

The Focal Point

The Atlanta Astronomy Club
Established 1947
May 2012

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Editor: Tom Faber

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May General Meeting & Elections

Important Note: Meeting Location Change!

Join us for the May meeting of the Atlanta Astronomy Club on Friday, May 18th at 8PM. Refreshments will be provided starting around 7:30PM. Due to a scheduling conflict, we will NOT meet at our usual location in the Hitson Center. This time we will meet across Mt. Vernon Hwy from the Hitson Center at the Sandy Springs United Methodist Church Fellowship Hall (see map on right). We will conduct elections for club officers and have a program by Art Zorka.

The Program:

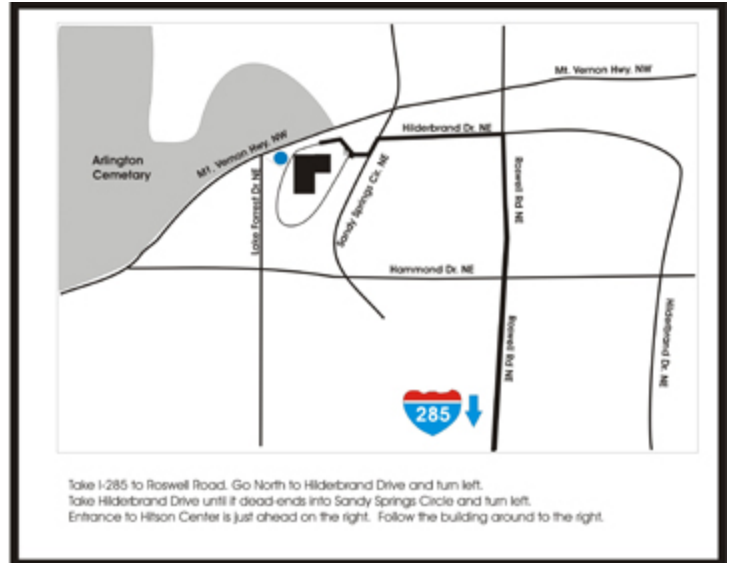
Club member and AAC Observing Chair Art Zorka will present a talk about the Transit of Venus coming up on June 5th. This will be the last time to observe a transit of Venus for over 100 years so don't miss it or Art's talk! Club member Larry Phillips wrote an article about how past transits of Venus were used to determine the true size of the Solar System. His article can be read here: <http://brightstartutors.com/blog/2012/04/26/the-transit-of-venus/>



Photo by Tom Faber

Upcoming AAC Meetings:

Our meetings will usually be held on the 3rd Friday of the month. Future meeting dates for 2012 are June 15, July 20, Aug 17, Sept 21, Oct 19, and Nov 16. The date for December Christmas potluck is TBA. Meetings will be at the Parlor Room of the Hitson Center unless noted otherwise.



Map to the location of the AAC Monthly Meeting. In May we will meet in the Fellowship Hall of the Sandy Springs United Methodist Church which is across Mt Vernon Hwy from our usual meeting location in the Hitson Center.

March Was Membership Renewal Month

If have not yet renewed your AAC membership for 2012 please send it to Sharon as soon as possible! Thank You for your support of the AAC!

