

The Focal Point

The Atlanta Astronomy Club
Established 1947
April 2006

Editor: Kat Sarbell

Vol XVIII No. 11

Table of Contents

- Page 1...**April Meeting Info
Page 2...March Mtg Minutes, Feb BOD Mtg Minutes
Page 3...CE Info, T&I Workshop, "Asteroid Williamon"
Page 5..."Mars Orbiter", "Cannibal Stars"
Page 6..."Cassini Finds Moonlets at Saturn"
Page 7...GASP & Board Info, Web Site, Memberships & Contacts
Page 8...Calendar, AAC List Serve Info, Focal Point Deadline

April General Membership Meeting

By Keith "Kosmic Kow" Burns

The next General meeting of the Atlanta Astronomy Club will be on April 21st at 8 P.M. at Emory University in White Hall. The room number is 207. Directions to Emory are on page 7. We will have refreshments in the hallway just outside of the room before the meeting. A small donation is requested but not required.

We will have a business meeting first. This includes any announcements and other things of astronomical interest. I ask that anyone who wishes to make any announcements to please notify Philip Sacco via email (president@atlantaastronomy.org) and also email me at Keith_B@Bellsouth.net. That way Philip knows who is going to speak and he can schedule the time, and I need to put your information on a power point presentation slide that will run before and during the beginning of the business meeting.

Our featured speaker of the night, longtime AAC member Sharon Carruthers, will give her talk with questions and answers to follow. We will adjourn the meeting and head off to a local eating establishment.

Sharon will speak on Women in Astronomy. Yes, many women were active then and are now in astronomy. You will be surprised just how many and what important roles each one played. Here's Sharon's info about the talk and biography in her own words: I created my talk about the "Women Astronomers" at the request of one of the rangers at Tallulah Gorge for Woman's History Month about 5 years ago. I thought I was going to struggle to find more than 2 -3 women that NOBODY had even heard of. Much to my surprise, women have been deeply involved in astronomical research, from the age of the ancient Greeks to today. My problem is cutting my talk down to a manageable 30-40 minutes! My special interest is about the "Women Computers" who were used by observatories all over the world in the 19th century. (If you have any information about observatories that used Women Computers, I would ask that you please contact me!) And what were the "Women Computers"? Guess you have to come to the meeting to find out.



Sharon's Biography: I was born in Halifax, Nova Scotia, Canada in the same year as the NGC number of the Crab Nebula (to which my hubby of 30 years, Peter Macumber, responds "figures"!)). Hence, the odd pronunciation of such words as "out & about". Some think I sound like a Minnesotan; an assumption that I find charming, as I loved the movie "Fargo").

I have an Honors B.A in Economics; and an incomplete MSC in AG EC, with emphasis on Econometrics (statistical analysis of economic data). I gave birth to kid #3 during my first post-grad and never had time to write the thesis - thus, no degree.

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I have been interested in astronomy since I was a child - I tell people, "All kids love dinosaurs and stars. I never outgrew stars." My astronomy interests before I joined the AAC 10 years ago were devoted to the history of early astronomy - up to, but not after, the age of telescopes. I find astronomy is a good example of how scientific theories are developed, tested and replaced. But I was remarkably ignorant of the famous observatories and their role in latter scientific discoveries. I have endeavored to overcome this shortcoming in the last few years. Though I have owned a Newtonian on a German Equatorial mount for over 20 years - I must confess that I was absolutely ignorant of how to set it up and use it.

(Truth or Dare Confession - I didn't even know there was a mirror at the bottom of my scope until I had owned it for several years. Peter always set it up, aligned it, aimed it, I never looked inside it! Life Lesson #1: You actually have to DO astronomy to LEARN astronomy.) I find my second scope, a 10" SkyQuest Dob that I have had for 5 years, much easier to use. I may actually become an accomplished amateur observer if I live for another 25 - 30 years.

Sharon's service to the club over the years includes being treasurer, president, and observing chair. Sharon has served 2 years as Treasurer and 2 years as president. Then for fun, Sharon became observing chair for a year. Now after a break from holding office, she is treasurer again.

Upcoming speaker and programs:

May 19th, 2006: Dr. Robert Knop of Vanderbilt University will speak on Galaxy Collisions. Do not miss this talk. Rob is a fantastic speaker. We are also having club elections on this night too.

June 16th, 2006: Brad Meyer of Clemson will speak on Stellar Evolution.

