The Focal Point

The Atlanta Astronomy Club
Established 1947
September 2013

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Editor: Tom Faber

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September General Meeting

Please join us for the September meeting and of the Atlanta Astronomy Club on **Saturday**, September 21st starting at 8PM. For our September meeting club member Daniel Herron will present a talk about the International Space Station. Our September meeting will take place at the Atlanta Freethought Society (AFS) building in Smyrna. After the main meeting there will be stargazing if the weather permits.

Upcoming AAC Meetings

Our meetings will usually be held on the 3rd Saturday of the month. Future meeting dates are Sept 21st, Oct 19th, Nov 16th, Dec 14 for the December meeting and Holiday potluck dinner.

Locations AFS unless noted.

Future Programs:

In order to keep our programs interesting and relevant for everyone from beginners to old pro's I need your help. Finding

Photo by Daniel Herron

Photo by NASA/JSC

Continued on page 3

The 2013 Peach State Star Gaze!

The next Peach State Star Gaze is coming soon! This will be the **20th Anniversary Peach State** and will again be held at the Deerlick Astronomy Village near Sharon, GA, and run from Sunday, September 29 to Sunday, October 6 (new moon is October 4). DAV has an 11-acre field that has room for RVs, campers, and tents. Limited power is available on the field. Full rest rooms with showers are available along with a 40' x 40' pavilion and gas BBQ grill. This year Micki's Kitchen returns to provide us with coffee, refreshments and meals (and brownies!). The Atlanta Astronomy Club's 24" telescope will be set up on the field and AAC's clubhouse will be open. We will have speakers, workshops, and vendors. Please visit us at www.AtlantaAstronomy.org/pssg/ for details and registration.

Our keynote speaker will be NASA astronaut Dr. Donald R. Pettit. Dr Pettit's biography is on page 3. More information will be upcoming on Dr. Pettit and other speakers and programs.

The Deerlick Astronomy Village, located about 100 miles east of Atlanta and 50 miles west of Augusta, has some of the darkest skies in the state.

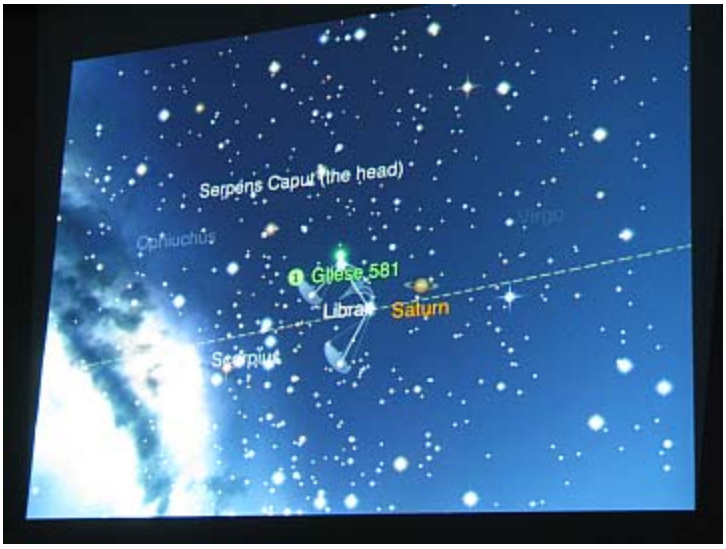
The AAC field at the DAV during the 2010 PSSG - Photo by Tom Faber.

August AAC Meeting Report

Photos by Tom Faber unless noted.

The August meeting of the Atlanta Astronomy Club was held on Saturday, August 17 starting at 6PM with a cookout/potluck dinner at the Atlanta Freethought Society building. The AAC provided burgers, hotdogs (photo right), and drinks, while guests brought a number of yummy side dishes. After everyone was done eating the general meeting began at about 7:30PM. There were about 25 members and several guests present (photos below) for the general meeting. Our speaker for the evening was long time club member David Lumpkin (photo right 3rd from top). Dave presented a talk about astronomy and other science apps available for IPADs and smart phones. Dave demonstrated a number of apps on his IPAD (photo right bottom) and answered many questions.

Peter Macumber gave an update on the next Peach State Star Gaze (the 20th anniversary PSSG) to be held September 29 to October 6. Other club officers presented updates about the club status and activities.



