



STAR STUFF

The Newsletter of the Ford Amateur Astronomy Club

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September 2013

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How to hunt for your very own supernova!

By Dr. Ethan Siegel

In our day-to-day lives, stars seem like the most fixed and unchanging of all the night sky objects. Shining relentlessly and constantly for billions of years, it's only the long-term motion of these individual nuclear furnaces and our own motion through the cosmos that results in the most minute, barely-perceptible changes.

Unless, that is, you're talking about a star reaching the end of its life. A star like our Sun will burn through all the hydrogen in its core after approximately 10 billion years, after which the core contracts and heats up, and the heavier element helium begins to fuse. About a quarter of all stars are massive enough that they'll reach this giant stage, but the most massive ones -- only about 0.1% of all stars -- will continue to fuse leaner elements past carbon, oxygen, neon, magnesium, silicon, sulphur and all the way up to iron, cobalt, and, nickel in their core. For the rare ultra-massive

stars that make it this far, their cores become so massive that they're unstable against gravitational collapse. When they run out of fuel, the core implodes.

The inrushing matter approaches the center of the star, then rebounds and bounces outwards, creating a shockwave that eventually causes what we see as a core-collapse supernova, the most common type of supernova in the Universe! These occur only a few times a century in most galaxies, but because it's the most massive, hottest, shortest-lived stars that create these core-collapse supernovae, we can increase our odds of finding one by watching the most actively star-forming galaxies very closely. Want to maximize your chances of finding one for yourself? Here's how.

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STAR STUFF

September 2013 - Vol. 23 No 9

STAR STUFF is published eleven times each year by:

FORD AMATEUR ASTRONOMY CLUB
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Dearborn MI 48121-7527

PRESIDENT: Gordon Hansen
VICE PRESIDENT: Jon Blum
SECRETARY: Doug Bauer
TREASURER: Chuck Jones
WEBMASTER: Greg Ozimek
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).

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/>



Left: Even a daytime photo of a planet can be corrected and look like it was taken at night using negative curve processing.

Afocal Image from Iphone through C14 at 888x with about 6x digital zoom.

Processed in Filterstorm.



(Above) Lunar Image from Tim Campbell

"For this image, we used the Meade 80mm APO with a TeleVue 2x Powermate (I did crop in just *slightly* but it does a much better job of filling the camera frame with the 2x.)"

ISO 100, 1/100th sec, f/12 (it's an f/6 scope with a 2x powermate)

ALSO NOTE:

Image exposure was set once using the Looney 11 rule.

From Wikipedia -

The basic rule is, "For astronomical photos of the moon's surface, set aperture to f/11 and shutter speed to the [reciprocal of the] ISO film speed [or ISO setting]."

With ISO 100 film / setting in the camera, one sets the aperture to f/11 and the shutter speed to 1/100 or 1/125 second (on some



SN 2013ai, via its discoverer, Emmanuel Conseil, taken with the Slooh.com robotic telescope just a few days after its emergence in NGC 2207 (top); NASA, ESA and the Hubble Heritage Team (STScI) of the same interacting galaxies prior to the supernova (bottom).

How to hunt for your very own supernova!

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Pick a galaxy in the process of a major merger, and get to know it. Learn where the foreground stars are, where the apparent bright spots are, what its distinctive features are. If a supernova occurs, it will appear first as a barely perceptible bright spot that wasn't there before, and it will quickly brighten over a few nights. If you find what appears to be a "new star" in one of these galaxies and it checks out, report it immediately; you just might have discovered a new supernova!

This is one of the few cutting-edge astronomical discoveries well-suited to amateurs; Australian Robert Evans holds the all-time record with 42 (and counting) original supernova discoveries. If you ever find one for yourself, you'll have seen an exploding star whose light traveled millions of light-years across the Universe right to you, and you'll be the very first person who's ever seen it!

Read more about the evolution and ultimate fate of the stars in our universe: <http://science.nasa.gov/astrophysics/focus-areas/how-do-stars-form-and-evolve/>.

While you are out looking for supernovas, kids can have a blast finding constellations using the Space Place star finder: <http://spaceplace.nasa.gov/starfinder/>.

