

Volume 22, Number 11

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It Takes More Than Warm Porridge to Make a Goldilocks Zone

by Diane K. Fisher

The "Goldilocks Zone" describes the region of a solar system that is just the right distance from the star to make a cozy, comfy home for a lifesupporting planet. It is a region that keeps the planet warm enough to have a liquid ocean, but not so warm that the ocean boils off into space. Obviously, Earth orbits the Sun in our solar system's "Goldilocks Zone."

But there are other conditions besides temperature that make our part of the solar system comfortable for life. Using infrared data from the Spitzer Space Telescope, along with theoretical models and archival observations, Rebecca Martin, a NASA Sagan Fellow from the University of Colorado Boulder. and astronomer in Mario Livio of the Space Telescope Science Institute in Baltimore, Maryland, have published new study а suggesting that our solar system and our place in it is special in at least one other way.

November/December 2012

This fortunate "just right" condition involves Jupiter and its effect on the asteroid belt.

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The Newsletter of the Ford Amateur Astronomy Club

President's Corner

By Gordon Hansen

Its hard to believe that 2012 is iust almost behind us. Einstein said that time was relative - he was right - relative to how old you are! Years don't last as long now that I'm "mature" compared to when I was a kid. Then it took forever for the month of December to pass and the jolly man in the red suit to make it to my house. Speaking of gifts, don't miss the club meeting on December 6. Jeff Hineline will be there to tempt us with a host of goodies from his company Great Red Spot. I'm sure there will be something that you will absolutely need in your stockina.

The meeting on December 6th is our last event for the year. I think we've had a pretty successful year.

(continued on Page 2)

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FORD AMATEUR ASTRONOMY CLUB P.O. Box 7527 Dearborn MI 48121-7527

PRESIDENT:
VICE PRESIDENT:
SECRETARY:
TREASURER:
WEBMASTER:
NEWSLETTER EDITOR

Gordon Hansen Jon Blum Doug Bauer Chuck Jones Greg Ozimek Jennifer Zdanowski

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/

President's Corner (continued from Page 1)

We've shared some nights of observing at Beginner's Nights, reminisced about the history of the club at the banquet along with another great round of Astro Jeopardy, swapped astro gear at the Swap Meet, and shared our observing experiences at the monthly meetings. As importantly, we've helped each other out and turned what could be a solitary activity into a social one. That's what makes our club great.

As the year comes to a close there are a couple of business matters that we need to address. I listed these in my column last month, but, they bear repeating:

• Membership Renewal – Its not too early to renew your club membership. Renewal cost stays at \$25 (\$30 if you pay after January 31, 2013.) See Doug Bauer and/or Chuck Jones at the meeting or send your check to:

FAAC

PO Box 7527

Dearborn, MI 48121

• 2013 Club Officer's – Elections will occur at the January24, 2013 meeting. The nominating committee, chaired by Jim Frisbie, will announce their recommendations at the December meeting. You will have the opportunity to nominate someone for each office prior to the election in January.

• Sirius Award Nominations – The club presents this, its highest honor, to a club member every year at the club banquet (May 4, 2013.) The board will accept nominations for this award till January 31, 2013. This year's recipient was Bob MacFarland truly one of our club's shining stars. That's the caliber of person you should consider nominating. The person nominated must be an active club member and cannot be one of the elected club officer's. Please forward your nomination, including a concise explanation of the person's qualifications to

<u>President@fordastronomyclub.com</u> All submissions will be kept confidential.

Hope everyone has a very happy and joy filled holiday season!

Three scenarios for asteroid-belt evolution



Our solar system is represented by the middle scenario, where the gas giant planet has migrated inward, but still remains beyond the asteroid belt.

It Takes More Than Warm Porridge to Make a Goldilocks Zone

(continued from Page I)

Many other solar systems discovered in the past decade have giant gas planets in very tight orbits around their stars. Only 19 out of 520 solar systems studied have Jupiter-like planets in orbits beyond what is known as the "snow line"—the distance from the star at which it is cool enough for water (and ammonia and methane) to condense into ice. Scientists believe our Jupiter formed a bit farther away from the Sun than it is now. Although the giant planet has moved a little closer to the Sun, it is still beyond the snow line.

