STAR STUFF

The Newsletter of the Ford Amateur Astronomy Club

Volume 16, Number 4 April 2007

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Astronomy Day / Beginners' Night a Success!

by John Kirchhoff

The opening Beginner's Night of 2007, held at our Island Lake, Spring Mill Pond observing site, was a grand finale to Astronomy Day, supported by the club at both the New Detroit Science Center, and Kensington MetroPark.

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Clouds from Top to Bottom

by Patrick L. Barry

During the summer and fall of 2006, U.S. Coast Guard planes flew over the North Pacific in search of illegal, unlicensed, and unregulated fishing boats. It was a tricky operation—in part because low clouds often block the pilots' view of anything floating on the ocean surface below.

To assist in these efforts, they got a little help from the stars. Actually, it was a satellite—CloudSat, an experimental NASA mission to study Earth's clouds in an entirely new way. While ordinary weather satellites see only the tops of clouds, CloudSat's radar penetrates clouds from top to bottom, measuring their vertical structure and extent.

By tapping into CloudSat data processed at the Naval Research Laboratory (NRL) in Monterey, CA, Coast Guard pilots were better able to contend with low-lying clouds that might have otherwise hindered their search for illegal fishing activity. In the past, Coast Guard pilots would fly out over the ocean not knowing what visibility to expect. Now they can find out quickly. Data from research satellites usually takes days to weeks to process into a usable form, but NASA makes CloudSat's data publicly available on its QuickLook website and to users such as NRL in only a matter of hours—making the data useful for practical applications.

"Before CloudSat, there was no way to measure cloud base from space worldwide," says Deborah Vane, project manager for CloudSat at NASA's Jet Propulsion Laboratory. CloudSat's primary purpose is to better understand the critical role that clouds play in Earth's climate. But knowledge about the structure of clouds is useful not only for scientific

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STAR STUFF

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

PRESIDENT:	Don Klaser
VICE PRESIDENT:	Doug Bauer
SECRETARY:	Ken Anderson
TREASURER:	Gordon Hansen
NEWSLETTER EDITOR:	Dale Ochalek

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 of the dark skies at Richmond Airport, Unadilla, given prior permission. 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.

It's all a Matter of Scale

President's Corner

Don Klaser, President, FAAC

In April Astronomy Magazine, there's an article about the New Horizons mission to Pluto and the Kuiper Belt. Launched in January, 2006, it only took 13 months to reach Jupiter, but it will take over eight more years to arrive at its destination. That got me to thinking about the scale of things - both in space and here on Earth. Over the last two years, we've had two interesting presentations at our general meetings about the scale of things in the universe -- I hope you had the opportunity to hear them. The Detroit Science Center has a scale model of the solar system along the rail above the science stage; so, the other day, I paced it off. The distance from the Sun to Mars was less than a half a span of both arms, but the distance from the Sun to Pluto was 14 full spans - that's some serious distance! No wonder the New Horizons spacecraft will be in hibernation for most of the next eight years. And, some of you may recall that we would set up a scale model of our neighborhood in space at the annual Island Lake Star Party Event. With the Sun placed at the entrance booth, the four terrestrial planets were all grouped together within the first few hundred feet, and Pluto was positioned by the registration tent at Spring Mill Pond - 2.9 miles from the booth!

This scale of things also applies to us right here on earth. I think the best example of this is the drive to Florida along I-75. Winter Star Party goers know what I'm talking about! You get through Ohio quickly, Kentucky - no problem. And Tennessee - man, we'll be in Florida in another hour or two. Not!! Georgia goes forever and Florida is even worse in my book. Those budget airfares are lookin' real good.

We also come in contact with scale in a variety of other ways, including woodworking plans, model car and train sets, boats and planes. In Colonial America, cabinetmakers would make scale models of a chest or buffet for their prospective customers in hopes that they would buy the real thing. Talk about customer service! Lastly, there are two types of scales I would rather not think about. First - all those musical scales my mother made sure I practiced on my clarinet (those minor key scales were a killer) and second - the one in the bathroom - Ouch!