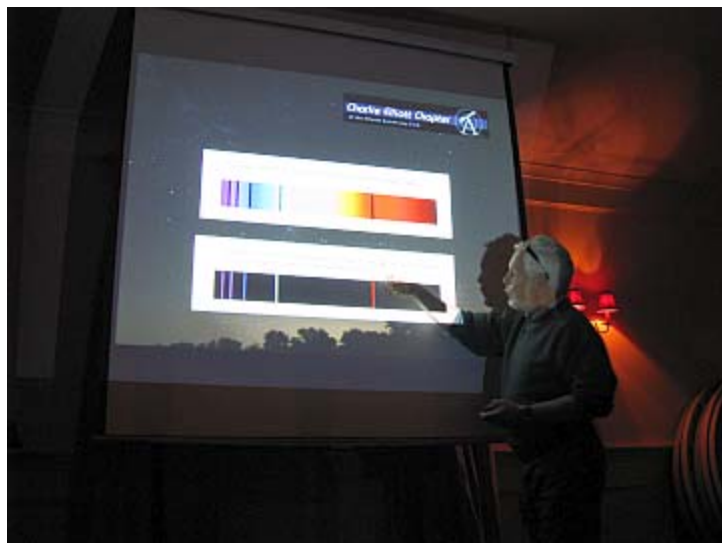
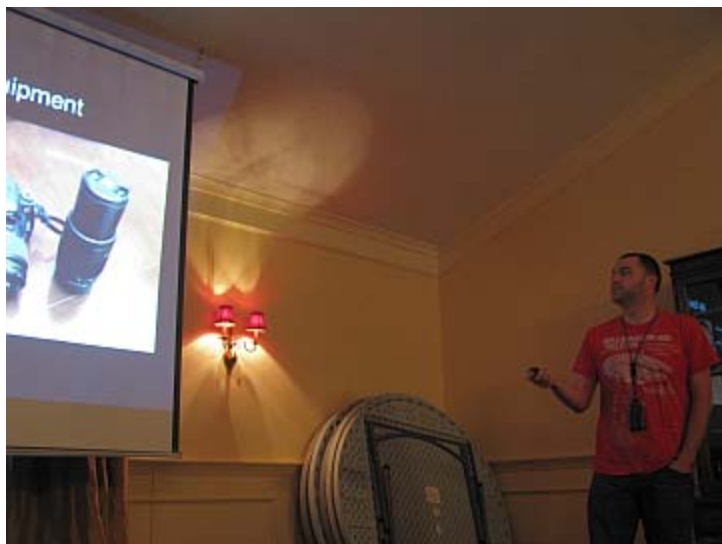
MEMBERSHIP RENEWALS: The AAC has moved to a "one-date-for-all" membership renewal. ALL CLUB MEMBERS, with some exceptions, should submit their \$30 (\$42 if you wish to receive the *Focal Point* by mail) dues for 2012 by March 20th. If you haven't renewed your membership yet please do so as soon as possible. (There will be an R1 in the upper right corner of your *Focal Point* mailing label if you receive it in the mail. If you receive the *Focal Point* online you will receive an email - be sure we have your current email address). If you see either an RF or an xxx on your mailing label that means that your membership is about to expire or has expired. Please send your renewal right away. Please note that as of January 1, 2011 the dues for receiving the mailed *Focal Point* have increased to \$42 per year. This increase is to cover the cost of printing and postage. Dues for members receiving the online version of the *Focal Point* will remain at \$30 per year. If you have questions, need to update your contact information, or wish to switch to receiving the *Focal Point* online (and save \$12 per year) please contact the AAC Treasurer Sharon Carruthers. Sharon's contact information is on pg. 7.

April Meeting Minutes

By Pixie Bruner, AAC Recording Secretary.

Photos by Tom Faber

The April 20th meeting was one of the best attended meeting in recent history. We owe our gratitude to the Sandy Springs Recreation and Parks staff and the local community. 47 attendees were present for a panel on Astronomical Imaging. Dan Herron (photo below), Tom Faber, Richard Jakiel, Dan Llewellyn (photo bottom), Theo Ramakers (photo right) and Paul Tankersley each shared some of their published and personal astro-images and tips for how to get great pics from the skies, using point and shoot cameras, narrow band special cameras, to CCD to DSLR, proving imaging can be done on any budget with a little know-how, some experimentation, and some fun effort. The Astronomical League awarded Mark Dove an award for activity and good work. Mark Dove is a wonderful asset to our club and we appreciate his outreach work and efforts immensely. Dues are due so get those unpaid dues in to Sharon Carruthers, AAC Treasurer and Baker Extraordinaire. AAC Board Elections are in May and all positions are open to nomination. Please give nominations to current AAC President Mark Banks. See you the third Friday in May for Art Zorka's presentation on the June 5th Venus Transit and how it is a once-in-a-lifetime event no one should miss or want to miss. The Venus Transit is incredibly special and Art will educate us all about it, so mark those calendars now! Wishing you clear skies and see you soon!



The Astronomical League

As a member of the **Atlanta Astronomy Club** you are automatically also a member of the **Astronomical League**, a nation wide affiliation of astronomy clubs. Membership in the AL provides a number of benefits for you. They include:

- * You will receive *The Reflector*, the AL's quarterly newsletter.
- * You can use the Book Service, through which you can buy astronomy-related books at a 10% discount.
- * You can participate in the Astronomical League's Observing Clubs. The Observing Clubs offer encouragement and certificates of accomplishment for demonstrating observing skills with a variety of instruments and objects. These include the Messier Club, Binocular Messier Club, the Herschel 400 Club, the Deep Sky Binocular Club, and many others.

To learn more about the Astronomical League and its benefits for you, visit <http://www.astroleague.org> You may also contact the AAC's Astronomical League Correspondent Art Zorka for more information about the AL's Observing Clubs at artzorka@yahoo.com or by phone at 404-633-8822.

