The Focal Point

The Atlanta Astronomy Club
Established 1947
August 2009

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Editor: Tom Faber

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August Special AAC Meeting

by Keith Burns, AAC President

The August meeting of the Atlanta Astronomy Club will be held on **Saturday August 8th**. We are to meet at the Tellus Northwest Georgia Science Museum near Cartersville, GA. It is a chance for club members, family, and friends to check out the Museum. All AAC members which includes your family members have free admission to the Museum on that day. The museum is open from 10AM to 5PM. When you come into the museum, just let them know you are an Atlanta Astronomy Club member at the front desk. If you have a member badge, please wear that. If you need something for lunch, they have a cafe in the museum you can

Volunteers from the AAC and the Northwest Georgia Astronomical Association set up telescopes at Tellus for Astronomy Day, May 2. Tellus photos by Tom Faber.

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Peach State Star Gaze is Approaching!

The PSSG will be held for the third year at our new home at the Deerlick Astronomy Village (DAV). Come and join us for the week or a couple of days under some of the darkest skies in Georgia. This is the 16th year of the Peach State Star Gaze.

Speakers are lined up to provide us with varied talks. Vendors are lined up to provide you with an opportunity to buy that "gotta have" accessory. An impressive collection of door prizes is accumulating to be won by the attendees.

This year's PSSG starts on Sunday, October 11th and runs a full week until Sunday, October 18th. Check out the details at http://www.AtlantaAstronomy.Org/PSSG.

Views of the AAC field at DAV during the PSSG'08 - Photos by Tom Faber.

The Tellus observatory, housing their 20-inch telescope, with the Museum building in the background to the right.

purchase food items from. We are having a meeting from 2PM to 3PM in Lab #4. The volunteers or someone at the front desk should be able to direct you to the room. I will have a limited number of free passes for one planetarium show. I was thinking we could go to a show after the meeting as a group. At 4:45PM we are to meet at the front lobby near the doors for a brief tour of the observatory to be given by David Dundee. I will scope around the area for a restaurant we can invade for dinner after we finish the tour. For more information about Tellus see: http://www.tellusmuseum.org

Directions to Tellus Museum

Tellus is located at 100 Tellus Drive, Cartersville, GA 30120. Heading north from Atlanta - Take I-75 to north exit 293 at Cartersville. This exit is highways 411/61. At the end of the ramp, turn left. Less than a half a mile on the left will be a Holiday Inn. Turn left between the Holiday Inn and the Citgo onto Tellus Drive. Tellus Drive terminates in the museum parking lot. Please note when leaving Tellus that the entrance ramp for I-75 south from Hwys 411/61 is on the left, not the right.

Upcoming AAC Meetings

September 11th, Speaker and Topic TBA.

October 2nd, Speaker and Topic TBA.

November 6th, Speaker and Topic TBA.

July General Meeting Minutes

by Richard Jakiel, AAC Recording Secretary

Meeting photos by Tom Faber

The July regular meeting of the AAC started at 8 PM in room 107 of Emory's White Hall. The "new room" was slightly smaller and had roomier seating than the typical meeting locations. About 30 AAC members and guests were present. After a few brief notes, Keith Burns turned the meeting over to the new AAC program chair - David Lumpkin. David gave an informal introduction for the evening's speaker - his good friend, longtime AAC member, recording secretary and astronomy writer - Richard Jakiel.

The evening's presentation was Earth: the first two billion years (photo above right). The talk outlined major events in the formation of our planet from the early solar nebula, the giant impact that formed the Moon, the iron catastrophe, plus the formation and evolution of the atmosphere, oceans and continents. The origin of life (~ 3.8 GY) had a major impact on the atmosphere, ocean chemistry and climatic regulation of the planet.

Finally, the evolution of other "terrestrial" worlds was briefly examined (Venus, Mars and Titan) plus a look into the distant future for our planet.

After the presentation, Keith discussed other key issues including upcoming DSOs, the next AAC meeting at the Tellus Museum (August 8 at 2 - 3 PM) and changes in the club's webpage. More details forthcoming in the August issue of the *Focal Point*.

The meeting ended ~ 9:30 PM, and many members headed over to nearby Athens Pizza for the "meeting after the meeting".

Upcoming AAC Events and Information

by Keith Burns, AAC President

We are planning to have our next board meeting on August 9th. The meeting time, date, and location will be announced as soon as the details are worked out. Updated information will be posted on the AAC board listserv and time permitting on the AAC website.

