



★ STAR STUFF ★

The Newsletter of the Ford Amateur Astronomy Club

October 2003
Volume 12 Number 10



Editor: Jim Frisbie

A MESSAGE FROM THE PRESIDENT

The past few months have been exciting times for FAAC, particularly with the efforts we put forth toward the two successful star parties. In September, FAAC teamed up with local astronomy clubs, park services, and local businesses to put together the most successful star party (GLAAC) in Michigan. Who would guess that we would host a two-day party of 10,000 to 12,000 people? Of course having great weather, informative presentations, lots of telescopes, and Mars shining at its brightest does help. In October, FAAC set a course to host its own annual star party. Unfortunately, whimsical Mother Nature put a damper of this day with cold and cloudy conditions. Despite this, FAAC members, Detroit Science Center, and local businesses were determined to ensure the public had a great time. A job well done!

Now it is time to gather our experiences and look into our star party plans for 2004. At October's FAAC Board Meeting, a great deal of discussion took place on our history of holding public events. A strong correlation was presented between weather and attendees. Events held on days of fair to great weather had about ten times the attendees at events held during undesirable weather conditions. We also learned that September is the best month for great weather and the best time for school children to attend. Furthermore, we learned that having an event over a two-day period increased the chances of having a good weather day. So how can we use this information for planning our next star party?

An idea was proposed at the last board meeting for combining our FAAC star party with GLAAC. Some advantages that were discussed of this concept are as follows:

- Increased probability of having good weather conditions
- Increased advertisement through Metro Park's Newsletter
- Larger parking lot, no need for a shuttle bus
- No need for rental of a large tent, although FAAC club could rent a smaller one for club specific needs
- Opportunity to start earlier in the afternoon to offer such events as "tech talks" with the guest speaker
- Opportunity to use Kensington Park's lecture halls
- Ability to leverage local astronomy clubs and park services to assist with event, giving the opportunity for FAAC members to enjoy the activities
- Opportunity to transfer monies normally spent on event to saleable items such FAAC personalized articles
- Increased awareness of FAAC

Although many of these benefits sound good, some of you may feel that we will be losing FAAC's only major annual event. Not true. We will still hold an FAAC star party but it will be of a smaller scale. The club will not solicit for presentations or sponsorship from local businesses. The club will take a more "back to basics" approach and offer the general public an opportunity to learn about the science and hobby of astronomy through personal dialog and use of our telescopes and binoculars. I feel this will be a great opportunity to put a twist on something we are already doing without too much risk but with so much more to gain.

At the upcoming general meeting we will be discussing the issue of combining FAAC star party with GLAAC. After which, I will be asking everyone to vote on the proposal. I appreciate your questions and ideas as we start planning for 2004.

Don Nakic

Ford Amateur Astronomy Club
P.O. Box 7527
Dearborn MI 48121-7527

<http://www.boonhill.net/faac>

Submissions to STAR STUFF are welcome Please write to the address above or contact the editor:

Jim Frisbie
via tele #: 734-453-1422
or email: w8tu@comcast.net

Dead line is the 15th of each month of publication.

Officers:

| | |
|----------------|---------------|
| President | Don Nakic |
| Vice President | Dale Ochalek |
| Secretary | Don Klaser |
| Treasurer | Gordon Hansen |

General Meetings:

The Ford Amateur Astronomy Club holds regular general meeting on the fourth Thursday of each month (except the combined November/December meeting held the first Thursday of December) at 5:00 PM at the Ford Motor Credit Building off Mercury Drive near Michigan Ave. in Dearborn.

Observing:

The Ford Amateur Astronomy Club observes at Spring Mill Pond within the Island Lake State Recreation Area near Brighton, Michigan. The club maintains a permit for after-hours access. Weather permitting, the club observes on Friday nights, Saturday nights, and nights before holidays.

Club Information:

Observing schedules and additional Club information is available by calling the Observing Hotline at: (313) 390-5456 or via the Ford Intranet: www.be.ford.com/astro/faac.html or the public Internet: www.boonhill.net/faac.

Club Membership:

Membership in the Ford Amateur Astronomy Club is open to Ford employees and non-employees. Write or call for an application.
Annual - New Member: \$30; Renewal: \$ 25 (before Jan 31 of each year); \$15 for new members after July 1.
Lifetime - \$ 150

Membership includes:

A subscription to the STAR STUFF newsletter and the quarterly newsletter the REFLECTOR published by the Astronomical League.

