



STAR STUFF

The Newsletter of the Ford Amateur Astronomy Club

Volume 18, Number 5

May 2009

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Note!

New Meeting Room!

HFCC - Administrative Services and Conference Center (same building as before), in the Berry Amphitheater Auditorium

(For map see: http://www.hfcc.edu/contact/campus_maps.pdf)



Scoring More Energy from Less Sunlight

For spacecraft, power is everything. Without electrical power, satellites and robotic probes might as well be chunks of cold rock tumbling through space. Hundreds to millions of miles from the nearest power outlet, these spacecraft must somehow eke enough power from ambient sunlight to stay alive.

That's no problem for large satellites that can carry immense solar panels and heavy batteries. But in recent years, NASA has been developing technologies for much smaller microsatellites, which are lighter and far less expensive to launch. Often less than 10 feet across, these small spacecraft have little room to spare for solar panels or batteries, yet must still somehow power their onboard computers, scientific instruments, and navigation and communication systems.

Space Technology 5 was a mission that proved, among other technologies, new concepts of power generation and storage for spacecraft. "We tested high efficiency solar cells on ST-5 that produce almost 60 percent more power than typical solar cells. We also tested batteries that hold three times the energy of standard spacecraft batteries of the same size," says Christopher Stevens, manager of NASA's New Millennium Program.

This program flight tests cutting-edge spacecraft technologies so that they can be used safely on mission-critical satellites and probes.

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Astronomy for all Seasons

President's Corner

Doug Bauer, FAAC President

Spring has arrived and summer is on its way and with them come two of my favorite night sky objects, the Great Cluster in Hercules (M13) and the Ring Nebula (M57) and Saturn should be a good view all spring and summer. Of course there are many other objects that are fun to look at and it is much warmer during this time of the year. If only we could find a way to get rid of the Michigan State Bird - the mosquito! The other problem is that it doesn't

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FORD AMATEUR ASTRONOMY CLUB
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TREASURER:	Steve Flessa
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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, Administrative Services and Conference Center 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. The FAAC also has use Richmond Airport, Unadilla, given prior permission, and Lake Erie MetroPark. 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: **248-207-2075**. Or send email inquiries to fordastronomy@comcast.net.

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 Member:	\$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 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 can be included in that issue.

* FAAC Members are welcome to join our **FordAstronomyClub** Yahoo! Group. Messages, photos, files, online discussions, and more! URL: groups.yahoo.com/group/FordAstronomyClub.

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

get dark until later during in the summer months. Once in awhile, if it is a clear night, I like to take my scope out in my driveway. I have a couple of neighbors who enjoy looking through the telescope and they will come over if they see me out with my telescope.

However, in the summer it is generally past their bedtime by the time it gets dark. The fact that they are working probably has something to do with it. One time I was out observing a comet and convinced my wife, DeeAnn, to come outside to look at it. She came out in her bathrobe. One of our neighbors saw us out there and she came over in her bathrobe too. This may be a new idea in stargazing – pajama star parties.

In the fall, we have two great events:

- Great Lakes Star Gaze in Gladwin, Michigan is September 17-20. Website: www.greatlakesstargaze.com at the River Valley RV Park.
- Astronomy at the Beach at Kensington Metropark – Maple Beach September 25 and 26.

Both of these events are fun.

At the Great Lakes Star Gaze you get to go to a dark site with a bunch of fellow astronomers and stay up all night amazed by what you can see. You also get to enjoy the camaraderie of your friends and sharing views through different types of telescopes and eyepieces. This can be an expensive experience.

The Astronomy at the Beach is a great chance to let the public share in the joy of this hobby and perhaps inspire some of them to a lasting interest in astronomy.

During the winter months there are many great objects that are visible and it gets dark early. Who doesn't love to look at the Orion Nebula? We also have lower humidity which makes the sky clearer. It is a little more difficult to get others to come outside in the colder weather.

This may be a measure of astronomy insanity, but the views can be great, especially from the warm beach at the Winter Star Party.

-- Doug Bauer

More Energy ... (continued from page 1)



Helen Johnson, a spacecraft technician at NASA's Goddard Space Flight Center, works on one of the three tiny Space Technology 5 spacecraft in preparation for its technology validation mission.

"This more efficient power supply allows you to build a science-grade spacecraft on a miniature scale," Stevens says.

Solar cells typically used on satellites can convert only about 18 percent of the available energy in sunlight into electrical current. ST-5 tested experimental cells that capture up to 29 percent of this solar energy. These new solar cells, developed in collaboration with the Air Force Research Laboratory in Ohio, performed flawlessly on ST-5, and they've already been swooped up and used on NASA's svelte MESSENGER probe, which will make a flyby of Mercury later this year.