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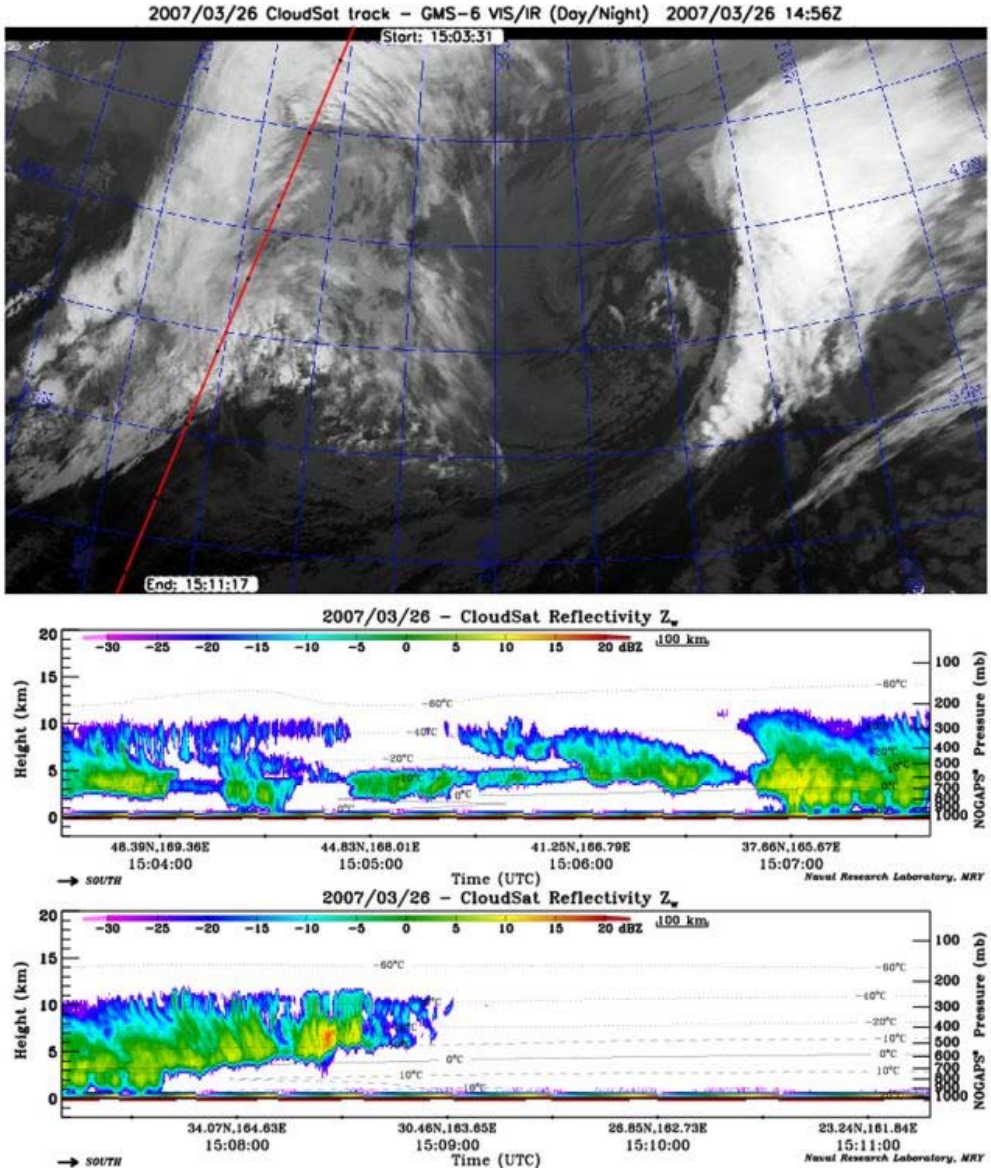
Clouds... *(continued from page 1)*