Discounts on ASTRONOMY and SKY & TELESCOPE magazines, after-hours access to the observing site and discounts at selected area equipment retailers.

Magazine Discounts:

Do not send money to FAAC for SKY & TELESCOPE or ASTRONOMY magazine subscriptions. We have a form that you send in with your subscription directly to the publisher to receive a \$10 discount. Pick up a form at the next meeting, or contact a club officer.

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MINUTES OF THE SEPTEMBER 25, 2003 FAAC GENERAL MEMBERSHIP MEETING By Don Klaser

The meeting was called to order by president Don at 5:00 p.m. Members introduced themselves, and enjoyed the pizza & pop as several individuals talked about their observing experiences during the past month.

Gordon Hansen gave the treasurer's report and Don Klaser gave the secretary's report. The next Astro-Imaging SIG meeting will be held on Thursday, Oct. 16, at 5:00 p.m. at the Family Learning Center on Rotunda Dr. Don Nakic spoke about the first annual FAAC swapmeet to be held in December. Chuck Jones talked about the observing tent he is donating for auction, with the proceeds being donated to the club. A brief re-cap of the GLAAC event at Kensington Metropark earlier this month was given. Don Nakic reported that we would have Entertainment & Gold 'C' books for sale at the star party.

Upcoming events were discussed - the first annual Great Lakes Star Gaze near Gladwin, Sept. 26 - 28; and several public outreach events.

Gordon Hansen gave the technical discussion on the Clear Dark Sky Clock website - cleardarksky.com. Ken Anderson lead the final planning session for the upcoming Island Lake Star Party on October 4 in place of the main program.

The meeting was adjourned at 7:00 p.m., and we went

outside to look at Chuck Jones' travel trailer that he is converting into an observing trailer.

TREASURERS REPORT SEPTEMBER 25, 2003

By Gordon Hansen

| | | |
|-----------------------------|-----------|-----------------|
| Bank Accounts | | |
| Checking | \$ | 489.98 |
| Savings | \$ | 271.00 |
| | ----- | |
| TOTAL Bank Accounts | \$ | 760.98 |
| Cash Accounts | | |
| Cash Account | \$ | 86.62 |
| | ----- | |
| TOTAL Cash Accounts | \$ | 86.62 |
| Asset Accounts | | |
| Books | \$ | - |
| GLAAC | \$ | 344.00 |
| Projector | \$ | 374.70 |
| Scholarship | \$ | 209.13 |
| | ----- | |
| TOTAL Asset Accounts | \$ | 927.83 |
| | ----- | |
| OVERALL TOTAL | \$ | 1,775.43 |

FILM, FILM, FILM!!!

By Clayton Kessler

September 9, 2003

If there is one thing that changes on a regular basis in astrophotography it is the selection of films appropriate to our use. While Eastman Kodak and Fuji strive to improve their film for their major market, the home snapshot taker, the astrophotographer can come up with the "short end of the stick". The last six years have been very good for astrophotographers with several low reciprocity failure, small grain color films that have been very sensitive to the H-alpha emissions in the nebula that we photograph. Unfortunately in the last year most of these films have been "improved" for better skin tones. This improvement seems to have lost the great red sensitivity in these films.

The good news is that all is not lost. Based on past experience I am expecting some new film, from Kodak, Fuji, Agfa, Konica or maybe from CVS to come on the scene and be hailed as the new "great film". In the mean time there are still some good films available. There are four easy to get films that are available today for our use. There are also several old films that still show up if

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you know what to look for. There are also films being tested by APMML members that MAY give good results.

Films To Look For:

- **Konica Centura 200 & Centura 400** - These two are the good news! While they can be hard to find locally (try Adray's) these are good color negative films for piggyback use. The 400 speed is also good for prime focus work. I have used the 200 speed stuff and I liked it. Some APMML members in Europe have been using the 400 speed for prime focus work with great results. Finding either of these is really worth the effort.