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
September 20, 2013
 By Chuck Jones

**Ford AmateurAstronomy Club
Balance Sheet**

As of September 20, 2013

Sep 20, 13

ASSETS

Current Assets

Checking/Savings	
CD 200599272	1,057.92
CD 205196033	1,003.02
CD 89265268	1,104.50
Checking	291.14
FAAC Savings	
Equipment	1,588.43
Scholarship	430.56
Total FAAC Savings	2,018.99
Petty Cash Account	110.02
Total Checking/Savings	5,585.59
Other Current Assets	
GLAAC	4,191.29
Total Other Current Assets	4,191.29
Total Current Assets	9,776.88
TOTAL ASSETS	9,776.88
LIABILITIES & EQUITY	0.00

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 - September 26th

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

Opening/Introduction/Member Observing

Main Presentation:

Lake Angus Observatory Jim Shedlowsky

Club Projects/Committees/Member Support

Club Business/Secretary/Treasurer/Equipment Reports

FAAC Equipment Report 9/12/13

Item	Currently Held By:	Date Last Verified
Telescopes		
4" Dobsonian	George Korody	8/14/13
4 ½ " Galileo Alt/Az Reflector	James French	6/11/13
8" Orion 8XTi Dobsonian	Matthew Kehoe	7/25/13
4" Donated Reflector in need of repair	George Korody	8/14/13
Presentation Tools		
Projector	Gordon Hansen	6/12/13
Projection Screen 8'	Bob MacFarland	5/2/13
Speaker System w/wireless mic	Greg Ozimek	8/1/13
Bullhorn	Gordon Hansen	4/10/13
DVD Player	Gordon Hansen	4/10/13
Projection Screen 6'	Gordon Hansen	5/2/13
Demonstration Tools		
Weight On Planets Scale	George Korody	8/14/13
Lunar Phase Kit	Bob MacFarland	3/12/13
100 ft Scale Model Solar System Kit	Bob MacFarland	3/12/13

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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 10th**. The meeting room location – HFCC Admin. Services and Conference Center (same building), Berry Amphitheater Auditorium.

Topics invited. Pizza served.

FAAC Events 2013

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)

Display Items		
Astronomy Event Sign (3' X 6')	Gordon Hansen	4/10/13
PVC Display Board - Folding	Doug Bauer	8/1/13
Banner – Large (32" X 16")	Doug Bauer	8/1/13
Banner – Medium (24" X 48")	Doug Bauer	8/1/13
Banner – Small (24" X 32")	Bob MacFarland	6/11/13
Tri-Fold Presentation Boards	Don Klaser	3/13/13
Tri-Fold Poster Board (Early Club Photos)	George Korody	8/14/13
Other		
Sky Quality Meter	Syed Saifullah	7/13/13
Canopy (10' X 10')	Greg Ozimek	8/1/13
Equipment Etching Tool	Dennis Salliotte	9/12/13

FAAC General Meeting Minutes

August 22nd, 2013

By Doug Bauer

Opening:

The meeting was called to order in the Berry Auditorium at 5:35 PM by President, Gordon Hansen. All attendees introduced themselves. There were about 40 people in attendance.

Observing Experiences:

- Milton F. observed in northern Michigan near Lewiston. He observed the Perseids meteor shower. Seeing about 7 meteors per minute.
- Brian K. has been observing the sun in H Alpha as it goes through its magnetic reversal.
- Dale P. went to Astro Blast in Pennsylvania and won a 22mm 2" 100 degree field of view eyepiece.
- Doug B. and John L. (along with several Seven Ponds members) participated in the Imlay City movies in the park program. They set up telescopes for the families that came to see the movie ET. There were about a 160 people in attendance.
- Tim C. and several other members observed and photographed the Nova in Delphinus from the HJRO site.
- John M. also observed the Nova with Ken A. and took a photo which was posted to the club Yahoo Group.
- Bob C. went to the Headlands Park near Mackinaw to observe the Perseids. They had a contest between St. Ignace and Mackinaw City to see who could turn off the most lights. Even the lights on the cables of the Mackinaw Bridge were turned out.
- Ken A. observed at the Club Picnic until 2:00AM, then watched the Perseids until 5:00 AM.
- Syed S. went to the Sunset Astronomy Club near Midland and saw the Perseids and the Nova.
- Herman H. took his grandchildren to Muskegon State Park to show them various night time objects from the beach. As he used his green laser pointer to point out various objects a small crowd gathered to listen to him talk. When he looked around, he noticed that his grandchildren had wandered off to do other things, but the small crowd enjoyed his talk.
- Matthew K. went to the Wilson Observatory in California and was able to observe with the 60" reflector.

