

The Focal Point

The Atlanta Astronomy Club
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Editor: Kat Sarbell

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August General Membership Meeting

By Keith "Kosmic Kow" Burns, AAC Program Chair

The next general meeting of the Atlanta Astronomy Club will be on August 18th at 8 P.M. at Emory University at the Goodrich Whitehall building. The meeting will take place in room 207. This is the first room on the left after entering into the building through the double doors. We will have refreshments just outside of the room before the meeting. A small donation in the "kitty" box is requested but not required. Directions on how to get to the meeting are on page 7.

We will have our business meeting first. This includes any announcements and other things of astronomical interest. Anyone who wishes to make any announcements, please notify Peter Macumber at president@atlantaastronomy.org and also email me at Keith_B@Bellsouth.net. That way Peter knows who is speaking ahead of time and he can schedule the time needed. I also need to know so I can put your information on a Powerpoint presentation slide that will run before and during the business meeting. Please have the announcements to me by no later than August 15th.

Our featured speaker of the night, Dennis Hands, gives his talk with questions and answers to follow. We will adjourn the meeting and head off to a local eating establishment for supper, dessert, or just a drink.

His talk is entitled, "Hard Work, No Pay, Eternal Glory: My Two Weeks on Mars." Come and hear about the experiences of Dennis Hands at the Mars Desert Research Station (MDRS) in the high desert of Utah. See pictures of the beautifully barren landscape, the few animals and plants encountered, and listen to the stories about the hard work simulating an out-of-this-world living environment.

The Mars Society, a non-profit organization championing the human exploration of the fourth rock from the Sun, operates MDRS. MDRS is one of four Martian simulated habitats worldwide that provides opportunities for scientific field research and protocol development.

Dennis served as the executive officer of Crew 42 at MDRS the last two weeks of January 2006. He is a science instructor at the Natural Science Center of Greensboro and a host at Guilford Tech's Cline Observatory.



Speaker bio: Dennis Hands grew up in Charlotte, North Carolina and met his wife Barbara at and graduated from Appalachian State University with a degree in social studies and education. In Greensboro, NC, he taught social studies and astronomy at Grimsley High School from which he retired in 2004.

"He's long been an advocate and fan of the space program, even to
Continued on next page



the extent of applying for the Teacher in Space seat on the shuttle Challenger. Dennis helped construct the Cline Observatory at Guilford Technical Community College and presently serves as Chair of the Observatory Advisory Board. He is also a member and past President of the Greensboro Astronomy Club.” Dennis also hosts many public nights at Cline Observatory, helping to bring the wonder of the stars to the public. He has been an observer of variable stars for the AAVSO.

Upcoming speakers and programs

September 15th: April Whitt of Fernbank Science Center will speak on a topic to be announced.

October 20th: meeting cancelled due to the Peach State Star Gaze. This event will include several wonderful speakers who will talk on various topics of astronomical interest. Be sure to make your reservations and attend.

July General Meeting Minutes

By Richard Jakiel, AAC Recording Secretary

The general meeting of the AAC started at 8:05 PM, with Peter Macumber presiding. The attendance was +50 AAC members and over a dozen guests, mostly from the 2006 ALPO convention. The business meeting was kept quite short (see the DAV initiative), with the main focus on upcoming observing events.

Professor Paul Wallace of Berry College (Rome, GA) gave a rousing talk on Johannes Kepler’s Intelligent Design. He discussed Kepler’s major accomplishments and his greatest failure (the harmony of the perfect solids and the Celestial Sphere) and tied this in with today’s controversial “Intelligent Design” (or ID) agenda. Though there are many similarities, Kepler was always a major champion of the scientific method - quite unlike most of the proponents of ID.

The DAV Initiative Proposal

After Dr. Wallace’s presentation, the Deerlick Astronomical Village (DAV) Initiative proposal was presented to the general membership. Earlier, president Macumber summarized the founding and history of the Deep Sky fund and gave an update on the progress of the initiative.

After the talk, Tom Crowley picked up where Peter had left off, describing in detail the major aspects of the initiative. Some of the key highlights include – the AAC finally owning its own observing site, the future home for the Peach State Star Gaze (PSSG) and other possible star parties, and a long-term generator of AAC capital. After laying out the major ‘pros’ and the few minor ‘cons’, the issue was brought to a membership vote. The membership vote was unanimous (46 to 0), and the DAV Initiative carried easily.

Charlie Elliott July Minutes

by Clevis Jones, CEC Recording Secretary

SPECIAL EVENTS REPORT

July 1, 2006: Regal Entertainment Atlantic Station 16 (cinemas in downtown Atlanta) had requested the Charlie Elliott Chapter (and the AAC) set up an astronomy booth inside their lobby during the opening of the new movie, “Superman Returns” with the tag line “Look! Up In The Sky!” On July 1, folks from the AAC set up some displays in the theater lobby (see the AAC Web-site for details). Representing Charlie Elliott, Larry Owens carted his 14-inch Celestron, mount, battery, etc. to the roof of the theater. Then he set up a link down to just off the lobby area and displayed, on a 7-foot square screen, the Moon during daylight hours and Jupiter during darkness. Steve Bieger and Clevis Jones talked with the movie patrons as they stopped to view the Moon or Jupiter. They

discussed (as part of the NASA Night Sky Network outreach program) how we discover planets in extra-solar systems, why we put telescopes in space, and many other astronomy subjects while handing out a very nice flyer Jon Wood created for the event. It was a lot of work - especially for Larry - but a lot of fun too.