- **Fuji Super HQ 100** - Don't let the ISO 100 rating fool you. This is a very fine grain film color negative film with a good astro color balance and very low reciprocity failure. It is available at all the "big" stores at a very low cost. K-Mart, Wal-Mart, Meijers and many others stock this film in a four pack that sells for about \$5.00. This film works well out of the box for piggyback use and if hypered 90 minutes (50C +3 PSI) works very well for long exposure prime focus work.

- **Don't buy the "Superia 100"** - it has been "improved".

- **Kodak E-200 and Elite Chrome 200** - This is actually the same slide film - the E-200 is a "Professional" film that is temperature controlled while the Elite Chrome is the "consumer" version. Either one works very well as an astro film with low reciprocity failure and high red sensitivity. Some have said this film is a little too red but I have seen great results using it. Slide films also react well to "push" processing - an advantage for the astrophotographer! The "Pro" version costs several dollars a roll more than the consumer version, it is the same film, you be the judge!

- **Kodak Elite Chrome 100 EX** - While you might think that this would be a poor second choice to the E-200 testing has shown that it has less reciprocity failure than it's ISO200 sibling. I have seen some wonderful piggyback shots taken with this film and have no hesitation recommending it for astro use.

- **Fuji Provia 400** - Another slide film, this time by Fuji, that is reported to have a better red/blue color balance E-200. Many users have reported this to be an excellent astro film.

- **Kodak Maximum Versatility 800** - This newer film seems to have some reasonable red sensitivity and will make a good Aurora film. There is still some question about the reciprocity failure with this film and some APMML members are testing it. Stay tuned!

In addition to the above occasionally you might come across some older Kodak films. While Royal Gold 200 and 400 are still available they have been "improved". If you spot some older stock with "Select Series" on the box you can be pretty sure that this is the older emulsion that was very good for astrophotography. Snap it up if you can.

Better days are coming and more films will be released that work well for astrophotography. In the mean time enjoy the ones that are available.



California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

IN SEARCH OF ALIEN OCEANS

by Patrick L. Barry and Dr. Tony Phillips

A robotic submarine plunges into the dark ocean of a distant world, beaming back humanity's first views from an alien ocean. The craft's floodlights pierce the silty water, searching for the first, historic sign of extraterrestrial life.

Such a scenario may not be as fantastic as it sounds. Many scientists believe that Jupiter's moon Europa conceals a vast ocean under its icy crust. If so, heat from the moon's interior—which would keep the ocean from freezing solid—may also drive subaquatic volcanoes and hydrothermal vents. On Earth, such deep-sea vents provide chemical energy for ecosystems that thrive without sunlight, and some scientists even suggest that Earthly life first got started around these vents.

So a warm European ocean spotted with thermal vents could be a natural incubator for life. That's why some scientists hope that someday we will send a probe to Europa that could bore through the ice and explore the ocean below like a submarine.

To plan for such a mission, scientists would first need to put a camera in orbit around Europa. By looking for places where water has welled up to fill the spindly cracks that riddle Europa's surface, scientists can estimate where the ice is thinnest—and thus easiest to bore through.

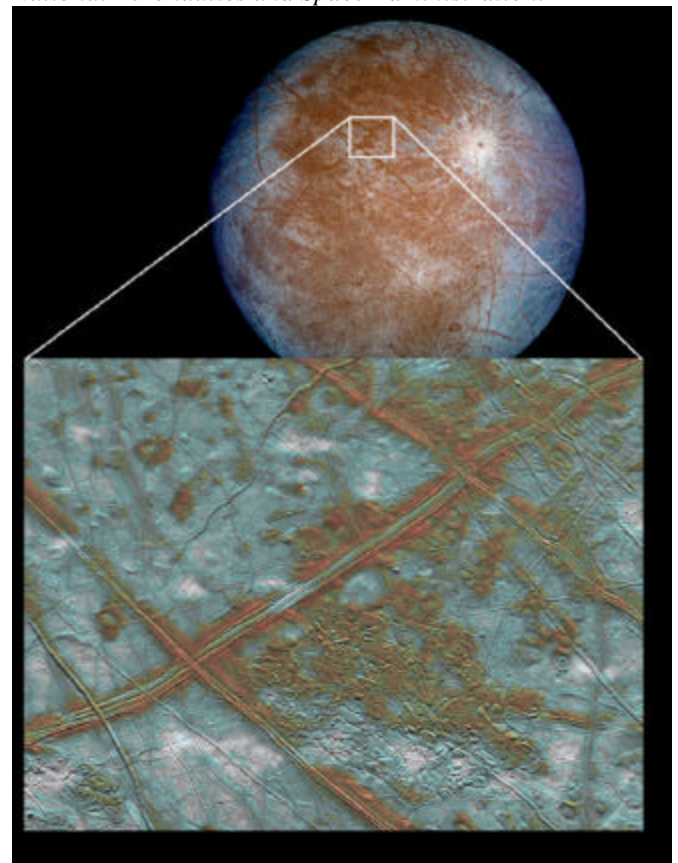
That mission scenario presents a problem, though. Europa orbits Jupiter inside the giant planet's punishing radiation belts. Continuous exposure to such high radiation would damage today's scientific cameras, making the information they gather less reliable and perhaps ruining them completely.

