

# The Focal Point

The Atlanta Astronomy Club  
Established 1947  
January 2009

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Editor: Tom Faber

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## January General Meeting

by Keith Burns, AAC President

The January meeting of the Atlanta Astronomy Club will be held on Friday, January 16th. Meeting starts at 8PM. Location is White Hall on the Emory University Campus. Room 207. Directions to White Hall are at the bottom of this article. We return to our regular programming this month. The meeting will start with a few announcements. There may be a short program or two for good measure. After that, we move on to our featured speaker of the night - Dr. Jim Sowell of the Georgia Institute of Technology. The title of this talk is, "*The Interactive Barnard Photographic Atlas.*"

### The Program

Here's a short description of the talk in Jim's own words.

"Edward Emerson Barnard is considered to be one of the greatest astronomers of the 19th century. His keen eyesight made possible the discovery of the fifth moon of Jupiter, Almathea, and of numerous comets. He was one of the first to apply the use of photographic plates toward studying his favorite objects -- dark nebulae (using telescope at right). Near the end of his career, Barnard began producing his *A Photographic Atlas of Selected Regions of the Milky Way*. He personally inspected, evaluated, and chose each reproduction print of his photographic plates, making each copy of the Atlas an exquisite book.



The Library of the Georgia Institute of Technology has digitized the Atlas and placed it on-line at <http://www.library.gatech.edu/barnard>. The goals and desires for this project have been twofold: (1) to make the Atlas and web site a research tool for those studying dark nebulae; and (2) to make more available a "jewel" from the rare-book archives for admirers, historians, and astronomers.

### Speaker Biography

James R. Sowell, School of Physics, The Georgia Institute of Technology, Atlanta, GA ([jim.sowell@physics.gatech.edu](mailto:jim.sowell@physics.gatech.edu)), [www.astronomy.gatech.edu](http://www.astronomy.gatech.edu)

Professional Preparation:

University of Michigan, Astronomy, Ph.D. 1986

Vanderbilt University, Astronomy, M.S. 1981

Vanderbilt University, Physics & Astronomy, B.S. 1979

Appointments:

2004-present: Georgia Tech - Senior Academic Professional - School of Physics

1999-2004: Georgia Tech - Academic Professional - School of Physics

1989-1999: Georgia Tech - Research Scientist II - Georgia Tech Research Institute

1986-1989: Georgia State University - Post-Doctoral Research Assistant CHARA

### Directions to White Hall and Parking

Emory University is in the process of making improvements to the parking and roads. So for the next year, we will have to endure road construction plus the closing of some of our favorite parking spots. For now, the best places to park are the Peavine Parking Deck and the Fishburne Parking Deck. Fishburne Parking Deck is located on Fishburne Drive. When driving on North Decatur Rd, turn onto Dowman Drive (Dowman is now a one-way road into the campus now from North Decatur Road. Exit either by Oxford Road or Fishburne Drive) and then right on Fishburne Drive. You can also access Fishburne Drive from Clifton Road southbound on right before the N. Decatur Rd intersection. Note the Fishburne Parking deck is actually accessible from Fishburne Lane. When driving on Fishburne Drive, watch for the parking lot signs. The parking deck is located behind the Rich Building.

The Peavine parking deck is accessible from North Decatur Road. Take N. Decatur Rd to Oxford Road. Oxford is accessible from N. Decatur Road at two spots. If you are traveling east on North Decatur, then turn right onto Oxford. If traveling west, turn left onto Oxford. Take Oxford Road to the

*Continued on next page*

back entrance of Emory and turn onto Eagle Row. Take that to the Peavine parking deck. Note Peavine is across the street from the running track. You can also access Peavine from Clifton Road. Take Clifton south from Briarcliff Road. Turn right onto Asbury Circle. Asbury Circle changes names to Eagle Row. Parking deck will be on right side of road.

Directions to White Hall are on page 7. See the Emory web site for more details: [www.emory.edu](http://www.emory.edu)

## Upcoming Meetings

February 6th - Dr Susanna L. Widicus-Weaver of Emory University will talk on, "Testing the limits of Astrochemistry."

March 13th - Speaker and Topic TBA.

April 3rd -100 Hours of Astronomy program to take place at Bradley Observatory. Joint AAC and Agnes Scott College special night and program.