The general meeting dates for the remainder of 2009 are the following: Aug. 8th, Sept. 11th, Oct. 2nd, Nov. 6th and Dec. 5th.

The 2009 Peach State Star Gaze is a week long star gaze sponsored by the Atlanta Astronomy Club that will be held on October 11th-18th, 2009. Updated information on the event including speakers and pricing will be posted on the PSSG website at http://www.atlantaastronomy.org/PSSG/ in the next couple of months.

Our new speaker chairman (Dave) is working on speakers for the coming meetings. He is asking for input from members on speakers, so this is your chance to suggest someone you want to see come and speak on an astronomy related topic at one of our meetings. Dave's email is DaveLump@Bellsouth.net.

Daniel Herron is working on a new observing schedule for the remainder of 2009 and the first part of 2010. Soon he will post details of upcoming events to the newsletter, the website, and the AAC listserv.

The GASP group is continuing to bring the stars to the campers at various State Parks in Georgia. The remaining schedule for 2009 is November 14th at Red Top Mtn State Park (*Editor's Note: The August 15th event at Buck Shoals State Park has been cancelled*). For more information, please contact Keith Burns at Keith_B@Bellsouth.net.

The Charlie Elliott Chapter of the AAC continues to hold meetings and observing events at the Charlie Elliott Wildlife Management Area. The meetings are held on Saturday afternoons with observing in the evening weather permitting. For more information, see the Elliott website at CEAstronomy.org. Note the Elliott website can be accessed from the main AAC website via a link located at the top of the main page. The Elliot Group also posts updates on events in their area on the AAC listserv.

CE Chapter June Meeting Minutes

by Ken Poshedly, CEWMA Chapter Recording Secretary

(Minutes have been edited for space constraints.)

The meeting was held at the Charlie Elliott Wildlife Visitor Center and called to order at 5:20 p.m. by CE Chapter Director Theo Ramakers. The final meeting attendance was 29 members and guests, with 21 members and guests on the observing field afterwards.

This being a pot-luck dinner / meeting, business was suspended after welcoming remarks by Theo until mealtime was completed. Official proceedings resumed at 6 p.m. when our featured speaker, Jim Honeycutt, gave his presentation "The Distance Ladder" (photo below). Astronomers

Jim Honeycutt during his presentation of "The Distance Ladder" while Theo and Olga listen attentatively.

have developed techniques that allow us to measure distances to celestial objects. While nine methods of making distance measurements were included, only six are the most important. No one measurement will do the job so it takes several to do the job, but they do overlap and serve as a check for reliability. The farther out the object is, the less accurate is the measurement. Parallax is measured observing the shift in a closer star, as seen from the Earth on two different sides of its orbit around the Sun and is accurate as long as the angle can be measured. The next step involves Cepheid variables. They can be seen both in star clusters within our Milky Way and in other galaxies fairly nearby. The next two are supernovae of types Ia and II, very massive stars which have reached the end of the existence by exploding so brightly that they are even brighter than the galaxies in which they are located. The last step (or "rung" in the Ladder) is Hubble's Law, named for astronomer Edwin Hubble who discovered that the farther away a galaxy is, the faster it is moving away from us - thus the universe is expanding.

After a short break was Jon Wood's "Observing 101" segment which included his always striking renditions of planetary positions, meteor showers and cometary phenomena for the next several weeks.

Theo's "Current Events in Astronomy & Space Exploration" included:

* Last month's and coming month highlights of CE's outreach program (see photo top right).

* Updates of images and observations by CE astronomy chapter members, with images of Sunspot 1019 by Marie Lott and Stephen Ramsden, and images of Jupiter, as well as an image from M17 by Paul Tankersley.

* News of the beginning of the Noctilucent Cloud season and highlights of the Hubble Space Telescope Servicing Mission 4 by the space shuttle Atlantis.

* Space exploration & information images of the LRO/LRCOSS, and ESA's missions of the Planck and Herschel telescopes.

The meeting was adjourned at approximately 7:30 p.m.

Stephen, Marie, and Theo during the solar part of the outreach program with a group of kids during the Charlie Elliott Summer Camp Week 1.

Charlie Elliott Future Meetings

The Meeting dates for the Charlie Elliott Chapter have now been set for 2009. All meetings are on Saturdays: Aug 22, Sept 19, Oct 17, Nov 14, Dec 19. Please note that the June, September and December Meetings are our Pot Luck Dinner Meetings. For meeting updates and other information please check the CE chapter website: http://www.CEastronomy.org Thanks and Clear Skies, Theo Ramakers.

