



# STAR STUFF

The Newsletter of the Ford Amateur Astronomy Club

Volume 15, Number 1

January 2006

## In This Issue

### Page One

- Snowstorm — on Pluto
- President's Corner

### Inside Stuff

- 3 January FAAC Meeting Site!
- 4 Astro Imaging SIG
- 5 Swap Meet
- 6 Eagle at the DSC
- 6 Swap Meet Presenters
- 7 Meeting Minutes
- 8 FAAC Calendar of Events 2006
- 8 For Sale
- 9 FAAC Meeting Agenda
- 9 Sky Calendar
- 9 Treasurer's Report
- 9 Last Reminder — Dues Due!



## Snowstorm — on Pluto

Dr. Tony Phillips

There's a nip in the air. Outside it's beginning to snow, the first fall of winter. A few delicate flakes tumble from the sky, innocently enough, but this is no mere flurry.

Soon the air is choked with snow, falling so fast and hard it seems to pull the sky down with it. Indeed, that's what happens. Weeks later when the storm finally ends the entire atmosphere is gone. Every molecule of air on your planet has frozen and fallen to the ground.

That was a snowstorm — on Pluto.

Once every year on Pluto (1 Pluto-year = 248 Earth-years), around the beginning of winter, it gets so cold that the atmosphere freezes. Air on Pluto is made mainly of nitrogen with a smattering of methane and other compounds. When the temperature dips to about 32 K (-240 C), these ...

*...continued on page 3*

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## 2005 — A Look Back

### President's Corner

Don Klaser, President, FAAC

The holiday decorations have been packed away and the last of the leftovers have been cleared from the fridge. I thought I had a lot more beer before New Year's than I have now...I wonder what happened to it?

January arrives and another year begins. Named for Janus, the Roman god of portals and doorways, endings and beginnings. The month puts us in a position of perspective - to not only look forward to the future but to see where we've been. From there, we can use the mileposts of the past to guide our footsteps on the path to tomorrow. This process works both for ourselves and our club. So, sit back and enjoy the FAAC retrospective.

*...continued on page 2*

# STAR STUFF

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**STAR STUFF** is published eleven times each year by the

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

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](http://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 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](mailto: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)*

The greatest attribute of our club is the number of public and special outreach events we have sponsored or participated in during the year. Beginner's Nights at Island Lake, Ice Daze at Lake Erie Metropark, Astronomy Day at the Detroit Science Center and other venues and GLAAC's Astronomy on the Beach at Kensington Metropark. Also recall Forest and Hillside Elementary Schools in Farmington Hills, Durfee Middle School in Detroit, solar viewing at the Ford Classic and Antique Car Show at PDC, the Arch-Diocese of Detroit's World Youth Day in Lapeer County. And note the Henry Ford Imax Theatre Event attended by students and chaperones from The Columbus Academy in Ohio, as well as the Blue and Gold Banquet for the Webelos in Canton, and the Boy Scout Camp-out at Kensington.

Of special note was our financial support of and attendance at the dedication of the kiosk erected at the Lake Hudson Dark Sky Preserve. I was also present at the dedication of the New Space Laboratory at the Detroit Science Center.

The FAAC was in the media in 2005, mentioned in a Free Press article about the Forest Elementary Science Fair. And, we can also take pride in having a club TV star - John Kirchoff's interview by Paul Gross on Channel 4, in conjunction with Astronomy Day (pardon the pun).

Other events actively supported by our members were the swap meet and the banquet at Station 885. In addition, our attendance at star parties across the country including the Winter Star Party in Florida, the Texas Star Party and the Great Lakes Star Gaze was outstanding. And, let's not forget the record number of "establishments" we've had: the club library, the HFCC planetarium presentation team, the Richmond Airport observing site and our Yahoo! users group were all realized in 2005.