July 21st, 2006: Paul Wallace of Berry College will give a talk on the Copernicus Revolution.

March General Meeting Minutes

By Richard Jakiel, AAC Recording Secretary

The March General Meeting started off promptly on the 17th at 8 PM, with about 40 members (including several visitors) were in attendance. After the initial introductions, AAC president Phil Sacco tested the eager crowd with several trivia questions on the Moon. The "lunar" lead-in was deliberate, as longtime member Art Russell (who just moved to Jacksonville, Fla.) was "posthumously" presented with both the Astronomical League's (AL) binocular Messier and the Lunar Club certificates. You may have moved Art - but the AAC's reach is long. *grin*

CEWC director Larry Owens updated the membership with the progress made at Charlie Elliot. The 16-inch mirror has been refinished, along with the refurbishing/rebuilding of the Byer's Equatorial Mount. However, money is still needed to purchase a new diagonal (plus mount), truss tubes and other parts for the OTA.

To raise funds, Larry has put together a stunning 13" x 19" poster of the past Mars apparition (plus another of Saturn). He's asking a donation of 15 dollars for the poster, of which 2/3 goes to the CEWC telescope fund.

Upcoming Elections:

Committee member Art Zorka reported that the next AAC elections will be in only two months and that three Board of Director and all of the officer positions are open. If interested, please contact Art or other members of the nominating committee.

Phil Sacco discussed the progress of the new Woodruff/Blue Ridge Chapter and the call for members to sign up. As of that time, 10 new members had already volunteered.

New Members Social:

President Phil Sacco announced a new event called the "New Member Social" that will be held on May 20th, at the AAC's Villa Rica site. It's a

great way for the newer members to meet and socialize with others in the AAC. There will be lots of food and drink, plus perhaps a bright comet or planet to check out in the evening sky. More to come next month..

AAC Presentation:

Striking Ancient Skies. Your faithful recording secretary gave this talk after numerous threats of mental torture and personal harassment by the Kosmic Kow. It featured lots of ancient astronomy, history and images to dazzle the eye. After the talk, the meeting was adjured to the "other AAC meeting" place - Athens Pizza.

February Board Meeting Minutes

Submitted by Richard Jakiel, AAC recording secretary

Attendance:

7 Board of Directors (BOD) members, 4 AAC members

Meeting called to order by AAC Board chairman Tom Crowley at ~ 5:15 PM on February 12th.

1) First Order of Business: Recording Secretary vacancy

*Replacement of Art Russell as Recording Secretary by presidential appointee Richard Jakiel. Motion carried by a 6-0 BOD vote.

2) Membership Renewal - date shifted to include all AAC memberships to March 31st, 2006 (and for each successive year). Renewals will be prorated, complete details to be worked out by the AAC Treasurer (Sharon Carruthers). Motion carried 6-1.

Old Business:

Deerlick Astronomy Village (DAV) Initiative (Presentation by Tom Crowley)

- Review of the Darksite Initiative (plus a 5 year plan)

- Overview of the location and site layout of DAV.

- Different Options (7) that the AAC (and DAV) could take, including a full discussion of the pros/cons as determined by the Darksite committee. Most favorable were those that favored an AAC/DAV business relationship; least favorable - the AAC stays the "course" and does nothing.

- Funding for the Dark Sites: The AAC currently maintains 3 observing sites; the addition of DAV would place a severe strain on the AAC budget using the current cash flow structure. The AAC needs to change its current cash flow paradigm - and it was suggested to incorporate an Activities Fee structure. Night-use fees similar to those at Chiefland, FL, would also be incorporated. (Depending on the relationship worked out with DAV, such measures could be split between the AAC and DAV.)

- Star Parties: The PSSG needs a new home, plus the site could also be used to host "Zombie Parties" and other AAC observing events.

Black Jack Mountain (As an Alternative): Located in the SW corner of Carroll County, near the Alabama State border, the site promises rather dark skies and low future development potential. The Carroll Co. BOD approached the AAC (plus University of West GA and Fernbank) for possible participation in a future astronomical facility at the site.

- Projected to be at least +3 to 5 years to implement

- Envisioned as a "Fernbank" like facility

- May be a possible future replacement to Villa Rica (as a result of continued development of that area).

* Tom Crowley was to meet with the Carroll Co. Commissioners on Feb 14, 2006.

Treasurer's Report: Conducted by Sharon Carruthers through the use of a spreadsheet presentation.

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Action: Check on the phone message updates - is it cost effective? Are there better alternatives such as advertising in Creative Loafing?