That's why NASA is designing a more radiation-tolerant CCD that could be used on a mapping mission to Europa. A CCD (short for "charge-coupled device") is a digital camera's chip-like core, which converts light into electric signals.

"We've seen the effects of this radiation during the Galileo mission to Jupiter," says JPL's Andy Collins, principal investigator for the Planetary Imager Project. "Galileo has orbited Jupiter for many years, dipping inside the radiation belts only for brief intervals. Even so," he says, "we've seen clear signs of damage to its instruments."

By using the hardier CCD's developed by the Planetary Imager Project, a future probe could remain in Jupiter's radiation belts for many months, gathering the maps scientists will need to finally get a peek behind Europa's icy veil. And who knows, maybe there will be something peeking back!

To learn more about the Galileo mission to the Jupiter system, visit <http://www.jpl.nasa.gov/galileo/>. For children, a fun, interactive "Pixel This!" game at http://spaceplace.nasa.gov/p_imager/pixel_this.htm introduces CCDs and how a really tough one will be needed for a future mission to Europa.



Cracks on the icy surface of Jupiter's moon Europa give evidence of a liquid ocean below.

STAR STUFF ARTICLE KIT

by Greg Burnett

[This article was first published in Star Stuff, the newsletter of the Ford Amateur Astronomy Club, in October, 1999.]

Lately, the STAR STUFF submissions in-box has gotten a little dusty. In order to encourage the reluctant writers out there, I have prepared a pro forma article, which you can use to prepare your own personal contribution to the next issue of STAR STUFF. All you have to do is fill in the blanks and , Vio la! a full-blown journalistic masterpiece ready for publication!...

OBSERVING AT _____
by _____

Last ____ night, _____, _____, and I headed out to _____ for an evening of observing. The temperature was about ____ degrees and _____ had just risen in the east. Just as the last glow of dusk was fading, _____ arrived and set up {his|her} brand new _____ next to us. What luck! We would finally get to see _____ through a _____!

My first observing target was _____. At 100x in my _____ it looked like a _____ with _____ coming out of it. I backed

This article was provided by the Jet Propulsion Laboratory,

off to about 35x to get the full effect of the _____. Magnificent!

It was perfectly clear and very dark. At about _____ o'clock, _____ fell into the _____! We all had a good laugh at {his|her} expense. No damage, but next time {he|she} will borrow the flashlight I offered.

_____ looked great in my scope with the _____ eyepiece. At 250x I could just barely make out the _____, which I had not seen before tonight. Ah! Another one for the log book.

A little after midnight _____ came by and told us _____. We were incredulous! _____ said {he|she} was full of _____! But we had no choice. Mustering great effort and admirable teamwork, we were able to get the _____ back into the _____, and everything turned out OK. Next time we'll remember to _____ before we _____!

It was getting late, but I wanted to look at _____ before we called it a night. I dialed in _____ dec and _____ R.A. on the circles, and there it was, neatly centered in the field. The sky conditions were really extraordinary. I could easily see the _____ going in and out of the _____. Although I have seen this many times before, the sight still amazes me.

Pleased that I had held out for this grand finale, I reluctantly loaded up for the trip back to _____. It had been a great night of observing. Be sure and join us next time!

RECAP: ISLAND LAKE STAR PARTY - STARS COME OUT IN THE END

By Dale Ochalek

The FAAC gang hosted the 11th annual Island Lakes Star Party on October 4th, and the stars came out - even if big crowds didn't. The air was a bit nippy this night, and some nasty-looking clouds suggested possible further troubles. Still, an impressive variety of SCTs, big and small dobs, refractors, even a telescope with camera and video monitor, stood dutifully at the ready.