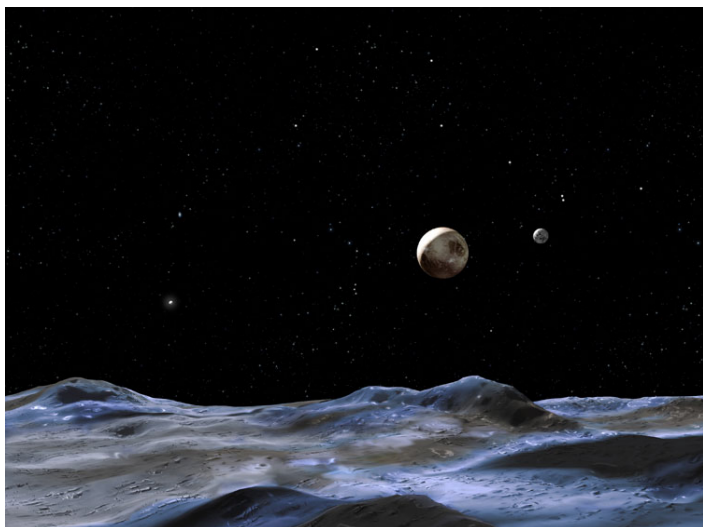
Lastly, I would like to recognize all of the members who gave presentations in 2005, with a special "Thank You" to our guest speakers: Dr. John Rather of WSU, who spoke at our February meeting, and to Dr. Charles Jacobs of HFCC, who spoke at our banquet.

In taking this look back, it's truly amazing how much we have done! Let's all pause a moment to take pride in these accomplishments, as we move forward into 2006.

## Snowstorm... *(continued from page 1)*

molecules crystallize and the atmosphere comes down.

"The collapse can happen quite suddenly," says Alan Stern of the Southwest Research Institute. "Snow begins to fall, the surface reflects more sunlight, forcing quicker cooling, accelerating the snowfall. It can all be over in a few weeks or months."



*This artist's rendering shows how Pluto and two of its possible three moons might look from the surface of the third moon. Credit: NASA/ESA and G. Bacon (STSci)*

Researchers believe this will happen sometime during the next 10 to 20 years. Pluto is receding from the warmth of the Sun, carried outward by its 25% elliptical orbit. Winter is coming.

So is New Horizons. Stern is lead scientist for the robotic probe, which left Earth in January bound for Pluto. In 2015 New Horizons will become the first spacecraft to visit that distant planet. The question is, will it arrive before the snowstorm?

"We hope so," says Stern. The spacecraft is bristling with instruments designed to study Pluto's atmosphere and surface. "But we can't study the atmosphere if it's not there." Furthermore, a layer of snow on the ground ("probably a few centimeters deep," estimates Stern) could hide the underlying surface from New Horizons' remote sensors.

Stern isn't too concerned: "Pluto's atmosphere was discovered in 1988 when astronomers watched the planet pass in front of a distant star—a stellar occultation." The star, instead of

vanishing abruptly at Pluto's solid edge, faded slowly. Pluto was "fuzzy;" it had air. "Similar occultations observed since then (most recently in 2002) reveal no sign of [impending] collapse," says Stern. On the contrary, the atmosphere appears to be expanding, puffed up by lingering heat from Pluto's waning summer.

Nevertheless, it's a good thing New Horizons is fast, hurtling toward Pluto at 30,000 mph. Winter. New Horizons. Only one can be first. The race is on...

Find out more about the New Horizons mission at: <http://pluto.jhuapl.edu>. Kids can learn about Pluto at: [spaceplace.nasa.gov/en/kids/pluto](http://spaceplace.nasa.gov/en/kids/pluto).

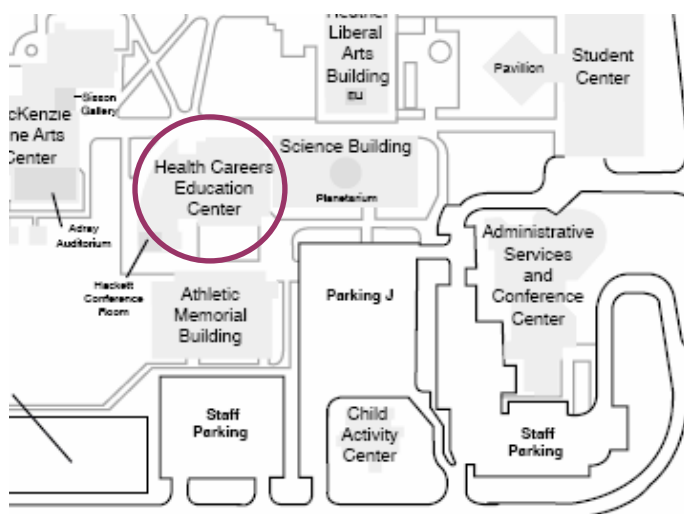
*This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with NASA.*

## January FAAC Meeting Site!

Bob MacFarland

The January 26th FAAC meeting (and only this meeting) will be held at a location different from the usual Rosenau rooms in the Administrative Services and Conference Center.