Motion: Called - the Budget was passed as "presented" by a 7-0 vote.

Other Actions Outstanding: Tabled until the next meeting of the BOD.

New Business:

Zombie Party - Spring 2006 (Dan Herron, Observing Chair): This spring it will be held at DAV from March 29th to April 2nd. DAV has volunteered to provide relief (Porta-potties), onsite water and other basic amenities including use of their warm-up shed. Dan stated that the fees would be 10 dollars a day, or \$30 total (10 dollar discount) for the entire event. These and other Zombie party details were then briefly discussed and accepted unopposed (motion passed by affirmation).

Maksutov Replacement. Due to problems inherent in the focuser, it was suggested that 8-inch SC now currently residing at Woodruff could temporarily replace the OTA. Motion carried by affirmation.

Charlie Elliott March Meeting Minutes

by Clevis Jones, CEC Recording Secretary

ATTENDANCE: Twenty-three guests and members attended the March meeting held at Oxford College of Emory University at Oxford, GA on Saturday, March 25, 2006.

BUSINESS: Chapter Director, Larry Owens, began the meeting with a report on the corrections of the problems encountered during the FIRST LIGHT of the newly coated 16-inch mirror Newtonian mounted on the Byers mount. 1st - the RA and Dec motors were reversed – so, the tracking problem has now been corrected. 2nd – The worm wheel clutch has a bit of a slippage problem that will have to be overcome manually during use. 3rd – The slow motion control is too slow. Larry is working with Michael Covington to get the right parameters into the PIC controller chip so the slow motion control will be smooth and correct.

CEC FUND RAISER: Money is needed to complete our CEC club projects: new secondary mirrors for both 16-inch scopes, the truss tube material for the 2nd 16" scope, refiguring and recoating by Galaxy Optics of the 2nd 16-inch scope, and completion of the Byers mount. To help raise money, Larry has developed two prints of some of his images. For a \$15.00 donation each: The Mars 2005 close approach, and the recently taken Saturn image which I think is EXTRAORDINARY. Each print is 13 by 19 inches and is on photo quality paper. A preview of the quality of the images is here:

Mars 2005: http://www.atlantaastronomy.org/CEWMA/mars_122705_IR_RGB.htm

Saturn 2006: http://www.atlantaastronomy.org/CEWMA/saturn_single_031606_2.htm

All his images – I think he'd print whichever one you would like for the \$15 donation: http://www.atlantaastronomy.org/CEWMA/larry_owens_images.html

Contact Larry Owens at planetographer@comcast.net

And thank you very much for your support!

OBSERVING REPORT: Steve Bieger presented "What's Up Tonight" with a continuing theme of "Galaxies". March is the Full Worm month. April 1, the Pleiades will be occulted by the Moon [NOTE: from my viewing location near Conyers, at 7:46 p.m. the Moon will be a huge black hole (with a thin sliver of crescent) in the Pleiades surrounded by the outer members of the Seven Sisters – a gorgeous photo or visual opportunity!]. Steve pointed out many of the galaxy clusters viewable over the next month AND he pointed out that NOW is the best time to do your Messier Marathon!

CURRENT EVENTS REPORT: None - in the interest of time for the feature presentation.

FEATURE PRESENTATION: "Stellar Spectra and Hubble's Law" by Jim Honeycutt: Instructor in Astronomy at Oxford College of Emory University: WOW! What a great meeting. Jim gave a quick overview of the spectrum of light and how it is used to determine the elements of stars and galaxies and of Hubble's Law. Then he helped everyone do computer labs to determine the spectra and, using Hubble's Law, determine the rate at which the object of interest is moving away (red shifted) or toward (blue shifted) us. It was a fascinating time and gave you the feeling of accomplishing something because you were actually "doing" with the computer instead of just listening. You got to apply what he had just explained – THANK YOU, JIM.

OBSERVING SESSION: Cold and wind did NOT deter several folks from observing after the meeting.

Charlie Elliot April Meeting

by Clevis Jones, CEC Recording Secretary

April 22, 2006 at 5:00 p.m. **NOTE THAT THIS IS A TIME CHANGE TO THE SUMMER SCHEDULE.**

"What's Up Tonight" by Steve Beiger and Current Events by Clevis Jones. Feature Presentation to be announced.

FOR UPDATES & DIRECTIONS: PLEASE check the CEC website for the most current meeting information!