Like modern laptop batteries, the high-capacity batteries on ST-5 use lithium-ion technology. As a string of exploding laptop batteries in recent years shows, fire safety can be an issue with this battery type.

"The challenge was to take these batteries and put in a power management circuit that protects against internal overcharge," Stevens explains. So NASA contracted with ABSL Power Solutions to

circuits to prevent power spikes that can lead to fires. "It worked like a charm."

Now that ST-5 has demonstrated the safety of this battery design, it is flying on NASA's THEMIS mission (for Time History of Events and Macroscale Interactions during Substorms) and is slated to fly aboard the Lunar Reconnaissance Orbiter and the Solar Dynamics Observatory, both of which are scheduled to launch later this year.

Thanks to ST-5, a little sunlight can go a really long way.

Find out about other advanced technologies validated in space and now being used on new missions of exploration at nmp.nasa.gov/TECHNOLOGY/scorecard. Kids can calculate out how old they would be before having to replace lithium-ion batteries in a handheld game at spaceplace.nasa.gov/en/kids/st5_bats.shtml.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with NASA.

April Meeting Minutes

Dale Ochalek

(For more detailed minutes, look for Ken Anderson's version to be posted in the "Folders" section on the FAAC's Yahoo Group site (see: groups.yahoo.com/group/FordAstronomyClub).

President Doug Bauer called the meeting to order at 5:30 p.m. -- at a one-time location, at the Dearborn Heights campus of Henry Ford Community College (HFCC) -- with introductions, while pizza and pop were offered.

(For the time being, all future meetings are to be held in the Berry Amphitheater Auditorium in the Administrative Services and Conference Center at HFCC -- just down the hall from the Rosenau Conference Room, the former location.)

Members shared observing experiences and comments.

Ken Anderson gave the "Tech Talk," on tips and techniques for pursuing a successful Messier Marathon. For those who missed it, the PowerPoint presentation (8 mB) is posted on the FAAC web site (<http://www.boonhill.net/faac/>).

Following this, Steve Uitti (WAS) presented his talk on the "Alien Universe," discussing theories of black holes and observations surrounding their event horizons.

An abbreviated business portion followed, due to time constraints, this followed by adjournment.

Recurring Events

2009 is the International Year of Astronomy (IYA 2009) celebrating 400th year of the (Galileo's) telescope. American Astronomy Society and Astronomical League are celebrating "International Year of the Telescope." All year long, expect speakers. Astronomy Day will be advertised greater, and we may get additional support for our AATB. DSC, Cranbrook, FAAC, and GLAC plan to bring more astronomy to the general public. Set up telescopes in your local community/neighborhood.

Eric Rasmussen will be planning events at University of Michigan (Dearborn and Ann Arbor) and HFCC. U of M will have Saturday Morning Talks. John Schroer, the FAAC chairman, passed out several handouts at the board meeting to show national intentions. Plastic replicas of Galileo's telescope with real glass lenses will sell for \$10-\$11, and you will be able to see Saturn and Jupiter with it. John is pre-ordering 100 of

these telescopes for November, and they can be mounted on a camera tripod (making it more stable than Galileo).

The 2009 IYA Activities:

The SIG meetings are the second Thursday of each month (next one June 11) at 5:30 pm in the Berry Amphitheater Auditorium in the Administrative Services and Conference Center at Henry Ford Community College just down the hall from the Rosenau Conference Room. Topic – TBD.

FAAC General Meetings are every fourth Thursday of each month, with the next one May 28 in the new location, Berry Amphitheater Auditorium in the Administrative Services and Conference Center at HFCC.

The FAAC Board meetings are usually the first Thursday of each month (next one June 4, 5 pm) at Senate Coney Island 3345 Greenfield Rd., Dearborn, (313) 441-1027.

Beginner's nights will resume in Spring 2009 on 1st quarter moon Saturdays (May 30, June 27, July 25, August 29, and October 24), with the intent to help people use their equipment (not public outreach). John Schroer is putting together the handouts for Beginner's Night at Island Lake State Park (Spring Mill Pond) and also Lake Erie Metropark (Cove Point Picnic Area). Bring your telescope/binoculars, or look through others. Events will be posted in the Park Bulletin board, Metropark Quarterly Newsletter, Ford World, and astromichigan.org.

Planetarium, Lecture and Observatory Schedule, Spring 2009. Henry Ford Community College and the University of Michigan – Dearborn. All events are free and open to the public.

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"Nothing Gold Can Stay" – A Spring Star Talk – 7:30-8:30 p.m., Planetarium – May 26, June 2, 9, 16.

