The Focal Point

The Atlanta Astronomy Club
Established 1947
April 2016

Vol. 28 No. 11

Editor: Tom Faber

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April AAC General Meeting

Note Meeting Location Change for April

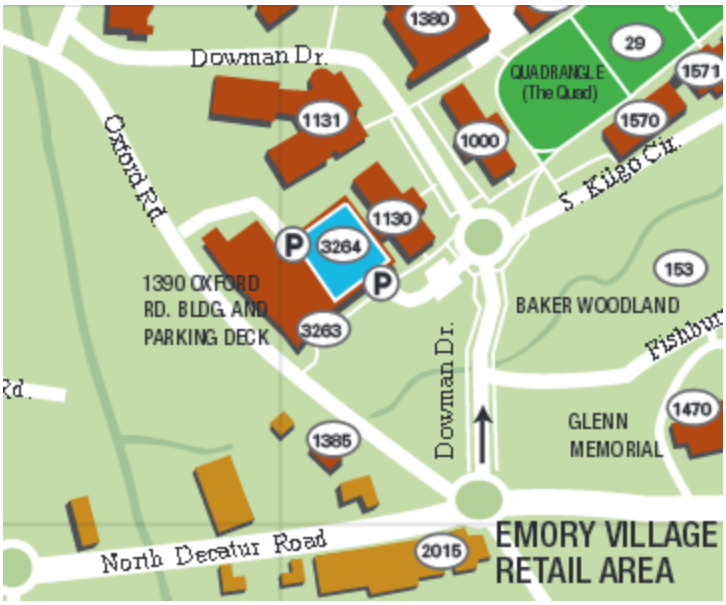
Please join us for the next meeting of the Atlanta Astronomy Club, to be held on Saturday, April 16th at 3PM in planetarium in the Math & Science Building, Emory University - see map. The address is 400 Doman Drive, Decatur. Parking is free at the parking deck behind the Math & Science Building. Access is on Oxford Road next to the Barnes & Noble Book Store. You will need to push the button and get a ticket but when you leave you won't need to pay. Enter the lower level of the building from the parking deck. A short beginner's program will be presented at 2PM. Our featured speaker will be Dr. Erin Bonning of the Emory University Department of Physics.

The Talk

Dr. Bonning will present a talk about relativity and the recent detection of gravitational waves by the LIGO gravitational-wave observatories.

Speaker Bio

Dr. Erin Wells Bonning joined the Emory University Department of Physics in September 2013 as a Lecturer and Director of the Planetarium. She received her BA from St John's College in Annapolis, Maryland, 1997, and PhD from the University of Texas at Austin, 2004. In her PhD work she studied numerical relativity, simulating the orbit and coalescence of binary black holes. Her current research encompasses many aspects of black hole astrophysics, with particular emphasis on multiwavelength observations of supermassive black holes in active galaxies.



The Math & Science Building is number 1131. Parking is available in the parking deck off of Oxford Rd.

March was Membership Renewal Month

The AAC has moved to a "one-date-for-all" membership renewal. ALL CLUB MEMBERS, with certain exceptions, should submit their $30 dues for 2016 by the end of March. If you have not yet renewed please do so as soon as possible. Please send your renewals to AAC Treasurer Sharon Carruthers, renew online using PayPal, or you can bring your renewal to the April Meeting. For more information see: http://atlantaastronomy.org/?page_id=22

Thank You for your support of the AAC!

The Next AAC Board Meeting

The next Board of Directors Meeting of the AAC is scheduled for Sunday, April 24th, starting at 3PM at the home of Peter and Sharon, 1057 Trestle Drive, Austell. Contact President Mark Banks or Board Chair Sharon Carruthers for more information about the meeting.

