



STAR STUFF

The Newsletter of the Ford Amateur Astronomy Club

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September 2012

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Doing Science with a Spacecraft's Signal

by David Doody

Mariner 2 to Venus, the first interplanetary flight, was launched August 27 fifty years ago. This was a time when scientists were first learning that Venus might not harbor jungles under its thick atmosphere after all. A Russian scientist had discovered that atmosphere during the rare Venus transit of 1761, because of the effects of sunlight from behind.

Mariner 2 proved interplanetary flight was possible, and our ability to take close-up images of other planets would be richly rewarding in scientific return. But it also meant we could use the spacecraft itself as a "light" source, planting it behind an object of our choosing and making direct measurements.

Mariner 4 did the first occultation experiment of this sort when it passed behind Mars as seen from Earth in July 1965. But, instead of visible light from the Sun, this occultation experiment used the spacecraft's approximately 2-GHz radio signal.

The Mariner 4 experiment revealed Mars' thin atmosphere.

Since then, successful radio science occultation experiments have been conducted at every planet and many large moons. And another one is on schedule to investigate Pluto and its companion Charon, when the New Horizons spacecraft flies by in July 2015. Also, during that flyby, a different kind of radio science occultation experiment will investigate the gravitational field.

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Secretary's Corner

By Doug Bauer

The 2012 Great Lakes Star Gaze was held September 13 through 16 at the River Valley RV Park in Gladwin. Early registration was \$45 and regular registration is \$60. It is an astronomer specific event, not a public observing event. There are about 250 people that attend. The River Valley RV Park is in a fairly dark area with clear views of the sky. The Milky Way is very visible as it sprawls across the night sky.

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TREASURER: Chuck Jones
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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 Community 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 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.

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 at jenzdanowski@yahoo.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 Yahoo!Group. Messages photos, files, online discussions, and more! URL: groups.yahoo.com/group/FordAstronomyClub.

This months 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/>

Secretary's Corner

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The River Valley RV Park has two primary areas, the first is a campground on the north with many campsites, RV hook ups and showers and bathrooms, the other area is the open field on the south which becomes the observing field for the event. Most of the attendees camp on the observing field near their equipment, a few rent spaces in the campground for their trailers and RVs, and the rest of us wimpy types rent a room at a nearby hotel either in Harrison and in Gladwin. The hotels are about 15 - 20 minutes from the Great Lakes Star Gaze site.



It is a very nice event with good skies, presentations on Friday and Saturday, a swap meet on Saturday, and a door prize drawing Saturday evening with many very nice door prizes. Norb Vance provided rocket launches on Saturday around 4:30 PM. There is also an Astro-Photo contest.

It is a great opportunity to chat with others interested in astronomy, look at a variety of equipment, get some help solving equipment problems, do some astro-photography, and of course, weather permitting, get some great observing time.

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In this poster art of Mariner 4, you can see the parabolic reflector atop the spacecraft bus. Like the reflector inside a flashlight, it sends a beam of electromagnetic energy in a particular direction. Credit: NASA/JPL/Corby Waste.

Doing Science with a Spacecraft's Signal

(continued from Page 1)

The most recent radio science occultation experiment took place September 2, 2012, when the Cassini spacecraft carried its three transmitters behind Saturn. These three different frequencies are all kept precisely “in tune” with one another, based on a reference frequency sent from Earth. Compared to observations of the free space for calibration just before ingress to occultation, the experiment makes it possible to tease out a wide variety of components in Saturn's ionosphere and atmosphere.

Occultation experiments comprise only one of many categories of radio science experiments. Others include tests of General Relativity, studying the solar corona, mapping gravity fields, determining mass, and more. They all rely on NASA's Deep Space Network to capture the signals, which are then archived and studied.

Find out more about spacecraft science experiments in “Basics of Space Flight,” a website and book by this author, [http://](http://jpl.nasa.gov/basics)

jpl.nasa.gov/basics. Kids can learn all about NASA's Deep Space Network by playing the “Uplink-Downlink” game at <http://spaceplace.nasa.gov/dsn-game>.

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

Secretary's Corner

(continued from page 2)

The nicest thing is you can set your equipment up in your spot and leave it there for the entire event. Of course, you may need to cover it if the weather gets bad.

This year the weather on Thursday night was rainy, but people still had a good time visiting with friends and making new friends. It also allowed people to get a good night's sleep before the all night observing sessions on the next two nights. Friday and Saturday nights were very nice and clear all night long. This led to a severe case of sleep deprivation by Sunday afternoon.



John Lines and the Seven Ponds Astronomy Club were setup in the campground and I spent my observing time with them. Ron Shank had his usual Shank Cafe in operation providing food all night long for the Seven Ponds folks (I refer to them as the Gastronomy Club). There were many Ford Amateur Astronomy Club members in attendance with the imaging contingent camped in the area of the observing field they call the "Club Level". The Warren Club also had a number of members attending.