Sun and planet signs were positioned at their relative distances along the drive from the park entrance to our tent at Spring Mill Pond. The early comers then arrived to see some very creative demonstrations. As a first act, Harold Tomason & Barry Craig's comet-making demo always impresses, yielding that smoky mass of a "dirty snowball." Kevin Dehne (from Delta College) then wowed onlookers with his memorable, liquid nitrogen-empowered demo - "How Cold is Space" - turning flower petals and racquetballs into crumbling icy shards, and munching on those frozen cheese puffs...

John Kirchhoff remarked on "Beginner Telescopes," using refractor and reflector telescopes to illustrate. Bruce Palansky did an excellent first job at presenting Greg Burnett's "Astronomy 101" slides. Clay Kessler shared some of his astrophotography expertise, allowing his amazing personal "Astrophotos" to demonstrate. Kevin Dehne then led a curious throng on the Spring Mill Pond beach, presenting a celestial tour and ancient Greek tales of the autumn constellations and asterisms.

Meanwhile, observing had begun. Mars and the moon made for fine initial targets, even as a sheath of high clouds threatened to put a damper on later observing. Just as the hot chocolate ran low, however, the heavens opened, and the nasty clouds were scooted

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away. Our doggedly-determined star-searchers were able to find nebulae, clusters, doubles - whatever the requirement. Kids enjoyed the sky tour challenge, and also making planispheres.

The star-gazing crowd regrouped at the evening's zenith for the raffle, providing some reward for shivering travails. Books, planispheres, eyepieces, and other astronomical trinkets and sundries found new owners; someone even came away with a brand new Nexstar 60 telescope, provided for the occasion by Rider's Hobby Shop of Livonia. Our thanks also go to the other donors - Astronomy magazine, Celestron, Orion Telescopes & Binoculars, Ken Press, and Telrad.

For those who appeared, and persevered, even if a little on the toe-numbing side - it was a stellar night. Congratulations, and thanks, go out to our sponsors - Rider's Hobby Shop, Heavner Canoe Rental, Detroit Science Center, and University Optics - and to the fine FAAC staff of helpers and presenters, and event coordinator Ken Anderson, on a job well done.

THANK YOU FROM SCHOLARSHIP RECIPIENT

By Karen Kudelko

Dear Members of the FAAC,

Thanks you very much for allowing me to share a bit of myself with you and for the generous scholarship. I realize it took a lot of time and effort to prepare and review the applications. What really impressed me was how welcoming, kind, and accommodating everyone was. I thank you all for the hard work that went into this program, as well as for your confidence in me to make good use of my love for science. I will gratefully put this money toward my college education. Thank you all so very much again for your generosity.

COSMIC ORIGINS: A SERIES OF PUBLIC LECTURES AND OBSERVATORY NIGHTS

Submitted by Don Sommers

The Astronomy Department, Exhibit Museum and the Student Astronomical Society, have organized a public lecture series on "Cosmic Origins". The series will run through out the fall semester. We have lined up a truly outstanding set of speakers who are both leading scientists as well as proven experts in public outreach. The lectures will be followed by telescope open houses organized by the undergrads.

Schedule of Events:

October 24

Geoffrey Marcy, University of California at Berkeley
"Extrasolar Planets and Prospects for Life"

Astronomy Department Orren C. Mohler Distinguished Lecture
November 7

Fred Adams, University of Michigan

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"Future of Life, Universe and Everything"

All lectures will be held on Fridays at 7:30pm in Angell Hall Auditorium D followed by telescope viewing on Angell Hall roof, weather permitting. Organized by Prof. Ray Jayawardhana. For more information: rayjay@umich.edu

NEW MEMBER WELCOME !

FAAC Welcomes the following new members:

| | |
|------------------|---------------|
| Robert C. | Clubb Jr. |
| Richard | Ernst |
| Steven A. | Flessa (Life) |
| Jeff | Hineline |
| Albert & Deborah | Holton |
| Patricia White | Johnson |
| Robert O. | Russell |
| Susan & Garry | Stahl |
| Dana | Stamatellos |
| Pocahontas | White |

ASTRONOMICAL IMAGING S.I.G.