## December Banquet/Meeting Minutes

by Richard Jakiel, AAC Recording Secretary

Meeting photos by Tom Faber

By 6 PM various AAC members had arrived at Agnes Scott College's Bradley Observatory setting up tables and chairs for the impending holiday feast. By 6:45 the tables were loaded with a broad assortment of eats ranging from turkey and ham, numerous casseroles, veggie plates and salad fixings, bread/rolls/chips & dip, and all manner of tasty desserts. At least 40 AAC members and their guests were in attendance and the feasting began in earnest shortly after 7 PM.

Around 8:15 PM, the food-sated membership gathered in the planetarium for the evening's presentation. After a few words on upcoming observing and AAC events, Club President Keith Burns presented part II of his "The Wonders of the Giants" program of images and music - this time focusing on the ringed planet Saturn.



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## The Next AAC Board Meeting

by Don Hall, AAC Board Chair

The next Board Meeting of the Atlanta Astronomy Club is scheduled for Sunday, January 18th from 3PM to 5PM. The meeting will take place at the Emory Science and Math building (across the street from White Hall) in room N301. The board needs to replace Marc Sandberg and Larry Wallace who have resigned. Those interested in a board position should contact Keith Burns or Don Hall by the next general meeting on Jan. 16th.

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## Charlie Elliot Chapter Meeting Minutes

by Ken Poshedly, CEWMA Chapter Recording Secretary

(Minutes have been edited for space constraints.)

The November 29th meeting was called to order at 3:25 p.m. by CE Chapter Director Theo Ramakers. There were 16 members and guests present. First on the program was a presentation by Steve Bieger's presentation, "Galileo's Wonderful Universe", a project now under production as a two-part planetarium program to be shown at Fernbank Science Center sometime in 2009. It follows the early development of the scientific revolution, where the old ideas of the universe were turned upside down and made irrelevant, thus giving birth to the field of modern astronomy. The program will be a chronology of the lives and science of five very famous people who, in their time, contributed to monumental leaps forward in human understanding and thus brought about what could truly be called a revolution.

The next presentation was Part II of Steve Ramsden's "History of Solar Observing" series. Part II dealt with the types of observable phenomena on the solar surface from filaments to prominences to active regions. He also explained the methods by which amateurs could see these various features. Jon Wood's "Observing 101" PowerPoint segment included upcoming rise/transit/set times for celestial objects in the coming weeks and was compiled using the software program Stellarium (available at <http://www.stellarium.org/>).

Theo Ramakers' "Current Events" segment noted upcoming and past natural and manmade celestial activities, this time including:

- \* Sidewalk astronomy / outreach events with CEWMA members
- \* Updates on the Mars rovers
- \* News of two independent observations and images made by two amateurs of a new ray crater on Mercury
- \* A Jon Woods image of the recent Venus and Moon sky grouping
- \* Solar images by Stephen Ramsden
- \* An image of the newly discovered extra-solar planetary system discovered by direct imaging rather than measurement of "star wobble"; the system was discovered in November and the star, HR8799, is in the constellation Pegasus (coordinates 23h 07m 28.7s 21 deg 8'3"); see also [http://www.keckobservatory.org/images/article\\_pictures/231\\_403.jpg](http://www.keckobservatory.org/images/article_pictures/231_403.jpg) and <http://trustyservant.com/archives/242>
- \* Some stunning images of the launch of the space shuttle Endeavour by member Angela Poore
- \* An image of the Space Shuttle Endeavour docked to International Space Station taken by Theo through his hand-guided scope from the CEWMA observing field on November 20
- \* An update on the plans of the European Space agency

The meeting was adjourned at approximately 6:30 p.m. The solar and current events presentation can be viewed on the CE astronomy website: <http://ceastronomy.org/blog/events>

## Charlie Elliott Future Meetings

The Meeting dates for the Charlie Elliott Chapter have now been set for 2009. All meetings are on Saturdays: Jan 24, Feb 21, Mar 28, Apr 25, May 16 (JAKES Day), June 20, July 18, Aug 22, Sept 19, Oct 17, Nov 14, Dec 19. Please note that the March, 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.

## Bradley Open House Series 2008-2009

### "Astronomy Before Galileo"

Humans have been gazing at the stars since they could look up, and have kept written records about motions in the heavens for millennia. This year, we will explore the rich history of astronomy and astronomical thought that predates Galileo. Our speakers will come from a variety of ancient disciplines including astronomy, architecture, classical studies, history and theology. All talks at 8PM unless noted. See <http://bradley.agnesscott.edu/> for more information.