The Next AAC Board Meeting

The next Board meeting of the Atlanta Astronomy Club is scheduled for Saturday, November 16th at 6PM, prior to our 8PM general meeting. Location of the meeting is at the Atlanta Freethought Society building in Smyrna. Contact President Mark Banks or Board Chair Daniel Herron for more information about the meeting.

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topics of interest to our members and speaker to do the programs is always a challenge. I am including a list of ideas I have and would like your input of additional program ideas. If you would like to do a program or know someone who would be a good speaker please let me know.

You can contact me at: programs@atlantaastronomy.org Thanks, Mark Banks

1. The Drake equation updated with the latest information on exoplanets.

2. Exobiology: Life as we know it and what else may be out there.

3. Near earth objects: Comets, Asteroids and all that other stuff out there.

4. The electromagnetic spectrum: How we use it to explore what's out there.

5. Star life cycles: Use the H.R. Diagram to explore the life & death of stars.

6. Spectroscopic analysis: How we use it to explore the universe.

7. Radio Astronomy: What we can learn from the radio part of the spectrum.

8. Science Fiction vs. Fact: What fiction has become true and what the future holds.

9. Atmospheres: What we can learn by observing weather on other planets.

10. Earth observations: How NASA, ESA, JAXA & others observe Earth.

11. Solar observing: What we know about our home star & would like to know.

12. A biographical program on any famous Astronomer / Scientist.

Donald R. Pettit (Ph.D.) NASA Astronaut

PERSONAL DATA: Born in 1955 in Silverton, Oregon. Married with two children.

EDUCATION: Graduated from Silverton Union High School, Silverton, Oregon, in 1973; received a Bachelor of Science in Chemical Engineering from Oregon State University in 1978 and a Doctorate in Chemical Engineering from the University of Arizona in 1983.

EXPERIENCE: Staff scientist at Los Alamos National Laboratory, Los Alamos, New Mexico from 1984 to 1996. Projects included reduced gravity fluid flow and materials processing experiments onboard the NASA KC-135 airplane, atmospheric spectroscopy on noctilucent clouds seeded from sounding rockets, fumarole gas sampling from volcanoes and problems in detonation physics. He was a member of the Synthesis Group, slated with assembling the technology to return to the moon and explore Mars (1990) and the Space Station Freedom Redesign Team (1993).

NASA EXPERIENCE: Selected by NASA in April 1996, Dr. Pettit reported to the Johnson Space Center in August 1996. A veteran of three spaceflights, Dr. Pettit has logged more than 370 days in space and over 13 EVA (spacewalk) hours. He lived aboard the International Space Station for 5-1/2 months during Expedition 6, was a member of the STS-126 crew, and again lived aboard the station for 6-1/2 months as part of the Expedition 30/31 crew.

SPACEFLIGHT EXPERIENCE: Expedition 6 (November 23, 2002 to May 3, 2003). Dr. Pettit completed his first spaceflight as NASA International Space Station Science Officer aboard the station, logging more than 161 days in space, including over 13 EVA hours. During their 5-1/2 months aboard the ISS, the crew worked with numerous U.S. and Russian science experiments. Dr. Pettit and Mission Commander Ken Bowersox performed two EVAs to continue the external outfitting of the orbital outpost. The Expedition 6 crew launched on STS-113 Space Shuttle Endeavour and returned to Earth on Soyuz TMA-1.

STS-126 Endeavour (November 14 to November 30, 2008) launched at night from the Kennedy Space Center, Florida, and returned to land at Edwards Air Force Base, California. It was NASA's 4th shuttle flight in 2008 and the 27th shuttle/station assembly mission. Highlights of the almost 16-day mission included expanding the living quarters of the International Space Station to eventually house six-member crews by delivering a new bathroom, kitchenette, two bedrooms, an exercise machine and a water recycling system. During the mission, Dr. Pettit operated the robotic arm for a total of four EVAs performed by three members of the crew. STS-126 also delivered a new resident to the station, replacing Greg Chamitoff, Expedition 17/18, with Sandy Magnus, Expedition 18. STS-126 returned to Earth after completing 250 orbits in more than 6 million miles.

