



STAR STUFF

The Newsletter of the Ford Amateur Astronomy Club

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Wrinkle in Space-Time

Trudy E. Bell

When a massive star reaches the end of its life, it can explode into a supernova rivaling the brilliance of an entire galaxy. What's left of the star fades in weeks, but its outer layers expand through space as a turbulent cloud of gases. Astronomers see beautiful remnants from past supernovas all around the sky, one of the most famous being the Crab Nebula in Taurus.

When a star throws off nine-tenths of its mass in a supernova, however, it also throws off nine-tenths of its gravitational field.

Astronomers see the light from supernovas. Can they also somehow sense the sudden and dramatic change in the exploding star's gravitational field? Yes, they believe so.

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A Weekend to Remember - GLSG 3

President's Corner

Don Klaser, President, FAAC

It's Friday morning, and Jan and I finish loading up the Explorer. I keep turning an anxious eye to the sky - are those clouds really moving out? At 10:00 a.m. we hit the road, the words North I-75 have such a magical sound! By 1:00 p.m. we have arrived at River Valley RV Park, Gladwin, and begin setting up camp. As we continue, a number of FAAC members join us; the support our club gives to this event is great!

As the afternoon passes, more and more camp sites are moved into, and the clouds are moving out. With the night's weather report in mind, I figure those GLSG-3 hooded sweatshirts we ordered will come in handy!

At last - Nightfall! I've finish putting on the dew heaters and polar aligning the scope. Now, all I need is a 2-star alignment and I'm off to an enjoyable evening of viewing. NOT!! Repeated attempts to complete this procedure met with one snafu after another. Finally, I work through those problems and get the scope to choose its alignment stars.

...continued on page 2

STAR STUFF

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FORD AMATEUR ASTRONOMY CLUB
P.O. Box 7527
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PRESIDENT:	Don Klaser
VICE PRESIDENT:	Ed Halash
ACTING SECRETARY:	Bob MacFarland
TREASURER:	Gordon Hansen
NEWSLETTER EDITOR:	Dale Ochalek

CLUB INFORMATION

The Ford Amateur Astronomy Club (FAAC) holds regular general meetings on the fourth Thursday of each month, except for the combined November/December meeting held on the first Thursday of December. Meetings are held in the Administrative Services and Conference Center building at Henry Ford Community College in Dearborn. Refer to our website for a map and directions (www.boonhill.net/faac).

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.

Observing schedules and additional information are available by calling the FAAC Observing Hotline at 313-390-5456, and on the our website.

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 are as follows:

Annual – New Member:	\$30	(\$15 after July 1)
Annual – Renewal:	\$25	(\$30 after January 31)
Life Membership:	\$150	

Membership includes the STAR STUFF newsletter, discounts on ASTRONOMY and SKY & TELESCOPE 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 subscription request and payment. Do not send any money directly to the FAAC for this.

STAR STUFF NEWSLETTER SUBMISSIONS

Your submissions to STAR STUFF are more than welcome! Send your story and/or images to the editor at dake00k@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 that weekend will be included in that issue.

President's Corner *(continued from page 1)*

First is Altair; I hit the 'Go To' key and it goes, except that it points to where Altair was 2 hours ago. After numerous attempts to align the scope, and with my frustration level rising, I think, do I want to spend the night being cheesed off, or viewing? I chose the latter. Earlier, I had noticed a couple of LXD scopes on the field, so I decided to go and talk with the owners on Saturday. The rest of the evening was spent enjoyably viewing Mars and the Milky Way, using the slew keys.

Saturday morning arrives and I'm looking forward to the day's activities. I meet up again with the owners of the LXD scopes, and get some suggestions on correcting my problem. After lunch, Jan and I head down to the community building to take in the programs. One of the many things that the Sunset Astronomical Society (SAS) does in organizing this event is to provide an outstanding children's event. The engaging activities are really enjoyed by all the kids, hopefully sparking their interest in astronomy and science. This year's speakers were very interesting, especially Norbert Vance, on model rocketry. Too bad he couldn't fire one off!!

After dinner, there were prize drawings. The SAS has assembled a great lineup of door prizes (I wonder which one has my name on it?), and a number of them were won by our club members. Also, part of the weekend's activities included an astrophoto contest, and one of the winners was Tony Licata (Congratulations, Tony!).

