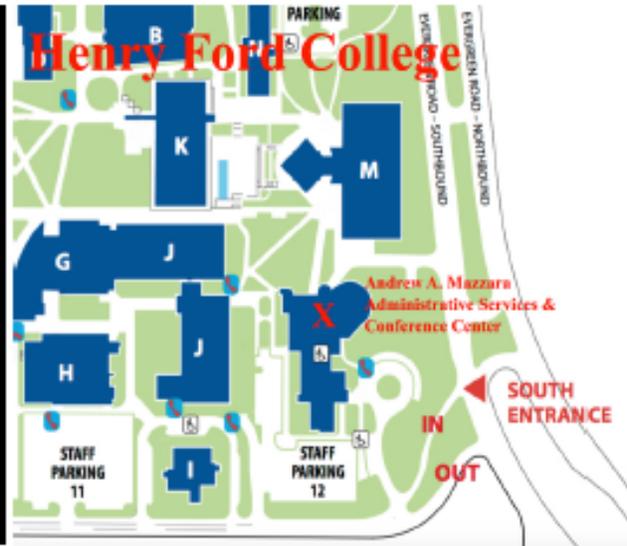
Swap Meet

All Day...Eam Cash by Selling Those Items Sitting Around Collecting Dust!
Telescopes, Eyepieces, Cameras, Binoculars, Mounts, Software, Books, and Accessories, etc.

Participating Vendors

Telescope Support Systems, Wood Wonders, Sirius Astro Products, LX-200 Electronics Exchange

Admission: \$5.00 (children 15 and younger – Free / must be accompanied by an adult)
Sales Table: \$15 in advance, or \$20 at the door as available, (one admission ticket included).
Advanced Table Registration ends Mar 29, 2018
Doors Open: 8:00am for setup.
Make Checks Payable: to FAAC for advance table registration.
Send payment to: Ford Amateur Astronomy Club, P.O. Box 7527, Dearborn, MI 48121-7527
Location: Henry Ford College, 5101 Evergreen Rd, Dearborn, MI 48128 (Andrew A. Mazzara Admin. & Conference Center... See X on map, Staff Parking Lots 11 & 12 will be open)



For More Information: Contact Jim via email: w8tu@comcast.net or call (734) 751-8280 or Frank Ancona via email: FrankAncona34@yahoo.com or call (248) 345-0178

FAAC Equipment Holders Report

By Dennis Salliotte

FAAC Equipment Report 2/15/18

<u>Item</u>	<u>Currently Held By:</u>	<u>Date Last Verified</u>
<u>Telescopes</u>		
4" Dobsonian (Harold's donation)	George Korody	1/8/18
<u>Presentation Tools</u>		
Projector (older)	Jim Frisbie	1/3/18
Projection Screen 8'	Bob MacFarland	1/3/18
Speaker System w/wireless mic	Bob MacFarland	1/3/18
Bullhorn	George Korody	1/8/18
DVD Player	Jim Frisbie	1/3/18
Projection Screen 6'	Hayden Barrett	1/25/18
Projector, ViewSonic	Gordon Hansen	1/3/18
<u>Demonstration Tools</u>		
Weight On Planets Scale	George Korody	1/8/18
Lunar Phase Kit	Bob MacFarland	1/3/18
100 ft Scale Model Solar System Kit	Bob MacFarland	1/3/18
<u>Display Items</u>		
Astronomy Event Sign (3' X 6')	Gordon Hansen	1/3/18
PVC Display Board - Folding	Sandra Macika	1/5/18
Banner – Small (24" X 32")	George Korody	1/8/18
Banner – Medium (24" X 72")	Sandra Macika	1/5/18
Banner – Large (32" X 16')	George Korody	1/8/18
Tri-Fold Presentation Boards	Don Klaser	1/5/18
Tri-Fold Poster Board (Early Club Photos)	George Korody	5/25/17
<u>Other</u>		
Canopy (10' X 10')	Liam Finn	1/4/18
Equipment Etching Tool	Greg Ozimek	1/3/18
Pop Cooler	Hayden Barrett	1/25/18
<u>EQUIPMENT KITS</u>		
<u>CARETAKER</u>		
<u>Telescopes</u>		
TK3 Celstrn 130 Newt Goto mount	Liam Finn	1/4/18
TK4 Clstrn 90 Refrctr w/man mount	Liam Finn	1/4/18