BoD Meeting Minutes - March 15, 2009

By Richard Jakiel, AAC Recording Secretary

The March BoD meeting of the AAC was held this time at Board Chairman Don Hall's residence. Seven BoD members were in attendance.

Old Business:

1. Approval of January 2009 BOD minutes - submitted by Tom Faber. BOD members voted to approve the minutes as read by a 6 - 0 margin.

2. 2009 AAC Budget - as submitted by Sharon Carruthers. After a brief discussion, a motion was brought forth to approve the budget. Motion carries by a 7-0 vote.

3. DAV - Clubhouse Improvement: An update on the recent improvements that have been carried on throughout the fiscal year. Further improvements and concerns listed under "new business".

New Business:

1. DAV Improvement: President Keith Burns suggested a "work party" to be held during the upcoming Spring Zombie Party (at DAV). The hanging of sheetrock will be the main task at hand.

2. Other DAV Matters: Dave Lumpkin will donate kitchen cabinets and a sink for installation at the Clubhouse. He has stated that he will look into the insurance and liability matters at both DAV and Villa Rica Facilities.

3. Declining Attendance at VR and other Events: No one other than AAC staff volunteers attended the last VR event - even though the weather was "reasonable". It was suggested that more focus on a dedicated "event" page in the *Focal Point*, more advanced notice on the AAC list may help ameliorate the situation. At 4:45PM - the BOD meeting was adjourned.

The Next AAC Board Meeting

by Keith Burns, AAC President

The next Board Meeting of the Atlanta Astronomy Club is scheduled for Sunday, August 9th from 4PM to 6PM. Meeting location is TBA. Contact Keith Burns or Board Chair Don Hall for more information about the meeting agenda.

Betelgeuse Mysteriously Shrinking

UC Berkeley Press Release

By Robert Sanders, Media Relations - 09 June 2009

The red supergiant star Betelgeuse, the bright reddish star in the constellation Orion, has steadily shrunk over the past 15 years, according to University of California, Berkeley, researchers.

Long-term monitoring by UC Berkeley's Infrared Spatial Interferometer (ISI) on the top of Mt. Wilson in Southern California (photo below) shows that Betelgeuse (bet' el juz), which is so big that in our solar system it would reach to the orbit of Jupiter, has shrunk in diameter by more than 15 percent since 1993.

The three telescopes of the Infrared Spatial Interferometer lined up east-west on Mt. Wilson in Southern California. The telescopes are mounted in semi-trailers so that they can be moved. The building with the periscopes houses a laser which is transmitted to all three telescopes (David Hale 2006)

Since Betelgeuse's radius is about five astronomical units, or five times the radius of Earth's orbit, that means the star's radius has shrunk by a distance equal to the orbit of Venus.

"To see this change is very striking," said Charles Townes, a UC Berkeley professor emeritus of physics who won the 1964 Nobel Prize in Physics for inventing the laser and the maser, a microwave laser. "We will be watching it carefully over the next few years to see if it will keep contracting or will go back up in size."

Townes and his colleague, Edward Wishnow, a research physicist at UC Berkeley's Space Sciences Laboratory, will discuss their findings at a 12:40 p.m. PDT press conference on Tuesday, June 9, during the Pasadena meeting of the American Astronomical Society (AAS). The results were published June 1 in The Astrophysical Journal Letters.

Despite Betelgeuse's diminished size, Wishnow pointed out that its visible brightness, or magnitude, which is monitored regularly by members of the American Association of Variable Star Observers, has shown no significant dimming over the past 15 years.

The ISI has been focusing on Betelgeuse for more than 15 years in an attempt to learn more about these giant massive stars and to discern features on the star's surface, Wishnow said. He speculated that the measurements may be affected by giant convection cells on the star's surface that are like convection granules on the sun, but so large that they bulge out of the surface. Townes and former graduate student Ken Tatebe observed a bright spot on the surface of Betelgeuse in recent years, although at the moment, the star appears spherically symmetrical.

"But we do not know why the star is shrinking," Wishnow said. "Considering all that we know about galaxies and the distant universe, there are still lots of things we don't know about stars, including what happens as red giants near the ends of their lives."