Expedition 30/31 (December 21, 2011 to July 1, 2012) launched to the International Space Station aboard the Soyuz TMA-03M craft from Kazakhstan. NASA Flight Engineer Don Pettit, Russian Soyuz Commander Oleg Kononenko and European Space Agency Flight Engineer Andre Kuipers of the Netherlands docked to the Rassvet module of the station on December 23, 2011 restoring the station's crew complement to six. They continued scientific research and marked a new era of commercial resupply services from the United States by greeting the first SpaceX Dragon spaceship, which launched from Cape Canaveral Air Force Station in Florida aboard a SpaceX Falcon 9 rocket. Following a series of tests of its maneuverability and abort systems, the capsule was grappled and berthed to the space station by the crew members of Expedition 31. Dr. Petit landed in Kazakhstan after 193 days in space orbiting the Earth 3,088 times and traveling more than 76 million miles.

Dr. Pettit has spent a total of 370 days in space in three flights.

From: http://www.jsc.nasa.gov/Bios/htmlbios/pettit.html

The Next Charlie Elliott Meeting

Join us for our next meeting at 6:00 p.m., Saturday, September 7, at the Charlie Elliott Conference Center.

Meeting Agenda

Dinner and a movie! Join us at 6:00 p.m. on Saturday, September 2013 for our quarterly pot luck. We'll be enjoying good food, good company, and a good movie. Charlie Elliott Astronomy events are always free and open to the public!

Sunset Time Alert

When the meeting is indoors, and if the meeting runs extra-long, a "Sunset Time Alert" will be announced. While we'd love for everyone to stay for the entire meeting, we also realize that some folks prefer to leave a bit earlier so as to set up their equipment at the observing field before dark.

"Observing after the Meeting"

All are invited to the observing field immediately after the meeting (weather-permitting) (or to stay on the observing field if the meeting was outdoors). Everyone is welcome.

Place: Jon Wood Astronomy Field at Charlie Elliott Wildlife Center.

2013 Meeting dates: October 12, November 2, December 7.

Some Planetary Nebulae Have Bizarre Alignment to Our Galaxy

NASA/ESA/STScI News Release: September 4, 2013

Astronomers have used the NASA/ESA Hubble Space Telescope and ESO's New Technology Telescope to explore more than 100 planetary nebulae in the central bulge of our galaxy. They have found that butterfly-shaped members of this cosmic family tend to be mysteriously aligned — a surprising result given their different histories and varied properties.

The final stages of life for a star like our Sun result in the star puffing its outer layers out into the surrounding space, forming objects known as planetary nebulae in a wide range of beautiful and striking shapes. One type of such nebulae, known as bipolar planetary nebulae, create ghostly hourglass or butterfly shapes around their parent stars.

All these nebulae formed in different places and have different characteristics. Neither the individual nebulae, nor the stars that formed them, interact with other planetary nebulae. However, a new study by astronomers from the University of Manchester, UK, now shows surprising similarities between some of these nebulae: many of them line up in the sky in the same way [1].

"This really is a surprising find and, if it holds true, a very important one," explains Bryan Rees of the University of Manchester, one of the paper's two authors. "Many of these ghostly butterflies appear to have their long axes aligned along the plane of our galaxy. By using images from both Hubble and the NTT we could get a really good view of these objects, so we could study them in great detail."

The astronomers looked at 130 planetary nebulae in the Milky Way's central bulge. They identified three different types, and peered closely at their characteristics and appearance [2].

"While two of these populations were completely randomly aligned in the sky, as expected, we found that the third — the bipolar nebulae — showed a surprising preference for a particular alignment," says the paper's second author Albert Zijlstra, also of the University of Manchester. "While any alignment at all is a surprise, to have it in the crowded central region of the galaxy is even more unexpected."

Planetary nebulae are thought to be sculpted by the rotation of the star system from which they form. This is dependent on the properties of this system — for example, whether it is a binary [3], or has a number of planets orbiting it, both of which may greatly influence the form of the blown bubble. The shapes of bipolar nebulae are some of the most extreme, and are thought to be caused by jets blowing mass outwards from the star system perpendicular to its orbit.

"The alignment we're seeing for these bipolar nebulae indicates something bizarre about star systems within the central bulge," explains Rees. "For them to line up in the way we see, the star systems that formed these nebulae would have to be rotating perpendicular to the interstellar clouds from which they formed, which is very strange."