This month we meet in the Hackett Conference room, H-150, in the Health Careers Bldg., which is located 2 buildings west of where we normally meet, on the west side of parking lot where we normally park. This is just west of the Science building. Start time remains the same, 5:30 pm. Find a larger map of the HFCC Campus at: [http://www.hfcc.edu/contact/campus\\_maps.pdf](http://www.hfcc.edu/contact/campus_maps.pdf)



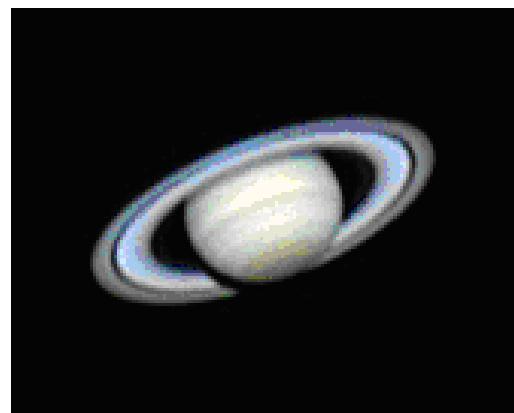


## Astro Imaging SIG

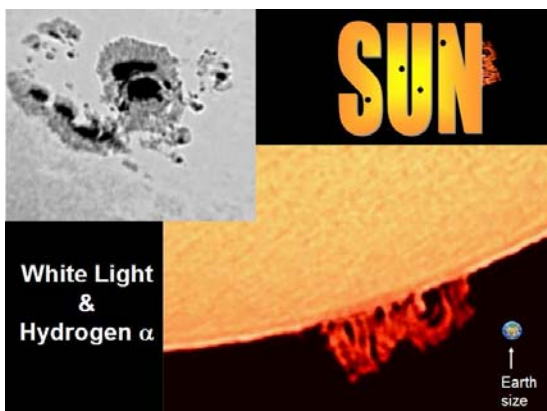
Jim Frisbie

The next meeting of the SIG is Thursday, February 9, 2006, 5:30 pm at Henry Ford Community College, in Dearborn, in the Roseneau Rooms at the Administrative Services Bldg (same room as the regular FAAC General Meeting), topic TBD. All FAAC members and their guests are invited. If you approach the Faculty parking gate, it should open allowing you to park close to the building.

The first FAAC Astrophoto Contest, organized by Jim Frisbie with the SIG, ended with these winners:



Beginner 3rd: Saturn –Bob Polmanter



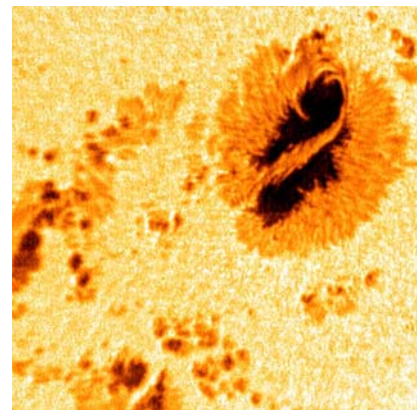
Beginner 2nd: Sunspot 10808- Gary Strumolo



Beginner Winner: DS #2, M31 – Gordon Hansen



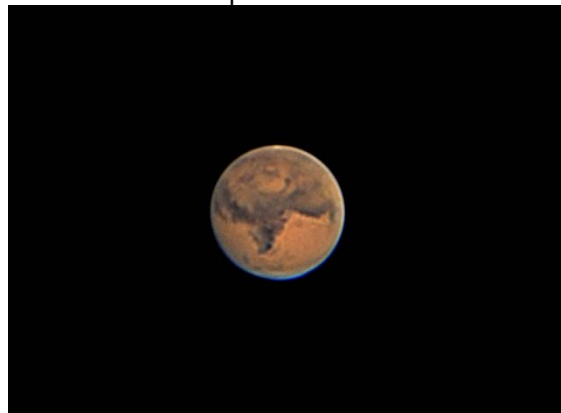
Intermediate Winner: Jupiter with IO –Jim Dolfi