Betelgeuse was the first star ever to have its size measured, and even today is one of only a handful of stars that appears through the Hubble Space Telescope as a disk rather than a point of light. In1921, Francis G. Pease and Albert Michelson used optical interferometry to estimate its diameter was equivalent to the orbit of Mars. Last year, new measurements of the distance to Betelgeuse raised it from 430 light years to 640, which increased the star's diameter from about 3.7 to about 5.5 AU.

"Since the 1921 measurement, its size has been re-measured by many different interferometer systems over a range of wavelengths where the diameter measured varies by about 30 percent," Wishnow said. "At a given wavelength, however, the star has not varied in size much beyond the measurement uncertainties."

The measurements cannot be compared anyway, because the star's size depends on the wavelength of light used to measure it, Townes said. This is because the tenuous gas in the outer regions of the star emits light as well as absorbs it, which makes it difficult to determine the edge of the star.

The ISI that Townes and his colleagues first built in the early 1990s sidesteps these confounding emission and absorption lines by observing in the mid-infrared with a narrow bandwidth that can be tuned between spectral lines. The ISI consists of three 5.4-foot (1.65-meter) diameter mirrors separated by distances that vary from 12 to 230 feet (4-70 meters), said Townes. Using a laser as a common frequency standard, the ISI interferometer combines signals from telescope pairs in order to determine path length differences between light that originates at the star's center and light that originates at the star's edge. The technique of stellar interferometry is highlighted in the June 2009 issue of Physics Today magazine.

"We observe around 11 microns, the mid-infrared, where this long wavelength penetrates the dust and the narrow bandwidth avoids any spectral lines, and so we see the star relatively undistorted," said Townes. "We have also had the good fortune to have an instrument that has operated in a very similar manner for some 15 years, providing a long and consistent series of measurements that no one else has. The first measurements showed a size quite close to Michelson's result, but over 15 years, it has decreased in size about 15 percent, changing smoothly, but faster as the years progressed."

Townes (photo below), who turns 94 in July, plans to continue monitoring Betelgeuse in hopes of finding a pattern in the changing diameter, and to improve the ISI's capabilities by adding a spectrometer to the interferometer.

UC Berkeley physicist Charles Townes cleans one of the large mirrors of the Infrared Spatial Interferometer. (Cristina Ryan 2008)

"Whenever you look at things with more precision, you are going to find some surprises and uncover very fundamental and important new things," he said.

The ISI is supported by grants from the National Science Foundation, the Gordon and Betty Moore Foundation and the Office of Naval Research.

Hubble Space Telescope Captres Rare Jupiter Collision

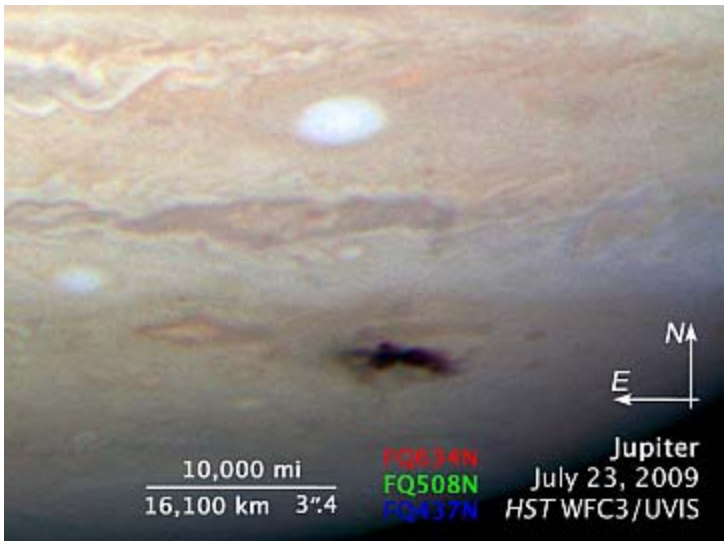
NASA/STScI News Release - July 24, 2009

BALTIMORE - NASA's Hubble Space Telescope has taken the sharpest visible-light picture yet of atmospheric debris from an object that collided with Jupiter on July 19. NASA scientists decided to interrupt the recently refurbished observatory's checkout and calibration to take the image of a new, expanding spot on the giant planet on July 23.

Discovered by Australian amateur astronomer Anthony Wesley, the spot was created when a small comet or asteroid plunged into Jupiter's atmosphere and disintegrated. The only other time such a feature has been seen on Jupiter was 15 years ago after the collision of fragments from comet Shoemaker-Levy 9.

