



# STAR STUFF

The Newsletter of the Ford Amateur Astronomy Club

Volume 23, Number 8

August 2013

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So Does Dark Energy**

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## Size Does Matter, But So Does Dark Energy

By Dr. Ethan Siegel

Here in our own galactic backyard, the Milky Way contains some 200-400 billion stars, and that's not even the biggest galaxy in our own local group. Andromeda (M31) is even bigger and more massive than we are, made up of around a trillion stars! When you throw in the Triangulum Galaxy (M33), the Large and Small Magellanic Clouds, and the dozens of dwarf galaxies and hundreds of globular clusters gravitationally bound to us and our nearest neighbors, our local group sure does seem impressive.

Yet that's just chicken feed compared to the largest structures in the universe. Giant clusters and superclusters of galaxies, containing thousands of times the mass of our entire local group, can be found omnidirectionally with telescope surveys. Perhaps the two most famous examples are the nearby Virgo Cluster and the somewhat more distant Coma Supercluster, the latter

containing more than 3,000 galaxies. There are millions of giant clusters like this in our observable universe, and the gravitational forces at play are absolutely tremendous: there are literally quadrillions of times the mass of our Sun in these systems.

The largest superclusters line up along filaments, forming a great cosmic web of structure with huge intergalactic voids in between the galaxy-rich regions. These galaxy filaments span anywhere from hundreds of millions of light-years all the way up to more than a billion light years in length. The CfA2 Great Wall, the Sloan Great Wall, and most recently, the Huge-LQG (Large Quasar Group) are the largest known ones, with the Huge-LQG -- a group of at least 73 quasars -- apparently stretching nearly 4 billion light years in its longest direction: more than 5% of the observable universe! With more mass than a million Milky Way galaxies in there, this structure is a puzzle for cosmology.

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# STAR STUFF

## August 2013 - Vol. 23 No 8

STAR STUFF is published eleven times each year by:

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

PRESIDENT: Gordon Hansen  
VICE PRESIDENT: Jon Blum  
SECRETARY: Doug Bauer  
TREASURER: Chuck Jones  
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NEWSLETTER EDITOR: 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](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 at [jenzdanowski@yahoo.com](mailto: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](http://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/>

# FAAC General Meeting Minutes

## July 25th, 2013

By Doug Bauer

### Opening:

The meeting was called to order in the Berry Auditorium at 5:35 PM by Vice-President, Jon Blum. All attendees introduced themselves. Jon welcomed new members and guests. 34 people were in attendance.

### Observing Experiences:

- Mohammed M. did some observing with friends in field where he managed to step in a deep mud puddle with his dress shoes (a sequel to his shoe adventures at the Winter Star Party a few years ago)
- Robert C. went to the Headlands Dark Sky Preserve in northern Michigan, including a moonlight cruise on the Shepler Ferry. Bob included the details on the following astronomy events:

At the Headlands (West of Mackinaw City)  
[www.emmetcounty.org](http://www.emmetcounty.org)

These events are free  
July 29, 2013  
Meteor Shower Picnic 9-11 P.M.  
Prelude to the Delta Aquarids

Aug 12  
MONDAY, AUG. 12  
Picnic with the Perseids & the Lights Out Across the Straits Challenge

SATURDAY, SEPTEMBER 21, 2013  
What's in a name? (Names of the full moon)

SATURDAY, OCTOBER 26, 2013  
5th Annual Headlands Challenge! and Triple Fright Night in Northern Emmet County

SATURDAY, NOVEMBER 2, 2013  
SO YOU WANT TO BE AN ASTRONOMER  
With guest speaker, astronomer Terence Dickinson

FRIDAY, DECEMBER 20, 2013  
WOMEN IN THE STARS

The following are joint events between the Headlands and Shepler's Ferry Service. These will cost you money. Buying tickets in advance are recommended. The website is <http://sheplersferry.com/>

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*Digital mosaic of infrared light (courtesy of Spitzer) and visible light (SDSS) of the Coma Cluster, the largest member of the Coma Supercluster. Image credit: NASA / JPL-Caltech / Goddard Space Flight Center / Sloan Digital Sky Survey.*

## Size Does Matter, But So Does Dark Energy

*(continued from Page 1)*

You see, with the normal matter, dark matter, and dark energy in our universe, there's an upper limit to the size of gravitationally bound filaments that should form. The Huge-LQG, if real, is more than double the size of that largest predicted structure, and this could cast doubts on the core principle of cosmology: that on the largest scales, the universe is roughly uniform everywhere. But this might not pose a problem at all, thanks to an unlikely culprit: dark energy. Just as the local group is part of the Virgo Supercluster but recedes from it, and the Leo Cluster -- a large member of the Coma Supercluster -- is accelerating away from Coma, it's conceivable that the Huge-LQG isn't a single, bound structure at all, but will eventually be driven apart by dark energy. Either way, we're just a tiny drop in the vast cosmic ocean, on the outskirts of its rich, yet barely fathomable depths.