By George Korody

Rooms for meetings of the Astro Imaging S.I.G. for November and December are not available at the Ford Family Learning Center at this time. Due to this uncertainty and the upcoming holiday period, meetings may be suspended for the remainder of the year consistent with the wishes of the group. S.I.G. members will be notified via E-mail in the next week or two, of any final decision.

CRESTWOOD SCHOOL DISTRICT - ENSIGN PLANETARIUM

PUBLIC SHOWS

1501 Beech-Daly

Dearborn Heights, MI 48217

(313) 274-3711

Submitted by Bob Fitzgerald

All shows begin at 7:00 pm

November 12: *On to Mars...*

A look at the armada of spacecraft arriving at the Red Planet in the coming weeks.

December 3: *Telescopes for Dummies!*

Got one, want one? Learn what it takes to be a good observer of the Universe. BYOT: (Bring your own telescope... or use one of ours!)

NEW!

Saturday, October 20, 10am: *Saturday Morning for Young*

Stargazers

October 2003

Children ages 1-6 are especially invited to visit the starry skies of the planetarium to hear stories and meet some constellations!

ENTERTAINMENT AND GOLD C BOOKS FOR SALE

By Don Nakic

I received twenty Entertainment books (\$30 each) and ten Gold C books (\$10 each) from FERA. These books provide an easy means to raise money for FAAC. The sale of these books alone can raise \$65 for our club. In addition to raising money, they can save you money. My Gold C book alone saved me over \$30! To sell one, all you have to do is place a flyer outside your office or place of business. They simply sell themselves. If you are interested in some to sell or buy let me know via e-mail (dnakic@yahoo.com) or get with me at the next general meeting. Hurry, they will be going fast!

A REMINDER! Election of FAAC officers for 2004 will be held at the meeting on the January 22, 2004. Please think about who you would like to nominate for office next year.

IT'S TIME TO RENEW YOUR FAAC MEMBERSHIP!

By Gordon Hansen



Avoid the year-end rush and send your check in today to:
FAAC
P.O. Box 7527
Dearborn, Michigan 48121-7527

Renewal fees for 2004 are only \$25 or sign up for a Life Membership for \$150 and never have to worry about paying dues again.

Please include any updates to your address (snail mail or email), phone numbers, etc.

October 23, 2003
General Membership Meeting
5:00 pm to 6:45 pm
Agenda

| | | |
|---------------------------------------|-----------------------------|--------|
| - Introductions | Don Nakic | 25 min |
| - Reports: Treasurer's Secretary's | Gordon Hansen Don Klaser | 10 min |
| - Old/New Business | Don Nakic | 25 min |
| - Upcoming Events | Don Nakic | 10 min |
| - Technical Discussion | Jim Frisbie | 15 min |
| - Main Program | TBD | 20 min |

ASTRONOMICAL CALENDAR

October 2003

All times are Eastern Standard Time or Eastern Daylight Saving Time, whichever applies

| | |
|--------|---|
| Oct 21 | Waning Crescent Moon near Jupiter morning |
| Oct 25 | New Moon 8:50 am |
| Oct 26 | Daylight Savings Time Ends |
| Oct 26 | Venus near moon – evening |
| Oct 31 | First Quarter Moon 11:25 pm |

November 2003

| | |
|------------|--|
| Nov 2, 3 | Moon near Mars -evenings |
| Nov 8 | Full Moon 8:13pm Frosty Moon |
| Nov 8 | Total Lunar Eclipse, Max Eclipse 8:18 pm |
| Nov 12, 13 | Moon near Saturn – mornings |
| Nov 16 | Last Quarter Moon 11:15 pm |
| Nov 17, 18 | Moon near Jupiter - mornings |
| Nov 23 | New Moon 5:59 pm |
| Nov 25 | Moon near Venus - evening |
| Nov 30 | First Quarter Moon 12:16 pm |

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

2004 ASTRONOMY CALENDARS

Club Price: \$10 (Retail Price: \$11.95)

There are a limited number of these calendars available. First come - - first served!