Advanced Winner: Sunspot AO0798 – Jim Frisbie



Advanced 2nd (Tie): B33 and Environs – Tony Licata



Advanced 2nd (Tie): Mars – Mike Rousseau



**RIDER'S**  
**HOBBY SHOPS**

*The 3<sup>rd</sup> Annual*

# Astronomy Show & Swap Meet

Hosted by  
Ford Amateur Astronomy Club (FAAC)  
& Rider's Hobby – Livonia

**Saturday, Jan 28, 2006 9:00 am - 3:00 pm**  
Holy Cross Church Gymnasium, 30650 Six Mile, Livonia

**Included: ASTRONOMY PRESENTATIONS\***  
9:30 am - 11:00am - 12:30pm - 2:00pm

*Earn Cash By Selling Your Extra:*  
Telescopes - Eyepieces - Cameras - Binoculars - Mounts  
Tripods - Software - Publications - Accessories, etc.

***Or, locate that special bargain you might not otherwise find!***

**Admission:** \$5.00 advance or \$6.00 at the door  
(children 15 and younger – Free)

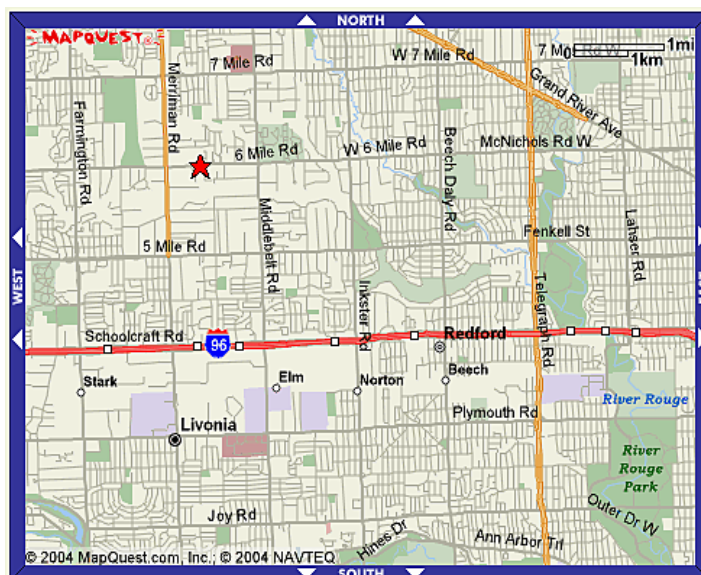
**Sales Table:** As available at the Door, \$20 (one admission ticket included).

(Advanced Registration ended January 21).

**Doors Open: 8:00am for setup.**  
*Complimentary Coffee & Donuts  
provided by Rider's Hobby.*

**Location: Holy Cross Lutheran Church  
Gymnasium 30650 Six Mile, Livonia, north  
side of Six Mile, ½ mile east of Merriman.  
See STAR on map.**

\*See page 6 for presenters.



**For More  
Information:**

Contact Jim via email: w8tu@comcast.net or call (734) 453-1422, or  
John Kirchoff via email: riderslivonia@aol.com or call (734) 425-9720

## Eagle at the New DSC

Terry Oparka

*(Reprinted with permission – Warren Weekly)*

A new exhibit at the New Detroit Science Center (DSC) aims to inspire young people to make the leap into outer space.

"This is perhaps the most significant exhibit we've had here," said Shawn Kahle, president and chief executive office of the DSC, "This is one of the largest and most comprehensive exhibits on space in existence."

Highlights of the 12,000-square-foot "Space, a Journey to our Future," exhibit include rocks for the moon and Mars that may be touched, an infrared camera that displays body temperatures on a screen, a centrifuge that visitors can power like a bicycle that is designed to solve the problem of lost muscle tone and bone mass in space, a wheel that is turned to simulate weightlessness, and a display of artifacts from the space program.