research, but also to operational users such as Coast Guard patrol aircraft and Navy and commercial ships at sea. "Especially when it's dark, there's limited information about storms at sea," says Vane. "With CloudSat, we sort towering thunderclouds from blankets of calmer clouds. "And we have the ability to distinguish between light rain and rain that is falling from severe storms." CloudSat's radar is much more sensitive to cloud structure than are radar systems operating at airports, and from its vantage point in space, Cloudsat builds up a view of almost the entire planet, not just one local area. "That gives you weather information that you don't have in any other way."

See cloudsat.atmos.colostate.edu for archive of all data, and for kids, spaceplace.nasa.gov/en/ kids/ cloudsat_puz.shtml.

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



A CloudSat ground track appears as a red line overlaid upon a GMS-6 (a Japanese weather satellite) infrared image. CloudSat is crossing the north-central Pacific Ocean on a descending orbit (from upper-right to lower-left) near a storm front. The radar data corresponding to this ground track (beginning in the center panel and continuing into the lower panel) shows a vertical cloud profile far more complex than the two-dimensional GMS-6 imagery would suggest. Thicker clouds and larger droplets are shown in yellow/red tones, while thinner clouds are shown in blue.

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Beginners' Night... *(continued from page 1)*

Nice weather brought out many FAAC members, and there were a number of non-club observers and future amateurs at the Saturday night event--thanks to the promotional efforts of DCS's John Schroer, and company!

Parking was at a premium, we estimated 35 cars and over 40 telescopes on the field by the time it started to get dark. Scopes ranged in size from 66mm (several William Optics Zenith Star 66SD present) up to Eric Webster's 22" truss dob (that's 559mm of photon-gathering power folks!).

Speaking of dobs there were more big 12" and larger newtonians on the field than I can ever remember seeing. Jim Moscheck brought his big new homemade telescope, Bob MacFarland had his 15" Obsession, Bob Polmanter and me with 18" glass, and Joe Vargas with his new 12" Orion Intelliscope.

There were lots of Schmidt-Cassegrains (SCTs) - Steve's Meade 14" LX200 and a number of Celestron 11 models, both on fork mounts (Ray Rauen) and GEM (Ed Isabell) and plenty of eight-inch SCTs. Refractors were well-represented too

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Photos by John Kirchhoff

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Beginners' Night... *(continued from page 4)*

with Milton French's 150mm f/12. Milton offered a stunning view of a very close one arc-second double in Leo at one point. Craig had his custom Takahashi 90mm with Sky Commander DSC and Tom Blaszak had a new Celestron Omni 102mm on a Sirius GoTo mount.

I helped with Diane Worth's new William 66SD, and George Korody showed me a beautiful shot of the Rosette he took with his 66 from his back yard observatory in Northville. Rich Ernst was able to give Ed Halash a tutorial on video deep sky imaging (is there a StellarCam in your future Ed?) and Chris was busy creating webcam images of Saturn on his Meade LX200 when I walked by and Randy Smith was busy imaging the moon with his

Celestron 6" SCT and NexImage webcam. Thanks to Pam, too, for all of the grub...it was delicious. Our binocular expert Bob FitzGerald was kind enough to take a peek though the pair of William Optics 10X50 ED triplets I brought with me and gave them a good comparison to his "gold standard" Fujinon 10X50s; we both agreed that the WO held up very well in the test.

Thanks to everyone for attending the first Beginner's Night of 2007, and for your help in making all of guests and future club members and hobbyists welcome. As I wandered the field I couldn't help but notice all of knowledge our club members are willing to share and help you are all willing to give. I sure had a good time and I will be looking forward to the next Beginner's Night on May 19. Hope to see you there!