Public Observing Session – From Spring to Summer – June 19 – 10:00 p.m. – Observatory

The Planetarium is located on the main campus of HFCC in the Science Building Room S-126. The

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Minutes ... *(continued from page 4)*

Observatory is located on the main campus of UOM-Dearborn, Science Learning and Research Center, 3rd floor. UM-D lecture location has yet to be determined. Check website for further updates. HFCC Lecture will be held in room LA-14 of the Reuther Liberal Arts Building at HFCC.

FAAC Club Wares with embroidered five color club logo can be ordered through Diane Worth (contact Diane at dianewsky_night@yahoo.com for accurate pricing; these are estimates only, as heard by the secretary, and there may be additional cost for shipping):

Ottoman "Official" Club Short Sleeve Shirt (black or white) \$37, Bill Blass Long Sleeve Dress Shirt (blue) \$42, Casual Club (blue) \$35, Hat \$19, patch \$9, Blanket nylon & fleece \$33, Duffle Bag (blue) \$20, Expandable Brief (blue) \$20, Chart Bag (black) \$16; Port Authority Hooded Sweatshirt (black) \$32 no longer avail, XL additional \$3; Hoodless Sweat Shirt not-embroidered (grey) \$20, and T-shirt not-embroidered (white, grey, blue) \$8. Diane Worth said she will bring filled orders to AATB. Contact Diane Worth.

The FAAC Library and DVD collection is in HFCC Science Building Room 109. The list of 100+ books and brief descriptions is available at the FAAC Yahoo site; books can be signed out for one month, with extensions allowable. President Doug Bauer and VP Chuck Jones are backup key holders for returning and signing out books.

Seeking 2009 speakers for both FAAC 30-60 minute Main Presentations, and 15-20 minute Tech Talks. Contact Doug Bauer at dougbauer@comcast.net or call 313-828-7385.

Astro Imaging SIG

Gordon Hansen

All are invited to join us, share and discuss their images. We always have a good time, with lively discussion.

Next meeting is June 11. Note the new meeting room location – HFCC Admin. Services and Conference Center (same building), Berry Amphitheater Auditorium.

Topics invited.

FAAC Events 2009

Kevin Medon and Lori Poremsky

May

29-31 – Second Annual Michiana Star Party will be held in South Bend, Indiana. Also, see: www.michiana-astro.org.

30 – Astronomy Day – Kalamazoo Astronomical Society. Free event at Kalamazoo Valley Museum, 230 N. Rose St., Kalamazoo, 10 a.m. to 4 p.m. Displays, Hands-on Activities, Solar Observing, The Starry Messenger, and book signings and talk by Dr. Phil Plait (Bad Astronomy and Death from the Skies). www.astroday.kasonline.org.

30 – Beginners' Night, Island Lake Recreation Area, Lake Erie Metropark

June

27 – Beginners' Night, Island Lake Recreation Area, Lake Erie Metropark

July

25 – Beginners' Night, Island Lake Recreation Area, Lake Erie Metropark

August

29 – Beginners' Night, Island Lake Recreation Area, Lake Erie Metropark

September

TBD – Astro-Imaging Workshop, Gladwin
17-20 – Great Lakes Star Gaze, Gladwin
25-26 – Astronomy on the Beach – Maple Beach in Kensington Park

October

24 – Beginner's Night - Island Lake

Items for Sale

Schmidt-Newtonian 10" – F5.35, 1360 mm focal length with 2" focuser, 60 mm guide scope, Thousand Oaks Full aperture solar filter (Mylar). Cooling fan, extra set of "O" rings, Optron Corrector plate. Crestliner mount (on wheels) available. Scope made by Nelson Lewis of Detroit Astronomical Society in 1962. Purchased 1981. Selling telescope for \$325. Mount for \$200. Contact Harold Thomason 313-584-7465

MEADE 8" LX 200 GPS- Purchased summer 2004, new from John Kirchhoff, Riders. Premium coatings, matching aluminum dew shield, w/goto. Pristine condition. It sits in my home, covered and waiting to be taken out to explore the star filled night sky. Asking a \$1,300, new \$2,560 - purchased.

Contact: Diane Worth at 248-980-7832 or dianewsky_night@yahoo.com.

