



Volume 24, Number 7

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## The Invisible Shield of our Sun

By Dr. Ethan Siegel

Whether you look at the planets within our solar system, the stars within our galaxy or the galaxies spread throughout the universe, it's striking how empty outer space truly is. Even though the largest concentrations of mass are separated by huge distances, interstellar space isn't empty: it's filled with dilute amounts of gas, dust, radiation and ionized plasma. Although we've long been able to detect these components remotely, it's only since 2012 that a manmade spacecraft -- Voyager 1 -- successfully entered and gave our first direct measurements of the interstellar medium (ISM).

What we found was an amazing confirmation of the idea that our Sun creates a humongous "shield" around our solar system, the heliosphere, where the outward flux of the solar wind crashes against the ISM.

*(continued on Page 3)*

## President's Article

By Tim Campbell

### "Intensified" Beginner's Night Fun!

At the last club meeting I mentioned that we've received an extensive list of astronomy equipment from a generous donor. This includes numerous telescopes, eyepieces, binoculars, and cameras ... most of which I would describe as being in excellent like-new condition.

One particularly interesting item is a "Binocular Image Photon Machine" or "BIPH", by Night Vision Astronomy. It's a night-vision image intensifier. The device attaches to a 2" eyepiece receiver — and looks a bit like bino-viewers. Unlike bino-viewers, the device does not use an eyepiece; it has its own electronic display. The image is focused on the display screen and that means for those who wear glasses, it's best to leave your glasses on for this particular piece of equipment.

*(continued on Page 2)*

# STAR STUFF

## July 2014 - Vol. 24 No 7

STAR STUFF is published eleven times each year by:

**FORD AMATEUR ASTRONOMY CLUB**  
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Dearborn MI 48121-7527

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VICE PRESIDENT: Art Parent  
SECRETARY: Ellen Duncan  
TREASURER: Gordon Hansen  
WEBMASTER: Greg Ozimek  
NEWSLETTER EDITOR: Jennifer Monske

### 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 Community College Administration Services and Conference Center in Dearborn. Refer to our website for a map and directions ([www.fordastronomyclub.com](http://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 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. or send email inquiries to [info@fordastronomyclub.com](mailto: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](mailto: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 issue.

\* FAAC Members are welcome to join our Ford Astronomy Club

*This month's background photos of the moon Page 1 courtesy of John Kirchhoff. See more of John's photos at:*

<http://www.flickr.com/photos/33926475@N06/with/4311533997/>

George Korody brought the BIPH to our last "Beginner's Night" at Island Lake State Park where I suspect it surprised quite a few observers. The device is particularly good at making faint fuzzies "pop" into view.

The device works by using the photons a telescope normally collects, but then multiplies the signal "up to 50,000 [times]". Night Vision Astronomy claims the device effectively causes a scope to behave as though it's aperture has been tripled. A 6" scope behaves more like an 18" scope. On Beginner's Night, George connected the device to my 14" LX-200 — making it behave a bit like a 42" telescope.

The device is intended to be used on "faint" objects. There would be no point in using it for a bright object which is already easy to see. It's not designed for the moon or planets, for example. It works extremely well on deep space nebulae and globular clusters. George noted that it works particularly well on edge-on galaxies, but not as dramatic for face-on galaxies.

But I should mention that the device is delicate. The point of the machine is to be extremely light-sensitive. The manufacturer warns that it should never be switched on in ordinary daylight and should never be pointed at car headlights — either of these would likely burn out the unit. George has developed a list of guidelines for use — precautions to avoid damaging the unit.

I suspect this device would be very impressive at public outreach and Astronomy at the Beach. It renders in astonishing brightness and detail the "faint fuzzies" that viewers are struggling to observe — especially viewers who do not know what they are supposed to be looking for in the eyepiece.