Learn about the many ways in which NASA strives to uncover the mysteries of the universe: <http://science.nasa.gov/astrophysics/>. Kids can make their own clusters of galaxies by checking out The Space Place's fun galactic mobile activity: <http://spaceplace.nasa.gov/galactic-mobile/>

*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

### August 1, 2013

By Chuck Jones

#### Ford Amateur Astronomy Club Balance Sheet As of August 1, 2013

	Aug 1, 13
<b>ASSETS</b>	
<b>Current Assets</b>	
Checking/Savings	
CD 200599272	1,057.80
CD 205196033	1,002.32
CD 89265268	1,103.67
Checking	315.23
FAAC Savings	
Equipment	1,429.08
FAAC Club Savings	428.88
Scholarship	409.56
<b>Total FAAC Savings</b>	<b>2,267.52</b>
Petty Cash Account	194.27
<b>Total Checking/Savings</b>	<b>5,940.81</b>
<b>Other Current Assets</b>	
GLAAC	5,699.64
<b>Total Other Current Assets</b>	<b>5,699.64</b>
<b>Total Current Assets</b>	<b>11,640.45</b>
<b>TOTAL ASSETS</b>	<b>11,640.45</b>
<b>LIABILITIES &amp; EQUITY</b>	<b>0.00</b>

### 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/>

## Meeting Agenda - August 22nd

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

### Opening/Introduction/Member Observing

#### Main Presentation:

Planetarium-Fall Show

Bob Clubb

### Club Projects/Committees/Member Support

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

## FAAC Equipment Report 7/13/13

(continued on Page 5)

## 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 **September 12th**. The meeting room location – HFCC Admin. Services and Conference Center (same building), Berry Amphitheater Auditorium.

Topics invited. Pizza served.

## FAAC Events 2013

**Thursday September 5th-8th - Great Lakes Star Gaze in Gladwin, MI**

**Friday September 27th-28th - Astronomy at the Beach at Kensington Metro Park**

*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.

## Member Photos



*Above: Photo taken by Greg Knekleian through Ken Anderson's large Dob. No processing. 20mm Ethos eyepiece in lens discovery.*

### **FAAC Equipment Report 7/13/13**

*(continued from Page 4)*



# FAAC General Meeting Minutes July 25th, 2013

By Doug Bauer

## Observing Experiences (cont.):

2013 Dark Sky & Moon Cruises

Adults: \$25.00 -- Children: \$10.00

Infants free but must sit in parent's lap.

Sunday, July 28

Delta Aquarid Meteor Shower Cruise

11:00pm – 1:00 am

Sacre Bleu

AUGUST

Tuesday, August 6

Sunset Cruise

8:00 – 9:30 p.m.

Sunday, August 11

Perseid Meteor Shower Cruise

11:00pm – 1:00 am Sacre Bleu

Tuesday, August 20

Full Moon Cruise

8:00 – 10:00 p.m.

SEPTEMBER

Friday, September 6

New Moon Cruise

8:30 – 10:00 p.m.

Thursday, September 19

Harvest Moon Cruise

7:00 – 8:30 p.m.

Traverse City

[www.magnorth.org](http://www.magnorth.org)

Midwest Space Fest

October 4 & 5

This is not a totally free event, but you get Alex Filippenko

October 4th Dark sky film@ State Theater @ 6 PM  
\$15 (\$5 student)

Launch Party @ Ecco Event @ 9 PM \$25 ((\$15 student)

October 5th

Alex Filippenko's "Dark Energy and the Runaway Universe" @ 11 AM

\$25 (\$15 student)

Total Package \$50

- Dale P. measured the orbit of Saturn's moon Titan using his telescope
- Ken A. observed at July 13th FAAC Beginner's Night and attended the Harlon Neuville presentation at Seven Ponds Astronomy Club
- Brian K. observed Uridium flares and other satellites
- Milton F. attended the WAS Picnic on July 13th and observed many objects.
- Ron and Catherin P. did some observing in Arizona, but there was a lot of dust in the air.

## What's Up in August?

There was no What's Up in August due to Gordon Hansen being out of town.

## Main Program:

Telescopes and Optics - Jack Brisbin (University Lowbrows)

Jack described the optics of various telescopes and eyepieces and, the key components of the various types of optic systems. He also covered anatomy of the human eye, light pollution, atmospheric stability, photography vs visual observing, and limiting magnitude.