What's Up in September - Gordon Hansen:

- Gordon showed a photo that he took of the Nova in Delphinus.
- Sept 5 - New Moon - start of the Great Lakes Star Gaze
- Sept 19 - Full Moon
- Sept 27 - Third quarter Moon - start of Astronomy at the Beach
- Planets:
- Sept 5, beginning at 2:00AM - Jupiter in Gemini
- Sept 8, 6:00 AM - Mars in the Beehive and Comet ISON passing nearby
- Many Messier Objects including Andromeda
- Milton French volunteered to do the What's Up in the Month presentation for future meetings in John Schroer's absence.

Tech Talk:

No Tech Talk.

Business Meeting:

- Secretary's Report in Star Stuff - Approved
- Treasurers Report in Star Stuff – Approved
- Equipment Report was presented by Equipment Manager, Dennis Salliotte.
- Frank Ancona gave a presentation on the Annual Swap Meet. He is looking for volunteers to help with the event which is held in March.
- The September FAAC Board Meeting will be held on Friday, Sept 6th in Gladwin at the GLSG (the Board members all plan to be there)
- Greg Ozimek would like to start a Ham Radio SIG. He is proposing Radio Active SIG as the name. If you are interested, contact Greg.
- Milton French visited the Humbug Marsh Nature Preserve and spoke to the Ranger (Jamie). They may be interested in doing an Astronomy Event there. Milton will coordinate it.

Projects and Events:

September 5-8 - Great Lakes Star Gaze - Gladwin
 September 27, 28 - 6:00 PM - Midnight - Astronomy At the Beach at Kensington MetroPark - there will be a special guest speaker presentation for the astronomy club members on Saturday at 1:00 PM in the Kensington Nature Center followed by a dinner at Bakers for those that want to attend,

October 12th - at Lake Erie MetroPark - Erie Skies Event

The formal meeting was adjourned by President, Gordon Hansen at 6:35 PM and members were invited to walk to the HFCC Planetarium for a presentation by Bob Clubb.

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HJRO Update

by Greg Knekleian

September was an interesting month of observing at HJRO. Tim Campbell and Tim Dey continued to observe and test with the newer camera setup. They took some photos and stored them on HJRO's computer for further reference. I took a few photos of a few deep space objects.

This month I also toyed with negative curves to alter old daytime photos I took of the moon and Jupiter. I wondered if processing techniques could be used to get rid of daytime sky glow (Blue skies.)

I tried to remove daytime sky glow using negative "curve" processing. I tested this with the iPad app called Filterstorm. Filterstorm has R-red, G-green, B-Blue and L-luminance curves. Filterstorm also has color curves for Magenta, Cyan and Yellow. I used negative curves from these MCY colors to reduce daytime sky glow, I also used white balance and Luminance adjustments to get the photos to look more like a night time photograph. During some sessions FAAC observers chatted and talked while we took long test exposures of deep sky objects. One image is in the column of the right, we will have to take more exposures and dark frames to get better images with less noise.

We had a few glitches during some of the nights observing and are learning more about different photography options. We can use the Meade as our auto-guider for long c14 exposures. The F7 field reducer can be used for photography now (thanks to another purchase of a few parts by Tim Campbell.) I took some test photos to verify that we cannot use the F3.3 Meade field reducer, Tim Campbell was going to loan the observatory.

(Ironically the F3.3 looked good in a Canon viewfinder visually but the test photos showed massive coma like blurring.)

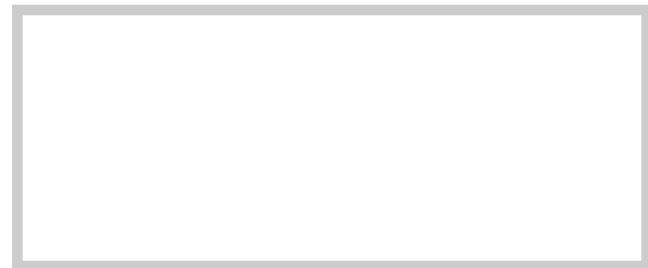


(above) During one clear night I visited my friend in Dexter and we observed from his front yard.

(below) M27 single five minute exposure with Canon EOS t1i processed in Nebulosity



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Star Stuff Newsletter
P.O. Box 7527
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FAAC General Meeting Minutes August 22nd, 2013

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Main Program:

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

ARTICLE 1 SECTION 3 USE OF INCOME OR ASSETS

Bob Clubb led the group to the HFCC Planetarium where he displayed the night sky for September and various club members pointed out objects and described how they star hop to find them. He also showed a video from the NASA space program.