If you are interested in learning more about the device, the website for the manufacturer is: [www.nightvisionastronomy.com](http://www.nightvisionastronomy.com). There is also an equipment review which was published in Astronomy Technology Today. A copy of that review is at the manufacturer's website and can be found here: <http://www.nightvisionastronomy.com/downloads/Nov-Dec-ATT-BIPH.pdf>

Clear Skies!  
Tim



*Image credit: Hubble Heritage Team (AURA / STScI), C. R. O'Dell (Vanderbilt), and NASA, of the star LL Orionis and its heliosphere interacting with interstellar gas and plasma near the edge of the Orion Nebula (M42). Unlike our star, LL Orionis displays a bow shock, something our Sun will regain when the ISM next collides with us at a sufficiently large relative velocity.*

## The Invisible Shield of our Sun

*(continued from Page 1)*

Over 100 AU in radius, the heliosphere prevents the ionized plasma from the ISM from nearing the planets, asteroids and Kuiper belt objects contained within it. How? In addition to various wavelengths of light, the Sun is also a tremendous source of fast-moving, charged particles (mostly protons) that move between 300 and 800 km/s, or nearly 0.3% the speed of light. To achieve these speeds, these particles originate from the Sun's superheated corona, with temperatures in excess of 1,000,000 Kelvin!

When Voyager 1 finally left the heliosphere, it found a 40-fold increase in the density of ionized plasma particles. In addition, traveling beyond the heliopause showed a tremendous rise in the flux of intermediate-to-high energy cosmic ray protons, proving that our Sun shields our solar system quite effectively. Finally, it showed that the outer edges of the heliosheath consist of two zones, where the solar wind slows and then stagnates, and disappears altogether when you pass beyond the heliopause.

Unprotected passage through interstellar space would be life-threatening, as young stars, nebulae, and other intense energy

sources pass perilously close to our solar system on ten-to-hundred-million-year timescales. Yet those objects pose no major danger to terrestrial life, as our Sun's invisible shield protects us from all but the rarer, highest energy cosmic particles. Even if we pass through a region like the Orion Nebula, our heliosphere keeps the vast majority of those dangerous ionized particles from impacting us, shielding even the solar system's outer worlds quite effectively. NASA spacecraft like the Voyagers, IBEX and SOHO continue to teach us more about our great cosmic shield and the ISM's irregularities. We're not helpless as we hurtle through it; the heliosphere gives us all the protection we need!

Want to learn more about Voyager 1's trip into interstellar space? Check this out: <http://www.jpl.nasa.gov/news/news.php?release=2013-278>.

Kids can test their knowledge about the Sun at NASA's Space place: <http://spaceplace.nasa.gov/solar-tricktionary/>

*This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.*

## Treasurer's Report

July 20, 2014

By Gordon Hansen

Jul 20, 14

### ASSETS

#### Current Assets

##### Checking/Savings

10000 · Checking 1,103.40

11000 · FAAC Savings

11100 · FAAC Club Savings 1,463.01

11200 · Equipment 1,292.36

11300 · Scholarship 592.76

11400 · GLAAC 5,859.56

11000 · FAAC Savings - Other 0.31

Total 11000 · FAAC Savings 9,208.00

12000 · Petty Cash Account 111.50

13000 · CD's

13100 · CD 200599272 1,060.03

13200 · CD 205196033 1,004.82

13300 · CD 89265268 1,107.65

Total 13000 · CD's 3,172.50

Total Checking/Savings 13,595.40

Total Current Assets 13,595.40

## Meeting Agenda - July 24th

HFCC – Berry Auditorium -Admin. Services & Conference Center [www.fordastronomyclub.com](http://www.fordastronomyclub.com)  
5:30

### Opening/Introduction/Member Observing

#### Main Presentation:

Southern Hemisphere Skies

Jon Blum

### Club Projects/Committees/Member Support

### Club Business/Secretary/Treasurer/Equipment Reports

### Club Wear

You can order online from LL Bean, using the instructions contained in a file that you can view on our club Yahoo Group website Club Wear file folder at

<http://tech.groups.yahoo.com/group/FordAstronomyClub/files/Club%20Ware/>

## Classified

Meade LX200GPS – 8 inch SCT with a Scope Buggy dolly.