Bradley Open House Series 2011-2012

Return of the Alumnae

Graduates of the Department of Physics & Astronomy have gone on to a wide range of graduate studies and careers. This year, our speakers are all returning alumnae who will tell us about their journeys since they have left Agnes Scott College, and the work or research that they are now doing. All Open Houses run from 8:00 - 10:00 PM unless noted.

May 11 - Open House Lecture Series: En Route to Smart Materials. This is the final Open House until the Fall.

For more information and updates see: <http://www.agnesscott.edu/academics/bradleyobservatory>

The Next AAC Board Meeting

The next Board meeting of the Atlanta Astronomy Club is scheduled for Sunday, June 17th at 3PM. Location of the meeting is TBD. Contact President Mark Banks or Board Chair Daniel Herron for more information about the meeting agenda.

CE Chapter Meeting Report

By Jeff Rebitzke

Charlie Elliott Chapter Meeting Notes - Saturday, April 21, 2012

Meeting start time approximately 17:12 (5:12 p.m. EDT)

After welcoming remarks by chapter director Ken Poshedly, note the following items:

- * Telescope and equipment for sale in Duluth (sheet passed around and information also available on the ListServ.
- * "Astronomy" magazines for sale - most issues between 1973 - 1995. Email Ken Poshedly (poshedly@bellsouth.net) for more information.
- * The May 19 meeting topic is Asteroseismology by member Anthony Edwards.
- * The June 16 meeting is our quarterly potluck dinner & a movie event - more details pending.
- * The July 21 meeting topic is Stellar Evolution.
- * Various other announcements from club members, including plans for observing the upcoming June 5, 2012 transit of Venus across the Sun.
- * This month's topic: Supermassive Black Holes, presented by Annette Michel (presentation to be available on the Charlie Elliott chapter website).
- * This Month's Sky presentation by Steve Phillips.
- * Collimation Techniques for SCT and reflecting telescopes presented also by Steve Phillips.

The 2012 Deerlick Astronomy Village Memorial Weekend Picnic!

By Marie Lott

When: Sunday May 27th

Time: Grilling, socializing & set up will start about 4 PM. We hope to chow down about 5 PM. There will be an Open House from 7:30-8:30 PM so that guests may tour some of the personal observatories.

Where: The DAV pavilion (photo right) on Grier's Field, Deerlick Astronomy Village, Sharon, GA (about 2 hours east of Atlanta). For a good map to Deerlick Astronomy Village, see <http://www.deerlickgroup.com/PDF/DeerlickMap1.pdf>

RSVP: Anytime between now & Thursday May 24th

Potluck: Please bring a favorite side dish to share (appetizers, veggies, salads, fruit, and desserts), enough to feed 6-8. If you RSVP by May 24th, we'll also have some BBQ & grilled hot dogs waiting for you!

How to RSVP: Please email Karen at picnic@deerlickgroup.com by Thursday May 24th with (1) How many family & friends will be attending the picnic and (2) What you'd like to bring to the potluck.

Come check out the AAC clubhouse & the DAV camping facilities! This event is open to anyone interested in DAV. If guests would like to camp on Grier's Field during the weekend, camping Sunday night after the picnic is free! There will be a \$5 camping fee per person per night for those who would like to come early & camp on Friday &/or Saturday night. A full bath house is located on site. All of the usual Dark Sky rules will apply while camping at DAV. See www.deerlickgroup.com for details.

FOOD SUGGESTIONS

Bring any of the following suggested food dishes to serve 6-8: Your favorite potluck dish or family casserole; bucket of fried chicken; corn, green beans, other veggie dish; coleslaw; salads - pasta, fruit, marinated or tossed; mac & cheese; chips, salsa or dip; fresh fruit. No matter what folks bring, no one will go away hungry!