Exhibit spokesman Eugene Cernan, lasof the 12 NASA astronauts to walk on the moon, said he hopes the exhibit will inspire kids to dream, and make the impossible happen. Cernan said that NASA plans to go back to the moon, and then on to Mars.

Cernan participated in the Gemini IX, Apollo 7, 10, 1, and 17 missions and logged more than 566 hours in space, including 73 hours on the surface of the moon.

"My dream was to fly airplanes off ships," said Cernan. "I never dreamed I would walk on the moon." He said he would go back to the moon or to Mars "in a minute." The most striking thing about his experiences on the lunar surface was looking back at earth though the blackness of space.

"I was walking on another place in the universe, not Earth," said Cernan. He said he felt very nostalgic during his last walk on the moon.

"As I climbed up that ladder, I knew I would never be there again." Birmingham resident Janice Haausman said she grew up watching Cernan and others walk in space and on the moon.

"Apollo is history to kids, and we lived through it," said Hausman, who attended the exhibit with her son Eric, his teacher Phyllis Jarvis and eight other students in the Automotive Engineering Mentoring Program at Berkshire Middle School in Birmingham. Eric said he liked powering the centrifuge best of all, although he said it made

him kind of dizzy. He plans to pursue science studies and would like to see humans land on Mars.

"They (the students) grew up with the space shuttle and the International Space Station," said Janice Hausman. "What we think of space and what the think of space is different."

She added that she and her family have visited the Kennedy Space Center in Florida and the Johnson Space Center in Houston, and a lot of the same information is presented in the space exhibit at the Science Center.

"It's nice to see the exhibit come here."

*The exhibit will be at the DSC through May 14, 2006. Admission to the Science Center and Exhibit, which is geared toward children aged 9-17, is \$13 for adults, 10 for children 2-12 and senior citizens.*

*General Motors, Lockheed Martine and Bank One sponsor the exhibit, which is produced by Clear Channel Exhibitions in collaboration with NASA and the National Science Teachers Association.*

*The DSC is at 5020 John R., at Warren Avenue in Detroit, telephone 313-577-8400. Also check [www.spaceexhibit.com](http://www.spaceexhibit.com) for more information.*

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## Swap Meet Presenters

Jim Frisbie

The Third Annual FAAC Astronomy Swap Meet, co-hosted by FAAC and Riders Hobby Shop-Livonia, will be held on Saturday, January 28, 2006 (see Swap Meet, page 5 in this newsletter, for full details). Free Coffee and Donuts will be provided by Riders Hobby. Admission includes these presentations throughout the day:

**9:30 am:** Al Rothenberg - "The Long Night of Selenography - A Brief History of Lunar Observation."

**11:00 am:** Jeff Thrush - "The Atmosphere, Effects of Seeing, Optics, Collimation, Focus, Tracking, and the Use of Field Flatteners"

**12:30 am:** Gordon Hansen "Astronomy 101"

**2:00 pm:** John Kirchhoff will provide his newest recommendations on "High Resolution Webcam Imaging"



## Minutes – December 1, 2005

Bob MacFarland

Don Klaser opened the meeting at 5:30 by asking the attendees to share their astronomy related experiences since the last General Membership meeting. Chris Strang, Gary Strumolo, Bob Stonik, John Kirchhoff, Gordon Hansen and Mike Bruno responded.

Jim Frisbie was then introduced who presented the results of the Astro Imaging Contest. First, he displayed all 33 entrees from the Beginner, Intermediate and Advance classes for the Deep Sky, Lunar & Planetary, Solar, and Other categories. Then, Jim announced the winners who each received a \$50 gift certificate from Rider's Hobby Shops (see SIG article on page 4).

All 33 of these outstanding images can be seen on the FAAC Yahoo Group site in the Files section.

John Kirchhoff from Rider's Hobby Shops in Livonia brought in a vast array of his new offerings to show to the meeting attendees. Included were some of the latest offerings from Orion, Celestron and Meade, Baader and others. These covered a range of entry level to advanced telescopes, eyepieces, filters, web cams, versa tools, charts and other goodies.

On the business side of the meeting, Don Klaser passed around a pack of thank you letters from the Columbus, Ohio middle school students who were shown the skies over the Henry Ford last month by our club members last month.