So why do we care where Jupiter hangs out? Well, the gravity of Jupiter, with its mass of 318 Earths, has a profound effect on everything in its region, including the asteroid belt. The asteroid belt is a region between Mars and Jupiter where millions of mostly rocky objects (some water-bearing) orbit. They range in size from dwarf planet Ceres at more than 600 miles in diameter to grains of dust. In the early solar system, asteroids (along with comets) could have been partly responsible for delivering water to fill the ocean of a young Earth. They could have also brought organic molecules to Earth, from which life eventually evolved. Jupiter's gravity keeps the asteroids pretty much in their place in the asteroid belt, and doesn't let them accrete to form another planet. If Jupiter had moved inward through the asteroid belt toward the Sun, it would have scattered the asteroids in all directions before Earth had time to form. And no asteroid belt means no impacts on Earth, no water delivery, and maybe no life-starting molecules either. Asteroids may have also delivered such useful metals as gold, platinum, and iron to Earth's crust.

But, if Jupiter had not migrated inward at all since it formed father away from the Sun, the asteroid belt would be totally undisturbed and would be a lot more dense with asteroids than it is now. In that case, Earth would have been blasted with a lot more asteroid impacts, and life may have never had a chance to take root.

The infrared data from the Spitzer Space Telescope contributes in unexpected ways in revealing and supporting new ideas and theories about our universe. Read more about this study and other Spitzer contributions at spitzer.caltech.edu. Kids can learn about infrared light and enjoy solving Spitzer image puzzles at spaceplace.nasa.gov/spitzerslyder.

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

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November 7, 2012		Co 5:3
By Chuck Jones		0
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Ford AmateurAstronomy Club Balance Sheet		HF As
As of November 7, 2	2012	
	Nov 7, 12	CI
ASSETS Current Assets		CI
Checking/Savings CD 200599272	1,055.80	
CD 205196033 CD 89265268	1,001.01 1,101.20	
Checking FAAC Savings Equipment Scholarship	229.51 1,308.22 140.81	_
Total FAAC Savings	1,449.03	
Petty Cash Account	71.45	
Total Checking/Savings	4,908.00	Up
Other Current Assets GLAAC	1,563.35	Or fe
Total Other Current Ass	1,563.35	op T
Total Current Assets	6,471.35	ov du
TOTAL ASSETS	6,471.35	Re
LIABILITIES & EQUITY	0.00	

Club Wear

You can purchase clothing with our FAAC club logo on it from either one of two sources. You can buy from Diane Worth, by calling her at 248-980-7832. Or 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/

Meeting Agenda - December 6th

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

Opening/Introduction/Member Observing

Main Presentation: HFCC Student Club Astronomy Toys

Marissa Villanueva Jeff Hineline

Club Projects/Committees/Member Support

Club Business/Secretary/Treasurer/Equipment Reports

Items For Sale

Up for sale is my recently acquired Orion Starblast 6. I bought it off Astromart a few months ago, and it is in truly like-new condition. I have only had a couple opportunities to take it out and it performs well. I have one too many scopes and this one is overshadowed by my 8" dob. Scope comes with dust cover and red dot finder, but no eyepieces. Retails for \$279 currently plus \$30 s/h.

PRICED TO SELL: \$175

Pictures are posted here: <u>http://groups.yahoo.com/group/</u> <u>FordAstronomyClub/photos/album/982235276/</u> <u>pic/list</u>

Contact Syed at: (734) 945-5162 if interested or e-mail me.

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 **December 13th.** The meeting room location – HFCC Admin. Services and Conference Center (same building), Berry Amphitheater Auditorium.

Topics invited. Pizza served.

FAAC Events 2012

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

November 8th-SIG Meeting-Berry Amphitheater Auditorium (HFCC)

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.

Items For Sale

(continued from page 5)

- 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-inthe-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

REMINDER: FAAC membership renewals are due by January 31, 2013.

We are trying to get renewals done by the end of the year to reduce the number of renewal notices that we send out in January. It costs the club to send renewal notices by mail, so early renewals will save us money.