<http://www.atlantaastronomy.org/CEWMA/>

The Telescope & Instrument Workshop

by Sharon Carruthers, Treasurer@AtlantaAStronomy.org

The next T&IW will be on April 22 at 11a.m. at Bradford Map/Telescope Atlanta. (The experiment of doing it at 4 p.m. with the Open House was a roaring success for the Open House & a roaring failure for the workshop. So it is back to what worked for us....) I have acquired some 6" mirror blanks and we will be doing a mirror grinding workshop. You can buy one of the blanks, if you wish to take a stab at making your own scope, or help us grind some mirrors to make some loaners for the AAC. If you have any ideas or plans for the construction of the OTA & base for a 6", bring them along.

Asteroid Williamon

Introduction by Keith Burns

The best-kept secret in the club was finally revealed on the night of the 10th of February. Just a select few folks knew of what was about to happen. Finally the cat has been let out of the bag so to speak. Adam Block honored Rick Williamon by naming a recently discovered asteroid after him.

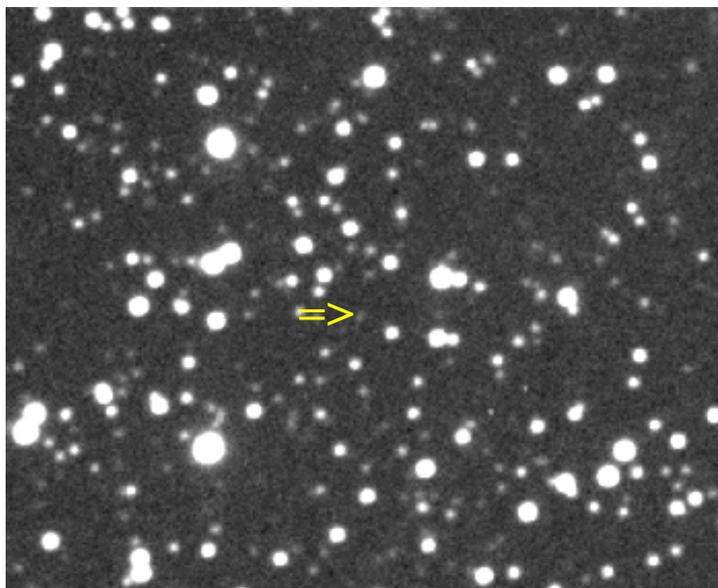
An Honorable Mention

by Adam Block

Just a few nights into the 21st century (2000), I was fortunate to be able to spend time with the telescope (a 16in LX200 with an SBIG ST8 CCD camera at Kitt Peak National Observatory) and scan the sky looking for asteroids. In the course of the programs that I hosted at Kitt Peak, finding uncatalogued asteroids was not an uncommon occurrence. What made this

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night different was that asteroids were the goal of the observations and not serendipitous, cosmic players that would often strut across the field that I was working on. Normally if I found an asteroid in the vista I was trying to capture, I would check the database of the Minor Planet Center (MPC) and see if it was new, interesting, or just an oft seen old friend. Then, like a fisherman with a size restriction, I had to let the asteroids swim away back into the darkness of space. In order to have the MPC designate an asteroid with a number, it needs to be followed up with successive multi-night observations. This is something I could rarely do.



The picture shown above is the discovery image of an asteroid I did not let go. During these nights the moon was nearly full which allowed me to follow the asteroid since the telescope was not in use. Indeed, the recovery image was taken a few nights later during the brightest full moon this century has seen. In the subsequent months and year(s) further observations were taken to refine the calculated orbit to a precision that permitted the discoverer (me) the opportunity to name this reclusive rock that orbits the Sun between Mars and Jupiter. Yes, that small gray smudge (right of yellow arrow) is a place out there- and I gave it a name.

Asteroids are given names that honor not the discoverer, but instead another deserving person. The official circular, in typical scientific brevity, states who the person is and what they are known for. However, below you will find my personal citation that honors the astronomer that influenced me strongly as a young man. His name is Dr. Richard Williamon, of Emory University in Atlanta Georgia, and I was lucky enough to be able to personally present him with the following in February of 2006:

Discovery date: 2000 01 05

Discovery site: Kitt Peak National Observatory

Discoverer: Adam Block

Dr. Richard Williamon has spent his life teaching and doing public outreach within the field of astronomy. He graduated with a PhD in astronomy from the University of Florida in 1972. Thus, he has made a career in astronomy for as long as I have been alive.