#### Spring 2009

February 13 - Megan Drinkwater (Agnes Scott College) - "Greeks, Romans, and the Stars"

March 20 - W. A. Calder Spring Equinox Concert & Open House

April 3 - "100 Hours of Astronomy" Celebration

May 8 - Bill Brown (Columbia Theological Seminary) - "The Heavens are Telling the Glory of God": The Cosmos According to Ancient Israel



This photo shows the view looking southwest at 6:28PM on December 29th. Below the approximately 59 hour old moon is Jupiter and closer to the horizon is Mercury. Camera - Canon PowerShot SX100IS. Exposure 4s, f/4.0, ISO 80. Photo by Tom Faber.

## Mrs. Antonín Růkl

by Ken Poshedly

Those of you who helped make the Year 2000 Peach State Star Gaze the huge success it was surely remember our most gracious guest, Antonin Růkl, reknowned author of “Atlas of the Moon” and many other works. Many of you also had a chance to meet his gracious wife, Sonja, who accompanied him here from Prague, Czech Republic. I am sorry to pass along the following e-mail I just received from “Tony”.

“Dear Ken and family,

This is certainly the worst news I ever sent you from Prague. The day before yesterday, on Friday morning (Dec. 19), my dear wife Sonja died after a short but very serious disease. It is hardly possible to express in words what we are feeling. I apologize for being too short now, perhaps I will write more later. Please, accept my cordial greetings and best wishes for the coming Christmas and the New Year 2009.

Yours, as ever,

Tony

Antonín Růkl

Ruská 38, 101 00 Praha 10, Czech Republic (arukl@noveradsl.cz)”

Those of you who recall Mr. Růkl might want to express your own condolences to him either by e-mail or regular mail - Kenpo.

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## GASP at Red Top Mountain

On November 7th GASP volunteers Sharon Carruthers, Keith Burns, Kat Sarbell, Tom Faber, and Holly and John Ritger traveled to Red Top Mountain State park to camp and present an astronomy program for the campers and visitors Saturday evening. The weather was overcast with some rain Friday but the skies cleared Friday night and we had clear and cool weather for the public program Saturday night. We were joined for the evening by club members Daniel and Misty Herron and Mark Banks who brought additional telescopes for the approximately 50 guests to view through. While Sharon gave the beginners astronomy talk the other club members set up the telescopes for the guests to view the Moon, Venus, Jupiter, and many other objects. Photos by Tom Faber.



Kat Sarbell views the clearing skies Friday night. Orion is breaking through the moonlit clouds above her. Camera - Canon PowerShot SX100IS. Exposure 15s, f/2.8, ISO 400.



Misty and Daniel Herron (on left) talk with some of the visitors. Sharon gave the beginners astronomy talk in the building in the background.



Sharon setting up the projector and laptop to give her presentation.



On Saturday afternoon Sharon Carruthers, Keith Burns, Kat Sarbell, and Tom Faber visited the grounds of the new Tellus Science Museum near Cartersville. The Tellus Museum is scheduled to open this month.

## Dynamic Moon Enceladus Shows More Signs of Activity

NASA/JPL News Release - December 15, 2008

PASADENA, Calif. - The closer scientists look at Saturn's small moon Enceladus, the more they find evidence of an active world. The most recent flybys of Enceladus made by NASA's Cassini spacecraft have provided new signs of ongoing changes on and around the moon. The latest high-resolution images of Enceladus show signs that the south polar surface changes over time.

Close views of the southern polar region, where jets of water vapor and icy particles spew from vents within the moon's distinctive "tiger stripe" fractures, provide surprising evidence of Earth-like tectonics. They yield new insight into what may be happening within the fractures. The latest data on the plume - the huge cloud of vapor and particles fed by the jets that extend into space - show it varies over time and has a far-reaching effect on Saturn's magnetosphere.

"Of all the geologic provinces in the Saturn system that Cassini has explored, none has been more thrilling or carries greater implications than the region at the southernmost portion of Enceladus," said Carolyn Porco, Cassini imaging team leader at the Space Science Institute in Boulder, Colo.

A panel of Cassini scientists, including Porco, presented these new findings Monday in a news briefing at the American Geophysical Union's fall meeting in San Francisco.

"Enceladus has Earth-like spreading of the icy crust, but with an exotic difference -- the spreading is almost all in one direction, like a conveyor belt," said panelist Paul Helfenstein, Cassini imaging associate at Cornell University in Ithaca, N.Y. "Asymmetric spreading like this is unusual on Earth and not well understood."

"Enceladus has asymmetric spreading on steroids," Helfenstein added. "We are not certain about the geological mechanisms that control the spreading, but we see patterns of divergence and mountain-building similar to what we see on Earth, which suggests that subsurface heat and convection are involved."