July 12, 2006: Jon Wood, with Clevis Jones assisting, gave an excellent 4 part presentation covering our solar system and beyond, the NASA Night Sky Network Outreach Programs “How we find planets in extra-solar systems”, “Why we put telescopes in space”, “How to find directions in the night sky”, and “Night vision” to twenty-two young teens and counselors on the evening of July 12, 2006, the 2nd and final CE Overnight Summer Camp. Finally having to put a stop to tons of questions, everyone adjourned to the observing field where CEWC supplied 7x35 binoculars to the entire group (Thanks CEWC!). Clevis showed everyone how to use the Big Dipper and Cassiopeia to find the North Star, Polaris, and also pointed out the Scorpion and Tea Pot Giants. Jon then explained how to focus the binoculars and guided everyone to objects such as the blue and orange Alberio (picture kids lying on the ground looking through binoculars yelling, “I SEE IT! I SEE IT!”). Everyone then got to look through Steven Phillips’, Jon’s, and Clevis’ telescopes. In spite of the sky not cooperating very well, everyone got to see Jupiter and a few other objects before the close of the evening.

July 15, 2006: CEastronomy Rummage Sale. For the chapter projects, folks donated \$75 to take home treasure that was once one man’s rummage.

ATTENDANCE: Thirteen guests and members attended the July 15th CE chapter meeting.

BUSINESS: Larry Owens discovered the AC voltage was a bit high on the Byers mount. So, Michael Covington reprogrammed the chip to reduce the voltage by about 10%. The mount is now functioning nearly perfectly - one more thing to do is get the Dec motor speed correct - Larry is working on it.

2006 remaining schedule: August 19 (3rd Qtr), September 16 (3rd Qtr), October 14 (3rd Qtr), November 11 (3rd Qtr), December 9 (Wn Gib).

If you would like to be considered for a “Friends of the Chapter” CEastronomy.org E-mail address, contact Larry Owens at either Director@CEastronomy.org or planetographer@CEastronomy.org. Examples are the CEastronomy officers’ new E-mail addresses: Director@CEastronomy.org, Observing@CEastronomy.org, and Secretary@CEastronomy.org.

OBSERVING REPORT: Steve Bieger presented his usual excellent coverage of “What’s Up Tonight”.

CURRENT EVENTS REPORT: Clevis Jones covered current events including asteroids, the storms on Jupiter, and the July 4th launch along with current status of STS-121 Discovery and crew.

FEATURE PRESENTATION: Carlos Flores presented “North East Astronomy Exposition and Forum”. On May 5-7, Carlos and Olga Flores attended the event in Suffern, NY along with about 3,000 other people to ogle the 100 vendors’ wares and take in the creme-de-la-creme workshops.

OBSERVING SESSION: The sky was obscured, so the planned imaging assistance workshop by Jon Wood and Larry Owens was postponed until a better evening.

Next AAC Board Meeting

The next Board Meeting of the Atlanta Astronomy Club is scheduled for Sunday, August 6th at 5:00PM. Location to be announced.

Charlie Elliot August Meeting

by Clevis Jones, CEC Recording Secretary

Saturday, August 19th at 5:00 PM at Charlie Elliott Visitor's Center.

All meetings and events are open to the public and free of charge. Please join chapter director Larry Owens for an update on club projects and events.

Lectures and presentations:

"What's Up & Astronomy Current Events" - Stephen Bieger, the chapter's observing supervisor will present a short program on what's available for observing from Charlie Elliott, with a bit of science and history for good measure. Clevis Jones, or recording secretary, will update us on the latest events in astronomy and space exploration.

"Planet Quest" - Have you ever wondered how planets are formed, or how the search for planets around other stars is conducted by astronomers on Earth? Please join Clevis Jones for a NASA Night Sky Network-based presentation on the quest for planets around other stars.

"The Byers 16" - Larry Owens will cover the history and construction techniques used on the Chapter's massive Byers mount, and since the scope will be available for use soon, a bit of training on how to use the scope. Please attend this meeting if you plan to use the scope in the near future.

Observing with the Byers 16 - everyone is invited to the Charlie Elliott observing field after the meeting for observing and a bit of practical in-field training on how to use the Byers mount.

Sidewalk Astronomy Report

by Sharon Carruthers, treasurer

This is a report from the first sidewalk astronomy event held inside a theatre!

Larry Owens, Clevis Jones, Steve Bieger, Marc Sandberg, Art Zorka, Phil Sacco, Alesha Roberts & I went to the new Regal Atlantic Station to help promote "Superman Returns" and the AAC. The slogan for the movie is "Look...Up in the Sky!" - which is what we amateur astronomers do a lot. We arrived & set up between 4 - 5 p.m. and stayed until the last showing of Superman at 12:30 a.m.