Personally I have been interested in astronomy since my earliest memories. As a child my first experience with a professional astronomer was with Dr. Williamon at Fernbank Science Center. He was the director of the observatory and ran the public evening programs there. And so, my first impression of an astronomer was that of a person sharing their knowledge and passion about something they enjoy.

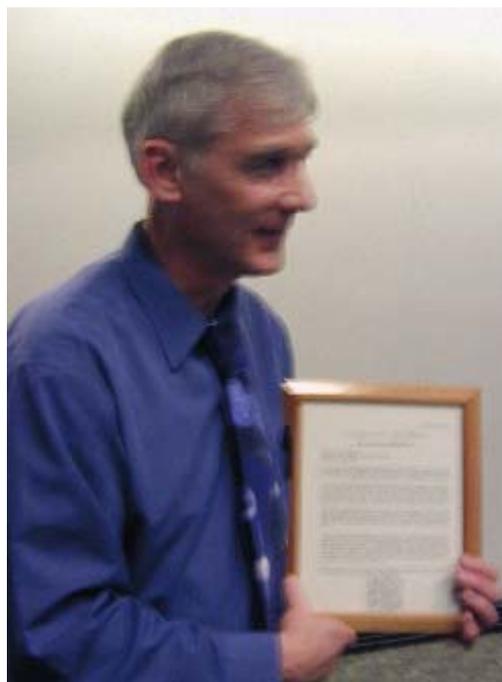
As I grew I cultivated my interest in science and astronomy by seeking special classes and opportunities. During my high school years I was fortunate to be a volunteer for the observatory's public nights under his auspices. As a senior, I took an independent class with him and once again respected his quiet, confident, and comforting teaching style.

Later in college and my subsequent 9 years at KPNO I have certainly experienced the full spectrum of many types of astronomers and scientists with an assortment of passions and agendas. However, for me Dr. Williamon's warm persona and encouraging outlook for his students translated into a well-founded foothold on my path to a career in this field. Indeed, his attributes I admired most are the ones I strive to reflect in the public presentations I give today. I hope I can exert the same kind of positive influence for someone else in the same way he did for me.

For these reasons, I wish to honor him by giving the asteroid I found his name. In some connected way he should share in the discovery.



Adam Block presents the plaque to Dr. Williamon.



Dr. Williamon holds the plaque showing the discovery image of his asteroid and the story of why Adam chose to name it after him. The text on the plaque is included at the end of the accompanying article. Photos above and left by Keith Burns.

Mars Reconnaissance Orbiter Takes Test Images

NASA News Release - March 24, 2006

The first test images of Mars from NASA's newest spacecraft provide a tantalizing preview of what the orbiter will reveal when its main science mission begins next fall.

Three cameras on NASA's Mars Reconnaissance Orbiter were pointed at Mars at 11:36 p.m. EST, Thursday, while the spacecraft collected 40 minutes of engineering test data. The three cameras are the High Resolution Imaging Science Experiment, Context Camera and Mars Color Imager.

"These high resolution images of Mars are thrilling, and unique given the early morning time-of-day. The final orbit of Mars Reconnaissance Orbiter will be over Mars in the mid-afternoon, like Mars Global Surveyor and Mars Odyssey," said Alfred McEwen, of the University of Arizona, Tucson, the principal investigator for the orbiter's High Resolution Imaging Science Experiment camera.

"These images provide the first opportunity to test camera settings and the spacecraft's ability to point the camera with Mars filling the instruments' field of view," said Steve Saunders, the mission's program scientist at NASA Headquarters. "The information learned will be used to prepare for the primary mission next fall." The main purpose of these images is to enable the camera team to develop calibration and image-processing procedures such as the precise corrections needed for color imaging and for high-resolution surface measurements from stereo pairs of images.



This view shows the ground covered in the first image of Mars taken by the High Resolution Imaging Science Experiment camera (HiRISE) on NASA's Mars Reconnaissance Orbiter (white rectangle). NASA/JPL-Caltech/University of Arizona.

To get desired groundspeeds and lighting conditions for the images, researchers programmed the cameras to shoot while the spacecraft was flying about 1,547 miles or more above Mars, nine times the range planned for the primary science mission. Even so, the highest resolution of about 8 feet per pixel - an object 8 feet in diameter would appear as a dot - is comparable to some of the best resolution previously achieved from Mars orbit.

Further processing of the images during the next week or two is expected to combine narrow swaths into broader views and show color in some portions.