TK5 4 ½ “ Reflector, on Fitz GEM mount	Bob MacFarland	1/3/18
TK6 8” Orion 8XTi Dobsonian	Jed & Jacob Datema CARETAKERSHIP IS AVAILABLE	1/3/18
TK1 Coronado PST solar scope w/double stack, Meade Autostar Goto mount & tripod and accessories	John McGill	1/4/18
TK7 TPO 8” f/4 Imaging Newtonian Telescope (OTA)	Jim Barnes	1/3/18
<u>Binoculars</u>		
BK3 15x70 binocs, monopod mount	Bob MacFarland	1/3/18
BK4 20x80 binocs, altaz goto mount	Sandra Macika	1/5/18
BK5 25x70 binocs w/tripod adaptor	Tim Dey	1/3/18
<u>Eyepiece Kit</u>		
EPK1 Eyepieces, filters & accesories	Liam Finn	1/4/18
<u>Other</u>		
TA Sky Quality Meter	Liam Finn	1/4/18
TA Sky Atlas 2000.0	Tim Dey	1/3/18
TA Orion telescope binoviewer	Liam Finn	1/4/18
<u>Lincoln Park Observatory</u>		
LPO Celestron binoviewer #93691	Tim Dey	1/3/18
LPO Celestron 2X 1.25” Barlow	Tim Dey	1/3/18
<u>Imaging SIG</u>		
C1 Celestron NexImage Solar System Imager model #93712	Gordon Hansen	1/3/18
C2 Meade Deep Sky Imager PRO III w/AutoStar Suite	Gordon Hansen	1/3/18
C3 Orion StarShoot Deep Space Video Camera NTSC #52185 w/video capture device #52178	Gordon Hansen	1/3/18
C4 Meade Electronic Eyepiece w/cable to a video monitor, VCR or TV. Pairw#43 AND Meade 3.5” LCD Color Monitor Kit # 07700 Complete (unused). Pair w#34	Gordon Hansen	1/318
C5 Orion StarShoot Deep Space	Gordon Hansen	1/3/18

Video Camera II #52195 AND Orion StarShoot iPhone Control for Deep Space Video Camera II #52195		
C6 Canon 60 DA and accessories	Tim Dey	1/3/18
CA1 Rigel Systems Spectroscope	Gordon Hansen	1/3/18
CA2 Celestron 1.25" to T-Adapter(male thread) Model #93625	Gordon Hansen	1/3/18
CA3 Canon EOS deluxe astrophoto kit FOR Canon bayonet T-thread adapter and variable 1.25" extender	Tim Dey	1/3/18
CA4 Orion StarShoot LCD-DVR #58125 2.5" LCD screen	Gordon Hansen	1/3/18
CA5 Celestron Canon EOS T-ring adapter #93419	Gordon Hansen	1/3/18
<u>Special Event Use Only- Not Available For Loan Out</u>		
BK1 Orion BT-100 binocular telescope w/hard case, Orion VersaGo h.d. man altaz mount w/Vixen dovetail head and Vixen style binocular holder bracket	Ken Anderson	1/3/18
BK2 Zhumell 25x100 binoculars, hard case & Zhumell TRH-16 tripod w/soft fabric bag	Sandra Macika	1/5/18
TAK1 Night Vision Intensification binocular unit	George Korody	1/8/18
Dennis Salliotte equipment@fordastronomyclub.com		

STAR STUFF

This Newsletter is published eleven times each year by:
FORD AMATEUR ASTRONOMY CLUB P.O. Box 7527 Dearborn MI 48121-7527

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Club Information:

The Ford Amateur Astronomy Club (FAAC) meets on the fourth Thursday each month, except for the combined November/ December meeting on the first Thursday of December - at Henry Ford College Administration Services and Conference Center in Dearborn. Refer to our website for a map and directions. www.fordastronomyclub.com

The FAAC observes at Spring Mill Pond within the Island Lake State Recreation Area near Brighton, Michigan. The club maintains an after-hours permit and observes on Friday and Saturday nights, and nights before holidays, weather permitting.

The FAAC also has use of a private observing site near Gregory Michigan and Lake Erie Metro Park. See the FAAC Yahoo Group* for more information.

Observing schedules and additional info are available on our website, or via the FAAC Yahoo Group.* Or call the FAAC Hotline, for info and leave a message, or ask questions: 313-757-2582. You may also send email inquiries to info@fordastronomyclub.com.

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

Membership fees:

Annual - New Members: \$30 (\$15 after July 1)

Annual - Renewal: \$25 (\$30 after January 31)

Membership includes the STAR STUFF newsletter, discounts on magazines, discounts at selected area equipment retailers, and after-hours access to the Island Lake observing site.

Astronomy or Sky & Telescope Magazine Discounts Obtain the required form from the FAAC club treasurer for a \$10 discount.

Send the completed form directly to the respective publisher with your subscriptions request and payment. Do not send any money directly to the FAAC for this.

Star Stuff Newsletter Submissions Your submissions to STAR STUFF are welcome! Send your story and/or images to the editor: StarStuff@fordastronomyclub.com Email text or MS Word is fine. STAR STUFF will usually go to press the weekend prior to each general meeting.

Submissions received prior to the 15th can be included in that month's issue.

* FAAC Members are welcome to join our Ford Astronomy Club Yahoo! Group. Messages photos, files, online discussions.