While the properties of their progenitor stars do shape these nebulae, this new finding hints at another more mysterious factor. Along with these complex stellar characteristics are those of our Milky Way; the whole central bulge rotates around the galactic centre. This bulge may have a greater influence than previously thought over our entire galaxy — via its magnetic fields. The astronomers suggest that the orderly behaviour of the planetary nebulae could have been caused by the presence of strong magnetic fields as the bulge formed.

As such nebulae closer to home do not line up in the same orderly way, these fields would have to have been many times stronger than they are in our present-day neighbourhood [4].

"We can learn a lot from studying these objects," concludes Zijlstra. "If they really behave in this unexpected way, it has consequences for not just the past of individual stars, but for the past of our whole galaxy."

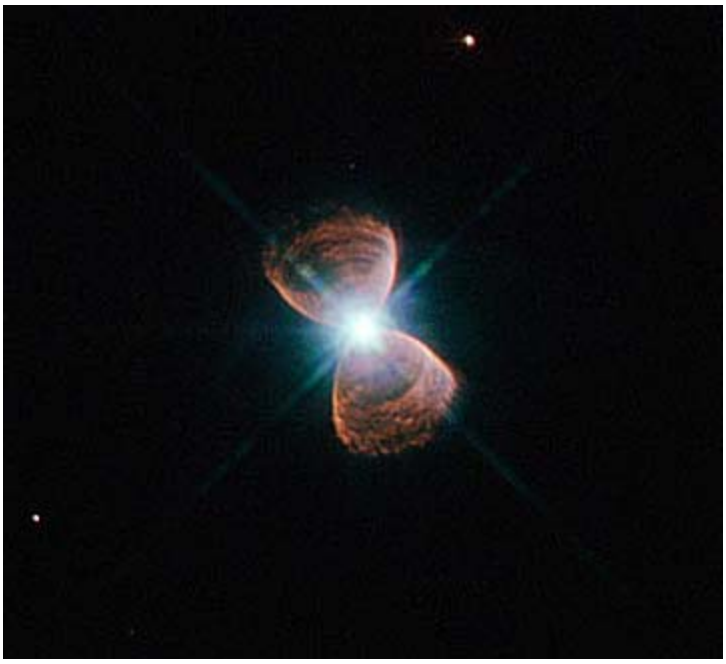
Notes:

[1] The "long axis" of a bipolar planetary nebula slices though the wings of the butterfly, whilst the "short axis" slices through the body.

[2] The shapes of the planetary nebula images were classified into three types, following conventions: elliptical, either with or without an aligned internal structure, and bipolar.

[3] A binary system consists of two stars rotating around their common centre of gravity.

[4] Very little is known about the origin and characteristics of the magnetic fields that were present in our galaxy when it was young, so it is unclear how they have changed over time.



This image shows an example of a bipolar planetary nebula known as PN Hb 12 — popularly known as Hubble 12 — in the constellation of Cassiopeia. The striking shape of this nebula, reminiscent of a butterfly or an hourglass, was formed as a Sun-like star approached the end of its life and puffed its outer layers into the surrounding space. For bipolar nebulae, this material is funnelled towards the poles of the ageing star, creating the distinctive double-lobed structure.

Observations using the NASA/ESA Hubble Space Telescope and the NTT have found that bipolar planetary nebulae located towards the central bulge of our Milky Way appear to be strangely aligned in the sky — a surprising result given their varied and chaotic formation.

PN Hb 12 was not part of the new study. A version of this image was entered into the Hubble's Hidden Treasures image processing competition by contestant Josh Barrington.

Credit: NASA, ESA. Acknowledgement: Josh Barrington (Hubble's Hidden Treasures Competition)

Hubble Finds Source of Magellanic Stream

NASA/STScI News Release: August 8, 2013

Astronomers using NASA's Hubble Space Telescope have solved a 40-year mystery on the origin of the Magellanic Stream, a long ribbon of gas stretching nearly halfway around our Milky Way galaxy.

The Large and Small Magellanic Clouds, two dwarf galaxies orbiting the Milky Way, are at the head of the gaseous stream. Since the stream's discovery by radio telescopes in the early 1970s, astronomers have wondered whether the gas comes from one or both of the satellite galaxies. New Hubble observations reveal most of the gas was stripped from the Small Magellanic Cloud about 2 billion years ago, and a second region of the stream originated more recently from the Large Magellanic Cloud.