- Annual-New Member: \$30
- Annual-Renewal: \$25 (\$30 after Jan 31)

Send your check for \$25 to:

FAAC P.O. Box 7527 Dearborn, MI 48121-7527

Or bring your money to the FAAC General Meeting at 5:30 PM in the Berry Amphitheater Auditorium in the Administrative Services and Conference Center on the campus of Henry Ford Community College.

Membership includes the STAR STUFF newsletter, discounts on magazines, discounts at selected area equipment retailers, and afterhours access to the Island Lake and Lake Erie Metropark observing sites, use of the FAAC Yahoo Group, and mentoring program.

FAAC General Meeting Minutes October 25th, 2012

By Doug Bauer Secretary

President Gordon Hansen opened the meeting at 5:30 pm. 34 attendees were present. After introductions, the following members shared their observing experiences:

Milton French - downtown viewing of Orion, Venus & Jupiter, Chris Strange - Cadillac observing, Dale Partin - Royal Oak observing with beginners, Chuck Jones - imaging, George Korody and Ben Cline - Orionid observing, and George Korody and Tim Campbell - sharing their solar observing public outreach experience at Kensington Metropark. Also, Ken Anderson showed off his new Great Atlas of the Stars which contained 296 individual 12 magnitude charts.

Gordon reminded the attendees that like every year, we take a break from the typical 4th Thursday of the month general membership timing in November and December to avoid any conflict with the Thanksgiving Day and Christmas holidays. Instead, a joint November and December general membership meeting will be held on Thursday, December 6th at 5:30pm Berry Auditorium in the Administrative Services & Conference Center at Henry Ford Community College (same place as usual). The main presentation for that meeting will be given by Jeff Heinline of the Great Red Spot Astronomy Products. In it, he will show off his new product offerings to the group. So hold off on your Christmas wish list until then.

Greg Ozimek received the club order for the Royal Astronomical Society of Canada Observer's Handbook and has one left. If interested, contact Greg at: webmaster@fordastronomyclub.com.

Chuck Jones has a few 2013 Astronomy magazine wall calendars left. Normally, these sell for \$13 but the FAAC club price is \$7. Contact Chuck at: Treasurer@fordastronomyclub.com

Milton French gave a brief summary of what can be viewed in the November skies which included the November 16th – 18th Leonid meteor showers.

Gordon called for Sirius Award nominations. The club presents this, its highest honor, to a club

member every year at the club banquet (May 4, 2013.) The board will accept nominations for this award until January 31, 2013. Prior year Sirius Award winners were: Bob FitzGerald, George Korody, Tim Dey and Bob MacFarland. These are the caliber of "shining star" persons you should consider nominating. The person nominated must be an active club member and cannot be one of the current elected club officers. Please forward your nomination(s), including a concise explanation of the person's qualifications to: President@fordastronomyclub.com All submissions will be kept confidential.

Nominations are also being solicited for the election of FAAC club officers for the 2013 calendar year. The Nomination Committee of Bob FitzGerald, Jim Frisbie and Frank Ancona have identified Gordon Hansen, Jon Blum, Doug Bauer and Chuck Jones as being open to be nomination for their current positions of president, vicepresident, secretary and treasurer next year. However, any member can nominate themselves or someone else for any one of these position for the January 24th general membership meeting election.

Tim Campbell detailed club wear arrangement he set up with L.L. Bean products. This is an opportunity for those whom might want certain FAAC logoed L.L. Bean garments. Details on how to order can be found on the FAAC Yahoo forum site in "Files' section under the "Club Wear" directory.

At 6:25pm the meeting adjourned to the Hammond Planetarium in the Science building on HFFC's campus. Bob Clubb proceeded to treat the club attendees to a special presentation of the Fall night sky tour and Mars exploration history (with Curiosity) programs. In addition, Tim Campbell presented a unique musical LED light show on the dome.