The Focal Point Archives

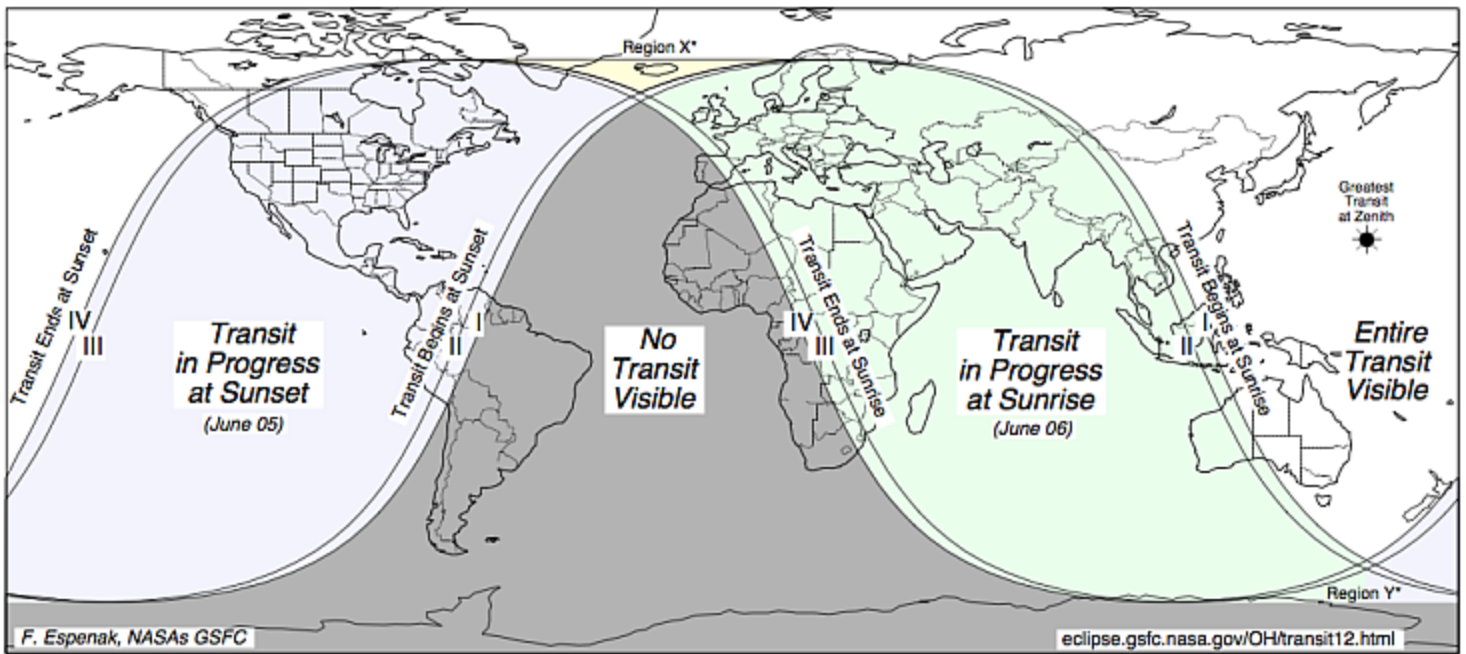
The AAC began publishing the *Focal Point* as a PDF online in June 1998. Since then every issue has, and still is, available for download from the club's web page. Recently that archive has expanded. Sharon Carruthers has scanned 61 issues of the AAC's newsletter (then called *The Atlanta Astronomers' Report*) from 1948 to 1977. Although many issues from this period are still missing these provide a valuable record of the club's early years. In addition I (Tom Faber) came across 19 issues of the *Focal Point* from the years 1995-1998 that I scanned to make available on the club's web site. Again not every issue during this period is available but it is another step in maintaining and making available to all a record of the AAC's history. Our web master Daniel Herron has uploaded these to the web site as PDF's for download. Just visit www.atlantaastronomy.org and click on the "Focal Point Archives" link on the right side of the page. If you have any of the missing issues of the club's newsletter that you would like to scan and submit to Daniel as a PDF please do!



Part of Grier's field showing the DAV Pavillon in the background at the 2011 PSSG. Photos by Tom Faber



Another view of Grier's field before the start of the 2011 PSSG. The AAC's 24-inch scope enclosure is on the left.



- * Region X - Beginning and end of Transit are visible, but the Sun sets for a short period around maximum transit.
- * Region Y - Beginning and end of Transit are NOT visible, but the Sun rises for a short period around maximum transit.

Transit of Venus visibility map courtesy of Fred Espenak (NASA Goddard Space Flight Center) from <http://www.transitofvenus.org/>

Don't Miss the Transit of Venus!

By Tom Faber, AAC Corresponding Secretary

Mark June 5th on your calendar! On that date the last transit of Venus until the year 2117 will occur! What is a transit of Venus? Simply, a transit of Venus occurs when the planet Venus passes in front of the sun as seen from the Earth. The transits occur in groups of two spaced eight years apart, but these pairs of transits occur over 100 years apart. This makes them MUCH rarer than transits of Mercury, which occur on average 13 times per century. The upcoming transit is the second of a pair with the first occurring in June 2004. Prior to these transits the last pair was in the years 1874 and 1882. While nowadays a Transit of Venus is little more than a rare astronomical curiosity, in the 1700's and 1800's observing them was very important in determining the true size of the Solar System. Back then the relative distances between the planets and the sun were known thanks to Kepler's 3rd law but the actual distances were unknown. The transits of 1761 & 1769 and 1874 & 1882 provided a means to determine the actual distances.