The Mars Reconnaissance Orbiter has been flying in elongated orbits around Mars since it entered orbit on March 10. Every 35 hours, it has swung from about 27,000 miles away from the planet to within about 264 miles of Mars' surface.



Mission operations teams at NASA's Jet Propulsion Laboratory, Pasadena, Calif., and at Lockheed Martin Space Systems, Denver, continue preparing for aerobraking. That process will use about 550 careful dips into the atmosphere during the next seven months to shrink the orbit to a near-circular shape less than 200 miles above the ground.

More than 25 gigabits of imaging data, enough to nearly fill five CD-ROMs, were received through NASA's Deep Space Network station at Canberra, Australia, and sent to JPL. They were made available to the camera teams at the University of Arizona Lunar and Planetary Laboratory and Malin Space Science Systems, San Diego, Calif.



This view shows a full-resolution portion of the first image of Mars taken by HiRISE. This view covers an area about 4.5 by 2.1 kilometers (1.6 by 1.3 miles) Credit: NASA/JPL-Caltech/University of Arizona

Cannibal Stars Like Their Food Hot, XMM-Newton Reveals

European Space Agency News Release - March 26, 2006

The European Space Agency's XMM-Newton observatory has seen vast clouds of superheated gas, whirling around miniature stars and escaping from being devoured by the stars' enormous gravitational fields - giving a new insight into the eating habits of the galaxy's "cannibal" stars.

The clouds of gas range in size from a few hundred thousand kilometres to a few million kilometres, ten to one hundred times larger than the Earth. They are composed of iron vapour and other chemicals at temperatures of many millions of degrees.

"This gas is extremely hot, much hotter than the outer atmosphere of the Sun," said Maria Diaz Trigo of ESA's European Science and Technology Research Centre (ESTEC), who led the research.

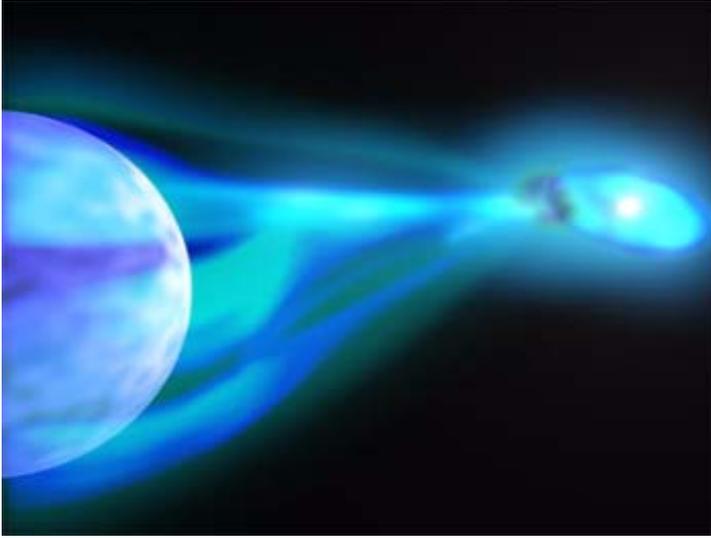
ESA's XMM-Newton x-ray observatory made the discovery when it observed six so-called 'low-mass X-ray binary' stars (LMXBs). The LMXBs are pairs of stars in which one is the tiny core of a dead star.

Measuring just 15-20 kilometres across and comparable in size to an asteroid, each dead star is a tightly packed mass of neutrons containing more than 1.4 times the mass of the Sun.

Its extreme density generates a powerful gravitational field that rips gas from its 'living' companion star. The gas spirals around the neutron star, forming a disc, before being sucked down and crushed onto its surface, a process known as 'accretion'.

Continued on next page

The newly discovered clouds sit where the river of matter from the companion star strikes the disc. The extreme temperatures have ripped almost all of the electrons from the iron atoms, leaving them carrying extreme electrical charges. This process is known as 'ionisation'.



Artist's impression of a vast cloud of superheated gas whirling around an asteroid-sized cannibal star, part of a low-mass X-ray binary star system. Credit: ESA

The discovery solves a puzzle that has dogged astronomers for several decades. Certain LMXBs appear to blink on and off at X-ray wavelengths. These are 'edge-on' systems, in which the orbit of each gaseous disc lines up with Earth.

In previous attempts to simulate the blinking, clouds of low-temperature gas were postulated to be orbiting the neutron star, periodically blocking the X-rays. However, these models never reproduced the observed behaviour well enough.