A team of astronomers, led by Andrew J. Fox of the Space Telescope Science Institute in Baltimore, Md., determined the source of the gas filament by using Hubble's Cosmic Origins Spectrograph to measure the amount of heavy elements, such as oxygen and sulfur, at six locations along the Magellanic Stream. They observed faraway quasars, the brilliant cores of active galaxies, that emit light that passes through the stream. They detected the heavy elements from the way the elements absorb ultraviolet light.

Fox's team found a low amount of oxygen and sulfur along most of the stream, matching the levels in the Small Magellanic Cloud about 2 billion years ago, when the gaseous ribbon is thought to have formed. In a surprising twist, the team discovered a much higher level of sulfur in a region of the stream that is closer to the Magellanic Clouds.

"We're finding a consistent amount of heavy elements in the stream until we get very close to the Magellanic Clouds, and then the heavy element levels go up," said Fox. "This inner region is very similar in composition to the Large Magellanic Cloud, suggesting it was ripped out of that galaxy more recently."

"Only Hubble can measure these abundances," Fox explained. "These abundances can only be measured in ultraviolet light, which Earth's atmosphere absorbs, and so the observations can only be done from a telescope in space."

Unlike other satellite galaxies of the Milky Way the Magellanic Clouds have been able to retain their gas and still are forming stars because they're more massive than the other satellites. However, as they're now approaching the Milky Way, they're feeling its gravity more and also encountering its halo of hot gas, which pushes their own gas out. That process, together with the gravitational tug-of-war between the Magellanic Clouds, leads to the production of a stream.

Ultimately, the gaseous stream may rain down onto the Milky Way's disk, fueling the birth of new stars. This infusion of fresh gas is part of a process that triggers star formation in a galaxy. Astronomers want to know the origin of that wayward gas in order to more fully understand how galaxies make new stars.

"We want to understand how galaxies like the Milky Way strip the gas from small galaxies that fall into them and then use it to form new stars," Fox explained. "This seems like it's an episodic process. It's not a smooth process where a slow stream of gas comes in continuously. Instead, once in a while a large gas cloud falls in. We have a way of testing that here, where two galaxies are coming in. We've shown which of them is producing the gas that ultimately will fall into the Milky Way."

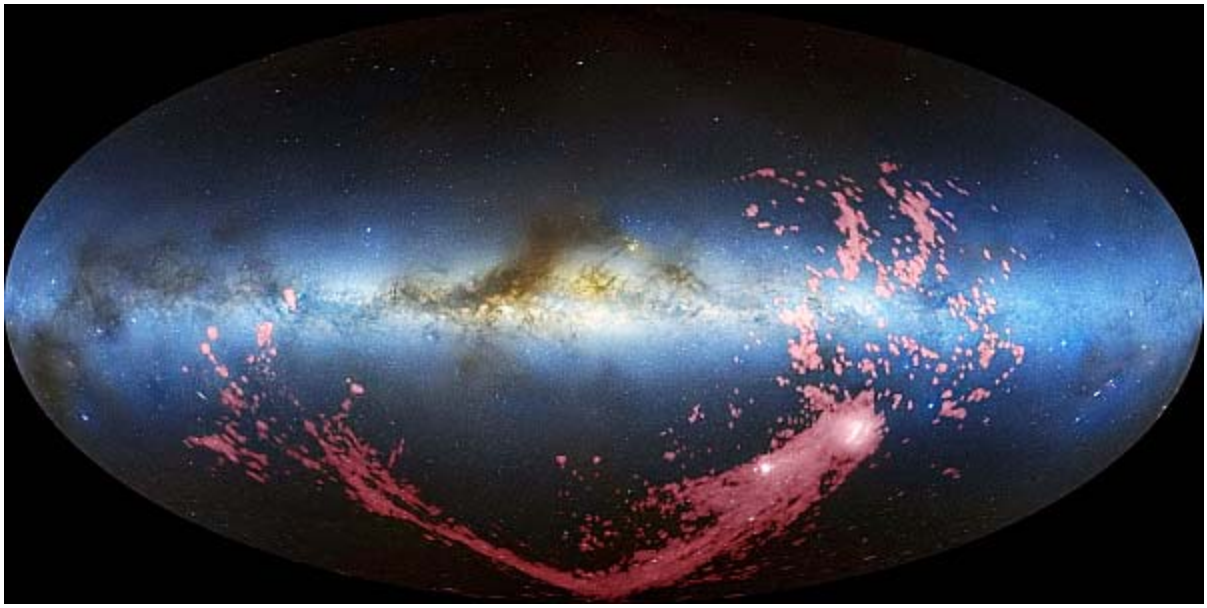
The team reported its results in two papers that appeared in the Aug. 1 issue of The Astrophysical Journal. Fox is the lead author of one paper; the other paper's lead author is Philipp Richter of the University of Potsdam in Germany.