Larry coordinated the event. He, Clevis & Steve set up Larry's 14" on the roof of the theater, and fed live images through a projector onto a borrowed photographic backdrop that they were using as a screen. They set this up in the corridor outside the theaters. Early in the day they were projecting images of the Moon. Later on the images were of Jupiter. Despite the fact that his scope was sitting on a hot roof in the sun for hours, and that the roof was flexing considerably from heating & cooling, the images of Jupiter looked very good: nice large images with a lot of band detail and color - unmistakably Jupiter even to the "unwashed" masses.

The rest of us set up some tables & our scopes in front of the ticket collector's booth. Art & Phil had a video feed from Phil's SC up to Art's laptop, aimed at one of the theater indoor marquees (just to show people how it was done). Marc had his light pollution display & hand-outs. I had an assortment of astronomy posters, and we looped my "Guide to the Night Sky" program through the Club's laptop all day.

We handed out brochures, about 1,000 business cards with info about the AAC, and answered a lot of questions about the AAC and astronomy.

Some of us snuck in to see Superman (naming no names); and some of us got a tour of the projection booths - great fun!

The Regal staff were welcoming, helpful, and would like to have us back!

Thank you to Larry for coordinating the event, to all who came out to support it and to everyone at the Regal, especially Stephen Wilczak, who invited us out; and the rest of the staff who are a bunch of really great young people!

You know you're a Deep Sky Observer when...

...you consider the moon a major annoyance.

...your favorite objects are objects you can barely see.

...you're not sure that anything in this solar system counts as astronomy any more.

...you're amazed that anyone needs artificial light to read charts.

...you could do a Messier Marathon from memory, if you still bothered with Messier objects.

...you view a major earthquake as an opportunity for a close-in dark-sky star party.

...you welcome (and have even considered instigating) power cuts, but only if they occur on clear moonless nights.

...your choice of a new vehicle is determined by the size of your scope.

...you consider 15 minutes to be a 'quick' exposure.

...you are briefly taken aback by the brightness of a normal flashlight under "normal flashlight" circumstances, such as power outages.

by Marc Sandberg, AAC Light Trespass advocate

Planet-forming disks might put the brakes on stars

JET PROPULSION LABORATORY NEWS RELEASE

Posted: July 25, 2006

Astronomers using NASA's Spitzer Space Telescope have found evidence that dusty disks of planet-forming material tug on and slow down the young, whirling stars they surround.

Young stars are full of energy, spinning around like tops in half a day or less. They would spin even faster, but something puts on the brakes. While scientists had theorized that planet-forming disks might be at least part of the answer, demonstrating this had been hard to do until now.

"We knew that something must be keeping the stars' speed in check," said Dr. Luisa Rebull of NASA's Spitzer Science Center, Pasadena, Calif. "Disks were the most logical answer, but we had to wait for Spitzer to see the disks."

Rebull, who has been working on the problem for nearly a decade, is lead author of a new paper in the July 20 issue of the *Astrophysical Journal*. The findings are part of a quest to understand the complex relationship between young stars and their burgeoning planetary systems.

Stars begin life as collapsing balls of gas that spin faster and faster as they shrink, like twirling ice skaters pulling in their arms. As the stars whip around, excess gas and dust flatten into surrounding pancake-like disks. The dust and gas in the disks are believed to eventually clump together to form planets.

Developing stars spin so fast that, left unchecked, they would never fully contract and become stars. Prior to the new study, astronomers had theorized that disks might be slowing the super speedy stars by yanking on their magnetic fields. When a star's fields pass through a disk, they are thought to get bogged down like a spoon in molasses. This locks a star's rotation to the slower-turning disk, so the shrinking star can't spin faster.

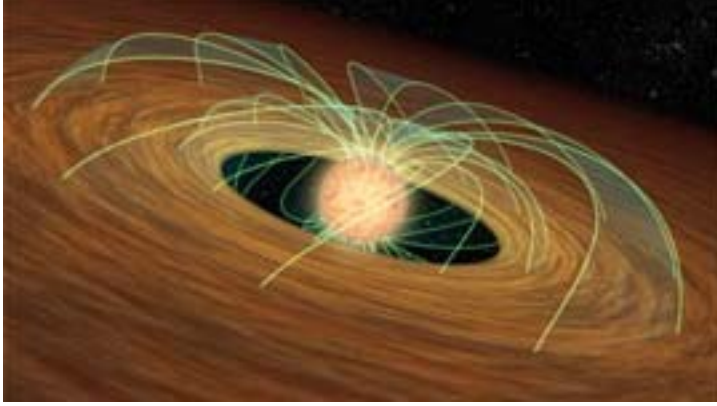
To prove this principle, Rebull and her team turned to Spitzer for help. Launched in August of 2003, the infrared observatory is an expert at finding the swirling disks around stars, because dust in the disks is heated by starlight and glows at infrared wavelengths.



The team used Spitzer to observe nearly 500 young stars in the Orion nebula. They divided the stars into slow spinners and fast spinners, and determined that the slow spinners are five times more likely to have disks than the fast ones.