Asking \$1800

Contact: Joan Onkka, 734-525-0228

Orion SkyQuest XT10 Classic Dobsonian  
Asking \$350

Contact: Gordon Hansen, 734-624-1102  
or on Yahoo

## Astro Imaging SIG

Gordon Hansen

All are invited to join us in the Astro Imaging SIG meetings, to share and discuss images, experiences, and techniques.

We always have a good time, with lively discussion, and sharing of valuable information.

Next meeting is **August 14th**. The meeting room location – HFCC Admin. Services and Conference Center (same building), Berry Amphitheater Auditorium.

Topics invited. Pizza served.

## FAAC Events 2014

**August 2nd - 5pm Annual Multiclub picnic at Island Lake Recreation**

**August 2nd – Beginner's Night at Island Lake State Park / Spring Mill Pond**  
Sunset is at 8:51pm.

**Sept 18-21st – Great Lakes Star Gaze in Gladwin, Michigan**

**Sept 26-27th – 6pm Astronomy at the Beach at Kensington Metropark**

*Background Photo from Lunt Solar Scope Image taken at the Hector J Robinson Observatory, June 28, 2010*

## One FAAC members blog

<http://hjrobservatory.blogspot.com/>

A few updates on the observatory, quick articles and photos. I'll try to improve my writing on this blog. Also, I try to keep daily updates on this blog. - Greg Knekleian, HJRO volunteer.

Item	Currently Held By:	Date Last Verified
<b>Telescopes</b>		
4" Dobsonian	George Korody	1/18/14
4 ½ " Galileo Alt/Az Reflector	James French	7/12/14
8" Orion 8XTi Dobsonian	James French	7/12/14
4" Donated Reflector in need of repair	George Korody	1/18/14
<b>Presentation Tools</b>		
Projector	Jim Frisbie	6/26/14
Projection Screen 8'	Bob MacFarland	2/13/14
Speaker System w/wireless mic	Bob Mac Farland	2/13/14
Bullhorn	George Korody	1/18/14
DVD Player	Jim Frisbie	1/26/14
Projection Screen 6'	Gordon Hansen	7/13/14
Projector, ViewSonic	Gordon Hansen	7/13/14
<b>Demonstration Tools</b>		
Weight On Planets Scale	George Korody	1/18/14
Lunar Phase Kit	Bob MacFarland	2/13/14
100 ft Scale Model Solar System Kit	Bob MacFarland	2/13/14
<b>Display Items</b>		
Astronomy Event Sign (3' X 6')	Gordon Hansen	7/13/14
PVC Display Board - Folding	Tim Campbell	6/5/14
Banner – Large (32" X 16')	Dennis Salliotte	7/13/14
Banner – Medium (24" X 72")	George Korody	3/15/14
Banner – Small (24" X 32")	George Korody	3/15/14
Tri-Fold Presentation Boards	Don Klaser	1/23/14
Tri-Fold Poster Board (Early Club Photos)	George Korody	1/18/14
<b>Other</b>		
Sky Quality Meter	Syed Saifullah	3/15/14
Canopy (10' X 10')	Greg Ozimek	2/6/14
Equipment Etching Tool	Gordon Hansen	4/22/14
Pop Cooler	Michael Dolsen	1/23/14

# Third Annual FAAC Multi-Club Picnic

## Saturday August 2nd, 2014

5pm-Midnight

Island Lake Recreation Area – Spring Mill Pond



State Park Pass Required.  
You may purchase a day  
pass at the gate if you do not  
have one.