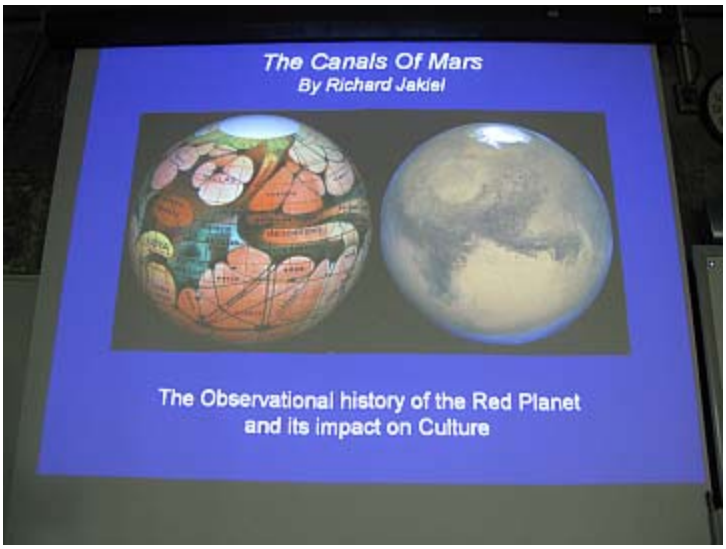
The 2016 Peach State Star Gaze

The 2016 Peach State Star Gaze will be held from Sunday, September 25 to Sunday October 2. Be sure to mark your calendars!

March AAC Meeting Report

Photos by Tom Faber.

The March general meeting was held beginning at 3PM on Saturday, March 19th at Fernbank Science Center. There were about 50 members and guests present for the meeting. Our guest speaker was AAC Program Chair Richard Jakiel (photo right). Rich presented a talk titled “The Canals of Mars”, in which he talked about observations of Mars from the earliest telescopic observations to modern spacecraft studies of the “Red Planet”. After his talk Rich answered a number of questions. After the talk, there were club announcements by Club officers about upcoming events and activities.



From the President’s Desk

By Mark Banks, AAC President

We have had a very busy year so far and I want to thank all of our volunteers for their dedication to our club mission to educate the public about the sky. We still have a lot to do before the school year ends so please keep an eye on our calendar and volunteer when you can. During the summer months our focus will shift to various summer camp programs and scout troops, so as you can see, we need help year round. You don’t need to be an expert. Most of the people you will talk to know very little about what's up in the night sky. You will get a great sense of satisfaction from knowing that you are encouraging and inspiring the next generation of astronomers, scientists, and engineers. Sometimes you also get free stuff like pizza, hot dogs, cookies & ice cream!

Elections this year will be done on line so please be sure your information on the club roster is correct so you will get your ballot by email. Elections will be held during the month of May. You can find the roster by clicking on the night sky network from the club main web site. We also need nominations for all positions, so don’t just sit there, do something!!! If you would like to run for any position please contact any of the club officers and let us know what you can do for the club.

The March Charlie Elliott Meeting

By Valorie Whalen, Charlie Elliott Chapter Recording Secretary

The March monthly meeting for the Charlie Elliott Chapter of the Atlanta Astronomy Club was held on 3/12/16 in the Campbell Aquatic Building at the Charlie Elliott Wildlife Management property in Mansfield, Georgia. There were twenty-five members and guests in attendance. This meeting was a quarterly potluck dinner event, and we enjoyed several dishes donated by members.

Jack Fitzmier, Chapter Director, called the meeting to order and welcomed everyone. There were two recipients of Astronomical League awards this month. Frank Garner was awarded a certificate and pin for the Sunspotter Program. David Whalen received two awards: one for the Binocular Deep Sky Program, and he was also awarded the pin and certificate for the Herschel 400 Program!

Marie Lott, Program Chair, announced that it is now time for all members to renew their annual dues with AAC. There is a link on the membership tab of the AAC website to pay your current dues through PayPal. She also shared the discount code to receive the digital version of Astronomy Technology Today for free. Just enter "Atlanta Astronomy Club" in the Club Name box and in the Discount Code box enter "club". This digital publication gives reviews and articles on equipment and advances in technology for astronomy.