"We can now say that disks play some kind of role in slowing down stars in at least one region, but there could be a host of other factors operating in tandem. And stars might behave differently in different environments," Rebull said.

Other factors that contribute to a star's winding down over longer periods of time include stellar winds and possibly full-grown planets.



Above: This artist's concept demonstrates how a dusty planet-forming disk can slow down a whirling young star, essentially saving the star from spinning itself to death. Credit: NASA/JPL-Caltech

If planet-forming disks slow down stars, does that mean stars with planets spin more slowly than stars without planets? Not necessarily, according to Rebull, who said slowly spinning stars might simply take more time than other stars to clear their disks and develop planets. Such late-blooming stars would, in effect, give their disks more time to put on the brakes and slow them down.

Ultimately, the question of how a star's rotation rate is related to its ability to support planets will fall to planet hunters. So far, all known planets in the universe circle stars that turn around lazily. Our sun is considered a slowpoke, currently plodding along at a rate of one revolution every 28 days. And, due to limits in technology, planet hunters have not been able to find any extrasolar planets around zippy stars.

"We'll have to use different tools for detecting planets around rapidly spinning stars, such as next-generation ground and space telescopes," said Dr. Steve Strom, an astronomer at the National Optical Astronomy Observatory, Tucson, Ariz.

Other members of Rebull's team include Drs. John Stauffer of the Spitzer Science Center; S. Thomas Megeath at the University of Toledo, Ohio; and Joseph Hora and Lee Hartmann of the Harvard-Smithsonian Center for Astrophysics, Cambridge, Mass. Hartmann is also affiliated with the University of Michigan, Ann Arbor.

NASA's Jet Propulsion Laboratory, Pasadena, Calif., manages the Spitzer Space Telescope mission for NASA's Science Mission Directorate, Washington. Science operations are conducted at the Spitzer Science Center at the California Institute of Technology. Caltech manages JPL for NASA.

Right: Gemini North adaptive optics image of Jupiter and its two red spots (which appear white because this is a near-infrared image; in visible light they appear reddish). Credit: Gemini Observatory ALTAIR Adaptive Optics Image.

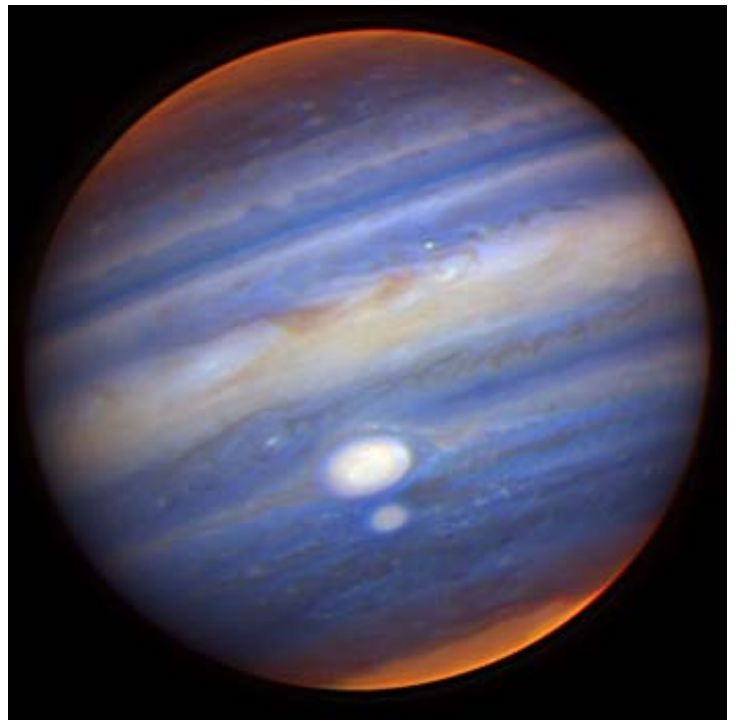
Jupiter's Two Red Spots Have a Close Encounter

Gemini Observatory News Release - July 21, 2006

A high-resolution image released by the Gemini Observatory shows two giant red spots brushing past one another in Jupiter's southern hemisphere. The image was obtained in near infrared light using adaptive optics which corrects, in real-time, for most of the distortions caused by turbulence in Earth's atmosphere. The result is a view from the ground that rivals images from space.

"It was tricky getting this image," said Gemini astronomer Chad Trujillo who helped lead the effort to capture the event. "Since we used adaptive optics we needed a star-like object nearby to guide on, so we had to find a time when Jupiter's moon Io would appear close enough to Jupiter and the red spots would be optimally placed on Jupiter's disk. Fortunately it all worked out on the evening of July 13th and we were able to capture this relatively rare set of circumstances," said Trujillo.

Both red spots are massive storm systems. The top of the larger one, known for a long time as the Great Red Spot, lies about 8 kilometers (5 miles) above the neighboring cloud tops and is the largest hurricane known in the solar system. The smaller storm (officially called Oval BA, but informally known as Red Spot Junior) is another hurricane-like system. Since it appears nearly as bright as the Great Red Spot in near-infrared images, Red Spot Junior may be at a similar height in Jupiter's atmosphere as the Great Red Spot.