Image above: Suat Eman / FreeDigitalPhotos.net

Members of the  
following  
Astronomy Clubs  
and their families:

All Ford

Ford Amateur  
Astronomy Club

University Lowbrows

Oakland Astronomy  
Club

Seven Ponds  
Astronomy Club

Warren Astronomical  
Society

SEMSA Soaring Club

Henry Ford  
Community College

Bring your  
scope or  
binoculars

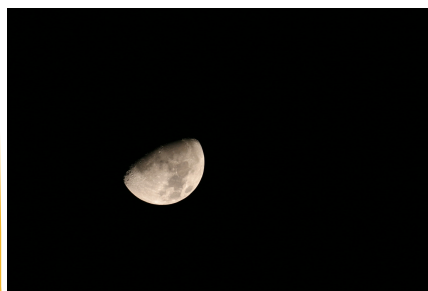


Image above: Jennifer Zdanowski

FAAC will provide hamburgers, hot dogs,  
veggie burgers, soft drinks, plates & utensils

Please bring a dish to pass  
salads, snacks, fruit, desserts.....

# FAAC General Meeting Minutes June 28th, 2014

By Ellen Duncan

## Opening:

Tim C called meeting to order at 5:34. Members enjoyed pizza and pop provided by Greg O and Mike D. Everyone introduced themselves. No new members or guests were present.

During member observing reports, Tim C said that this month he experienced the best seeing he's had of all time, Greg K and Gordon H showed a video of the camelopids meteor shower.

Dennis S gave a club equipment update: Tim C reported that an email to info@FAAC.com was from a couple wanted to donate their equipment no longer in use. George K contacted them. In order to pick up the donated equipment, a big vehicle was needed. There was a lot of equipment, some of it brand new, including night-vision binoculars. George will inventory the equipment, then the inventory will be posted on our equipment list when completed. The board will discuss what will happen with equipment--donation to school/s, auction, club lending, etc.

Tim D spoke to contact at Lake Erie Metropark. Their officials have decided to advertise in 2 6-month brochures per year, so we need to get them information about our involvement in events by new deadlines: July 1 for next 6-months job. Labor Day to Memorial Day, then Memorial Day to Labor Day.

"What's Up in July" was skipped due to absence of Steve U.

## Main Presentation:

"Enterprise: Myth of the Sixth Shuttle" by Diane Hall from the Warren Astronomical Society. The extremely condensed version is that the Enterprise was not a shuttle, but a space orbiter that didn't go to space, but was used for important testing and later PR and museum life.

Ellen D gave the Secretary's report. Minutes were published in StarStuff, and we are members now of Night Sky Network connected with NASA and the Jet Propulsion Lab. There are some problems with our NSN site to be fixed soon.

Jon Blum will speak at next meeting about his astronomical trip to Chile.

## Business Meeting:

- Gordon H gave treasurer's report, which also was published in Star Stuff. Gordon also projected on screen the summery financial report for fiscal year and explained it. A chunk of that money in the report really belongs to GLAAC. FAAC has approximately \$715 more than last fiscal year.

## Projects and Events:

- July 3: Next Board meeting at Senate Coney Island at Rotunda and Greenfield, 5:00 pm
- July 5: Beginner's Night at Island lake Rec Area/Spring Mill Pond. Sunset is at 9:12 pm.
- July 10: Astrophotography SIG at HFCC Barry Amphitheater, 5:30 pm
- August 2: Annual multi-club Picnic at 5:00 pm and Beginner's Night at Island lake Rec Area/Spring Mill Pond. Sunset is at 8:51 pm.
- Volunteers are needed for Astronomy at the Beach at Kensington Metropark on September 26 & 27. Please sign up with George Korody or at the next meeting. Volunteers are also needed to represent FAAC with GLAAC to help plan Astronomy at the Beach.

Tim C adjourned the meeting at 7:12 pm.

## When Stars Go Out

By Tim Campbell

This month our club is saddened by the news of two of our members who have passed away.

On July 9th, we learned that Bob FitzGerald passed away. Just 5 days later, on July 14th, John Schroer also passed away.

Both Bob and John were fixtures in the Ford Amateur Astronomy Club — and well known both within our club as well as far beyond our club in the community of GLAAC clubs and, in John's case, nationally.