Lastly, Marie brought along her planisphere for the Messier program. It is quite larger than the normal planispheres available and would be quite useful for anyone working on either of the Messier AL programs. You can get yours at www.Messierplanisphere.com . Also available to look at was the spiral-bound Jumbo Edition Pocket Sky Atlas published by Sky & Telescope magazine.

Brian Tucker mentioned a Yahoo group called "DSLR Astrophotography" that welcomes anyone wishing to hone their skills for using PixInsight software to do image post-processing. The group has sample photos available for download to practice with each month. They also provide constructive critique/feedback and contests.

Jack Fitzmier also discussed a new AL program that will coincide with the May 9, 2016 transit of Mercury across the face of the sun. Jack will be the national AL coordinator for this club. Contact him with any questions you may have for this unique event.

Dan Thoman, Outreach Coordinator, let everyone know that the lock that gives us access to the Jon Wood Astronomy Field has been moved so that it will not conflict with the keyed-lock for the Charlie Elliott Management Team. Please note that the hasp of the lock will connect two pieces of chain that have been painted white for night visibility. Please make sure that you reconnect the two painted sections of chain when securing the lock when you leave the field. He also mentioned several upcoming dates for outreach events, and asked for volunteers to please RSVP on the NSN website. If you would like to help out with any of these events, please be sure to note that on the events calendar. These dates are listed below in the upcoming events section.

David Whalen, Observing Director, treated us to another energetic "All of the Above", which gives a run-down of what you can expect to see in the sky in the coming weeks. It included current weather conditions for the Jon Wood Astronomy Field, relative location of each of the planets, along with the sun and moon, and each of their respective rise and set times. He included H-alpha photos of the Sun as of 3/12/16. Also discussed were several deep-sky targets in the categories of "Relaxing", "Intriguing", "Taxing" and a Challenge Object. The full list of targets for the month of March is available on the website.

David also announced that Van Macatee has invited club members to join him at his farm in Eatonton on March 25th for a cookout and star party to mark the conclusion of his PixInsight seminar being hosted at his home. Please bring your scopes so that seminar attendees can enjoy the night sky.

The astrophotography targets for the month of March are: Beginners can image a full disk photo of the moon. Advanced photographers can try to catch the crater "Plato" on the northeastern shore of Mare Imbrium. Good luck to all!

Clouds prevented any viewing/imaging from the Jon Wood Field after the meeting.

Upcoming Events:

Outreach Events:

Thursday, March 17, 2016 (6:30 to 8:00 p.m.): Starling Elementary School in Grayson, Georgia.

Friday, March 25, 2016 (8:30 to 11:30 a.m.): Solar Event at Jasper County Primary School in Monticello, Georgia.

Thursday, March 31, 2016 and Friday, April 1, 2016: Solar Event at Deerlick Astronomy Village in Sharon, Georgia.

Saturday, April 16, 2016 (11:00 a.m. to 4:00 p.m.): Solar Event at Anna Ruby Falls in Helen, Georgia.

Saturday, April 30, 2016 (10:00 a.m. to 4:00 p.m.): Solar Event at the Madison Festival in Madison, Georgia.

Next Meeting:

CE Meeting: April 9th at 6:00 p.m. The meeting room will be announced on the website.

The Next Charlie Elliott Meeting

The next meeting of the Charlie Elliott Chapter will be held on Saturday, April 9, 2016 at 6:00 pm (room TBA). Dr. Erin Bonning, director of the Emory University Planetarium, will present a talk about gravitational waves.

At sunset we will head over to Jon Wood Astronomy Field (33.468865, -83.735319) for a night of observing, weather permitting. All are welcome. Bring your scopes, binoculars, or just bring yourself – we enjoy sharing the night sky with our guests! Be sure to arrive before 10 pm, as that is when the security gate on Elliott Trail locks to new entry.

2016 Meeting Schedule: April 9, May 7, June 4 (potluck), July 9, August 6, September 10 (potluck), October 29, November 19, December 10 (potluck).