Place your order by emailing to ghhansen@comcast.net

October 2003



FAAC CALENDAR

| Activity | Date | Time |
|-------------------|--------|------|
| - General Meeting | Oct 23 | 5 pm |
| - FAAC Board Mtg | Nov 13 | 5 pm |
| - General Meeting | Dec 4 | 5 pm |
| - FAAC Board Mtg | Jan 8 | 5 pm |
| - General Meeting | Jan 22 | 5 pm |
| - FAAC Swap Meet | Jan 25 | 8 am |

T-SHIRT INVENTORY REDUCTION!

The Club has a large supply of T-Shirts from this year's and previous Island Lake Star Parties. Now is your chance to get yours at special prices!



2003 Shirts – Now only \$10
 Sizes Available:
 XXL, XL, L, S

Past Year's Shirts - \$5.00 !!

Sizes: XXL, XL, L, M, S

For pickup at the next Club Meeting: email you order to ghhansen@comcast.net

or mail your order including a check for payment to: FAAC, P.O.Box 7527, Dearborn, MI 48183



RIDER'S
HOBBY SHOPS

First Annual FAAC

ASTRONOMY SWAP MEET

Co-Hosted by the
Ford Amateur Astronomy Club
& **Rider's Hobby – Livonia**

Sunday, January 25th, 2004 - 8:00 am to 3:00 pm

EARN CASH BY SELLING YOUR OLD:

- Telescopes - Eyepieces - Cameras - Binoculars
- Mounts - Tripods - Software - Publications
- Accessories (You may even find something you want to buy!)

Admission: \$4.00 in advance or \$5.00 at the door. Tables: \$12.00 in advance or as Available at the door \$15.00 (one admission ticket included). Doors open at 7:00am for setup. Complimentary Coffee & Donuts provided by Rider's Hobby.

Please make checks payable to FAAC for advance registration and table reservations. Send payment to Ford Amateur Astronomy Club, P.O. Box 7527, Dearborn, MI 48121-7527

The Swap Meet will be held at 30943 Five Mile Road, Livonia, Michigan, in the Livonia Plaza (Kroger) Shopping Center, on the south side of Five Mile, just east of Merriman, near Rider's Hobby

For More Information: Contact Jim via email: w8tu@comcast.net
or call (734) 453-1422



Lake Erie Metropark's Lunar Eclipse Viewing Night

*Co-Hosted with the
Ford Amateur Astronomy Club
Saturday, November 8th - Time 5:00 pm to ???*

Don't Miss Viewing –

The Second Lunar Eclipse of 2003

The Moon will enter the Earth's penumbra (shadow) at roughly 5:15 pm.
It will then darken to reddish brown until totality, which will last from
8:06 – 8:31pm.

*In addition, you can observe Mars and many other
fascinating objects through our Telescopes and
Binoculars. Or you can bring your own equipment
and join in the fun.*

Dress Warmly and Bring your family and friends!!!

Lake Erie Metropark is located at 32481 West Jefferson just north of
Huron River Road in Brownstown. Take I-75 to Gibraltar Road. Go
East 2 Miles to West Jefferson. Turn Right (South) and drive 2 miles to
the park entrance on the left. Follow the signs at the gate, which will lead
you to the observing site within the park. This will be either be the
Marshland Museum or the Cove Point Picnic Area Parking Lot #3.

*This event is free of cost. However, there is a \$4 per vehicle
daily permit required for entry into Lake Erie Metropark*

For More Information, Call (734) 379-5020 or (800) 477-3189 or

Visit the METROPARKS web page at:

<http://www.metroparks.com/global/maps.php> (Map Number 13)

Last updated 10/14/03

**Ford Amateur Astronomy Club
Star Stuff Newsletter
P.O. Box 7527
Dearborn, MI 48121-7527**



RIDER'S[®] **HOBBY SHOPS**

| | | |
|--|--|---|
| Store Hours: M-F 10am-9pm SAT 10am- 6pm SUN Noon-5pm | Gen. Manager: John Kirchhoff Website: http://www.riders.com Email: riderslivonia@aol.com | 30991 Five Mile Rd. Livonia, MI 48154 Tele: 734.425.9720 Fax: 734.425.2029 |
|--|--|---|

FIFTH ANNUAL MOONLIGHT MADNESS SALE

**FRIDAY, OCTOBER 24
7PM TO 11PM**

**SPOOK-TACULAR
SAVINGS ON ALL IN STOCK MERCHANDISE**