On June 5th we in the Atlanta area will be able to see over 1/3 of the transit. It will begin at about 6:05PM EDT as Venus' silhouette starts to encroach on the sun's disk. This is called "first contact." It takes about 18 minutes for Venus to fully enter the sun's disk at the point called "second contact." The transit progresses as the sun drops toward the western horizon. In the Atlanta area the transit ends for us with sunset at about 8:46PM. For those farther west more of the transit will be visible as shown on the map above, since the transit continues for about another 4 hours after the sun sets at Atlanta. Those of us who stayed in the Atlanta area for the 2004 transit were clouded out, so we are looking forward to the upcoming event with great anticipation! The Atlanta Astronomy Club will be involved in a number of events around the area to observe the transit and show it to the public. Be sure to check the AAC web site for the locations and updates on these events, and try to get to one of them to view the transit (**ALWAYS use proper eye protection when viewing the Sun!!**). For more information about the transit of Venus and how to safely view it see: <http://www.transitofvenus.org/>. Additional information is available at: http://en.wikipedia.org/wiki/Venus_transit.



Transit of Venus on 8 June 2004 at 07:49UT. Photo by Jan Herold (German Wikipedian). From Wikimedia Commons.

Paydirt at 8-Year-Old Mars Rover's 'New Landing Site'

NASA/JPL News Release - May 03, 2012

A report in the May 4 edition of the journal *Science* details discoveries Opportunity made in its first four months at the rim of Endeavour Crater, including key findings reported at a geophysics conference in late 2011.

Opportunity completed its original three-month mission on Mars eight years ago. It reached Endeavour last summer, three years after the rover's science team chose Endeavour as a long-term destination. This crater is about 4 billion years old and 14 miles (22 kilometers) in diameter.

The impact that excavated the crater left a jumble of fused-together rock fragments around the rim. In a chunk brought to the surface by a later, much smaller impact into the rim, Opportunity found evidence that the original impact released heated, underground water that deposited zinc in that rock. Later after the impact, cool water flowed through cracks in the ground near the edge of the crater and deposited veins of the mineral gypsum.

"These bright mineral veins are different from anything seen previously on Mars, and they tell a clear story of water flowing through cracks in the rocks," said Steve Squyres of Cornell University, Ithaca, N.Y. He is the principal investigator for Opportunity and lead author of the new report by 27 researchers. "From landing until just before reaching the Endeavour rim, Opportunity was driving over sandstone made of sulfate grains that had been deposited by water and later blown around by the wind. These gypsum veins tell us about water that flowed through the rocks at this exact spot. It's the strongest evidence for water that we've ever seen with Opportunity."

For the past four months, the solar-powered rover has been working at one outcrop on the Endeavour rim, called Greeley Haven. Reduced daylight during the Martian winter, and accumulated dust on the rover's solar array, have kept energy too low for driving.

"The days are now growing longer, and the sun is moving higher in the sky at Endeavour Crater. We expect Opportunity to resume driving in the next two months and continue exploring other parts of the crater's rim," said Mars Exploration Rover Project Manager John Callas of NASA's Jet Propulsion Laboratory, Pasadena, Calif.

Researchers hope to get Opportunity to one of the deposits of clay minerals that have been detected in Endeavour's rim by observations from orbit. These minerals could be evidence of a non-acidic wet phase of the region's environmental history.

"Exploring Endeavour Crater is like having a new landing site," said JPL's Timothy Parker, a co-author of the new report. "That's not just because of the difference in the geology here compared to what we saw during most of the first eight years, but also because there's a whole vista before us inviting much more exploration."

Opportunity and its rover twin, Spirit, completed their three-month prime missions on Mars in April 2004. Both rovers continued for years of bonus, extended missions. Both have made important discoveries about wet environments on ancient Mars that may have been favorable for supporting microbial life. Spirit stopped communicating in 2010.

NASA launched the next-generation Mars rover, car-size Curiosity of the Mars Science Laboratory mission, on Nov. 26 for arrival at Mars' Gale Crater in August 2012.

Landing successfully is quite a challenge, and the Mars Science Laboratory/Curiosity mission pioneers a new landing method to enable use of a heavier rover. Curiosity is about twice as long and more than five times as heavy as any previous Mars rover. Its size and mass accommodate a science payload designed to study whether the landing region has had environmental conditions favorable for supporting microbial life, including chemical

ingredients for life.