During the event, some folks get together to have dinner at one of the local restaurants. In

past years, when many of us stayed at the Lakeside Motel in Harrison, we met at the Remedy Restaurant for breakfast and dinner. This year the lead scouts, Jon Blum and John Schroer, found a better hotel in Gladwin, the Cedar Avenue Inn. While it was step up from the Lakeside Motel, you wouldn't mistake it for a Hilton. At least it had full size showers. Since we were staying Gladwin, we tried a couple of restaurants there. We had breakfast and one dinner at the Pepper Mill, which is a typical family restaurant and the food was pretty good, especially the large selection of pies. One night, four of us met at the Riverwalk Restaurant in Gladwin for dinner. It was exceptional. The food was fantastic, but not overpriced and it had a beautiful view of the Cedar River. It was a true gem, if you are ever in Gladwin and looking for a great dinner, stop at the Riverwalk.

If you have not attended the Great Lakes Star Gaze you need to seriously consider going. It is the best Astronomers Only Star Party in Michigan!

All pictures for this article were provided by Jon Blum.



Treasurer's Report September 16, 2012

By Chuck Jones

Ford Amateur Astronomy Club Balance Sheet

As of September 16, 2012

	Sep 16, 12
ASSETS	
Current Assets	
Checking/Savings	
CD 200599272	1,055.80
CD 205196033	1,001.01
CD 89265268	1,101.20
Checking	320.08
FAAC Savings	
Equipment	1,269.22
Scholarship	122.06
Total FAAC Savings	1,391.28
Petty Cash Account	118.38
Total Checking/Savings	4,987.75
Other Current Assets	
GLAAC	1,483.89
Total Other Current Ass...	1,483.89
Total Current Assets	6,471.64
TOTAL ASSETS	6,471.64
LIABILITIES & EQUITY	0.00

Club Wear

To our "New and Current Members" Our club has "FAAC" Official Club Wear with our Logo Embroidered.

Anyone with an interest or need in FAAC Club Wear, I will be placing an order in the next few months, for more information please call me - Diane at 248 980-7832. The FILES section in the Yahoo group has a form noting each ITEM with PRICES. The listing name - "FAAC Club Wear" - please do not hesitate to call me.

Meeting Agenda - September 27th

HFCC – Berry Auditorium -Admin. Services & Conference Center www.fordastronomyclub.com
5:30

Opening/Introduction/Member Observing

Main Presentation:

How to get involved in astronomy

Bob Berta

Tech Talk:

TBD

Club Projects/Committees/Member Support

- October 20th – Astronomy Day – Solar Observing at Kensington MetroPark Nature Center
- October 27th – Wayne State University – Tour of Planetarium and Adjacent Facilities – 6 PM

Club Business/Secretary/Treasurer/Equipment Reports

Items For Sale

Orion 3 inch telescope-Orion spaceprobe 3EQ-complete with mount and tripod, finder and eyepieces. This is a reflector for beginners. Never used, like new. in box. Lists for \$150 on Orion website. Asking \$110. If interested please contact Tom Blaszk at stringfingerer@gmail.com.

MEADE Telescope and Tripod 6 years old - in excellent shape **LXD 75** - Series Schmidt - Cassegrain 8" f/10 SC-8AT (Super Coated, Autostar Guided) - Focal Length 2000 mm Telescope weight = 24 lbs - with MEADE EMC Super Multi-Coatings and with optional Ultra-High Transmission Coating Tripod weight = 45 lbs - Die cast Aluminum German-Type Equatorial Mount with Variable-Height Field Adjustments Autostar Controller guides to 30,223 objects

Includes a Sun Filter, Overnight Protective Cover, Transportation Containers. Contact phone no. 248-851-5053, e-mail robertboswell@comcast.net

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 **October 11th**. The meeting room location – HFCC Admin. Services and Conference Center (same building), Berry Amphitheater Auditorium.

Topics invited. Pizza served.

Items For Sale

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- 8 inch Zhumell Dobsonian Telescope
- F/5
- 2 inch Crawford low profile focuser with 1.25 inch adapter.
- 26 mm 2 inch eyepiece and 9 mm 1.25 inch eyepice
- 8 x 50 right angle finderscope
- Laser Collimator
- cooling fan with battery pack
- 2 " and 1.25" eyepiece rack and glow-in-the-dark tape on bearing box.
- Extras Include: Desert Storm Shield, padded carrying case for optical tube, Telrad
- \$300 Firm Call John 248-538-1514 or email to ka8grh@gmail.com

FAAC Events 2012

**October 20th - Astronomy Day – Solar
Observing at Kensington
MetroPark Nature Center**

**October 27th - Wayne State University – Tour
of Planetarium and Adjacent
Facilities – 6 PM**

*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.