"Because we believe this magnitude of impact is rare, we are very fortunate to see it with Hubble," said Amy Simon-Miller of NASA's Goddard Space Flight Center in Greenbelt, Md. "Details seen in the Hubble view shows a lumpiness to the debris plume caused by turbulence in Jupiter's atmosphere."

The new Hubble images also confirm that a May servicing visit by space shuttle astronauts was a big success.

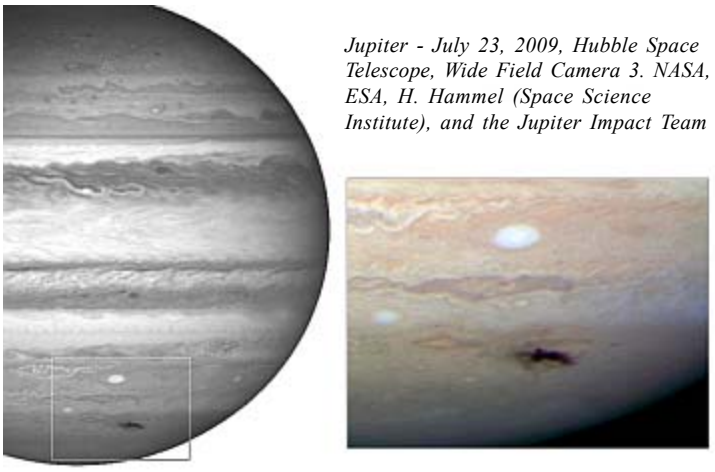


"This image of the impact on Jupiter is fantastic," said U.S. Senator Barbara A. Mikulski, D-Md., chairwoman of the Commerce, Justice and Science Appropriations Subcommittee. "It tells us that our astronauts and ground crew at the Goddard Space Flight Center successfully repaired the Hubble telescope."

For the past several days, Earth-based telescopes have been trained on Jupiter. To capture the unfolding drama 360 million miles away, Matt Mountain, director of the Space Telescope Science Institute in Baltimore, gave observation time to a team of astronomers led by Heidi Hammel of the Space Science Institute in Boulder, Colo.

"Hubble's truly exquisite imaging capability has revealed an astonishing wealth of detail in the impact site," Hammel said. "By combining these images with our ground-based data at other wavelengths, our Hubble data will allow a comprehensive understanding of exactly what is happening to the impact debris."

Simon-Miller estimated the diameter of the impacting object was the size of several football fields. The force of the explosion on Jupiter was thousands of times more powerful than the suspected comet or asteroid that exploded over the Siberian Tunguska River Valley in June 1908.



Jupiter - July 23, 2009, Hubble Space Telescope, Wide Field Camera 3. NASA, ESA, H. Hammel (Space Science Institute), and the Jupiter Impact Team

The image was taken with the Wide Field Camera 3. The new camera, installed by the astronauts aboard space shuttle Atlantis in May, is not yet fully calibrated. While it is possible to obtain celestial images, the camera's full power has yet to be seen.

"This is just one example of what Hubble's new, state-of-the-art camera can do, thanks to the STS-125 astronauts and the entire Hubble team," said Ed Weiler, associate administrator of NASA's Science Mission Directorate in Washington. "However, the best is yet to come."

To view the image and obtain more information about Jupiter's new spot, visit:

http://www.nasa.gov/hubble

JPL Blog - All Eyes on Jupiter

by Leigh Fletcher

What an incredible few hours it's been for astronomers everywhere, as we witness a chance of a lifetime event: evidence of a space rock of some sort slamming into Jupiter. Images taken after the impact show the debris field and aftermath of a gigantic collision that occurred in the southern polar region of the enormous planet.

An extremely dedicated and meticulous team of amateur astronomers observe Jupiter's changing cloud patterns on a regular basis, and it came as an amazing surprise when Anthony Wesley, near Canberra, Australia, reported his Sunday-morning (July 19, 2009) observations (http://jupiter.samba.org/jupiter-impact.html) of a dark scar that bore all the hallmarks of the Shoemaker Levy 9 impacts at Jupiter in 1994. By an amazing coincidence, I was part of a team that had already been allocated time to observe Jupiter from the NASA Infrared Telescope Facility (IRTF) on Mauna Kea, Hawaii. Based on Anthony's discovery, we were crowded around our computers at 3 a.m. PDT (with Anthony observing with us remotely from Australia) as the first near- and mid-infrared images started to come in… it was such an exciting moment, seeing the high altitude particles that had been lofted by the impact (they appear bright in the infrared). Anthony celebrated with us, but then the real work began. We celebrated and then rolled up our sleeves and began an exciting night of observations.