March 22 Meeting Minutes

Ken Anderson

Attendance: 29+

Meeting officially started at 5:30 pm with pizza and pop available, in the Hackett conference room of the HFCC Health Careers Building. Don Klaser, President, chaired the meeting and led the introductions, and asked for observations.

Ken Anderson and John Kirchoff participated with about 25 amateur astronomers at Lake Hudson in a March 17 "Messier Marathon," and observed all the Messier objects, except for M2, 30, 55, 72, 73, and 75. Ken, John, and one other were the only survivors who stayed till sunrise. Frank Ancona and Doug Bauer also reported some observing.

Guy Maxim, from the Warren Astronomical Society, gave the main presentation entitled, "Neutron Stars." Neutron stars, he said, are created by supernova and contain about 1.4 to 3 solar masses compressed to a diameter the size of Chicago. Type II supernovae occur after the last phase of the hydrogen, helium, carbon, neon, oxygen, and finally iron creation in a supergiant's core. Then electrons are sucked into the nucleus of the iron atom at quarter of the speed of light. The star collapses and bounces back a neutron shock wave. All elements with atomic numbers greater than iron are created by supernova.

The energy from one second of a supernova is roughly equal to the total energy given off by the sun in its entire lifetime (and the sun still has another 5 billion years to go). The visible part of a supernova is only one percent of the total energy given off. Supernova temperatures reach 3-4 billion degrees, and cool off by emitting neutrinos. Their atoms become slender spindles (not spheres) due to the strong magnetic field. It becomes a neutron super fluid (like a superconductor with protons), and mini-vortices rotate the fluid, but the rotation rate is, not steady. The more massive, the smaller the core, and the core contain just quarks (the building parts of electrons, neutrons, and protons. A one-pound object on Earth would weigh 33 lbs. on the

Sun, 165 tons on a white dwarf, and 100 million tons on a neutron star. Hypothetically, the one-pound object dropped from six feet above the surface of a neutron star, would impact the surface at 700 miles/sec with the energy of 0.5 kiloton, excluding gamma ray breaking.

A typical supernova produces 1029 megatons of TNT force at 1046 watts (one megaton (Mt) equals one million tons). The largest exploding bomb ever was only 60 Mt.

A pulsar has a radio beam going in, and a gamma ray coming out with a 0.25 to 1.0 millisecond pulse. They can be created two ways. The first is a higher mass binary. The second is a neutron and white dwarf which pulses quickly. The Chandra X-Ray observatory recorded the Crab nebula between 1.4 to 642 pulses/sec. This was a type I supernova.

A magnetestar SCR burst occurs when the magnetic field twists so much, that the surface

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Meeting Minutes... *(continued from page 5)*

cracks, and blows out gamma rays. Large SCR destroys all life in its path. In the core of our own Milky Way galaxy, exists Sgr A*, which contains many black holes and pulsars in the center.

A quark star contains pure quarks (it collapses the neutrons to their bar components). And finally a Preon star is even denser, breaking the quarks into their leptons, etc. If escape velocity is less than the speed of light, we would be able to see these.

Jim Frisbie led the Tech Talk, "Collimating Binoculars." Collimation is important since it reduces eye strain, prevents double images. Unlike how both animation and Hollywood show binocular views with overlapping circles, properly collimated binoculars merge to one single image. The causes of poor collimation can include shipment damage, rough handling, age, and/or improper adjustment. Tests involve picture windows, placing the binoculars on a table, and determining if you can see the same image with each eye.

Types of collimation problems include horizontal divergent error, rotation error, and/or vertical alignment error. You can collimate by eye (blink your own eye or block your eye with a card) or by using a collimating scope (4x rifle scope with reticle). Disassembling binoculars requires a handmade tool resembling the letter A needed to loosen the objective retaining ring. Removing the eyepieces is easier from the distal end. Collimation fix types include: disposal (of cheap ones - collimate your better binoculars), Z joint (easy to fix, since may be screwed in improperly), eccentric objectives, and adjustable prism shelf (push pin screws). Jim claims the iterative process takes 1.5 hours to do the first time.