JPL, a division of the California Institute of Technology in Pasadena, manages the Mars Exploration Rover Project and Mars Science Laboratory Project for the NASA Science Mission Directorate, Washington. More information about Opportunity is online at <http://www.nasa.gov/rovers> and <http://marsrovers.jpl.nasa.gov>. You can follow the project on Twitter at <http://twitter.com/MarsRovers> and on Facebook at <http://www.facebook.com/marsrovers>.



This color view of a mineral vein called "Homestake" comes from the panoramic camera (Pancam) on NASA's Mars Exploration Rover Opportunity. The vein is about the width of a thumb and about 45 centimeters long. Opportunity examined it in November 2011 and found it to be rich in calcium and sulfur, possibly the calcium-sulfate mineral gypsum.

"Homestake" is near the edge of the "Cape York" segment of the western rim of Endeavour Crater.

Exposures combined into this view were taken through Pancam filters admitting light with wavelengths centered at 601 nanometers (red), 535 nanometers (green) and 482 nanometers (blue). The view is presented in approximate true color. This "natural color" is the rover team's best estimate of what the scene would look like if humans were there and able to see it with their own eyes. The exposures were taken during the 2,769th Martian day, or sol, of Opportunity's career on Mars (Nov. 7, 2011). NASA/JPL.



This view from the front hazard-avoidance camera on NASA's Mars Exploration Rover Opportunity shows the rover's arm's shadow falling near a bright mineral vein informally named "Homestake." The vein is about the width of a thumb and about 18 inches (45 centimeters) long. Opportunity examined it in November 2011 and found it to be rich in calcium and sulfur, possibly the calcium-sulfate mineral gypsum.

"Homestake" is near the edge of the "Cape York" segment of the western rim of Endeavour Crater. Opportunity took this image during the 2,763rd Martian day, or sol, of the rover's career on Mars (Nov. 7, 2011). NASA/JPL.

Black Hole Caught Red-Handed in a Stellar Homicide

NASA/JPL News Release - May 02, 2012

PASADENA, Calif. - Astronomers have gathered the most direct evidence yet of a supermassive black hole shredding a star that wandered too close. NASA's Galaxy Evolution Explorer, a space-based observatory, and the Pan-STARRS1 telescope on the summit of Haleakala in Hawaii were among the first to help identify the stellar remains.

Supermassive black holes, weighing millions to billions times more than the sun, lurk in the centers of most galaxies. These hefty monsters lie quietly until an unsuspecting victim, such as a star, wanders close enough to get ripped apart by their powerful gravitational clutches.

Astronomers had spotted these stellar homicides before, but this is the first time they have identified the victim. Using several ground- and space-based telescopes, a team of astronomers led by Suvi Gezari of the Johns Hopkins University, Baltimore, Md., identified the victim as a star rich in helium gas. The star resides in a galaxy 2.7 billion light-years away. The team's results appear in today's online edition of the journal *Nature*.

"When the star is ripped apart by the gravitational forces of the black hole, some part of the star's remains falls into the black hole, while the rest is ejected at high speeds," Gezari said. "We are seeing the glow from the stellar gas falling into the black hole over time. We're also witnessing the spectral signature of the ejected gas, which we find to be mostly helium. It is like we are gathering evidence from a crime scene. Because there is very little hydrogen and mostly helium in the gas, we detect from the carnage that the slaughtered star had to have been the helium-rich core of a stripped star."

This observation yields insights about the harsh environment around black holes and the types of stars swirling around them. It is not the first time the unlucky star had a brush with the behemoth black hole.

The team believes the star's hydrogen-filled envelope surrounding the core was lifted off a long time ago by the same black hole. The star may have been near the end of its life. After consuming most of its hydrogen fuel, it had probably ballooned in size, becoming a red giant. Astronomers think the bloated star was looping around the black hole in a highly elliptical orbit, similar to a comet's elongated orbit around the sun. On one of its close approaches, the star was stripped of its puffed-up atmosphere by the black hole's powerful gravity. The stellar remains continued its journey around the center, until it ventured even closer to the black hole to face its ultimate demise.

Astronomers predict stripped stars circle the central black hole of our Milky Way galaxy. These close encounters are rare, occurring roughly every 100,000 years. To find this event, Gezari's team monitored hundreds of thousands of galaxies in ultraviolet light with the Galaxy Evolution Explorer, and in visible light with Pan-STARRS1. Pan-STARRS, short for Panoramic Survey Telescope and Rapid Response System, scans the entire night sky for all kinds of transient phenomena, including supernovae.