Red Spot Junior is roughly half the size of its famous cousin, but its winds blow just as strong. This mighty new storm formed between 1998 and 2000 from the merger of three long-enduring white ovals, each a similar storm system at a smaller scale, which had been observed for at least 60 years. But it was not until February 27th of this year that Philippine amateur astronomer Christopher Go discovered that the color of the newly formed white oval had turned brick red. Astronomers were witnessing the birth of a new red spot.

No one is certain why this white oval turned red. However, University of Hawai'i astronomer Toby Owen supports a hypothesis developed by New Mexico State University astronomer Rita Beebe, who suggests that the merger of the three white ovals led to an intensified storm system. This made it strong enough to dredge up reddish material from deeper in the atmosphere. As this material welled up in the middle of the spot, it is contained (or protected) from escape by the strong circulating currents at the spot's edges. "What's frustrating is that we don't know what this reddish material is," Owen said. "But it appears that the ability to dredge it up depends on the size of these oval storm systems."

Another popular hypothesis contends that the material dredged up from below Jupiter's visible clouds climbs to an altitude where the Sun's ultraviolet light chemically alters it to give it a reddish hue.

Nothing dramatic is expected to happen as the two storm systems continue their close encounter. The white ovals from which Red Spot Junior is made have passed by the Great Red Spot countless times as the atmospheric current in which they are embedded moves at a different speed from the one at the latitude of the Great Red Spot. Nevertheless, we should keep open the possibility that the Great Red Spot could now, or in the future, push Red Spot Junior into a southern jet stream that is blowing against the storm's counterclockwise rotation. If Red Spot Junior's spin slows, its color may revert back to white, but that remains to be seen. Right now, as the Gemini image shows, Red Spot Junior is demonstrating its staying power.

Each red spot is rotating with Jupiter at slightly different rates and over time, like passing cars on a highway, the two spots change relative positions causing periodic close passages like this. However, this is the first such passage since the new, smaller red spot intensified and turned red. A recent optical image from the Hubble Space Telescope was obtained in April of this year when the two spots were still separated by a considerable distance.

The Gemini image was produced by Travis Rector of the University of Alaska Anchorage, Chad Trujillo of Gemini Observatory and the Gemini ALTAIR adaptive optics team.

Gemini Observatory is an international partnership managed by the Association of Universities for Research in Astronomy under a cooperative agreement with the National Science Foundation.

The Gemini Observatory provides the astronomical communities in each partner country with state-of-the-art astronomical facilities that allocate observing time in proportion to each country's contribution. In addition to financial support, each country also contributes significant scientific and technical resources. The national research agencies that form the Gemini partnership include: the US National Science Foundation (NSF), the UK Particle Physics and Astronomy Research Council (PPARC), the Canadian National Research Council (NRC), the Chilean Comision Nacional de Investigacion Cientifica y Tecnologica (CONICYT), the Australian Research Council (ARC), the Argentinean Consejo Nacional de Investigaciones Cientificas y Tecnicas (CONICET) and the Brazilian Conselho Nacional de Desenvolvimento Cientifico e Tecnologico (CNPq). The Observatory is managed by the Association of Universities for Research in Astronomy, Inc. (AURA) under a cooperative agreement with the NSF. The NSF also serves as the executive agency for the international partnership.

*Right: An artist's concept shows the thick dust torus that astronomers believe surrounds supermassive black holes and their accretion discs.
Credit: ESA / V. Beckmann (NASA-GSFC)*

Scientists conduct census of nearby hidden black holes

Goddard Space Flight Ctr news release, posted July 27, 2006

Scientists on a quest to find hidden black holes in the local universe have found surprisingly few. The observation implies that if these hidden black holes exist - and most scientists are convinced they do - they must be from the more distant, earlier universe, a concept that has interesting implications for galaxy evolution.

This work constitutes the first census of the highest-energy part of the X-ray sky, where the most dust-enshrouded black holes are thought to shine. A team from Goddard Space Flight Center conducted the census, comprised of nearly two years of continuous data from the European Space Agency's International Gamma Ray Astrophysics Laboratory, or INTEGRAL, satellite.

"Naturally it is difficult to find something we know is hiding well and which has eluded detection so far," said Volker Beckmann of Goddard and the University of Maryland, Baltimore County, lead author on a report in an upcoming issue of *The Astrophysical Journal*. "INTEGRAL is a telescope that should see nearby hidden black holes, but we have come up short."

The X-ray sky is thousands to millions of times more energetic than the visible sky familiar to our eyes. Much of the X-ray activity is from black holes violently sucking in gas from their surroundings.

Recent breakthroughs in X-ray astronomy, including a thorough black hole census with NASA's Chandra X-ray Observatory and Rossi X-ray Timing Explorer, have all dealt with lower-energy X-rays. The energy range is roughly 2,000 to 20,000 electron-volts. Optical light, in comparison, is about 2 electron volts.