Don Klaser led the business portion. Ken Anderson gave the Secretary's report. Bob FitzGerald's February minutes, found on the web and newsletter, were approved without corrections. Gordon Hansen gave the Treasurer's report, accounts totaling $8000 (excluding GLAAC) with the expected increase due to receiving annual dues. About $1400 will be taken out for the FAAC dinner, since we do not have sub accounts for RSVP deposits.

See Treasurer's Report elsewhere in this newsletter.

Next Don Klaser, and other club members as indicated, discussed past and upcoming events, and other club business.

Bob MacFarland, Doug Bock, and Gordon Hansen reported on the March 3, 2007 Lunar Eclipse Observing at Cove Point Lake Erie Park – and had about 10 minutes of observing. Steve and Don Klaser were at DSC (observing the lunar eclipse via linkup from Belgium). Note: Next Lunar Eclipse August 28, before sunrise.

The annual FAAC Banquet is scheduled for March 24, 6 pm at Station 885 in Plymouth, MI. 48 signed up (58 allowed maximum). Al Bates is putting together the slide show. Dale Ochalek is leading Astro Jeopardy. Guest Speaker is Dr. Kerry Zater, Crestwood/Ensign Planetarium.

HFCC Planetarium is showing "Spring Sky" from April 1-June 19 (Tuesdays). Doors open 7:15-7:30 pm. Free. Dennis Salliotte, Eric Rasmussen are presenting. Families, kids, scouts welcome.

SIG meetings are every second Thursday of each month. The next meeting is April 12th at HFCC Rosenau conference room, topic TBD.

April 21, 2007 is Astronomy Day - Detroit Science Center is 10 am-4 pm, for solar viewing, telescope contest. John Schroer has free parking if you register and arrive by 9 am. The DSC will provide snacks and refreshments for volunteers.

Also, Kensington MetroPark Nature Center will support daytime solar viewing only. At the Dearborn Police Dept. on Michigan Ave., Harold Thomason offers daytime solar viewing.

And, at Island Lake, Spring Mill Pond Site, we will have Beginner's Night, nighttime observing (after 6 pm). Bring your telescope or look through others. Public welcome.

Reminder, FAAC meetings are every fourth Thursday, of each month; next one is April 26 at HFCC Rosenau conference room, presentation is "Extraterrestrial Intelligence – Three views" by Dale Partin (Warren Astronomical Society).

The FAAC Library will open one hour before the meeting, at HFCC Science Center Conference Room 109 through efforts of Gary Stahl. A list of books is available in FAAC Yahoo site. Members may sign out items for one month.

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Meeting Minutes... *(continued from page 6)*

The FAAC Road Trip to MSU Abrams Planetarium and Observatory is scheduled for June 22 at 5:30 pm, returning 1 am. Jim Frisbie is coordinating. Tickets (estimate) $20 Members, $28 Non-Members. Includes 8 pm planetarium show, "Search for Life in the Universe," behind the scenes. Open MSU 24" Cassegrain Observatory (weather permitting), bus trip with snacks, beverages, restroom (pick-up at Riders, Livonia). See flyer in this newsletter.

FAAC Dark Sky Workshop at Gladwin (on the hill) from Sept 9-13 is being coordinated by Tony Licata. Dark Sky Star Party for club members and families (not public in general).

Gladwin Star Glaze is September 14-16.

The GLAAC Astronomy on the Beach is Sep 21-22, at Kensington MetroPark for the general public. Solar observing earlier, 6 pm official start (6:30 pm first show), John Shroer coordinating guest speaker. New this year to encourage equipment setup, even with cloudy weather, we will raffle an eyepiece for those who set up. Artis Harold of Gross Point will help put up two portable planetariums. Radio Astronomy – Mark Depress. 4M Meade involvement is to be investigated. The next GLAAC planning meeting is April 29 at Kensington MetroPark Nature Center.