He talked about the Young Astronomer Program in Ann Arbor - [www.youngastronomer.org](http://www.youngastronomer.org)

## Tech Talk:

No Tech Talk.

## Business Meeting:

Secretary's Report in Star Stuff was approved.

Treasurers Report in Star Stuff was approved.

Equipment Report was presented by Equipment Manager, Dennis Salliotte. Dennis has an e-mail address ([Equipment@FordAstronomyClub.Com](mailto:Equipment@FordAstronomyClub.Com)).

You can send changes in who has equipment or to find out who has the equipment to Dennis. There is also a database on the Yahoo Group which lists who has each piece of club equipment

A change to the FAAC Bylaws was proposed and read at June's meeting. The change is meant to address a part of the bylaws that says that club assets cannot be used to the benefit of any individual. The change would allow loaning of specific club assets to individuals to enhance their skills and knowledge. It would cover things like: club scopes, books, Sky Quality meter, and other such assets.

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## HJRO Update

by Greg Knekleian

Near the end of August the telescope in the observatory seemed to be working quite well. Our latest "fix the leak attempt" didn't fully work. Some water came in and shorted out a wall socket which has been replaced three times now. We have a separate circuit and breaker switch for a few of the "up high" A/C sockets so we keep that off when we open up until the water problem is solved and another receptacle is installed.

Seven FAAC members were out to view the recently discovered nova. Tim Dey and Tim Campbell spent some time confirming that the pointing accuracy was synced and we were indeed looking at the new nova. All seven of us saw the nova which was quite bright at Magnitude 6.2 or so when we saw it. Tim Campbell imaged the nova with his Canon EOS through the C14 and shared that image with the Yahoo group.

I missed the FAAC picnic and some excellent observing at the August beginner's night. I was able to stop by in Dearborn and check out the sidewalk astronomy Harold was doing.

Late in August, I opened up HJRO to give a tour to a few friends. They saw M13, Neptune, Saturn, the Ring nebula, the moon and more.



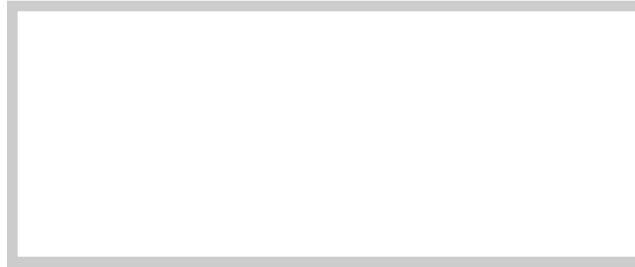
*Katherine, Jared and Natalie stopped by to observe late in the month of August*

*During the FAAC picnic I stopped by to visit and hopefully observe in Dearborn with Harold Thomason. Clouds moved in over Dearborn and ruined any viewing attempts, but it was clear at Island Lake.*

*(left) Image of the new nova by Tim Campbell at HJRO through the C14*



Ford Amateur Astronomy Club  
Star Stuff Newsletter  
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## FAAC General Meeting Minutes July 25th, 2013

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### Business Meeting (cont.):

The wording is as follows with the change underlined and bolded:

#### ARTICLE 1 SECTION 3 USE OF INCOME OR ASSETS

Any income or assets of the ASTRONOMY CLUB shall not inure, in whole or in part, to the direct or indirect benefit of any individual and shall be employed only in the pursuit of the ASTRONOMY CLUB objectives as set forth herein, Article 1, Section 4 OBJECTIVES, **except that the Executive Board is empowered to set up procedures for the loaning of books and other ASTRONOMY CLUB assets to individual members for the enhancement of skills and knowledge of said individual members.**

The second reading of the change was done and voted on. It was approved unanimously. It will be incorporated into the FAAC by-laws.

### Projects and Events:

- Beginners Nights 7:00 PM:
  - August 10th at Island Lake - Also the FAAC Multiclub Picnic (begins at 5:00 PM)
  - October 12th - at Lake Erie MetroPark - Erie Skies Event
- July 27, 28 - Makers Fair at The Henry Ford - James French is looking for more volunteers to man the FAAC Booth and bring Solar Scopes
- August 4th - 7:00PM - Seven Ponds Astronomy Club Picnic
- September 5-8 - Great Lakes Star Gaze - Gladwin
- September 27, 28 - Astronomy At the Beach at Kensington MetroPark

Bob MacFarland announced that Cranbrook has a paid position open for someone to do Planetarium shows and run the Observatory. Interested candidates should send their resumes to Cranbrook.

The meeting was adjourned by Vice-President, Jon Blum at 7:35 PM.