FAAC General Meeting Minutes August 23th, 2012

By Doug Bauer Secretary

Opening:

- The meeting was called to order in the Berry Amphitheater Auditorium of at HFCC at 5:30 pm by FAAC Vice president Jon Blum. President Gordon Hansen was visiting his new grandson.
- All attendees introduced themselves. We had two visitors, Cathy and Ron Priskorn and one new member, Frank Iannello. There were 40+ people present.
- Members contributed their observing experiences.
 - Several members reported observing Saturn, Mars and the crescent Moon in the last couple of days.
 - Milton French reported that he had gone camping in Mackinaw and observed Saturn, Mars, the Moon, Jupiter, and Venus.
 - Several Club Members went to Port Crescent State Park for the Perseids Meteor Shower however it was cloudy, Bob MacFarland did do an Astronomy 101 presentation for the folks at the park, Art Parent, Tm Campbell, and John Schroer all attended.
 - Doug Bauer, Bob MacFarland, and Larry Halstead did an astronomy program at the Highland Library on Tuesday, Aug 21st.
 - Doug Bock, Doug Bauer, Bob MacFarland and John Lines along with several others observed at Seven Ponds Nature Center on Saturday, Aug 18th.
 - Ellen Duncan attended a star Party in western Pennsylvania and observed with binoculars.

What's Up In July:

- John Schroer gave the What's Up in the Night Sky talk. He included:
- Moon Phases:
 - Sept 8 - Last Q
 - Sept 15 - New
 - Sept 22 - First Q
 - Sept 29 - Full
- Early September - Saturn and Mars are very low on the SW horizon at Sunset
- Sept 6 - 5:23 AM Venus is bright and close to the Beehive Cluster
- Sept 12 - early morning, Venus is close to the Beehive Cluster and the crescent Moon
- Sept 19 - Moon by Saturn and Mars - very low in the SW

- John is on a Web Astronomy Radio Show "Event Horizon" on Fridays at 9:00 PM - astronomy.fm

Main Program:

Jim Shedlowsky of the Warren Astronomical Society gave a presentation entitled: The Way We Found the Universe. It was very interesting, he described the scientific evolution of the knowledge of our Universe, what it is, its size, its age, and the distance between Spiral Nebula (Galaxies) from the 16th Century through 1925, when Edwin Hubble discovered that the universe is expanding. He talked about all of the great astronomers that built this understanding. He also sang a very good song on the Starry Starry Nights and the expanded knowledge of the universe.

Tech Talk:

- Jon Blum gave a Tech Talk entitled: Why You Should Go To Astronomy at the Beach and The Great Lakes Star Gaze. He compared the two events and gave overviews of both:
- Astronomy at the Beach - put on by eight local astronomy clubs at Kensington Metropark Maple Beach on Sept 21 and 22nd. Geared to the general public to enhance their knowledge of astronomy. The event has presentations each night and telescopes and binoculars set up on the beach for the public to get a view of the sky. And is free to the public except for the fee to get into the Metropark.
- Great Lakes Star Gaze is for astronomers and put on by the Bay City Sunset Astronomy Club on Sept 13-16th at the River Valley RV Park in Gladwin. It is \$60 per person, has presentation geared to astronomers, a swap meet, vendors, and very good door prizes.

Business Meeting:

- Secretary's Report was printed in the StarStuff. It was approved as printed
- Treasurer's Report was printed in the StarStuff and approved as printed.

Upcoming Project and Events:

- 6:00 PM - Saturday, Aug 25th, FAAC Picnic at Island Lake Recreation Area - Spring Mill Pond
- Sept 13-16 - Great Lakes Star Gaze - River Valley RV Park in Gladwin
- 6:00 PM until Midnight, Sept 21-22 - Astronomy at the Beach - Kensington Metropark, Maple Beach

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HJRO Update

by Greg Knekleian

We had a lot of great viewing this month.

One week we had the observatory open four nights in a row. We had different FAAC astronomers and some visitors arriving to view the sky, under nice conditions. The weather was perfect for viewing and the mosquitos were not really around.

We would look at many familiar objects that are out. Many Messier objects. To many to mention really. We can't get a good view of Saturn, because it was too low and the C14 won't show it once the sun sets. We looked at Mars, but it's fairly low and wasn't offering much detail. Many looked at other planets that were out and a few stayed up late enough to see Jupiter and M45 rising and in the C14. We looked at Jupiter more often late at night with a telescope outside because it was low to the horizon and the C14 can't see objects below 14 degrees. I stayed out until 2 or 3am most nights and after doing that for four nights I was pretty tired.