Seeking 2007 speakers for both FAAC 30 min-one-hour Main Presentations, and 15-20min Tech Talks. Contact Don Klaser at 586-596-9150 or dklaser4750@wowway.com.

Jim Barnes from SUNSMA at Richmond Airfield has informed us that we are no longer required to give two-day notice to observe. However they would like to be informed if 10 or more people observe, or plan to observe. So track how many people actually are present, and report back. We still plan to have the mid-summer picnic.

The 2007 Calendars (with Whirlpool cover) from Astronomy Magazine still available for purchase-cheaper from FAAC than if purchased individually from Astronomy magazine.

Equipment chairperson wanted, to store and track or log equipment in/out! Jim Frisbie purchased Yamaha Stagepas 300 sound system, and will be evaluating wireless microphone. We also own laptop and projector for presentations.

Meeting Agenda – April 26

5:30 pm

Opening/Introduction/Member Observing

New Members and Guests – Diane Worth

Tech Talk: N/A

Presentation: Extraterrestrial Intelligence - Three Views – Dale Partin – Warren Astronomical Society

Club Business/Secretary/Treasurer reports

Club Projects/Committees/Member support

- Astronomy Day Recap– All
- Clear Sky Clock Sponsorship –- Greg Ozimek
- Astro-Imaging SIG – Tony Licata
- Trip to Abrams Planetarium - June 22, 2007 – Jim Frisbie
- GLAAC/AOTB – September 21 & 22, 2007 – Bob MacFarland
- Equipment Purchase – PA System – Jim Frisbie
- Club Wearables – Gordon Hansen
- Open discussion – All
- Close – Don Klaser

FAAC Events 2007

Bob MacFarland

May	**19** – Beginners' Night, Island Lake Recreation Area
June	**22** – FAAC Read Trip – MSU Abrams **23** – Beginners' Night, Island Lake Recreation Area
July	**21** – Beginners' Night, Island Lake Recreation Area
August	**18** – Beginners' Night, Island Lake Recreation Area
September	**5-11** – Astro-Imaging Workshop, Gladwin **14-15** – Great Lakes Star Gaze, Gladwin **21-22** – Astronomy on the Beach – GLAAC, Kensington Park
October	**20** – Beginner's Night - Island Lake
TBD 2007	– Sand Hill / FAAC Picnic – Detroit Symphony Orchestra night

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Treasurer's Report

Gordon Hansen

Bank Accounts	
Checking	1,267.51
Savings	5,616.30
TOTAL Bank Accounts	6,883.81
Cash Accounts	
Cash Account	100.04
TOTAL Cash Accounts	100.04
Asset Accounts	
GLAAC	1,497.21
Projector	787.13
Scholarship	281.05
TOTAL Asset Accounts	2,565.39
OVERALL TOTAL	9,549.24

Astro Imaging SIG

Tony Licata

The next meeting of the Astro Imaging SIG is Thursday, May 11th, 2007, 5:30 pm, Roseneau Rooms A-B, at HFCC in Dearborn, in the Administrative Services and Conference Bldg. (same as the FAAC General Meeting). If you drive up to the Faculty parking lot gate, it should open allowing you to park close to the building.

We will continue discussion of planetary imaging. An additional presentation is T.B.D.

Also, mark your calendars! The Dark Sky Workshop is scheduled for Sep 5th-11th, at River Valley RV Camp in Gladwin, MI. A flyer and sign-up sheet will be posted at the Yahoo group site. Hard copies will also be made available at the general meeting.

Items for Sale

Coulter 10" Dobsonian telescope. $400.
Contact Bob Stonik, 313-361-4954.