The Hubble Space Telescope is a project of international cooperation between NASA and the European Space Agency. NASA's Goddard Space Flight Center in Greenbelt, Md., manages the telescope. The Space Telescope Science Institute (STScI) in Baltimore, Md., conducts Hubble science operations. STScI is operated by the Association of Universities for Research in Astronomy Inc., in Washington.

This image shows a long ribbon of gas called the Magellanic Stream, which stretches nearly halfway around the Milky Way.

In this combined radio and visible-light image, the gaseous stream is shown in pink. The radio observations are taken from the Leiden/Argentine/Bonn (LAB) Survey. The Milky Way is the light blue band in the centre of the image. The brown clumps are interstellar dust clouds in our galaxy. The Magellanic Clouds, satellite galaxies of the Milky Way, are the white regions at the bottom right.

Credit: David L. Nidever, et al., NRAO/AUI/NSF and Mellinger, Leiden/Argentine/Bonn Survey, Parkes Observatory, Westerbork Observatory, and Arecibo Observatory.



Hubble Finds 'Smoking Gun' After Gamma-Ray Blast

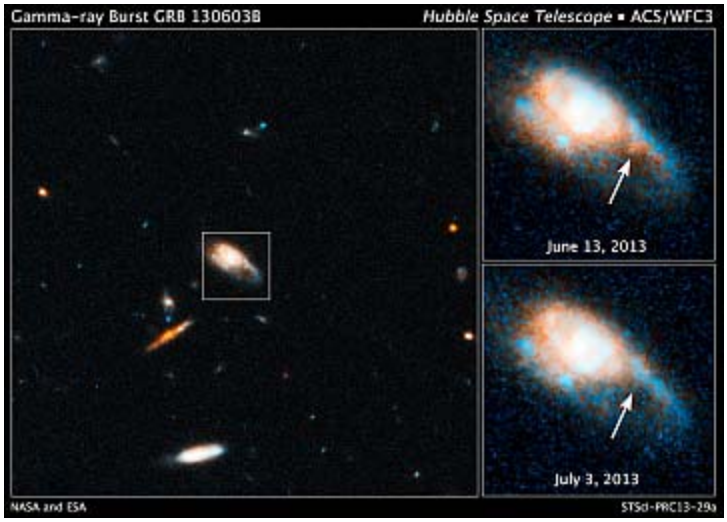
NASA/STScI News Release August 3, 2013

NASA's Hubble Space Telescope has provided the strongest evidence yet that short-duration gamma-ray bursts are triggered by the merger of two small, super-dense stellar objects, such as a pair of neutron stars or a neutron star and a black hole.

The definitive evidence came from Hubble observations in near-infrared light of the fading fireball produced in the aftermath of a short gamma-ray burst (GRB). The afterglow reveals for the first time a new kind of stellar blast called a kilonova, an explosion predicted to accompany a short-duration GRB.

A kilonova is about 1,000 times brighter than a nova, which is caused by the eruption of a white dwarf. Such a stellar blast, however, is only 1/10th to 1/100th the brightness of a typical supernova, the self-detonation of a massive star.

Gamma-ray bursts are mysterious flashes of intense high-energy radiation that appear from random directions in space. Short-duration blasts last at most a few seconds, but they sometimes generate faint afterglows in visible and near-infrared light that continue for several hours or days.



These images taken by NASA's Hubble Space Telescope reveal a new type of stellar explosion produced from the merger of two compact objects.

Hubble spotted the outburst while looking at the aftermath of a short-duration gamma-ray burst, a mysterious flash of intense high-energy radiation that appears from random directions in space. Short-duration blasts last at most a few seconds. They sometimes, however, produce faint afterglows in visible and near-infrared light that continue for several hours or days and help astronomers pinpoint the exact location of the burst.