The October meeting minutes were accepted without change and Gordon Hansen gave the Treasure's report (details can be found elsewhere in this issue).

Bob Fitzgerald asked for a volunteer(s) to take over the Pop Management duties for the winter months. You may contact Bob via the FAAC Hotline or contact any officer if you are willing to give back to the club in a small way by picking up this very important function.

The Astro Imaging SIG will meet on January 12th. Same time, same place.

The FAAC Board initiated an Officer Nomination Committee led by Bob Fitzgerald. An initial slate of candidates has been assembled. However, you may nominate yourself or anyone else up until the

commencement of the elections at the January 26th General Membership meeting. Contact Bob or any officer with your nomination(s).

FAAC members are reminded that the location the January 26th General Membership meeting (and only the January 26th meeting) will be held at a different location. This month we meet in the Hackett Conference room, H-150, in the Health Careers Building, which is located 2 buildings west of where we normally meet, on the west side of parking lot where we normally park. This is just west of the Science Building (see separate announcement and map on page 3).

The Board is asking for members who are willing to present at future meetings. Contact Don Klaser if you are interested. The annual Ice Daze event at Lake Erie Metropark will be held on Saturday, January 21st. A detailed notice to call for volunteers for this public outreach outing will be posted on the Yahoo Group page during the first week in January.

Also, the FAAC/Farmington Hills Forest Elementary school public outreach event is scheduled for Wednesday, February 1st. Contact Dan Klaser if you are interested in supporting.

High school seniors who are planning to pursue a science related curriculum next fall and would be interested in a \$200 – \$400 FAAC scholarship should apply by March 31st, 2006. Go to either the FAAC website or the FAAC Yahoo Group "Files" section for a .pdf file of the document which contains all of the needed instructions.

Mike Bruno reported that we now have three trained FAAC club members who are conducting the Tuesday night HFCC planetarium night sky presentation program and are looking for more. Contact Mike if you are interested in learning these skills and helping out. He guarantees clear skies at every outing.

Finally, Jim Frisbie and Tom Blaszk have set the date of January 28, 9 am to 3 pm, for the 3rd Annual FAAC Swap Meet. Gather up your "astro-goodies" to sell and save your cash for the great deals on such goodies available at this upcoming event. Flyers are posted with details in this issue (see page 5), on the web, and in the Yahoo group.

See you Saturday (January 28<sup>th</sup>) at the Swap!

## FAAC Calendar of Events 2006

### January

- 21 - Lake Erie Ice Daze Public Outreach
- 28 - 3rd Annual FAAC Astro SWAP Meet

### February

- 1 - Forest Middle School Public Outreach

### April

- TBD - FAAC Annual Dinner Party
- 8 - (tent.) Lyon Oaks Twp. Park Star Gaze

### May

- 6 - Astronomy Day - The New Detroit Science Center / Beginner's Night - Island Lake Recreational Area

### June

- 2 & 3 - Astronomy on the Beach - GLAAC (Observing Only)

### July

- 1 - Beginner's Night - Island Lake Recreational Area

**TBD** - Summer FAAC / Sand Hill Soaring Club Combined Picnic

### August

- 5 - Beginner's Night - Island Lake Recreational Area

### September

- 22-24 - Great Lakes Star Gaze - Gladwin
- 28-29 - Astronomy on the Beach - GLAAC (w/Presentations)

### October

- 28 - Beginner's Night - Island Lake Recreational Area

## 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

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**Coulter 10" Dobsonian** telescope. \$400.

Contact Bob Stonik, 313-361-4954.