Meeting Agenda - May 28

5:30 pm – HFCC – Berry Amphitheater Auditorium - Admin. Services and Conference Center

(For map see:

http://www.hfcc.edu/contact/campus_maps.pdf)

Opening/Introduction/Member Observing

Presentation: "Texas Star Party" by Jon Blum

Tech Talk: Lincoln Park Observatory Restoration

Club Business/Secretary/Treasurer/Equipment

Club Projects/Committees/Member Support

- Astrophoto SIG – Gordon Hansen
- Dark Sky Committee– Frank Ancona
- Lincoln Park Observatory Restoration – Tim Dey
- International Year of Astronomy 2009 – John Schroer
- Cable Programs for 2009 IYA – Lori Poremsky
- Astronomical League Dues! – John Schroer
- Open Discussions

Treasurer's Report

Steve Flessa

5/20/2009 Balance

Bank Accounts

Checking	\$	2,166.57
Savings	\$	233.75
TOTAL Bank Accounts	\$	2,400.32

Cash Account

Cash	\$	64.50
TOTAL Cash Account	\$	64.50

Investment Accounts

CD 1	\$	1,073.78
CD 2	\$	1,038.54
TOTAL Investment Accounts	\$	2,112.32

Asset Accounts

Equipment	\$	1,135.46
Scholarship	\$	459.05
TOTAL	\$	1,594.51

OVERALL TOTAL **\$ 6,171.65**

Memo:

GLAAC **\$ 2,571.60**

TOTAL **\$ 8,743.25**



More than a Weather Report

Spotting volcanic eruptions, monitoring the health of crops, pinpointing distress signals for search and rescue teams.

It's not what you might expect from a weather satellite. But these are just a few of the abilities of NOAA's newest polar-orbiting weather satellite, launched by NASA on February 6 and turned over to NOAA for full-time operations on February 26.

Formerly called NOAA-N Prime and now renamed NOAA-19, it is the last in its line of weather satellites that stretches back almost 50 years to the dawn of the Space Age. Over the decades, the abilities of these Television Infrared Observation Satellites (TIROS) have gradually improved and expanded, starting from the grainy, black-and-white images of Earth's cloud cover taken by TIROS-1 and culminating in NOAA-19's amazing array of capabilities.

"This TIROS series has become quite the Swiss army knife of weather satellites, and NOAA-19 is the most capable one yet," says Tom Wrublewski, NOAA-19 Satellite Acquisition Manager at NASA's Goddard Space Flight Center in Greenbelt, Maryland.

The evolution of TIROS began in 1998 with NOAA-K. The satellites have carried microwave sensors that can measure temperature variations as small as 1 degree Celsius between Earth's surface and an altitude of 40 kilometers—even through clouds. Other missions have added the ability to track large icebergs for cargo ships, monitor sea surface temperatures to aid climate change research, measure the amount of ozone in Earth's protective ozone layer, and even detect hazardous particles from solar flares that can affect communications and endanger satellites, astronauts in orbit, and city power grids.

NOAA-19 marks the end of the TIROS line, and for the next four years it will bridge the gap to a new series of satellites called the National Polar-orbiting Operational Environmental Satellite System. NPOESS will merge civilian and military weather satellites into a single system. Like NOAA-19, NPOESS satellites will orbit Earth from pole to pole, circling the planet roughly every 100 minutes and observing every location at least twice each day.