In the image at left, the galaxy in the center produced the gamma-ray burst, designated GRB 130603B. The galaxy, cataloged as SDS J112848.22+170418.5, resides almost 4 billion light-years away. A probe of the galaxy with Hubble's Wide Field Camera 3 on June 13, 2013, revealed a glow in near-infrared light at the source of the gamma-ray burst, shown in the image at top, right. When Hubble observed the same location on July 3, the source had faded, shown in the image at below, right. The fading glow provided key evidence that it was the decaying fireball of a new type of stellar blast called a kilonova.

Kilonovas are about 1,000 times brighter than a nova, which is caused by the eruption of a white dwarf. But they are 1/10th to 1/100th the brightness of a typical supernova, the self-detonation of a massive star.

Credit: NASA, ESA, N. Tanvir (University of Leicester), A. Fruchter (STScI), and A. Levan (University of Warwick)

The afterglows have helped astronomers determine that GRBs lie in distant galaxies. The cause of short-duration GRBs, however, remains a mystery. The most popular theory is that astronomers are witnessing the energy released as two compact objects crash together. But, until now, astronomers have not gathered enough strong evidence to prove it, say researchers.

A team of researchers led by Nial Tanvir of the University of Leicester in the United Kingdom has used Hubble to study a recent short-duration burst in near-infrared light. The observations revealed the fading afterglow of a kilonova explosion, providing the "smoking gun" evidence for the merger hypothesis.

"This observation finally solves the mystery of the origin of short gamma-ray bursts," Tanvir said. "Many astronomers, including our group, have already provided a great deal of evidence that long-duration gamma-ray bursts (those lasting more than two seconds) are produced by the collapse of extremely massive stars. But we only had weak circumstantial evidence that short bursts were produced by the merger of compact objects. This result now appears to provide definitive proof supporting that scenario."

Astrophysicists have predicted that short-duration GRBs are created when a pair of super-dense neutron stars in a binary system spiral together. This event happens as the system emits gravitational radiation, tiny ripples in the fabric of space-time. The energy dissipated by the waves causes the two objects to sweep closer together. In the final milliseconds, as the two objects merge, the death spiral kicks out highly radioactive material. This material heats up and expands, emitting a burst of light. This powerful kilonova blast emits as much visible and near-infrared light every second as the Sun does every few years. A kilonova lasts for about a week.

In a recent science paper Jennifer Barnes and Daniel Kasen of the University of California, Berkeley, and the Lawrence Berkeley National Laboratory presented new calculations predicting how kilonovas should look. They predicted that the same hot plasma producing the radiation will also act to block the visible light, causing the gusher of energy from the kilonova to flood out in near-infrared light over several days.

An unexpected opportunity to test this model came on June 3 when NASA's Swift Space Telescope picked up the extremely bright gamma-ray burst, cataloged as GRB 130603B, in a galaxy located almost 4 billion light-years away. Although the initial blast of gamma rays lasted just one-tenth of a second, it was roughly 100 billion times brighter than the subsequent kilonova flash.

The visible-light afterglow was detected at the William Herschel Telescope and its distance was determined with the Gran Telescopio Canarias, both located in the Canary Islands.

"We quickly realized this was a chance to test Barnes' and Kasen's new theory by using Hubble to hunt for a kilonova in near-infrared light," Tanvir said. The calculations suggested that the light would most likely be brightest in near-infrared wavelengths about 3 to 11 days after the initial blast. The researchers needed to act quickly before the light faded, so they requested Director's Discretionary Observing Time with Hubble's Wide Field Camera 3.

On June 12-13 Hubble searched the location of the initial burst, spotting a faint red object. An independent analysis of the data from another research team confirmed the detection. Subsequent Hubble observations three weeks later, on July 3, revealed that the source had faded away, therefore providing the key evidence it was the fireball from an explosive event.

"Previously, astronomers had been looking at the aftermath of short-period bursts largely in optical light, and were not really finding anything besides the light of the gamma-ray burst itself," explained Andrew Fruchter of the Space Telescope Science Institute in Baltimore, Md., a member of Tanvir's

Continued on next page

research team. “But this new theory predicts that when you compare near-infrared and optical images of a short gamma-ray burst about a week after the blast, the kilonova should pop out in the infrared, and that's exactly what we're seeing.”