It's almost dark when we return to the observing field. Dew heaters on, I begin the 2-star alignment, incorporating the suggestions I got from the other LXD owners. The pointing is better, but I may have to do a hyper tune on the drive to get it where it needs to be. While waiting for Mars to rise to a viewable height, I split my observing time between looking at double stars, and checking out some of the other scopes on the field. After a couple of hours on Mars, it's on to M42 - always a great sight! By about 3:00 a.m., the sandman is really doing a number on me, so - dew heaters off, and hello sleeping bag.

Sunday morning arrives with a clear sky and warming sun - another great weekend under the stars! I want to give Joe Bruessow, Kevin Dehne and the rest of the Sunset Astronomical Society a big 'Thank you' for putting on such a great event; it's a lot of work and you did an outstanding job again this year.

Can't wait to sign up for GLSG 4!

A (Newbie) View of the GLSG

Jim Dolfi

I arrived Thursday and setup a base camp in the River Valley RV Park, Gladwin. We had a large tent and plenty of room for tables cots, all the equipment and most important a heater.

The weather was about perfect for all but swimming. People running the park are very nice and helpful. They even deliver ice to your campsite. The showers were clean and the water was as hot as you needed.

Friday, we setup the viewing camp site and equipment. I provided an extension cord out to about 300 ft. between the vehicle drive spaces, where others could tap into the power. I did not notice if any took advantage of the convenience of power because I was busy with my equipment preparation for the night activities.

Many (15 or so) had setup camp sites on the hill before the official starting time Friday. For those that arrived Friday, there was no problem getting a good site. This year, River Valley (Kim and Patrick) mowed the back 10 acres of land on the hill to provide more space for participants. I believe there were almost twice the number of registered participants (my observation).

Friday, the moisture could have been a problem for some for 5 hours after sundown but that subsided during the night. Temperatures dropped into the 40's during the night and prompted frequent trips to the hot cocoa and coffee pots and ducking into the tents for relief from the cold. I had no problem with the cold because proper clothing for me was a down parka and insulated-water resistant boots (that combo keeps you comfortable all night) so slogging through wet grass did not result in damp feet.

Saturday was, in my opinion, was even better. No moisture, steady viewing and spectacular views of the Milky Way. One question I had was - do I look at the sky with eyes, or use my equipment? The guys with computer-controlled cameras had to make a decision; lose your night vision adaptation, or mess around with that computer controlled electronic stuff. I did both.

After getting the electronics setup, I covered the computer box with a black cloth and walked away to enjoy visual observing. I managed to keep my wife awake, by sharing the views and describing what we were seeing. We also had an ETX 90, perfectly aligned, and spent most of Saturday night doing the Messier marathon and other

preprogrammed tours – a good way to keep your spouse involved in the activities.

While waiting for the camera program to complete its 1 hour drizzle of M42, I escorted my wife around camp (she isn't comfortable asking questions of strangers), and we observed some of the most spectacular astrophotography I have ever seen. Bob from the Saginaw Valley group was shooting M31 with his ST12. It seemed you could count the stars in the center of that glowing galaxy, with his setup. We will probably see that picture in a publication one day. Did Bob miss the event, you may wonder? He spent all night setting up and making adjustments. I do not think so. That is what it is all about, having a good time and making your hobby fill your need for growing and improving – something like golf, you always want to improve performance.

For my old eyes, I would say Friday and Saturday were magnitude 6 nights, easily seeing the little dipper stars. Seeing was steady, and I got some of the best pictures I have ever taken - in spite being a newbie, and having a position on the learning curve that would be almost at the bottom of the chart.

During both days, viewing of the sun was excellent, with few if any clouds to contend with. Several people passing by our camp took advantage of looking at the sun through the SolMax 40 I had setup just outside of our base camp.

The technical sessions were good, swap shop was sparse. John Kirchhoff had almost the complete line of goodies from Riders Hobby setup next to his new motor-home strategically parked in front of the clubhouse. I was able to obtain some red computer screen film from him after begging him to take another look in the motor home. John did not even have time to unpack all the stuff he brought before getting mobbed with potential buyers and people wanting to chat.

For dinner, the meal offered this year was serve-yourself, all-you-can-eat style (seconds if there were leftovers, no additional charge). Reasonable food at a reasonable price; do it again guys. You could take the food to your tent, or stay and eat in the "clubhouse." Fewer people opted for the clubhouse this year.

I already look forward to next year, and a repeat of the last two years of GLSG. Is it too much to hope for having Michigan weather cooperate for three years in a row?

See you there.