With the assistance of William Golisch at the IRTF, Glenn Orton and I viewed the impacts in as many wavelengths and spectra as we possibly could, as Jupiter rotated and carried the impact scar out of Earth's view. We used these many views to show evidence for high temperatures at the impact location, and suggestions of ammonia and aerosols that had been

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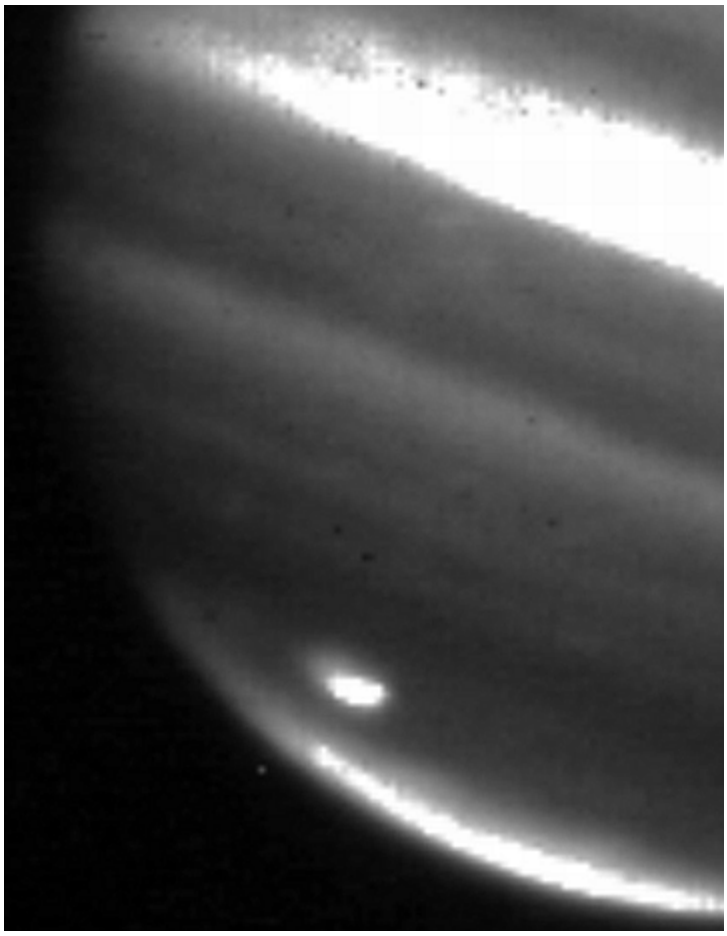

This image shows a large impact shown on the bottom left on Jupiter's south polar region captured on July 20, 2009, by NASA's Infrared Telescope Facility in Mauna Kea, Hawaii. Image: NASA/JPL/Infrared Telescope Facility

carried high into the atmosphere. The observations were repeated again today, Tuesday morning, to track the shape and properties of the site. The scar is extremely large, almost as big as Earth and will continue to grow as Jupiter's atmospheric winds and jet streams redistribute the material, and then, like Shoemaker-Levy 9, it will begin to fade in the coming weeks and months. Based on comparisons to SL-9, the impactor was likely to be small despite the large aftermath, maybe a few hundreds of metres across. Not only will this tell us a lot about impacts in the outer solar system, and how they contribute to the nature of the planets and icy moons, but they'll also serve as a probe for the fundamental weather patterns in Jupiter's high atmosphere.

Amateur observers continue to flood the Internet with new images of the dark spot at approximately 60 degrees south on Jupiter, and so far it looks as though the impact took place sometime in the 24 hours preceding Anthony's discovery. The debris field now extends out to the west and northwest, with additional high-resolution images from the Keck telescope (Marchis, Wong, Kalas, Fitzgerald and Graham http://keckobservatory.org/index.php/news/jupiters_adds_a_feature/) showing the detailed morphology of the impact region. The hard work continues today, as an international team of planetary astronomers scrambles for time on some of the world's largest astronomical facilities.

Finally, it's a shame but perhaps not surprising that we didn't see the collision, or the impactor itself, given the great distance to Jupiter. Like throwing a rock in a pond, we're seeing and analyzing the splash that it's made, and we can't yet infer many details about the rock itself - the detailed shape of the impact site could help determine the trajectory and energy of the collision. But it certainly made quite a splash, and we hope to learn a lot about Jupiter from this event!