In addition to confirming the nature of short GRBs, the discovery has two important implications. First, the origin of many heavy chemical elements in the universe, including gold and platinum, has long been a puzzle. Kilonovas are predicted to form such elements in abundance, spraying them out into space where they could become part of future generations of stars and planets.

Second, the mergers of compact objects are also expected to emit intense gravitational waves, first predicted by Albert Einstein. Gravity waves have not yet been discovered, but new instruments under development may make the first detections within a few years. “Now it seems that by hunting for kilonovas, astronomers may be able to tie together the events giving rise to both phenomena,” Tanvir said.

The team’s results appeared online on Aug. 3 in the journal *Nature*.

DSO Dates and Locations

The dates and locations for the AAC Dark Sky Observing for the remainder of the year are: September 7th at DAV, November 2nd at DAV, and December 7th at Charlie Elliott.

New Feature on the AAC Web Site

The Beginner’s Guide to Astronomy at: http://atlantaastronomy.org/?page_id=778

The **Atlanta Astronomy Club, Inc**., one of the South’s largest and oldest astronomical society, meets at **8:00 P.M.** on the 3rd Saturday of each month at the Atlanta Freethought Society building in Smyrna, 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 Programs@AtlantaAstronomy.org

Program Chair: Richard Jakiel President@AtlantaAstronomy.org

Observing Chair/BoD Chair: Daniel Herron Observing@AtlantaAstronomy.org

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Recording Secretary: Open

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Board: Brigitte Fessele, Contact info TBA

Board: David Lumpkin, Contact info TBA

Board: Steve Phillips sandsphillips@att.net

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Elliott Chapter Director: Larry Owens director@ceastronomy.org

Elliott Observing Supervisor: John Towne observing@ceastronomy.org

Elliott Recording Secretary: Marie Lott mtlott@comcast.net

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

Elliott Webmaster: Theo Ramakers 770-788-0843 webmaster@CEastronomy.org

Elliott Outreach Coordinator: Theo Ramakers 770-788-0843 outreach@ceastronomy.org

Georgia Astronomy in State Parks: Sharon Carruthers Treasurer@AtlantaAstronomy.org

PSSG Chairman: Peter Macumber pmacumber@nightsky.org

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

Sidewalk Astronomy: Brad Isley sidewalkastronomy@AtlantaAstronomy.org

Light Tresspass: 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, Observing@AtlantaAstronomy.org

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

AAC Events are listed in BOLD

Sept 1st, Sunday: Moon near Mars & Jupiter in morning.

Sept 5th, Thursday: New Moon.

Sept 7th, Saturday: **CE Chapter Meeting @ 6PM. DSO @ DAV.**

Sept 8th, Sunday: Moon near Venus in evening.

Sept 12th, Thursday: Moon First Quarter.

Sept 19th, Thursday: Full Moon (Harvest Moon).

Sept 21st, Saturday: **AAC Meeting, 8PM at AFS.**

Sept 26th, Thursday: Moon Last Quarter.

Sept 29th, Sunday - Oct 6th, Sunday: Peach State Star Gaze!!

Oct 1st, Tuesday: Moon forms triangle with Mars and Regulus.

Oct 4th, Friday: New Moon.

Oct 6th-7th, Sunday-Monday: Moon to right and left of Venus respectively.

Oct 11th, Friday: Moon First Quarter.

Oct 12th, Saturday: **CE Chapter Meeting.**

Oct 14th, Monday: Mars near Regulus.

Oct 16th, Wednesday: Venus near Antares.

Oct 18th, Friday: Full Moon (Hunter's Moon) with a weak penumbral eclipse. Mid @ 7:50PM.

Oct 19th, Saturday: **AAC Meeting, 8PM at AFS.**

Oct 26th, Saturday: Moon Last Quarter.

Nov 2nd, Saturday: **CE Chapter Meeting.**

Nov 3rd, Sunday: New Moon.

Nov 16th, Saturday: **AAC Meeting, 8PM at AFS.**

For more event listings see the calendar at www.atlantaastronomy.org

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 .

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 or PDF's are okay. You can submit articles anytime up to the deadline. **The deadline for October is Tuesday, September 24th. Submissions after the deadline will go in the following issue.**

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The Focal Point

Newsletter of The Atlanta Astronomy Club, Inc.

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FIRST CLASS

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