The team was looking for a bright flare in ultraviolet light from the nucleus of a galaxy with a previously dormant black hole. Both telescopes spotted one in June 2010. Astronomers continued to monitor the flare as it reached peak brightness a month later and slowly faded during the next 12 months. The brightening event was similar to the explosive energy unleashed by a supernova, but the rise to the peak was much slower, taking nearly one-and-a-half months.

"The longer the event lasted, the more excited we got, because we realized this is either a very unusual supernova or an entirely different type of event, such as a star being ripped apart by a black hole," said team member Armin Rest of the Space Telescope Science Institute in Baltimore.

By measuring the increase in brightness, the astronomers calculated the

black hole's mass to be several million suns, which is comparable to the size of our Milky Way's black hole.

Spectroscopic observations with the Multiple Meter Telescope Observatory on Mount Hopkins in Arizona showed the black hole was swallowing lots of helium. Spectroscopy divides light into its rainbow colors, which yields an object's characteristics, such as its temperature and gaseous makeup.

To completely rule out the possibility of an active nucleus flaring up in the galaxy, the team used NASA's Chandra X-ray Observatory to study the hot gas. Chandra showed that the characteristics of the gas didn't match those from an active galactic nucleus.

For images, video and more information about this study, visit: <http://hubblesite.org/news/2012/18>. For graphics and information about the Galaxy Evolution Explorer, visit: <http://www.nasa.gov/galex> and <http://www.galex.caltech.edu>.



This computer-simulated image shows gas from a tidally shredded star falling into a black hole. Some of the gas also is being ejected at high speeds into space. Astronomers observed the flare in ultraviolet light using NASA's Galaxy Evolution Explorer, and in optical light using the Pan-STARRS1 telescope on Mount Haleakala, Hawaii. The light comes from gas falling into the black hole, and glowing helium from the star's helium-rich gas expelled from the system.

The California Institute of Technology in Pasadena leads the Galaxy Evolution Explorer mission and is responsible for science operations and data analysis. NASA's Jet Propulsion Laboratory, also in Pasadena, manages the mission and built the science instrument. The mission was developed under NASA's Explorers Program managed by the Goddard Space Flight Center, Greenbelt, Md. Researchers sponsored by Yonsei University in South Korea and the Centre National d'Etudes Spatiales (CNES) in France collaborated on this mission.

Graphics and additional information about the Galaxy Evolution Explorer are online at <http://www.nasa.gov/galex/> and <http://www.galex.caltech.edu>.

Image Credit: NASA/JPL-Caltech/JHU/UCSC

Curiosity Touchdown, Artist's Concept

This artist's concept depicts the moment that NASA's Curiosity rover touches down onto the Martian surface, which is set to occur on August 5.

The entry, descent, and landing (EDL) phase of the Mars Science Laboratory mission begins when the spacecraft reaches the Martian atmosphere, about 81 miles above the surface of the Gale crater landing area, and ends with the rover safe and sound on the surface of Mars.

Entry, descent, and landing for the Mars Science Laboratory mission will include a combination of technologies inherited from past NASA Mars missions, as well as exciting new technologies. Instead of the familiar airbag landing systems of the past Mars missions, Mars Science Laboratory will

Continued on next page



use a guided entry and a sky crane touchdown system to land the hyper-capable, massive rover.

The sheer size of the Mars Science Laboratory rover (over one ton) would preclude it from taking advantage of an airbag-assisted landing. Instead, the Mars Science Laboratory will use the sky crane touchdown system, which will be capable of delivering a much larger rover onto the surface. It will place the rover on its wheels, ready to begin its mission after thorough post-landing checkouts.

The new entry, descent and landing architecture, with its use of guided entry, will allow for more precision. Where the Mars Exploration Rovers could have landed anywhere within their respective 93-mile by 12-mile landing ellipses, Mars Science Laboratory will land within a 12-mile ellipse! This high-precision delivery will open up more areas of Mars for exploration and potentially allow scientists to roam “virtually” where they have not been able to before.

In the depicted scene, Curiosity is touching down onto the surface, suspended on a bridle beneath the spacecraft's descent stage as that stage controls the rate of descent with four of its eight throttle-controllable rocket engines. The rover is connected to the descent stage by three nylon tethers and by an umbilical providing a power and communication connection. When touchdown is detected, the bridle will be cut at the rover end, and the descent stage flies off to stay clear of the landing site.

NASA's Jet Propulsion Laboratory, a division of the California Institute of Technology, Pasadena, Calif., manages the Mars Science Laboratory Project for the NASA Science Mission Directorate, Washington. More information about Curiosity is at <http://mars.jpl.nasa.gov/msl/>.