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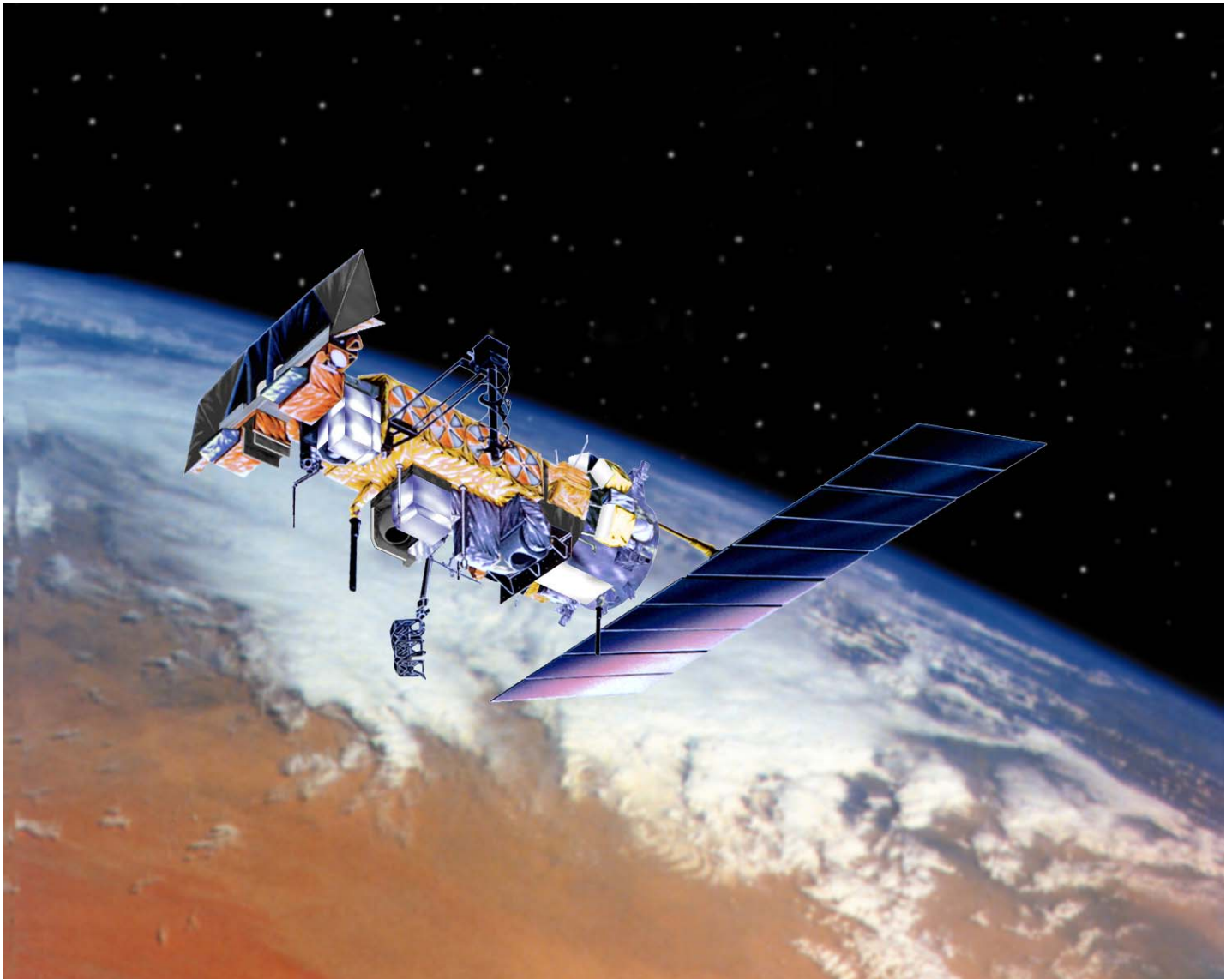
Weather Report ... *(continued from page 6)*

NPOESS will have yet more capabilities drawn from its military heritage. Dim-light sensors will improve observations of the Earth at night, and the satellites will better monitor winds over the ocean — important information for ships at sea and for weather and climate models.

"A lot more capability is going to come out of NPOESS, improving upon the 161 various environmental data products we already produce today," Wrublewski says.

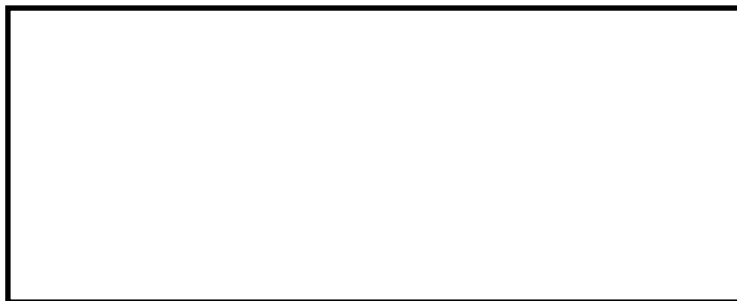
Not even a Swiss army knife can do that many things, he points out. For more on the NPOESS, check out: <http://www.npoess.noaa.gov>. Kids can find out about another NOAA satellite capability—tracking endangered migrating species—and play a fun memory game at http://spaceplace.nasa.gov/en/kids/poes_tracking

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



The new NOAA-19 is the last and most capable in the long line of Television Infrared Observation Satellites (TIROS).

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



May 30, June 27, July 25, August 29, October 24

Ford Amateur Astronomy Club *presents*

Beginners Nights 2009

with: New Detroit Science Center and Rider's Hobby

Do you have a new telescope that you are learning to use? Do you want to see samples of what the night sky has to offer? Consider coming out to **Island Lake State Recreation Area** on **Beginner's Night**. These Saturday nights are dedicated to providing equipment and observing assistance to new astronomers (**weather permitting**). The events will take place regardless of sky conditions, cloudy or clear. **If it is raining, the event will be cancelled.**

The Island Lake site is at the "Spring Mill Pond" parking lot/picnic area, at the Island Lake State Recreation Area, on Kensington Road, south of I-96 between South Lyon and Brighton.

For more info contact Gordon Hansen at 734-675-6137 or email Gordon at fordastronomy@comcast.net