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**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

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**ASTRO GARAGE SALE \*\*\*** Meade 9mm Illuminated Reticle – internal battery, LN. \$150 new. \$90. \*\*\* 4 mm TV Radian eyepiece LNIB \$240 new. \$180 (or will trade for Panoptic or Radian). \*\*\* Rigel 1X Finder w/mounting bracket and new battery (0.5 & 2.0 Degree Circle Images) \$35 new - \$20. \*\*\* Galileo 1X Circular Illuminated Finder - NIB \$16 new - \$12. \*\*\* A set of 2 #2750 Thousand Oaks 70 mm Type II Solar Filters for binoculars or optical tube. Used twice, \$69 new - \$45. \*\*\* Padded Orion Eyepiece Filter Case \$4 \*\*\* 12V Fluorescent Trouble Light with cigarette lighter connector \$5. \*\*\* PM Research Hinged Telrad Dew Cover w/screws \$8. \*\*\* Finder Scope Ring Set for 4 1/2" or smaller finder scope w/bracket and nylon screws - \$5. \*\*\* Orion Deluxe Laser Collimator w/new batteries. IB \$80 new. \$55. \*\*\* Infinitely Adjustable Position / Store Flat Observing Chair - Great for Meteor Showers \$50. \*\*Celestron Foam Filled Hard Shell Case - Lockable w/keys 15 1/2" w x 29 1/2" l x 11" d, never used - \$99 new - \$60.

Unless sold beforehand, all items will be available to see at the Jan. 28th Swap Meet.

Contact Bob MacFarland, stargzr@wowway.com or 248-321-8579



## FAAC General Meeting Agenda

January 26, 2005 (5:30 pm)

### Opening/Introductions/Member Observing

**Tech Talk - Designing a Solar Rig** - Gary Strumolo

**Presentation - Sounds of the Universe** - John Schroer

**Club Business / Secretary/ Treasurer Report**

### Election of Officers

### Club Projects / Committees / Member support

- Lake Erie Ice Daze Recap (Bob MacFarland)
- Astro Imaging SIG (Jim Frisbie)
- Dinner Party (Jim Frisbie)
- Swap Meet (Jim Frisbie)
- Forest Elementary - Feb. 1 (Don Klaser)
- Pop Management (Don Klaser)
- 2006 Program Presenters (Don Klaser)
- Walk-ins

## Sky Calendar

Jim Frisbie

### January

- 22 Su Last Quarter moon 10:14 AM
- 26 Th Saturn at opposition-visible all night
- 29 Su New moon 9:15 AM

### February

- 3 Fr Saturn .5 degree from M44 (Beehive) cluster-PM
- 5 Su First Quarter moon 1:29 AM
- 5 Su Moon passes 2 degrees north of Mars-PM
- 11 Sa Moon passes 4 degrees north of Saturn-PM
- 12 Su Full moon 11:44 PM Hunger Moon
- 17 Fr Moon occults Spica; reappearance at about 10:59 PM
- 20 Mo Moon passes 5 degrees south of Jupiter-AM
- 21 Tu Last Quarter moon 2:17 AM
- 23 Th Mercury at Greatest Elongation east (18 degrees)
- 24 Fr Moon passes 10 degrees south of Venus-AM
- 27 Mo New moon 7:31 PM

*All times in Eastern Daylight Time.*

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

## Treasurer's Report

Gordon Hansen

### Bank Accounts

Checking \$ 780.36

Savings \$ 2,990.53

**TOTAL Bank Accounts \$ 3,770.89**

### Cash Accounts

Cash Account \$ 70.46

**TOTAL Cash Accounts \$ 70.46**

### Asset Accounts

GLAAC \$ 626.45

Projector \$ 543.97

Scholarship \$ 354.60

**TOTAL Asset Accounts \$ 1525.02**

**OVERALL TOTAL \$ 5366.37**

## Last Reminder – Dues Due!

Gordon Hansen

If you haven't renewed your membership now's the time. Pay at the January meeting, or, send your check in today to:

FAAC  
P.O. Box 7527  
Dearborn, Michigan 48121-7527

Renewal fees for 2006 are only \$25 if received by the end of January. After January 31 late renewals are \$30. Remember you can convert to 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.

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



# RIDER'S<sup>®</sup>

## HOBBY SHOPS

<b>Store Hours:</b> M-F 10am-9pm SAT 10am-6pm SUN Noon-5pm	<b>Gen. Manager:</b> John Kirchhoff <b>Website:</b> <a href="http://www.riders.com">http://www.riders.com</a>	30991 Five Mile Road Livonia MI 48154 Tele: (734) 425-9720 FAX: (734) 425-2029
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**Meade Lightbridge 12" Truss Dob  
Now BIG is Portable! Deluxe Model  
\$1049.00  
IN STOCK !**