Indoor meetings start approximately 2 hours before sunset. Monthly locations & details vary, so please check the web site (ceastronomy.org) for current specifics. Stargazing sessions on the Jon Wood Astronomy Field begin just after sunset on the above dates.

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

The AAC Zombie Party

By Daniel Herron, AAC Observing Chair

This year's Zombie Party is scheduled for Thursday, April 7 thru Sunday, April 10 (3 nights) at the Deerlick Astronomy Village.

The Zombie party is a no-frills, open to the public, 3 night star party hosted by the Atlanta Astronomy Club. No speakers, workshops, or sessions - just observing. This event if open to all, beginners and experts alike, AAC members, and non-members (how else are we going to get you hooked!).

The event is $15 per person per night due upon arrival, no refunds for bad weather once paid. See you there!

Weather:

General rule if the weather looks to be rainy during the night we will just cancel for that night and start the party the next day. I will make the go/no-go decision for Thursday by Wednesday night. Backup date for bad weather (if the entire event is cancelled) will be May 5 - 8.

Note:

The Zombie party got its name from the way we all look the next morning after staying awake all night observing and has nothing to do with the undead that are occasionally rumored to walk the area!

Rosette Nebula by Dan Llewellyn

This image of the Rosette Nebula was made by Dan Llewellyn at the Deerlick Astronomy Village using the following equipment:

A 80mm Lomo triplet refractor with a 0.8 focal reducer. The camera used was a Sony A7s modified and cooled. This image is a single 38 second exposure, processed as a JPEG, not a raw image. The camera was set to ISO 12,800.

Various portions of the Rosette Nebula are cataloged as NGC 2237, NGC 2238, NGC 2239, and NGC 2246.

From https://en.wikipedia.org/wiki/Rosette_Nebula - The Rosette Nebula (also known as Caldwell 49) is a large, spherical (circular in appearance), H II region located near one end of a giant molecular cloud in the Monoceros region of the Milky Way Galaxy. The open cluster NGC 2244 (Caldwell 50) is closely associated with the nebulosity, the stars of the cluster having been formed from the nebula's matter.

The May 2016 Transit of Mercury

By Fred Espenak

Published in Observer's Handbook 2016, Royal Astronomical Society of Canada. This article is from Fred Espenak's web page: http://eclipsewise.com

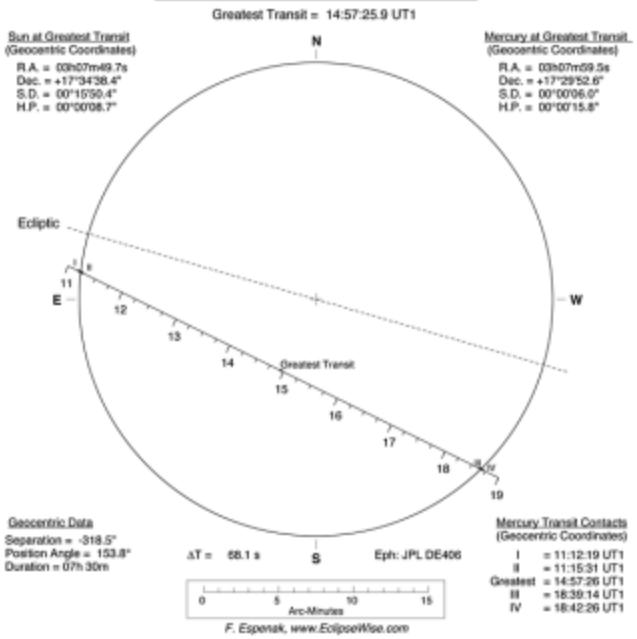
On Monday, 2016 May 09, Mercury will transit the Sun for the first time since 2006. The transit or passage of a planet across the face of the Sun is a relatively rare occurrence. As seen from Earth, only transits of Mercury and Venus are possible. There are approximately 13 transits of Mercury each century. In comparison, transits of Venus occur in pairs with more than a century separating each pair.