The INTEGRAL survey is the first of its kind to glimpse into the largely unexplored higher-energy, or "hard," X-ray regime of 20,000 to 40,000 electron-volts.

"The X-ray background, this pervasive blanket of X-ray light we see everywhere in the universe, peaks at about 30,000 electron volts, yet we really know next to nothing about what produces this radiation," said co-author Neil Gehrels of Goddard.

The theory is that hidden black holes, which scientists call Compton-thick objects, are responsible for the peak at 30,000 electron volts. These X-rays are so energetic that they would penetrate even the most dust-enshrouded black holes yet remain beyond the range of powerful lower-energy X-ray observatories such as Chandra.



High-energy light in general is harder to focus than optical and lower-energy (longer-wavelength) forms of light. As a result, INTEGRAL doesn't have the resolution to make sharp images like Chandra and Hubble.

"Basically, the higher you go in energy, the harder it is to detect faint sources," said Chris Shrader of Goddard, another co-author. "This is why no hard X-ray mission has been able to study many individual objects in the distant universe. That would require a next-generation telescope. But INTEGRAL is now the first to resolve the local universe."

INTEGRAL can obtain an unbiased count of black holes in the local universe by virtue of seeing even those that are hidden. Of all the black hole galaxies that INTEGRAL detected -- that is, galaxies with supermassive black holes in their cores actively accreting gas -- about 40 percent were unobscured black hole galaxies, called Seyfert 1 galaxies. About 50 percent were somewhat obscured black hole galaxies called Seyfert 2 galaxies. And less than 10 percent were the heavily shrouded "Compton thick" variety.

This implies that if hidden black holes make up the bulk of the X-ray background, they aren't local. Why? One reason could be that, in the modern local universe, these black holes have had time to blow away the gas and dust that once enshrouded them, leaving them unobscured. This liberation of gas and dust would have its consequences; it would blow away to influence star and galaxy formation elsewhere.

"This is just the tip of the iceberg," Beckmann said. "In a few more months we will have a larger survey completed with the Swift mission. Our goal is to push this kind of observation deeper and deeper into the universe to see black hole activity at early epochs. That's the next great challenge for X-ray and gamma-ray astronomers."

Simona Soldi and Nicolas Produit of the INTEGRAL Science Data Centre near Geneva, Switzerland, also participated in this result.

Cassini Finds Possible Lakes on Titan

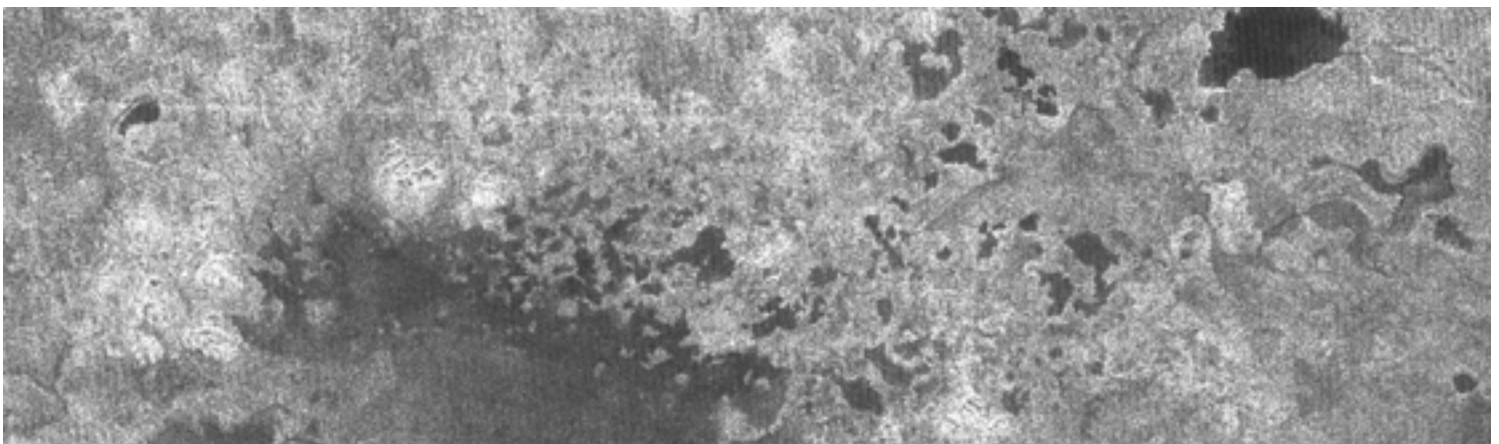
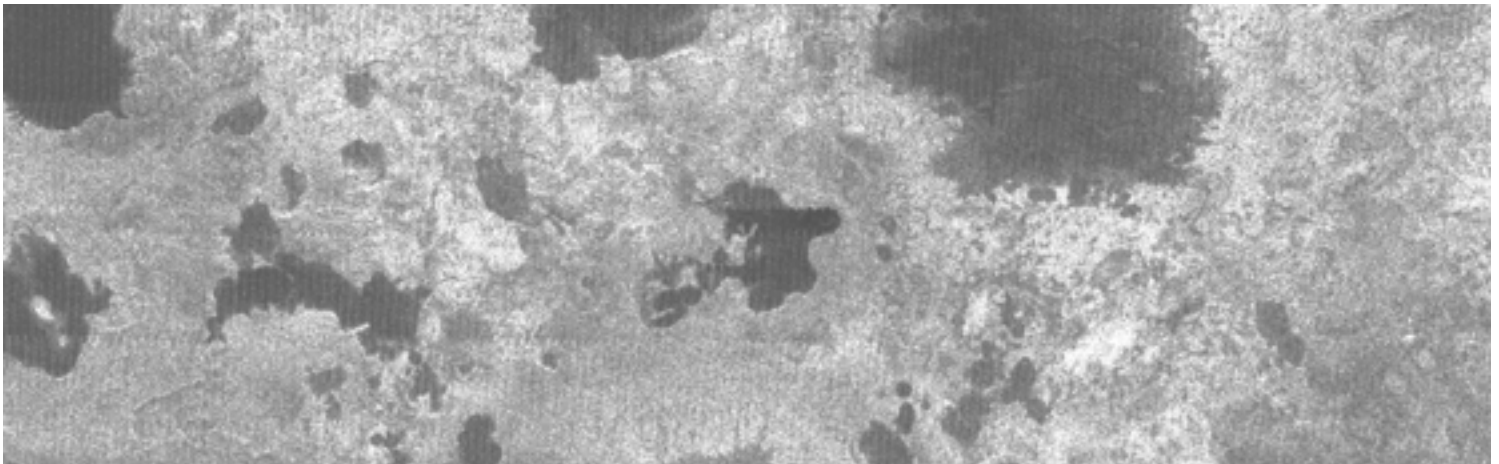
Cassini Photo Release - July 25, 2006