Anthony's discovery is truly astounding, as it united astronomers in looking again at the gas giant Jupiter. It's overwhelming and spectacularly exciting to watch this event unfolding before our eyes!

Leigh Fletcher, is a planetary scientist originally from Oxford, England who studies giant planet atmospheres using ground based telescopes. He is currently on the Cassini-Huygens mission at Saturn.

Jupiter Adds a Feature

W. M. Keck Observatory News Release - July 20, 2009

Mauna Kea, Hawai'i - Jupiter's got a brand new mark. Something slammed into the gas giant leaving a dark bruise in the planet's atmosphere, scientists at Keck Observatory confirmed early on the morning of July 20.

The observation, made with the Keck II telescope, marks only the second time astronomers have seen such an impact on the planet. The first collision occurred 15 years ago, when more than 20 fragments of comet Shoemaker-Levy 9 (SL9) collided with Jupiter.

The SL9 impact events were well-studied in 1994, and many theories were subsequently developed based on the observations. "Now we have a chance to test these ideas on a brand new impact event," said Paul Kalas, one of the University of California Berkeley (UCB) astronomers who helped observe the latest impact.

Kalas, along with Michael Fitzgerald of Lawrence Livermore National Lab and UCLA, happened to have observing time on the Keck II telescope early on the morning of Monday July 20, 2009. The two were searching for the Jupiter-like planet, Fomalhaut b, which orbits the star Fomalhaut. The star is located roughly 25 light years from Earth in the direction of the constellation Piscis Austrinus.

The astronomers decided to observe Jupiter after hearing of Australian amateur astronomer Anthony Wesley's discovery of the planet's new

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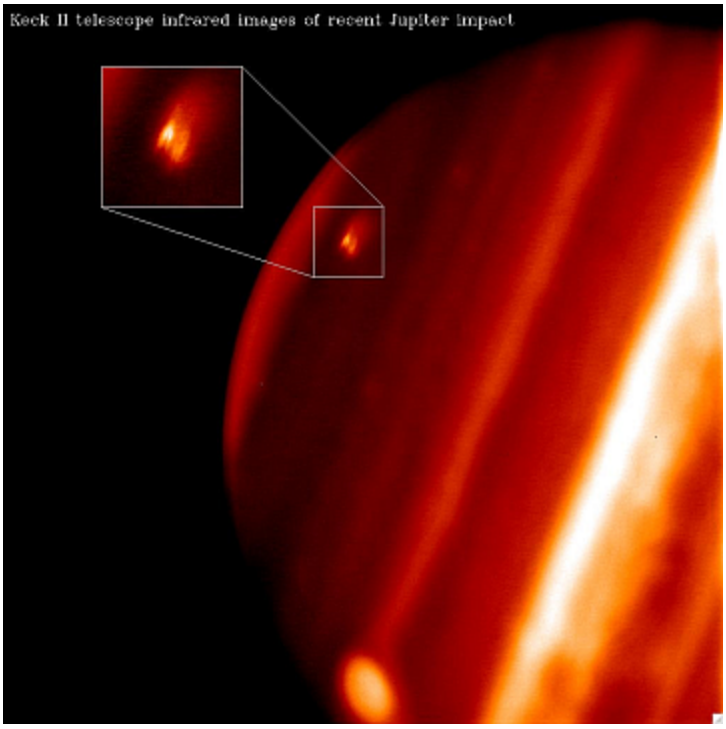

Credit: Paul Kalas (UCB), Michael Fitzgerald (LLNL/UCLA), Franck Marchis (SETI Institute/UCB), James Graham (UCB)

feature, which they read about on the blog of UCB and SETI Institute astronomer Franck Marchis. Together, the group of UC astronomers collaborated on how best to make the observations of the new feature. Fitzgerald then performed the observations with the help of Keck Observatory astronomer Al Conrad.

"The fact that [the feature] shows up so clearly means that it's associated with high-altitude aerosols as seen in the Shoemaker-Levy impacts," noted James Graham of UCB, who also assisted with the new observations as well as the observations taken during the SL9 event in 1994. According to the new data, an impact must have created Jupiter's latest feature, the team of astronomers said. Astronomers plan to conduct further observations using the Keck II telescope and its laser-guide-star adaptive optics system later this week.