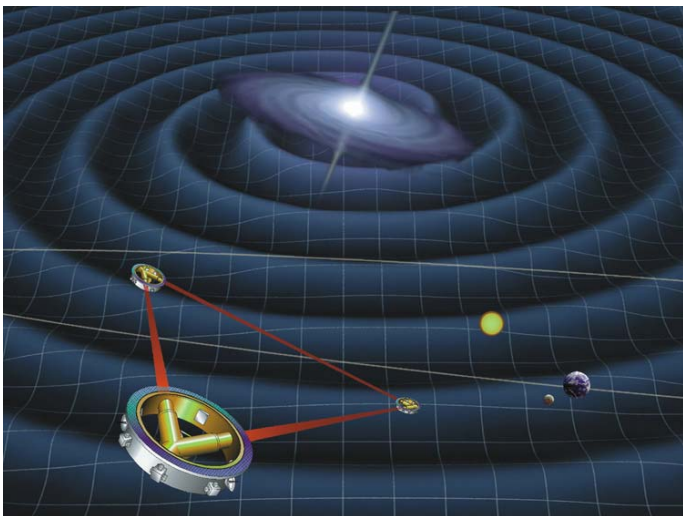
Wrinkle... *(continued from page 1)*

According to Einstein's general theory of relativity, changes in the star's gravitational field should propagate outward, like light—indeed, light speed. Those propagating changes would be a gravitational wave.

Einstein said what we feel as a gravitational field arises from the fact that huge masses curve space and time. The more massive an object, the more it bends the three dimensions of space and the fourth dimension of time. And if a massive object's gravitational field changes suddenly—say, when a star explodes—it should kink or wrinkle the very geometry of space-time. Moreover, that wrinkle should propagate outward like ripples radiating outward in a pond from a thrown stone.

The frequency and timing of gravitational waves should reveal what's happening deep inside a supernova, in contrast to light, which is radiated from the surface. Thus, gravitational waves allow astronomers to peer inside the universe's most violent events—like doctors peer at patients' internal organs using CAT scans. The technique is not limited to supernovas: colliding neutron stars, black holes and other exotic objects may be revealed, too.

NASA and the European Space Agency are now building prototype equipment for the first space experiment to measure gravitational waves: the Laser Interferometer Space Antenna, or LISA.



LISA's three spacecraft will be positioned at the corners of a triangle - 5 million kilometers on a side - and will be able to detect gravitational wave induced changes in their separation distance of as little as one billionth of a centimeter.

LISA will look for patterns of compression and stretching in space-time that signal the passage of a gravitational wave. Three small spacecraft will fly in a triangular formation behind the Earth, each beaming a laser at the other two, continuously measuring their mutual separation. Although the three crafts will be 5 million kilometers apart, they will monitor their separation to one billionth of a centimeter, smaller than an atom's diameter, which is the kind of precision needed to sense these elusive waves.

LISA is slated for launch around 2015.

To learn more about LISA, aim your browser to <http://lisa.jpl.nasa.gov>. Kids can also learn, and do a gravitational wave interactive crossword at <http://spaceplace.nasa.gov/en/kids/lisaxword/lisaxword.shtml>.

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

For Sale

Meade 10" LXD55 Schmidt Newtonian telescope Autostar guided, German Equatorial mount, "T"- adapter, Super Plossl 26-mm eyepiece, 1.25" and 2" eyepiece holders, battery pack for 8 "D" cell batteries, 25ft. 110v. power cord. Bought in 2002 for \$1200, will sell for \$1000, or possibly trade for another scope.

E-mail inquiries to: eddyelectro@talkamerica.net

Meade ETX Spotting Scope, 5 inch, Paragon Plus tripod, 26mm Super Plössl, 9.5mm Orion Epic, 13mm Orion Superwide Lanthanum. Nearly new, must sell. Could sell individually.

Contact Jack Fournier, 248-219-6222

MARS nights!

Bob MacFarland

An FAAC gathering at the Richmond Airport site is planned for both weekend nights, October 28/29. Be sure to pre-register at our Yahoo! group. If you haven't already – join the group (FAAC members only)!

<http://groups.yahoo.com/group/FordAstronomyClub>



John Kirchhoff



Tony Licata



Jim Frisbie

Astro Imaging SIG

Jim Frisbie

The August meeting of the Astro Imaging S.I.G. will be held, Thursday, November 10, 5:30 pm at Henry Ford Community College in Dearborn.

Tony Licata will speak on Photoshop Techniques for Processing Astro Images. All Club members and their guests are invited.