The principal events occurring during a transit are conveniently characterized by contacts, analogous to the contacts of an annular solar eclipse. The transit begins with contact I, which is the instant when the planet's disk is externally tangent to the Sun. Shortly after contact I, the planet can be seen as a small notch along the solar limb. The entire disk of the planet is first seen at contact II when the planet is internally tangent to the Sun. During the next several hours, the silhouetted planet slowly traverses the brilliant solar disk. At contact III, the planet reaches the opposite limb and once again is internally tangent to the Sun. Finally, the transit ends at contact IV when the planet's limb is externally tangent to the Sun. Contacts I and II define the phase called ingress while contacts III and IV are known as egress. Position angles for Mercury at each contact are measured counterclockwise from the north point on the Sun's disk.

Table 1 below gives the times of major events during the 2016 transit in Universal Time (UT1). Greatest transit is the instant when Mercury passes closest to the Sun's center (i.e., minimum separation). At this time, the geocentric angular distance between the center's of Mercury and the Sun will be 318.5 arc-seconds. The position angle is the direction of Mercury with respect to the center of the Sun's disk as measured counterclockwise from the celestial north point on the Sun.

Figure 1:

Transit of Mercury: 2016 May 09



Path of Mercury Across the Sun During the Transit of 2016 May 09

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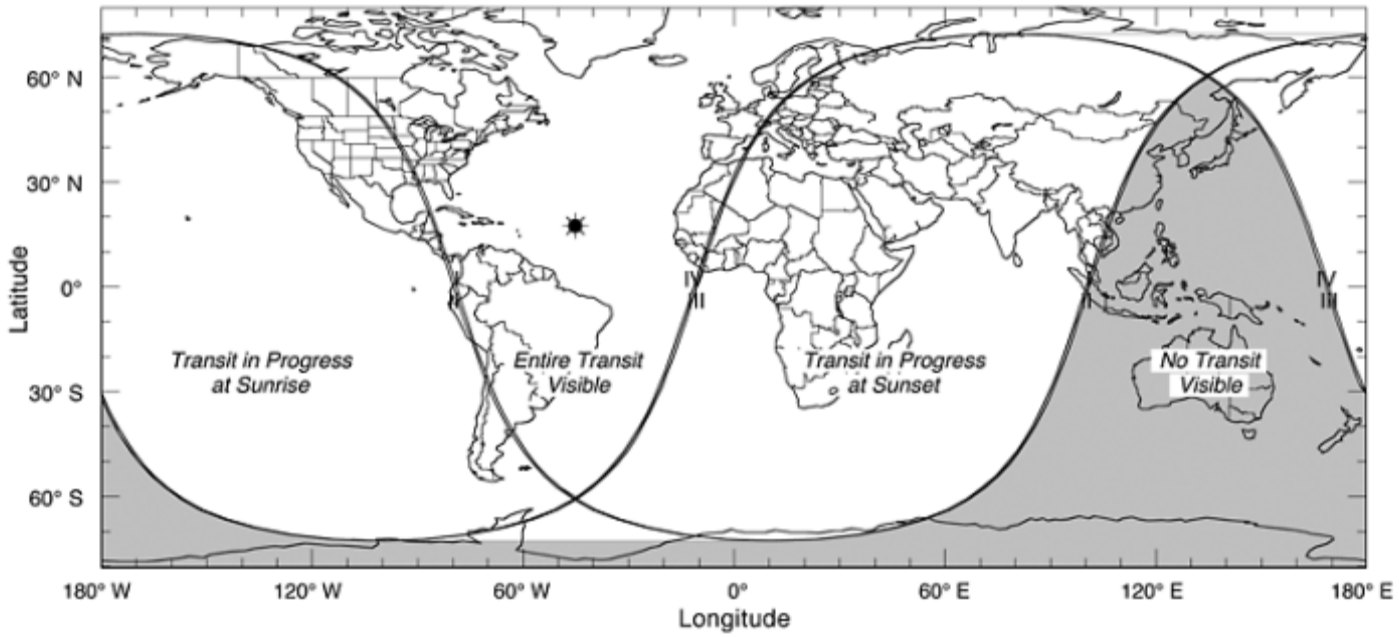
Figure 2 **Transit of Mercury: 2016 May 09**