The Cassini spacecraft, using its radar system, has discovered very strong evidence for hydrocarbon lakes on Titan. Dark patches, which resemble terrestrial lakes, seem to be sprinkled all over the high latitudes surrounding Titan's north pole.

Scientists have speculated that liquid methane or ethane might form lakes on Titan, particularly near the somewhat colder polar regions. In the images, a variety of dark patches, some with channels leading in or out of them, appear. The channels have a shape that strongly implies they were carved by liquid. Some of the dark patches and connecting channels are completely black, that is, they reflect back essentially no radar signal, and hence must be extremely smooth. In some cases rims can be seen around the dark patches, suggesting deposits that might form as liquid evaporates. The abundant methane in Titan's atmosphere is stable as a liquid under Titan conditions, as is its abundant chemical product, ethane, but liquid water is not.

For all these reasons, scientists interpret the dark areas as lakes of liquid methane or ethane, making Titan the only body in the solar system besides Earth known to possess lakes. Because such lakes may wax and wane over time, and winds may alter the roughness of their surfaces. Repeat coverage of these areas should test whether indeed these are bodies of liquid.

These two radar images were acquired by the Cassini radar instrument in synthetic aperture mode on July 21, 2006. The top image centered near 80 degrees north, 92 degrees west measures about 420 kilometers by 150 kilometers. The lower image centered near 78 degrees north, 18 degrees west measures about 475 kilometers by 150 kilometers. Smallest details in this image are about 500 meters across. *Credit: NASA/JPL*



Editor's Note

Most of the images in the Focal Point are in color, but you won't see that if you are getting the mailed version. You can download the full color version from the AAC web site each month. By reviewing the Focal Point over the Internet instead of having it mailed, you can save the club about \$12 a year in printing and mailing costs. It may not sound like much, but the more people that use the Internet to receive the Focal Point, the more money the club will have to support its other activities. Just send an email to Kat Sarbell (FocalPoint@AtlantaAstronomy.Org) requesting that your name be removed from the Focal Point mailing list.

Georgia Astronomy in State Parks (GASP) Events

Here are the remaining GASP events for 2006:

September 2nd (Labor Day Weekend) - FDR State Park



November 11th - Florence Marina State Park

For more information about these events, contact Joanne Cirincione at Starrynights@AtlantaAstronomy.org.

The GASP volunteers at FDR State Park on Labor Day weekend 2004 - From left to right: Joanne Cirincione, Keith Burns, Harold and Claudia Champ with Ginger, Peter Macumber, Sharon Carruthers, Tom Faber, Kat Sarbell, and Holly and John Rieger.

Atlanta Astronomy Club Website

While this newsletter is the official information source for the Atlanta Astronomy Club, it is only up to date the day it is printed. So if you want more up to date information, go to our club's website. The website contains pictures, directions, membership applications, events updates (when available) and other information. <http://www.atlantaastronomy.org>

The **Atlanta Astronomy Club, Inc.**, the South's largest and oldest astronomical society, meets at **8:00 P.M.** on the third Friday of each month at Emory University's White Hall or occasionally at other locations or times. Membership is open to all. Membership fees are **\$30** for a family or single person membership. College Students membership fee is **\$15**. These fees are for a one year membership.