XMM-Newton solves this by revealing the ionised iron. "It means that these clouds are much hotter than we anticipated," said Diaz. With high-temperature clouds, the computer models now simulate much better the dipping behaviour.

Some 100 known LMXBs populate our galaxy, the Milky Way. Each one is a stellar furnace, pumping X-rays into space. They represent a small-scale model of the accretion thought to be taking place in the very heart of some galaxies. One in every ten galaxies shows some kind of intense activity at its centre.

This activity is thought to be coming from a gigantic black hole, pulling stars to pieces and devouring their remains. Being much closer to Earth, the LMXBs are easier to study than the active galaxies.

"Accretion processes are still not well understood. The more we understand about the LMXBs, the more useful they will be as analogues to help us understand the active galactic nuclei," says Diaz.

The findings appear in *Astronomy & Astrophysics* (445, 179-195, 2006). The original article, 'Spectral changes during dipping in low-mass X-ray binaries due to highly-ionized absorbers', is by M. Diaz Trigo and A.N. Parmar (ESA, Noordwijk, The Netherlands), L. Boirin (Observatoire Astronomique de Strasbourg, France), M. Mendez and J.S. Kaastra (SRON, National Institute for Space Research, Utrecht, The Netherlands).

Right: This collection of Cassini images provides context for understanding the location and scale of propeller-shaped features observed within Saturn's A ring. NASA/JPL/Space Science Institute

Cassini Finds Moonlets at Saturn

Cornell University News Release - March 29, 2006

New observations of propeller-shaped disturbances in Saturn's A ring indicate the presence of four small, embedded moons, Cornell University astronomers report. This is the first evidence of the existence of moonlets bridging the gap in size between the larger ring moons and the much smaller ice particles that comprise the bulk of the rings. The discovery could lead to a better understanding of the origin and formation of Saturn's rings. Matthew Tiscareno, a Cornell research associate, is lead author of a paper describing the discovery in the March 30 issue of the journal *Nature*.

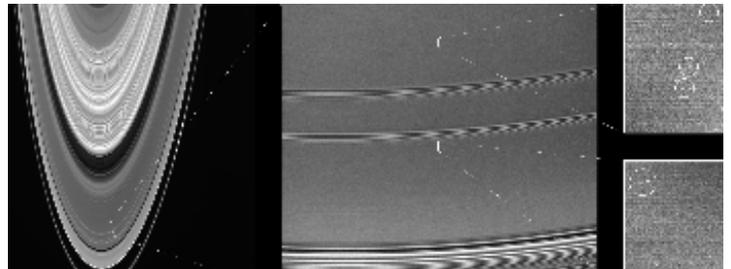
The four disturbances, which appear as pairs of slightly offset bright horizontal streaks in an otherwise bland region of the ring, were captured in two images taken in 2004 by NASA's Cassini spacecraft. Astronomers say the streaks are indicators of orbiting moons about 100 meters in diameter: about the length of a football field, but still too small for even Cassini's highly sensitive Imaging Science Subsystem to see directly, but large enough to exert an observable gravitational pull on the particles around them.

"The discovery of these intermediate-sized particles tells us that Pan and Daphnis are probably just the largest members of the ring population, rather than interlopers from somewhere else," said Tiscareno. A continuum of particle sizes lends strong support to the theory that Saturn's rings were formed when another object fragmented close to the planet, breaking into pieces which were then captured by Saturn's gravitational pull.

"There has always been the question about whether the rings were primordial material that was unable to grow into a moon or debris left over from a breakup event," said Joseph Burns, Cornell professor of astronomy and of theoretical and applied mechanics and paper co-author, along with Cornell research associate Matthew Hedman and researchers at other institutions. The discovery doesn't rule out the accretion model, but "it's a step in that direction," said Tiscareno. "It's hard for direct accretion to produce particles this large. It's much easier if you start with a solid icy core, like a shard from a breakup." The discovery also helps explain fully cleared openings such as the Encke and Keeler gaps within the rings. The gravitational influence of a larger moon like Pan or Daphnis wraps around the circumference of the rings, creating a gap. The smaller moonlets begin to create this effect, the researchers say, but their influence is not strong enough to prevent particles from falling into the rings ahead of and behind them.

The four observed disturbances are particularly visible since the area they inhabit is otherwise smooth. But the fact that four were found in just two images covering only a tiny fraction of the ring makes it likely that millions more exist. By studying them further, researchers hope to gain a better understanding of how Saturn's rings formed -- and even about how solar systems form around stars.