Global Visibility of the Transit of Mercury on 2016 May 09

Table 1: Geocentric Phases of the 2016 Transit of Mercury

Event	Universal Time	Position Angle
Contact I	11:12:19	83.2°
Contact II	11:15:31	83.5°
Greatest Transit	14:57:26	153.8°
Contact III	18:39:14	224.1°
Contact IV	18:42:26	224.4°

Figure 1 above shows the path of Mercury across the Sun's disk and the scale gives the Universal Time of Mercury's position at any instant during the transit. The contact times are listed along with the equatorial coordinates of the Sun and Mercury at greatest transit. Since the contact times are geocentric they are only correct for an observer stationed at Earth's center. The contact times for any given location may differ from the geocentric times by up to a minute. This is due to the effect of parallax since Mercury's 10 arc-second diameter disk may be shifted up to nearly 13 arc-seconds from its geocentric coordinates depending on the observer's exact geographic position.

The transit will be widely visible from most of Earth including the Americas, the Atlantic and Pacific Oceans, Europe, Africa and much of Asia, as shown in Figure 2 above. None of the transit will be visible from eastern Asia, Japan, Indonesia, Australia and New Zealand.

The transit begins before sunrise for observers in western North America. The transit ends after sunset for Eastern Europe, Asia and most of Africa. Regions where the entire transit is visible include eastern North and South America, the Atlantic Ocean, and Western Europe.

Additional information including tables of the transit times for a number of cities in North America are given here: http://eclipsewise.com/oh/tm2016.html

Journey to the Center of Our Galaxy

NASA/STScI News Release - March 31, 2016

Peering deep into the heart of our Milky Way galaxy, NASA's Hubble Space Telescope reveals a rich tapestry of more than half a million stars. Except for a few blue, foreground stars, the stars are part of the Milky Way's nuclear star cluster, the most massive and densest star cluster in our galaxy. So packed with stars, it is equivalent to having a million suns crammed into the volume of space between us and our closest stellar

Credit: NASA, ESA, and the Hubble Heritage Team (STScI/AURA). Acknowledgment: T. Do and A. Ghez (UCLA), and V. Bajaj (STScI)

neighbor, Alpha Centauri, 4.3 light-years away. At the very hub of our galaxy, this star cluster surrounds the Milky Way's central supermassive black hole, which is about 4 million times the mass of our sun.

Astronomers used Hubble's infrared vision to pierce through the dust in the disk of our galaxy that obscures the star cluster. In this image, scientists translated the infrared light, which is invisible to human eyes, into colors our eyes can see. The red stars are either embedded or shrouded by intervening dust. Extremely dense clouds of gas and dust are seen in silhouette, appearing dark against the bright background stars. These clouds are so thick that even Hubble's infrared capability could not penetrate them.

Hubble's sharp vision allowed astronomers to measure the movements of the stars over four years. Using this information, scientists were able to infer important properties such as the mass and structure of the nuclear star cluster. The motion of the stars may also offer a glimpse into how the star cluster was formed — whether it was built up over time by globular star clusters that happen to fall into the galaxy's center, or from gas spiraling in from the Milky Way's disk to form stars at the core.

This picture, spanning 50 light-years across, is a mosaic stitched from nine separate images from Hubble's Wide Field Camera 3. The center of the Milky Way is located 27,000 light-years away. The "snowstorm" of stars in the image is just the tip of the iceberg: Astronomers estimate that about 10 million stars in this cluster are too faint to be captured in this image.

Hubble Unveils Monster Stars

NASA/STScI News Release - March 17, 2016

Astronomers using the unique ultraviolet capabilities of the NASA/ESA Hubble Space Telescope have identified nine monster stars with masses over 100 times the mass of the Sun in the star cluster R136. This makes it the largest sample of very massive stars identified to date. The results, which will be published in the Monthly Notices of the Royal Astronomical Society, raise many new questions about the formation of massive stars.