Magazine subscriptions to *Sky & Telescope* or *Astronomy* can be purchased through the club for a reduced rate. The fees are **\$33** for Sky & Telescope and **\$34** for Astronomy. Renewal forms will be sent to you by the magazines. Send the renewal form along with your check to the Atlanta Astronomy Club treasurer.

The Club address: Atlanta Astronomy Club, Inc., P.O. Box 76155, Atlanta, GA 30358-1155.

Atlanta Astronomy Club Hot Line: Timely information on the night sky and astronomy in the Atlanta area. Call **770-621-2661**.

AAC Web Page: <http://www.AtlantaAstronomy.Org>

Send suggestions, comments, or ideas about the website to webmaster@AtlantaAstronomy.org. Also send information on upcoming observing events, meetings, and other events to the webmaster.

AAC Officers and Contacts

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Observing Chair: Daniel Herron observing@atlantaastronomy.org

Corresponding Secretary: Kat Sarbell 404-352-0652
focalpoint@atlantaastronomy.org

Treasurer: Sharon Carruthers Treasurer@AtlantaAstronomy.org

Recording Secretary: Rich Jakiel
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Board: Ken Poshedly 678-516-1366 poshedly@bellsouth.net

Board: Gil Shillcutt - Contact Info TBA

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PSSG Chairman: Peter Macumber pmacumber@nightsky.org

Co-Chair: Joanne Cirincione starrynights@AtlantaAstronomy.org

Sidewalk Astronomy: position open

Woodruff Observ. Coordinator: John Lentini 770-984-0175
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Webmaster Atlanta Astronomy: Peter Macumber 770-941-4640
pmacumber@nightsky.org

Directions to White Hall at Emory

Meeting Location Information:

Turn onto Dowman Drive from North Decatur Road at the five way intersection (across from Everybody's Pizza). White Hall is located on the right across from the new Science & Math building. Parking is available along Dowman Drive on both sides of the road. There is also a gated parking lot on the left behind the Admissions Building. After 6PM there is no fee to park there. For more detailed directions on how to get to Emory University, visit www.atlantaastronomy.org.

Calendar by Tom Faber (All times EDT unless noted)

August 2nd, Wednesday: Moon First Quarter.
August 6th, Sunday: **AAC Board Meeting, 5PM.** Saturn Conjunction with Sun.
August 7th, Monday: Mercury Greatest Western Elongation.
August 8th, Tuesday: Mercury near Venus.
August 9th, Wednesday: Full Moon (Green Corn or Grain Moon).
August 10th, Thursday: Mercury near Venus. Neptune at Opposition.
August 12th, Saturday: Perseid Meteors.
August 15th, Tuesday: Moon Last Quarter.
August 18th, Friday: **AAC Meeting at White Hall, 8PM, Emory University.**
August 19th, Saturday: **DSO at location TBA - Contact Daniel Herron for details. CEC Meeting - see p. 2 for details.**
August 21st, Monday: Mercury near Saturn.
August 22nd, Tuesday: Morning grouping of the Moon, Mercury, Venus, & Saturn.
August 23rd, Wednesday: New Moon.
August 26th, Sunday: Venus near Saturn.
August 31st, Thursday: Moon First Quarter.
September 2nd, Saturday: **GASP at FDR State Park - see p. 7 for details.**
September 4th, Monday: Uranus at Opposition.
September 6th, Wednesday: Venus near Regulus.
September 7th, Thursday: Full Moon (Fruit or Harvest Moon).
September 14th, Thursday: Moon Last Quarter.
September 15th, Friday: **AAC Meeting at White Hall, 8PM, Emory University.**
September 16th, Saturday: **CEC Meeting.**
September 22nd, Friday: New Moon.
October 16th-22nd: Peach State Star Gaze at Whitewater.

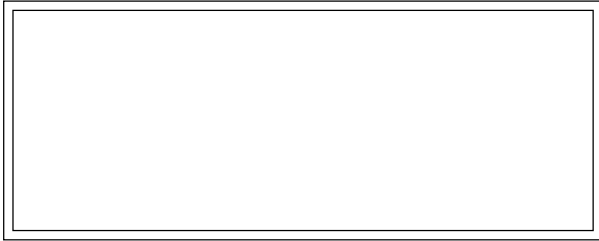
Atlanta Astronomy Club Listserve

Subscribe to the Atlanta Astronomy Club Mailing List: The name of the list is: AstroAtlanta. The address for messages is: AstroAtlanta@yahoogroups.com . To add a subscription, send a message to: AstroAtlanta-subscribe@yahoogroups.com . This list is owned by Lenny Abbey.

Focal Point Deadline and Submission Information

Please send articles, pictures, and drawings in electronic format on anything astronomy related to Kat Sarbell at focalpoint@atlantaastronomy.org. Please send images separate from articles, not embedded in them. Articles are preferred as plain text files but Word documents are okay. You can submit articles anytime up and including the deadline date. **The deadline for September is Thursday, August 24th at 4:00 PM ... Submissions will no longer be accepted after the deadline.**

FIRST CLASS



Newsletter of The Atlanta Astronomy Club, Inc.



The Focal Point

FROM:

Kat Sarbell

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