They were both extremely active in astronomy outreach where they shared their enthusiasm and passion for astronomy with schools, organizations, and the public. Both Bob and John were

planetarium presenters... Bob for the Hammond Planetarium at Henry Ford College and John for the Detroit Science Center — now Michigan Science Center Dassault Systèmes Planetarium.

Each of them stand out with their own list of many contributions to the club and the larger astronomy community. While I can continue to mention much more, tribute articles have been contributed by club members to honor the memory of Bob FitzGerald and John Schroer. I will let those articles speak to the contributions of each of them with greater detail.

We are deprived of their companionship and saddened with this loss. Their council, their friendship, and their passion for astronomy will be missed.

## Bob FitzGerald

By Jim Frisbie



My Friend Bob,

I loved him. He will be missed!

It appears Bob finally got his wish... to be with his son Sean.

Bob FitzGerald was old enough to say what he thought and didn't hesitate to set the record straight if he thought a Club Meeting was drifting out of focus. He had a dry sense of humor: One time he was asked by the owner to look after a scope set up at an outreach event. Upon return, the owner found Bob trying to sell the scope to a passerby. Bob and I used to kibitz about any subject that wondered across the table at our regular Tuesday lunches. People have said we sounded like an old married couple bickering. But, we enjoyed many sunrise breakfasts in the open air at a Great Lake Star Gaze in Gladwin.

Bob was a Life Member of FAAC first joining up in 1995. It wasn't long before he was nicknamed "Bino-Bob" due to his

interest in binocular observing. He had a long list of Club credits that included: Parliamentarian, Equipment Manager, Nominating Committee, Board Meeting Participant, Club Election Facilitator and Hotline Manager. Some members even referred to Bob as the "Club Sage". He regularly represented the Club at Great Lakes Association of Astronomy Club (GLAAC) Meetings. He had a keen interest in the education of young people in all things astronomy and enjoyed participating in virtually every Club Outreach Event. Passion for Astronomy led to his receiving the Club's first "SIRIUS AWARD".

Many nice things can be said about Bob, but the thing that impressed me the most is that he gave much more to the world around him than he took. In addition to his volunteer work at local hospitals, he gave significant financial support to local and national charities. Bob was recently nominated by the Wayne County Airport Authority and received the Detroit Convention Bureau's coveted "ROSE AWARD" for his extensive volunteer work aiding travelers at Metro Airport.

From one of Bob's favorite poets, Rudyard Kipling...

*One man in a thousand, Solomon says,  
Will stick more close than a brother.  
And it's worth while seeking him half your  
days  
If you find him before the other.  
Nine hundred and ninety-nine depend  
On what the world sees in you,  
But the Thousandth man will stand your  
friend  
With the whole round world agin you.*

I loved him. He will be missed!

## John Schroer

By Jon Blum



John Schroer

September 12, 1956 --- July 14, 2014

John Schroer was a beloved member of the Ford Amateur Astronomy Club who died of complications of his longstanding diabetes this month.

John was an enthusiastic amateur astronomer. He also belonged to the Warren club and the Astronomical League.

He was one of the major contributors to planning and executing our huge Astronomy At The Beach event every year. Professionally, he was the planetarium education director at the Detroit Science Center (now the Michigan Science Center). He was a past president of the Great Lakes Planetarium Association. He worked with Marty Kunz on radio station astronomy.fm.

John was an amateur radio operator, and used his call letters KA8GRH in his email

address. He was a computer enthusiast ever since he got his first TRS-80, and never threw away any of his old computers. He loved music and kept it in all formats old and new, from LP's through MP3's.

John was a wonderful friend to me and a great help in teaching me about astronomy. He made it possible for me to go to the Great Lakes Star Gaze every year, because he would do the driving while I could not drive that distance alone. He encouraged me to become active at Astronomy At The Beach every year and showed me what fun it is to engage with the public at that event. I will always miss him, but especially when I no longer see him at those two annual events, GLSG and AATB.

Ford Amateur Astronomy Club  
Star Stuff Newsletter  
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