The **Atlanta Astronomy Club, Inc.**, the South's largest and oldest astronomical society, meets at **8:00 P.M.** on the 3rd Friday of each month in the Parlor Room - Hitson Center in Sandy Springs, or occasionally at other locations or times. Membership fees are **\$30 (\$42)** for a family or single person membership. College Students membership fee is **\$15 (\$27)**. These fees are for a one year membership (\$12 per year extra charge to receive a printed *Focal Point* by mail).

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. 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.

Atlanta Astronomy Club Online

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 and other information. <http://www.atlantaastronomy.org> You can also follow the AAC on Facebook by joining the AAC group, and on Twitter at <http://twitter.com/atlastro>.

AAC Officers and Contacts

President: Mark Banks President@AtlantaAstronomy.org

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Board: Brigitte Fessele, Contact info TBA

Board: David Lumpkin, Contact info TBA

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Georgia Astronomy in State Parks:

PSSG Chairman: Peter Macumber pmacumber@nightsky.org

PSSG Co-Chair: Joanne Cirincione
starrynights@AtlantaAstronomy.org

Sidewalk Astronomy: Brad Isley
sidewalkastronomy@AtlantaAstronomy.org

Light Trespass: Open - Contact Mark Banks if you would like to volunteer for this position

Woodruff Observ. Coordinator: Sharon Carruthers
Treasurer@AtlantaAstronomy.org

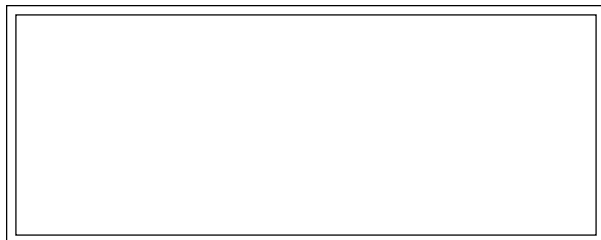
AAC Webmaster: Daniel Herron, Contact info TBA

Calendar by Tom Faber (Times EDT/EST unless noted)

FIRST CLASS



www.betage.com



AAC Events are listed in **BOLD**

- May 13th, Sunday: Jupiter Conjunction with Sun.
- May 15th, Tuesday: Venus Stationary.
- May 18th, Friday: **AAC Meeting (New Location - see pg 1), 8PM - Club Elections.**
- May 19th, Saturday: **CE Chapter Meeting, 5PM.**
- May 20th, Sunday: New Moon. Partial Eclipse at sunset.
- May 21st, Monday: Thin crescent moon low in west after sunset.
- May 22nd, Tuesday: Moon near Venus.
- May 25th, Friday: **June Focal Point Deadline.**
- May 26th, Saturday: **DSO at location DAY.**
- May 27th, Sunday: Picnic at DAV - see pg 3. Mercury at Superior Conjunction.
- May 28th, Monday: Moon First Quarter.
- May 31st, Thursday: Moon near Spica and Saturn.
- June 4th, Monday: Full Moon. Partial Lunar Eclipse.
- June 5th, Tuesday: Transit of Venus starts at 6:05PM - see pg 4.
- June 11th, Monday: Moon Last Quarter.
- June 13th, Wednesday: Earliest Sunrise (~6:25AM at Atlanta).
- June 14th, Thursday: Lyrid meteors.
- June 15th, Friday: **AAC Meeting, 8PM.**
- June 16th, Saturday: **CE Chapter Meeting, 5PM.**
- June 17th, Sunday: **BoD Meeting at location TBA, 3PM.** Moon near Jupiter.
- June 19th, Tuesday: New Moon.
- June 20th, Wednesday: Solstice at 7:09PM.
- June 23rd, Saturday: **GASP at Tugaloo State Park.**
- June 26th, Tuesday: Moon First Quarter.
- June 27th, Wednesday: Latest Sunset (~8:52PM at Atlanta).

Atlanta Astronomy Club Listserv

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 Lemmy Abbey.

Focal Point Deadline and Submission Information

Please send articles, pictures, and drawings in electronic format on anything astronomy, space, or sky related to Tom Faber at focalpoint@atlantaastro.org. Please send images separate from articles, not embedded in them. Articles are preferred as plain text files but Word documents or PDF's are okay. You can submit articles anytime up to the deadline. **The deadline for June is Friday, May 25th. Submissions after the deadline will go in the following month's issue.**



The Focal Point

Newsletter of The Atlanta Astronomy Club, Inc.

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