Celestron Orange Tube 8" (mid-1970s) Very good condition, no scratches, w/camera mount, tripod. RA bearings, slo-mo Dec fine. Corrector plate needs cleaning; needs visual back, diagonal.
Contact Dr. Nicolle Zellner, Albion College
nzellner@albion.edu

Schmidt-Newtonian 10" – F5.35, 1360 mm focal length with 2" focuser. Includes 60 mm guide scope, Full aperture solar filter by Thousand Oaks (Mylar). Also includes cooling fan, extra set of "O" rings. Corrector plate made by Optron systems (division of Nazca Corp. of Callifornia).
Also available is the Crestliner mount (on wheels).
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

AstroSystems 12.5" F5.26 TeleKit Dobsonian, 2" thk 1/15 peak to valley wave front Pegasus primary, new Sky Commander XP4 DSC , AstroSystems Phase IV focuser, 9 x 70 finder, internal filter slide, secondary heater, base mirror fan with 2 boundary layer fans, light shroud, full nylon cover, truss bag, wheelbarrow handles, other extras. $4400 new, asking $2150.

Contact Bob, stargzr@wowway.com

Orion Telescope 8-inch XT8
Very Good Condition
Comes with 6X30 finder,2 eps 25 & 9mm
Dobsonian mounted, great all around Scope!
$300.00

Contact Michael, 734-777-3605 or email:
mharri1000@netzero.com

Photon 127 5" f9 5" f9 achromatic refractor for sale. $300 OBO.

Contact Clay Kessler, ckessler@gatecom.com.

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FAAC ROAD TRIP 2007

MSU - Abrams Planetarium & Observatory

Friday, June 22, 2007 *5:30 pm - 1:00 am*

The Planetarium Show begins at 8:00pm followed by a "Behind the Scenes" look at Planetarium Operation. Weather permitting, we will travel to the MSU Observatory for Open Observing

Ticket Prices Include:
- **Planetarium Show:**
  "The Search for Life in the Universe"
- **What's Up Tonight**
- **A Behind the Scenes look**
- **Open observing at the observatory**
- **Bus transportation to and from the MSU Campus in East Lansing.**
  (Snacks & Beverages provided, restroom on bus)

Tickets: Members & Family: $ 20

Non-Members: $ 28

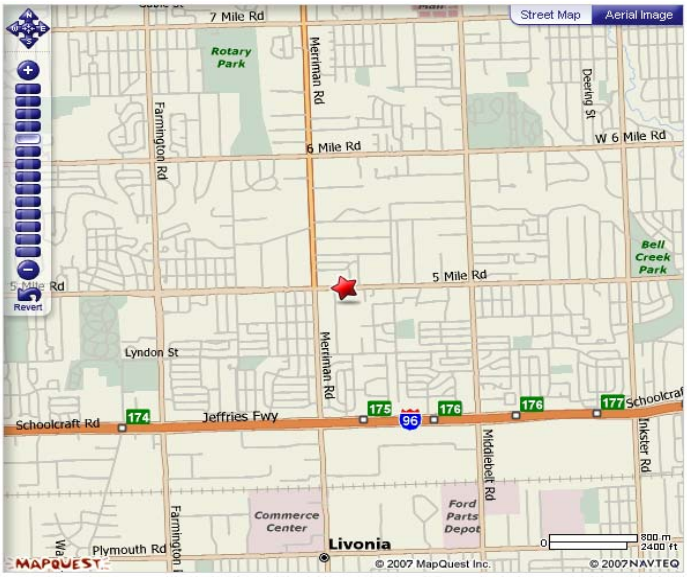
Registration Ends: June 1, 2007.

Sign Up: At the General Meeting or in Yahoo Site Files Section

Make Checks Payable: to FAAC. Send payment to **Ford Amateur Astronomy Club, P.O. Box 7527, Dearborn, MI 48121-7527**

Bus pick up location: Riders Hobby Shop, 30991 Five Mile Rd, Livonia, MI 48154. See **STAR** on Map.

NOTE: Bus will leave at **6 pm SHARP**! (Don't be late!) and return by approx. 1:00am



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

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