HJRO Update

by Greg Knekleian

I made a last minute decision to go out and observe Thursday November 15th. Earlier forecasts predicted 50 percent cloud cover. But the weather was much better very transparent with moments of excellent seeing. I notified club members that I was out on that night and It was cold out, with conditions were good. fairly high humidity, but conditions were really nice for looking at Jupiter. Jupiter is nearing opposition. We had a few visitors on Thursday. I was able to spend some time experimenting with the Iphone and Canon EOS to see what kind of quality photos I could get. Details in the cloud band near the great red spot were amazing and we could go a little over 350x before we hit a visual limit on detail. Seeing was awesome for brief moments, maybe 5% of the time.

Aaron Simon a new FAAC and HFCC member stopped by late both evenings. He saw the FAAC announcement on Facebook. (*Thursday Jupiter seeing quality limit: 15mm eyepiece at 3911mm in the C14.*)

Friday was forecast to be better than Thursday. I announced that we'd be open for HFCC club members. Cold, damp conditions and last minute schedule changes may have reduced HFCC club turnout. Aaron showed up late Friday night as well. We had four other FAAC members, Art Parent, Rick Arzadon, Tim Campbell and myself for Friday viewing.

Early Friday night, a few of us did some solar viewing. After 7PM Big Bertha and the BT-80 binocular provided additional views of star clusters, Jupiter and the crescent moon. Three visitors from Lake Erie Metro Park stopped by late Friday night as well. (Friday Jupiter seeing quality limit for C14: a 32mm eyepiece at F11)

Some discussion of meteor shower observing took place at HJRO. Bright urban skies seem to always disappoint me when attempting to look for a meteor shower.

ICY FROST: I decided to cancel the opening for Saturday, due to the poor weather forecasts. Weather predictions for Saturday included 95% humidity.

I watched a few science shows on Netflix and did some late night cooking (stuffed green peppers). At about 4AM, I decided to head out and take some time lapse photos of a typical urban "meteor shower" in Lincoln Park. I hoped to document the limits of our skies in Lincoln Park. The 95% humidity provided dense fog, so no meteors would be visible. I decided to take a trip and document some "light flow" of various local street lights using the Canon EOS and in the fog.

BOY SCOUT TROOP, rescheduled twice.

We will have a scout troop tour HJRO when the weather is clear enough for Monday night observing. We've already cancelled two Monday night sessions. We are expecting about 40 visitors for the scout visit (once we get a clear Monday.)

I'm hoping to start doing more solar observing with school science classes. The internet setup has been restored with debugging help from Tim Campbell.

Humidity affects seeing conditions:

Rick Arzadon mentioned: "When observing high altitude jet vapor trails. If the trails quickly disappear (a sign of low humidity), the night's sky will offer better seeing".

For solar: Visually we've seen some nice views of jets passing in front of the sun, while looking at it through the safe HA Solar telescope. This usually happens late in the day at HJRO. (Metro airport has a decent flying pattern through the setting sun. I should probably try to get some video of distant jets flying over the face of the sun.)

HJRO Update (continued)

by Greg Knekleian

For HJRO we can do solar viewing up to about 4PM now. After 4:30 the sun is to low this time of year for HJRO's location.

FUTURE EVENTS

- Lake Erie Metro Park

December 13th 6:30PM - Lake Erie Appreciation dinner

LEMP is having a volunteer appreciation dinner December 13th at the Marshlands Museum at Lake Erie Metro Park. They will provide a meat dish which means, bringing "a plate to pass would be great!"

(Hmm. . . kind of a dinner potluck.)

FAAC is invited as we have been volunteers for events there.

They want RSVP by December 1st.

734 379-5020 ext 5736 or email Paul Cypher@Metroparks.com

32481 West Jefferson Brownstown, MI 48173

- HJRO

Science day for February 5th 2013. 6:30PM

Lincoln Park Middle School is having a science academic night on February 5th from 6:30 to 7:30PM. They would really appreciated if we could be there with volunteers and open up the observatory. Last year this was a big hit of the science night.

I'm thinking this year, we might even put up a display table inside the school with a volunteer or two inside as well (in warmer environment.) This would allow more discussion in a larger setting and give more exposure to students and parents. After attending the Plymouth Astrophotography SIG group, I decided to try stacking ten photos I took of Jupiter on November 15, at HJRO.