We were looking at Jupiter about four hours before the impact, but didn't see any results of the impact the day afterwards. We also did a bit of solar viewing. Some nights I was tired enough to just do some really fast binocular viewing at home. There were perhaps three or four clear nights, where the weather cleared up late, or I was too busy or tired to open up the observatory, so we didn't get HJRO open on every clear night.

Some of the regular visitors included, Mike Stamey, James French and many first time visitors as well. We had FAAC regulars, Art Parent, Dan Barriball, Brian Kutscher, Rick Arzadon. We even had Harold Thomason and Greg Ozimek visit with Harold bringing his HA solar setup for the C14 one fine afternoon. All in all it was a great month and there were plenty of other events as well.

Some like Rick Arzadon were able to tick off a view Messier viewing objects off their list of objects they have seen this month. One evening a frequent visitor Mike was shown how to drive the computer and he started picking objects for his two visitor friends so they could see a ton of stuff. They looked at about 40 different objects in a few hours. One of his visitors was an eye surgeon, who was able to check out my Vixen telescope on the double cluster and give me his input on my 3d viewing theory. He didn't see the 3d effect either.

I also attended the HFCC welcome back days and did some solar viewing at different locations, sometimes showing a few people the sun doing impromptu sidewalk astronomy.



Only a few of the fifty astronomers from the FAAC picnic.

(Below) Quick Sidewalk astronomy setup, Dexter Michigan



My 3d article had errors

by Greg Knekleian

Last month I speculated, and theorized a bit about the eyes and why I see a 3d effect while viewing the double cluster through my binocular telescope. At the FAAC picnic I tested the viewing of this effect with several visitors and astronomers viewing the double cluster to look for the 3d effect.

The effect I reported is "some stars are fixed" in the field and with "others moving". This I thought might be due to the way our eye are constructed. At the FAAC picnic I further tested the theory by having others view the double cluster through the BT80 binoculars. Almost everyone did not see the effect. About a dozen saw, "all the stars move", or no stars move at all. (I saw some fixed with others moving.) Maybe, it was something unique about my way of viewing. Then Ken Anderson looked through my Vixen binoculars. He didn't see the effect at first, but later **saw the same effect**. He had the following comments. He thinks **it's field curvature**, causing the stars to move. He thought it happened when focusing on a small group of stars and concentrating on them. Which is something I didn't instruct most viewers to do. He thought it was some kind of **mind/optical trick**, that **our mind fixes some stars in place** and others move.

He thought it might be more noticed with some astronomers who have more binocular viewing experience. (We both look through binoculars a lot. I also wondered if this effect happened due to my eyes being different perhaps. (I have a "prism" in my eyeglass prescription.) I also had an eye surgeon visit HJRO recently and he looked through the Vixen binoculars and could not see the 3d effect. It may be something only a few can witness.

HFCC Welcome Back Days

by Greg Knekleian

I was able to attend part of the HFCC welcome back days with Doug Bauer, Dennis Salliotte, Greg Ozimek and many other FAAC members who are in the club by virtue of their being in the HFCC club. I'm not going to mention all the HFCC members who were at the table, because I only saw a few and was outside most of the time with the solar telescopes. Greg Ozimek went inside and picked up a sign up sheet for the outside table on the second day and that second sign off sheet outside helped get even more sign-ups. We had perhaps 35 to 40 people sign up to join the HFCC club. One enthusiastic new member was even out at Astronomy At The Beach on a rainy Friday night. It's good to see the HFCC club grow in membership. The second day was better, because we had better weather. Outside Dennis had a white light solar setup, Doug had a very nice Lunt HA setup and I had my little solar projector. People were interested, at times they were in a hurry between classes and couldn't stop. One class was sent out to view the sun, later the teacher complained that they didn't return to the class, apparently they used the viewing opportunity as an early escape from class.



Ford Amateur Astronomy Club
Star Stuff Newsletter
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FAAC General Meeting Minutes August 23th, 2012

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New Business:

- Greg Ozimek will be ordering the 2013 Royal Astronomical Society of Canada Observing Handbook. Let him know if you would like to get one.
- Bob MacFarland is organizing a tour of the Wayne State University Observatory for Oct 6 or Oct 27th.
- The HFCC Planetarium shows are about to resume. Bob Clubb will post the schedule when it is completed.
- The Cranbrook observatory is being updated and will open November.
- Shepler's Ferry in Mackinaw is running some moon viewing tours.
- Doug Bock is looking for some help on Sept 29th to refurbish his backyard observatory so that he can host a star party there next Spring. Contact Doug Bock if you can help.

Thanks to Greg Ozimek for bringing the pizza and to Ellen Duncan for bringing the pop!