Georgia Astronomy in State Parks

The following GASP events are currently scheduled:

(Editor's Note: The August 15th event at Buck Shoals State Park has been cancelled)

November 14 - Red Top Mountain State Park.

For more information about these events, contact Keith Burns at 770-427-1475 or Keith_B@bellsouth.net.

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 Ritger. Photo by Holly Ritger.

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 Friday closest to full moon of each month at Emory University's White Hall or occasionally at other locations or times. Membership fees are **$30 ($35)** for a family or single person membership. College Students membership fee is **$15 ($20)**. These fees are for a one year membership ($5 per year extra charge to receive the *Focal Point* mailed).

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.

AAC Officers and Contacts

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Elliott Coordinator: Alesia Rast Alesia_Rast@mail.dnr.state.ga.us

Elliott Webmaster: Larry Owens 678-234-5399 webmaster@CEastronomy.org

Georgia Astronomy in **State Parks:** Keith Burns 770-427-1475 Keith_B@bellsouth.net

Light Trespass: Open - Contact Keith Burns if you would like to volunteer.

PSSG Chairman: Peter Macumber pmacumber@nightsky.org

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

Sidewalk Astronomy: Brad Isley sidewalkastronomy@atlantaastronomy.com

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

Webmaster Atlanta Astronomy: Peter Macumber 770-941-4640 pmacumber@nightsky.org

Directions to White Hall at Emory

Our meetings are generally held in White Hall. To get to White Hall, turn onto Dowman Drive from North Decatur Rd at the five way intersection (across from Everybody's Pizza). White Hall is located across from the new Science & Math building. The best places to park are the Peavine and the Fishburne Parking Decks. The Fishburne deck is located on Fishburne Drive which is accessible from N. Decatur Rd. Turn onto Dowman and then right on Fishburne. You can also access Fishburne Drive from Clifton Road just north of N. Decatur. The Peavine parking deck is accessible from N. Decatur Rd. Turn onto Oxford Rd, go to the back entrance of Emory and turn onto Eagle Row. Take that to the Peavine deck. You can also access the Peavine deck from Clifton Rd. Turn onto Asbury Circle. It's the intersection next to the railroad tracks on Clifton. For maps to the decks see http://map.emory.edu. For more detailed directions to Emory University, visit www.atlantaastronomy.org or go to the Emory web site.

The Focal Point

Newsletter of The Atlanta Astronomy Club, Inc.

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

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FIRST CLASS

Calendar by Tom Faber (Times EDT unless noted)

Upcoming AAC Events are listed in BOLD

August 2nd, Sunday: Mercury near Regulus.
August 5th, Wednesday: Full Moon.
August 8th, Saturday: **AAC Meeting at Tellus Science Museum - See pg 1 for details.**
August 9th, Sunday: **AAC BoD Meeting at Location TBA.**
August 11-12th, Tuesday-Wednesday: Perseid Meteors.
August 13th, Thursday: Moon Last Quarter.
August 16th, Sunday: Moon near Mars.
August 17th, Monday: Moon near Venus (M). Mercury near Saturn (E).
August 20th, Thursday: New Moon.
August 21st, Friday: **September *Focal Point* Deadline.**
August 22nd, Saturday: **DSO at Brasstown Bald. CEC Meeting - See pg 3 for details.**
August 27th, Thursday: Moon First Quarter.
September 4th, Friday: Full Moon.
September 11th, Friday: **AAC Meeting at White Hall, 8PM, Emory University.** Moon Last Qtr.
September 16th, Wednesday: Moon near Venus.
September 17th, Thursday: Saturn conjunction with Sun. Uranus Oppostion.
September 18th, Friday: New Moon. **October *Focal Point* Deadline.**
September 19th, Saturday: **DSO at location TBA. CEC Meeting - See pg 3 for details.**
September 20th, Sunday: Mercury Inferior Conjunction. Venus near Regulus.
September 22nd, Tuesday: Equinox at 5:20PM.
September 24th, Thursday: Moon near Antares.
September 26th, Saturday: Moon First Quarter.
October 2nd, Friday: **AAC Meeting at White Hall, 8PM, Emory University.**
October 4th, Sunday: Full Moon.

October 11th, Sunday to October 18th, Sunday: Peach State Star Gaze!!!

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 Lenny 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@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 to the deadline. **The deadline for September is Friday, August 21st at 4:00 PM. Submissions will not be accepted after the deadline.**