An international team of scientists using the NASA/ESA Hubble Space Telescope has combined images taken with the Wide Field Camera 3

Credit: NASA, ESA, and P. Crowther (University of Sheffield)

(WFC3) with the unprecedented ultraviolet spatial resolution of the Space Telescope Imaging Spectrograph (STIS) to successfully dissect the young star cluster R136 in the ultraviolet for the first time [1].

R136 is only a few light-years across and is located in the Tarantula Nebula within the Large Magellanic Cloud, about 170,000 light-years away. The young cluster hosts many extremely massive, hot and luminous stars whose energy is mostly radiated in the ultraviolet [2]. This is why the scientists probed the ultraviolet emission of the cluster.

As well as finding dozens of stars exceeding 50 solar masses, this new study was able to reveal a total number of nine very massive stars in the cluster, all more than 100 times more massive as the Sun. However, the current record holder R136a1 does keep its place as the most massive star known in the Universe, at over 250 solar masses. The detected stars are not only extremely massive, but also extremely bright. Together these nine stars outshine the Sun by a factor of 30 million.

The scientists were also able to investigate outflows from these behemoths, which are most readily studied in the ultraviolet. They eject up to an Earth mass of material per month at a speed approaching one percent of the speed of light, resulting in extreme weight loss throughout their brief lives.

"The ability to distinguish ultraviolet light from such an exceptionally crowded region into its component parts, resolving the signatures of individual stars, was only made possible with the instruments aboard Hubble," explains Paul Crowther from the University of Sheffield, UK, and lead author of the study. "Together with my colleagues, I would like to acknowledge the invaluable work done by astronauts during Hubble's last servicing mission: they restored STIS and put their own lives at risk for the sake of future science!" [3]

In 2010 Crowther and his collaborators showed the existence of four stars within R136, each with over 150 times the mass of the Sun. At that time the extreme properties of these stars came as a surprise as they exceeded the upper-mass limit for stars that was generally accepted at that time. Now, this new census has shown that there are five more stars with more than 100 solar masses in R136. The results gathered from R136 and from other clusters also raise many new questions about the formation of massive stars as the origin of these behemoths remains unclear [4].

Saida Caballero-Nieves, a co-author of the study, explains: "There have been suggestions that these monsters result from the merger of less extreme stars in close binary systems. From what we know about the frequency of massive mergers, this scenario can't account for all the really massive stars that we see in R136, so it would appear that such stars can originate from the star formation process."

In order to find answers about the origin of these stars the team will continue to analyse the gathered datasets. An analysis of new optical STIS observations will also allow them to search for close binary systems in R136, which could produce massive black hole binaries which would ultimately merge, producing gravitational waves.

"Once again, our work demonstrates that, despite being in orbit for over 25 years, there are some areas of science for which Hubble is still uniquely capable," concludes Crowther.

Notes:

1] R136 was originally listed in a catalogue of the brightest stars in the Magellanic Clouds compiled at the Radcliffe Observatory in South Africa. It was separated into three components a, b, c at the European Southern Observatory, with R136a subsequently resolved into a group of eight stars (a1-a8) at ESO, and confirmed as a dense star cluster with the NASA/ESA Hubble Space Telescope after the first servicing mission in 1993.

[2] Very massive stars are exclusive to the youngest star clusters because their lifetimes are only 2-3 million years. Only a handful of such stars are

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known in the entire Milky Way galaxy.

[3] STIS's capabilities were restored in 2009 by astronauts who successfully completed Serving Mission 4 (SM4), one of the Hubble's most challenging and intense servicing missions, involving five spacewalks.

[4] The ultraviolet signatures of even more very massive stars have also been revealed in other clusters — examples include star clusters in the dwarf galaxies NGC 3125 and NGC 5253. However, these clusters are too distant for individual stars to be distinguished even with Hubble.