PLEASE NOTE—MEETING ROOM CHANGE! We will meet in the Hackett Conference room in the Health Careers building at HFCC. For directions, contact me at w8tu@comcast.net. If you drive to the Faculty parking lot gate with your car, it should open allowing you close to the building.

The SIG would also like to remind you to enter/vote in the FAAC Fall Astroimaging Contest. Voting begins November 16 and ends November 26 – visit the FordAstronomyClub group on Yahoo.

Astro Imaging Contest STATUS

Jim Frisbie

A total of 15 entries have been received to date. The Intermediate level is wide open! Remember after your images have been submitted, you can update them right up to the Contest deadline, November 15, 2005. There are at least a dozen Astro Imagers who have not submitted any entries. Aside from just participating in a fun Contest, there are \$150 in Rider's Gift Certificates waiting for the winners. So please get out those images from the last year, dust 'em off and submit them!

Please note the Contest submissions have been moved from the Photo section to the Files section (FordAstronomyClub group on Yahoo) to accommodate "Full Size" 800X600 images viewable by all Club members.

Fall Astro Imaging Contest

Jim Frisbie

Contest Rules

- Entry Deadline:** November 15, 2005
- Entry Levels:** Beginner (<1 year), Intermediate (<3 years), Advanced
- Entry Categories:** High Resolution Lunar/ Planetary; Solar; Deep Sky; Other (Aurora, Meteor Shower, Wide Field, Lightning, Night Sky, etc). Images taken between November 16, 2004 and November 15, 2005 are eligible.
- Limits:** The contest is limited to FAAC members ONLY!. Each member may submit only one entry per category (maximum 4).
- Photo Formats:** Entries may be photos (8"X 10" max), digital or digitized images (1mb jpeg, maximum).
- Information:** Please include your name and e-mail address, entry level, entry category, a title for the photo, a brief statement about the photo, where the photo was taken, when it was taken and the equipment used to take it. Each photographer retains copyrights to each image and grants permission for FAAC private and commercial usage with credits.
- Submit to:** Please send your submissions to Jim Frisbie, 1050 Penniman Ave., Plymouth, MI 48170 or via email to: w8tu@comcast.net
- No Photos Returned:** Photos will not be returned. Please do not send your only copy.
- Judging:** All Club Members are invited to vote online in the Yahoo Club Site. Each member has one vote per level & category (12 total). Voting begins November 16 and ends November 26.
- Winners:** 1st, 2nd, & 3rd place Winners will be announced and winning pictures will be displayed at the December 1, 2005 FAAC General Meeting. A Rider's \$50 gift certificate will be awarded to the top vote getters in each entry level (Beginner, Intermediate and Advanced).

FAAC General Meeting Agenda

October 27, 2005 (5:30 pm)

Opening/Introductions

Club Business Items

- Secretary / Minutes (Bob MacFarland)
- Treasurer's Report (Gordon Hansen)

Club Projects / Committees / Member support

- Mars Observing event (Don Klaser)
- Astro Imaging SIG – (Jim Frisbie)
- Star Stuff (Dale Ochalek)
- IMAX Film at The Henry Ford
- Walk-ins

(6:15) Presentation – Planetarium show at the HFCC Planetarium, located in the Science Bldg.

Minutes - September Meeting

Bob MacFarland

Don Klaser opened the meeting at 5:30 pm by welcoming everyone including three new members. 33 members and visitors were in attendance. **Clay Kessler, Harry Juday, Ken Anderson, Jim Frisbee, Mike Bruno, Jim Buzonik, Gary Strumolo, Bob Stonik and Doug Bock** reported on their recent observing experiences while **Anna Scott** shared her first lunar astro-image. **Great Job Anna!** Let's see some more.

Gary Strumolo proceeded to give a very interesting talk on a segment of his family trip to Ireland which he entitled "The Leviathan of Parsontown". This was a summary of his visit to the historic telescope built in the 18th century by Lord Rosse which was 72" in aperture and 58' long. This mammoth alt – az scope was limited to a view directed at the meridian (+/- 15 degrees) and vertically from 0 – 105 degrees given that its stone mount/foundation was permanently installed. The mirror was made of a polished brass formulation called speculum. Gary also outlined the applications the scope was used on and other works of Rosse and his family.

Next, **Clay Kessler** presented "Astrophotography with Film." Clay reviewed his reasons for getting into astrophotography, what one needs to get started, what can be photographed and how he photographs today. Throughout the talk, Clay showed many examples of his works of star trails, the moon, comets, nebulas, clusters, star fields and auroras. Clay offered many tips along the way including what films and what exposure times should be used for the best results.