"The structures we observe with Cassini are strikingly similar to those seen in many numerical models of the early stages of planetary formation, even though the scales are vastly different," said Carl Murray, a co-author and astronomer at Queen Mary College, University of London. "In this way, Cassini is giving us unique insight into the origin of planets."



Georgia Astronomy in State Parks (GASP) Events

Here are the currently scheduled GASP events for 2006:

April 15th - Tallulah Gorge State Park.

June 10th - Amicalola Falls S.P.

September 2nd (Labor Day Weekend) - FDR S.P.

November 11th - Florence Marina S.P.



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

The GASP volunteers at Unicoi State Park in March 2006 - Front row, from left to right: Holly Ritger, Sharon Carruthers, Juergen & Nancy Berninger, and Claudia Champ with Ginger. Back row, left to right: John Ritger, Peter Macumber, Joanne Cirincione, Harold Champ, Kat Sarbell, Tom Faber, and Keith Burns. Photo by Holly Ritger.

Next AAC Board Meeting

The next Board Meeting of the Atlanta Astronomy Club will be on Sunday, April 9th at 5:00PM at Bradford Map, Globe & Telescopes, 300 Hammond Dr, Sandy Springs.

Message from the AAC Board Chairman

by Tom Crowley

If you need capital expenditure for your group or project, please submit it to the board ASAP for consideration.

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 Contacts

President: Philip Sacco 404-296-6332
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Program Chair: Keith Burns 770-427-1475
programs@atlantaastronomy.org

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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
johnlentini@yahoo.com

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)

April 1st, Saturday: Moon in M45.

April 2nd, Sunday: Daylight Savings Time Begins, 2AM.

April 5th, Wednesday: Moon First Quarter.

April 7th, Friday: Bradley Observatory Open House, 8PM, Agnes Scott College, "Plato's Vision of the Universe in the Timaeus", Richard Parry.

April 8th, Saturday: Mercury Greatest Western Elongation.

April 13th, Thursday: Full Moon (Grass, Egg, Easter, or Paschal Moon).

April 15th, Saturday: GASP at Tallulah Gorge State Park - See page 7 for details.

April 17th, Monday: Moon near Antares.

April 18th, Tuesday: Venus near Uranus.

April 20th, Thursday: Moon Last Quarter.

April 21st, Friday: AAC Meeting at White Hall, 8PM, Emory University.

April 22nd, Saturday: Lyrid Meteors. Telescope & Instrument Workshop, 11:00 a.m. at Bradford Map & Telescopes - see p.3 for details.

April 27th, Thursday: New Moon.

April 29th, Saturday: DSO at Woodruff BSC, Contact Daniel Herron for details.

May 3rd, Wednesday: Jupiter at opposition.

May 5th, Friday: Moon First Quarter. Bradley Observatory Open House, 8PM, Agnes Scott College, "Astronomy and Public Outreach", Anita Kern - Fernbank Museum.

May 6th, Saturday: Eta Aquarid Meteors.

May 13th, Saturday: Full Moon (Planting Moon or Milk Moon).

May 19th, Friday: AAC Meeting at White Hall, 8PM, Emory University.

May 20th, Saturday: New member social and picnic at Barber Observatory, Villa Rica.

May 24th, Wednesday: Moon near Venus.

May 27th, Saturday: New Moon. DSO at TBD, Contact Daniel Herron for details.

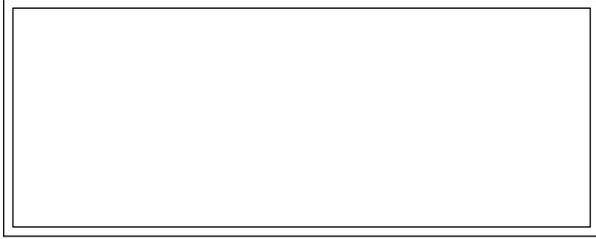
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Focal Point Deadline and Info

Please send articles, pictures, and drawings in electronic format on anything astronomy related to Kat Sarbell at focalpoint@atlantaastronomy.org. You can submit articles anytime up and including the deadline date. **The deadline for May is Thursday, April 27th at 4:00 PM Submissions will no longer be accepted after the deadline.**

FIRST CLASS



Newsletter of The Atlanta Astronomy Club, Inc.



FROM:

Kat Sarbell

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We're here to help! Here's how to reach us:

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