It took a while to tweak the image and several steps. Some artifacts might have been introduced, none were "retouched" out, except by global filter adjustments. I used (High Dynamic Range) HDR curve processing in Photoshop but also HDR processing in a program called Photomatix Pro. My techniques might be a little bit more experimental and not recommended by pure "astro image" processors. I tended to use much to much color processing. I used both negative and positive curves in the RGB adjustments for this image. The end result was not as good as it could have been. It's better to record Planetary with webcams to AVI files and process the movie. Using stacking techniques on a AVI movie file works better. Ι ended up stacking ten stills, from the Canon EOS which were exposed handheld through an eyepiece. With a few hours of tweaking, the image looks okay. But it's kind of a garbage in, garbage out kind of astronomy photo process.

This is just a "test" and there is a lot of room for improvements.



Jupiter at 318x: Ten hand held photos at ISO 1600 1/40th second taken through Canon EOS t1i. 318x through C14 at HJRO. Processed with Photomatix Pro, Photoshop and Preview for Macintosh.

Solar filter creation

By Greg Knekleian

The transit of Venus event created the desire to have more solar telescopes personally available. I purchased a sheet of Baader Astrozap film from OPT corp and awaited for the sheet that was roughly 20 inches by 10 inches in size to arrive. I also purchased a 5 inch Thousand Oaks RG solar film filter. (It was one of the sizes left in stock.)

The Baader film and filters arrived well packed to avoid damage in a huge box. The box had a large flat piece of cardboard inside that protected the Astrozap film and allowed it to lay completely flat and safe from damage. The film came with instructions. The Baader film cost about \$65 without shipping. Harold later told me he remembers the good old days with Baader film of that size cost about \$25.

With the sheet of Baader Astrozap film I started to create solar filters for many of my telescopes. We also created a few for a couple of other FAAC members.

For \$65 I can make several filters, and it's more affordable compared to those nice aluminum mounted cells out there. The aluminum cells manufactured by Thousand Oaks are a lot nicer than the homebuilt cardboard cells, but they are basically the same quality when you look through them. With any solar filter the key is good construction and a secure fit to the telescope often with plenty of tape.

The instructions for making filters came with the Baader film. They suggest it's a good idea to make a filter with two sides as a holder, with something kind of gasket like material, one can use thin poster board. They show this method, and suggest thin double stick tape and white glue to hold the filters in place in the filter holder. I used thin sealing tape, used to seal plastic weather seals to windows. That tape is both thin and very sticky. The cardboard filter holder is then attached to more rings of cardboard or whatever material you select as the holding tube.

The filter holder is often attached together with glue or some other creative method that is safe.



Homemade plug design and store bought aluminum cell filter

PLUG DESIGNS

Rather than creating filters that went over the outside of the OTA, due to the various designs and material I selected, I ended up creating Filters that fit inside the plug designs. telescope and were taped into place. Μv Nexstar 4se, the little Bushnell ball mount telescope and my Vixen binoculars all could use a type of plug design filter instead of a filter cell that fit on the outside. The Vixen filter set used a thick poster board container as the "plug". The thick poster board container actually was 35 years old, and had been in the attic for decades. I found a plastic poster end cap from newer poster tubes that fit perfectly as a kind of gasket seal holder of the solar filters. The plastic gasket seal sealed off the light, but not all of the light and I had to make additional gaskets or light baffles out of cardboard to insure no stray light entered around the filter. The completed plugs screw into the dew caps of the Vixen BT-80s. With some additional tape I'm ready to observe.

For an old pair of Kmart focal 10 by 50 binoculars, I created solar filters that would fit inside the end caps which securely screw on the end of the binoculars, needing no mounting tape for the setup.

Other telescopes called for different designs, depending on their construction. Jim Barnes quickly cut a 3 inch hole inside a cardboard cover and taped filter material to the inside of a cardboard filter, using a 4 inch square sheet of film to create a 3 inch filter. He didn't trim away the corners for his filter, because he didn't create a set of round retaining gaskets. A much quicker design to build with less gaskets. But of course you'll need to inspect the tape holding the material in the cap more before each use, to insure your tape holding the filter in place will hold. Ford Amateur Astronomy Club Star Stuff Newsletter P.O. Box 7527 Dearborn MI 48121-7527