The August minutes were accepted without comment. **Gordon Hansen** reported out on the status of the treasury. (See his detailed report elsewhere in this newsletter.)

Don Klaser reported that the club was invited to set up their scopes and binoculars outside the Henry Ford IMAX Theater one night during the showing of "Magnificent Desolation" 3D film. Tentative plans were to schedule for Friday, October 7th and hand out invitation flyers for the following night's Beginner's Night at Island Lake.

Bob MacFarland and others discussed the follow up from the GLAAC Astronomy at the Beach event. 12 members volunteered to staff the FAAC display table while some \$485 of FAAC merchandise was sold. **Thank you volunteers!!** The Astro-Imaging SIG plans to meet at 5:30 pm on October 13th in the HFCC Administrative Services and Conference Center building (for new location – see notice elsewhere in the newsletter). **Gordon Hansen** noted the FAAC Yahoo discussion group was going well.

Newsletter editor **Dale Ochalek** reiterated that due to the high cost of mailing, for all new members, the default newsletter delivery will be notification that the new issue has been posted on the FAAC web page. Current members receiving the newsletter in the mail, are encouraged to download it from the web site.

Mike Bruno reported that the HFCC planetarium will be up and running shortly and that they plan to have a showing for all FAAC members as part of the next general membership meeting (October 27th). **Don Summers** brought in flyers for the Saturday morning Physics series at U of M Ann Arbor. Call 734-764-4437, see the calendar listings on the FAAC Yahoo group page or go directly to: www.physics.lsa.umich.edu/nea/smp for more details.

Don Klaser reported that the club would have 2006 Auto Show tickets for sale at the combined November/December general membership meeting on December 1st.

Sky Calendar

Jim Frisbie

October

24	Mo	Last Quarter Moon 9:17 pm
25	Tu	Moon near Saturn-dawn
26	We	Moon near Saturn-dawn
29	Sa	Mars at closest approach to Earth this year
30	Su	Daylight Savings Time ends

November

1	Tu	New Moon 8:24 pm
3	Th	Mercury: Greatest Eastern Elongation (24 degrees) pm
3	Th	Venus: Greatest Eastern Elongation (47 degrees) pm
5	Sa	Moon to lower left of Venus-dusk pm
7	Mo	Mars at Opposition
8	Tu	First Quarter Moon 8:57 pm
14	Mo	Moon just above Mars
15	Tu	Full Moon 7:57 pm "Beaver Moon"
17	Sa	Leonid Meteor shower peaks
21	Mo	Moon near Saturn
23	We	Last Quarter Moon 5:11 pm
29	Tu	Crescent Moon below Jupiter-dawn

All times in Eastern Daylight Time.

This information was obtained from the Henry J. Buhl, Jr. Planetarium in Pittsburg, PA.

World Youth Day



Members of FAAC with Brother Guy Consolmagno (author – Turn Left at Orion) at the World Youth Day gathering in Lapeer Co. this past August. Left to right - Gordon Hansen, Dennis Salliotte, Tony Licata, Brother Guy, Don Klaser, Diane Worth, Bob Fitzgerald, Bob MacFarland, and Stephen Harvath.

Treasurer's Report

Gordon Hansen

Bank Accounts

Checking	\$	325.97
Savings	\$	2407.33

TOTAL Bank Accounts	\$	2733.30

Cash Accounts

Cash Account	\$	100.82

TOTAL Cash Accounts	\$	100.82

Asset Accounts

GLAAC	\$	626.45
Projector	\$	543.97
Scholarship	\$	303.60

TOTAL Asset Accounts	\$	1525.02

OVERALL TOTAL	\$	4359.14

Save Our Site!

Don Klaser

For those club members who are subscribers to our Yahoo! email group, no doubt you have read about the new mall that will be built a few miles from Spring Mill Pond. There have been a number of suggestions on how to make recommendations for the exterior lighting for the mall.

This is a great opportunity to make a difference; it's surprising how often the design of responsible lighting is overlooked because of a lack of information. I strongly encourage your participation. If you haven't signed up for our Yahoo! group, please do so today, and join the fun!
<http://groups.yahoo.com/group/FordAstronomyClub>

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Star Stuff Newsletter
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Moonlight Madness Sale!

Friday October 28th 7-11PM

Great saving on every item in the store...

Drawings for door prizes every hour!

Free refreshments!