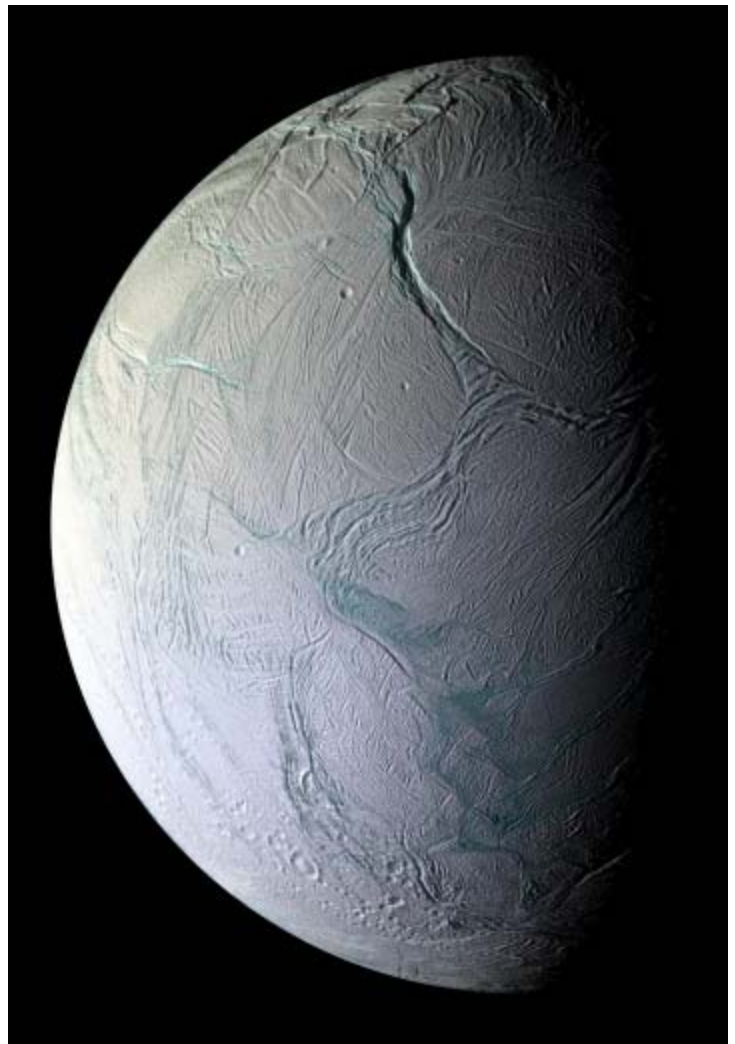
The tiger stripes are analogous to the mid-ocean ridges on Earth's seafloor where volcanic material wells up and creates new crust. Using Cassini-based digital maps of the south polar region of Enceladus, Helfenstein reconstructed a possible history of the tiger stripes by working backward in time and progressively snipping away older and older sections of the map. Each time he found that the remaining sections fit together like puzzle pieces.

Images from recent close Enceladus flybys also have bolstered an idea the Cassini imaging team has that condensation from the jets erupting from the surface may create ice plugs that close off old vents and force new vents to open. The opening and clogging of vents also corresponds with measurements indicating the plume varies from month to month and year to year.

"We see no obvious distinguishing markings on the surface in the immediate vicinity of each jet source, which suggests that the vents may open and close and thus migrate up and down the fractures over time," Porco said. "over time, the particles that rain down onto the surface from the jets may form a continuous blanket of snow along a fracture."

Enceladus' output of ice and vapor dramatically impacts the entire Saturnian system by supplying the ring system with fresh material and loading ionized gas from water vapor into Saturn's magnetosphere.

"The ions added to the magnetosphere are spun up from Enceladus' orbital speed to the rotational speed of Saturn," said Cassini magnetometer science team member Christopher Russell of the University of California, Los Angeles. "The more material is added by the plume, the harder this is for Saturn to do, and the longer it takes to accelerate the new material."



*On Oct. 5, just after coming within 16 miles of the surface of Enceladus, Cassini captured this stunning mosaic as the spacecraft sped away from this geologically active moon of Saturn. Credit: NASA/JPL/Space Science Institute.*

With water vapor, organic compounds and excess heat emerging from Enceladus' south polar terrain, scientists are intrigued by the possibility of a liquid-water-rich habitable zone beneath the moon's south pole.