More information:

The Hubble Space Telescope is a project of international cooperation between ESA and NASA.

The results were published in the paper "The R136 star cluster dissected with Hubble Space Telescope/STIS. I. Far-ultraviolet spectroscopic census and the origin of Heii ?1640 in young star clusters" in the Monthly Notices of the Royal Astronomical Society.

Upcoming Sidewalk Astronomy Events

By Daniel Herron, AAC Observing Chair

We could use some volunteers at these events. Please let me know (observing@atlantaastronomy.org) if you can help out.

2016-04-22, 7:00 PM-9:00 PM, Night Under the Stars, Brook Run Park, 4770 N Peachtree Rd, Dunwoody

2016-05-10, 8:00 PM-9:00 PM, Forest Park Sidewalk Astronomy 2016, Forest Park Library, 4812 West Street, Forest Park

Please see the club website for more details for the events: http://atlantaastronomy.org/

The **Atlanta Astronomy Club, Inc**., one of the South's largest and oldest astronomical society, meets at **3:00 P.M.** on the 2nd Saturday of each month at the Fernbank Scince Center in Decatur, or occasionally at other locations or times. Membership fees are **$30** for a family or single person membership. College Students membership fee is **$15**. These fees are for a one year membership.

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

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

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Elliott Outreach Coordinator: Dan Thoman outreach@ceastronomy.org

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

PSSG Chairman: Peter Macumber pmacumber@nightsky.org

PSSG Co-Chair: Open

Sidewalk Astronomy: Brad Isley sidewalkastronomy@AtlantaAstronomy.org

Light Tresspass: Ken Edwards, Contact info TBA

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

AAC Webmaster: Daniel Herron

Observing@AtlantaAstronomy.org

The Focal Point

Newsletter of The Atlanta Astronomy Club, Inc.

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

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Atlanta, GA 30358-1155
www.atlantaastronomy.org
On Twitter at http://twitter.com/atlastro

www.beetagg.com

FIRST CLASS

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

AAC Events are listed in BOLD

Apr 7th, Thursday: New Moon.

Apr 9th, Saturday: **CE Chapter Meeting.** Uranus Conjunction with Sun.

Apr 14th, Thursday: Moon First Quarter.

Apr 16th, Saturday: **AAC Mtg at Emory University Math & Science Building 3:00PM.**

Apr 18th, Monday: Mercury at Greatest Elongation East.

Apr 22nd, Friday: Full Moon. Sidewalk event at Brook Run Park - see page 7.

Apr 25th, Monday: Grouping of the Moon, Mars, Saturn, and Antares.

Apr 29th, Friday: Moon Last Quarter.

May 5th, Thursday: Eta Aquariid Meteor Shower.

May 6th, Friday: New Moon.

May 7th, Saturday: **CE Chapter Meeting.** Moon thin crescent near Aldebaran.

May 9th, Monday: Mercury at Inferior Conjunction - Transit of Mercury: 1st Contact 7:13:43AM, Greatest 10:58:15AM, Last Contact 2:41:42PM. See page 4.

May 10th, Tuesday: Sidewalk event at Forest Park Library - see page 7.

May 13th, Friday: Moon First Quarter.

May 21st, Saturday: **AAC Mtg at Fernbank Science Center 3:00PM.** Full Moon.

May 22nd, Sunday: Mars at Opposition.

May 29th, Sunday: Moon Last Quarter.

May 30th, Monday: Mars closest to Earth - 0.503 AU, 18.6" across.

June 4th, Saturday: **CE Chapter Meeting & Potluck.** New Moon.

June 6th, Monday: Venus at Superior Conjunction.

June 12th, Sunday: Moon First Quarter.

June 18th, Saturday: **AAC Mtg at Fernbank Science Center 3:00PM.**

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 PDFs are okay. You can submit articles anytime up to the deadline. **The deadline for May is Saturday, April 23. Submissions after the deadline will go in the following issue.**