Cassini's flybys on Aug. 11 and Oct. 31 of this year targeted Enceladus' fractured southern region. An Oct. 9 flyby took the spacecraft deep into the plume of water vapor and ice shooting out of the moon's vents. Cassini's next flyby of Enceladus will be in November 2009.

The Cassini-Huygens mission is a cooperative project of NASA, the European Space Agency and the Italian Space Agency. The Jet Propulsion Laboratory, a division of the California Institute of Technology in Pasadena, manages the Cassini-Huygens mission for NASA's Science Mission Directorate, Washington. The Cassini orbiter and its two onboard cameras were designed, developed and assembled at JPL. The imaging team is based at the Space Science Institute, Boulder, Colo. The magnetometer team is based at Imperial College in London, working with team members from the United States and several European countries.

# Study Tracks Stars Orbiting Milky Way Black Hole

European Southern Observatory News Release

Posted: December 13, 2008

In a 16-year long study, using several of ESO's flagship telescopes, a team of German astronomers has produced the most detailed view ever of the surroundings of the monster lurking at our Galaxy's heart - a supermassive black hole. The research has unravelled the hidden secrets of this tumultuous region by mapping the orbits of almost 30 stars, a five-fold increase over previous studies. One of the stars has now completed a full orbit around the black hole.

By watching the motions of 28 stars orbiting the Milky Way's most central region with admirable patience and amazing precision, astronomers have been able to study the supermassive black hole lurking there. It is known as "Sagittarius A\*" (pronounced "Sagittarius A star"). The new research marks the first time that the orbits of so many of these central stars have been calculated precisely and reveals information about the enigmatic formation of these stars - and about the black hole to which they are bound.

"The centre of the Galaxy is a unique laboratory where we can study the fundamental processes of strong gravity, stellar dynamics and star formation that are of great relevance to all other galactic nuclei, with a level of detail that will never be possible beyond our Galaxy," explains Reinhard Genzel, leader of the team from the Max-Planck-Institute for Extraterrestrial Physics in Garching near Munich.

The interstellar dust that fills the Galaxy blocks our direct view of the Milky Way's central region in visible light. So astronomers used infrared wavelengths that can penetrate the dust to probe the region. While this is a technological challenge, it is well worth the effort. "The Galactic Centre harbours the closest supermassive black hole known. Hence, it is the best place to study black holes in detail," argues the study's first author, Stefan Gillessen.



Credit: ESO

The team used the central stars as "test particles" by watching how they move around Sagittarius A\*. Just as leaves caught in a wintry gust reveal a complex web of air currents, so does tracking the central stars show the nexus of forces at work at the Galactic Centre. These observations can then be used to infer important properties of the black hole itself, such as its mass and distance. The new study also showed that at least 95% of the mass sensed by the stars has to be in the black hole. There is thus little room left for other dark matter.

"Undoubtedly the most spectacular aspect of our long term study is that it has delivered what is now considered to be the best empirical evidence that supermassive black holes do really exist. The stellar orbits in the Galactic Centre show that the central mass concentration of four million solar masses must be a black hole, beyond any reasonable doubt," says Genzel. The observations also allow astronomers to pinpoint our distance to the centre of the Galaxy with great precision, which is now measured to be 27,000 light-years.

To build this unparalleled picture of the Milky Way's heart and calculate the orbits of the individual stars the team had to study the stars there for many years. These latest groundbreaking results therefore represent 16 years of dedicated work, which started with observations made in 1992 with the SHARP camera attached to ESO's 3.5-metre New Technology Telescope located at the La Silla observatory in Chile. More observations have subsequently been made since 2002 using two instruments mounted on ESO's 8.2 m Very Large Telescope (VLT). A total of roughly 50 nights of observing time with ESO telescopes, over the 16 years, has been used to complete this incredible set of observations.

The new work improved the accuracy by which the astronomers can measure the positions of the stars by a factor of six compared to previous studies. The final precision is 300 microarcseconds, equivalent to seeing a one euro coin from a distance of roughly 10,000 km.

For the first time the number of known stellar orbits is now large enough to look for common properties among them. "The stars in the innermost region are in random orbits, like a swarm of bees," says Gillessen. "However, further out, six of the 28 stars orbit the black hole in a disc. In this respect the new study has also confirmed explicitly earlier work in which the disc had been found, but only in a statistical sense. Ordered motion outside the central light-month, randomly oriented orbits inside - that's how the dynamics of the young stars in the Galactic Centre are best described."

One particular star, known as S2, orbits the Milky Way's centre so fast that it completed one full revolution within the 16-year period of the study. Observing one complete orbit of S2 has been a crucial contribution to the high accuracy reached and to understanding this region. Yet the mystery still remains as to how these young stars came to be in the orbits they are observed to be in today. They are much too young to have migrated far, but it seems even more improbable that they formed in their current orbits where the tidal forces of the black hole act. Excitingly, future observations are already being planned to test several theoretical models that try to solve this riddle.

"ESO still has much to look forward to," says Genzel. "For future studies in the immediate vicinity of the black hole, we need higher angular resolution than is presently possible." According to Frank Eisenhauer, principal investigator of the next generation instrument GRAVITY, ESO will soon be able to obtain that much needed resolution. "The next major advance will be to combine the light from the four 8.2-metre VLT unit telescopes - a technique known as interferometry. This will improve the accuracy of the observations by a factor 10 to 100 over what is currently possible. This combination has the potential to directly test Einstein's general relativity in the presently unexplored region close to a black hole."

## March is Membership Renewal Month

MEMBERSHIP RENEWALS: The AAC has moved to a “one-date-for-all” membership renewal. ALL CLUB MEMBERS, with some exceptions, should submit their \$30 (\$35 if you receive the mailed *Focal Point*) dues for 2009 by March 20th - The Vernal Equinox. (There will be an R1 in the upper right corner of your *Focal Point* label. If you receive the *Focal Point* online you will receive an email - be sure we have your current email address). New members and those who have not yet paid their pro-rated dues, will receive a notice in their *Focal Point* stating the amount you owe to bring you in line with the March date. (There will be either an xxx or an RF on your label). If you have questions or concerns, please let the Treasurer know.

## Georgia Astronomy in State Parks

The following GASP event are currently scheduled:

**March 21** - Unicoi 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 third Friday of each month at Emory University's White Hall or occasionally at other locations or times. Membership is open to all. Membership fees are **\$30 (\$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](mailto:webmaster@AtlantaAstronomy.org). Also send information on upcoming observing events, meetings, and other events to the webmaster.

## AAC Officers and Contacts

**President:** Keith Burns 770-427-1475 Keith\_B@bellsouth.net

**Program Chair:** Position Open - [programs@atlantaastronomy.org](mailto:programs@atlantaastronomy.org)

**Observing Chair:** Dave Lumpkin [observing@atlantaastronomy.org](mailto:observing@atlantaastronomy.org)

**Corresponding Secretary:** Tom Faber 770-642-4865  
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**Treasurer:** Sharon Carruthers [Treasurer@AtlantaAstronomy.org](mailto:Treasurer@AtlantaAstronomy.org)

**Recording Secretary:** Rich Jakiel  
[secretary@atlantaastronomy.org](mailto:secretary@atlantaastronomy.org)

**Board Chair:** Don Hall - [donrhall@bellsouth.net](mailto:donrhall@bellsouth.net)

**Board:** Mark Banks - Contact Info TBA

**Board:** William Brannet - Contact Info TBA

**Board:** Open - Contact Keith Burns if you would like to volunteer.

**Board:** Open - Contact Keith Burns if you would like to volunteer.

**ALCOR:** Art Zorka 404-633-8822 (H) 404-824-7106 (C)  
[star.myth@juno.com](mailto:star.myth@juno.com)

**Elliott Ch. Director:** Theo Ramakers 770-464-3777  
[ramakers@bellsouth.net](mailto:ramakers@bellsouth.net)

**Elliott Observing Supervisor:** Jonathan Wood 404-374-8750  
[observing@ceastronomy.org](mailto:observing@ceastronomy.org)

**Elliott Recording Secretary:** Ken Poshedly 678-516-1366  
[poshedly@bellsouth.net](mailto:poshedly@bellsouth.net)

**Elliott Coordinator:** Alesia Rast [Alesia\\_Rast@mail.dnr.state.ga.us](mailto:Alesia_Rast@mail.dnr.state.ga.us)

**Elliott Webmaster:** Larry Owens 678-234-5399  
[webmaster@CEastronomy.org](mailto:webmaster@CEastronomy.org)

**The Telescope Workshop:** Dan Llewellyn 404-735-9661 or 404-633-7562  
[zoser@mindspring.com](mailto:zoser@mindspring.com)

**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](mailto:pmacumber@nightsky.org)

**Co-Chair:** Joanne Cirincione [starrynights@AtlantaAstronomy.org](mailto:starrynights@AtlantaAstronomy.org)

**Sidewalk Astronomy:** Brad Isley  
[sidewalkastronomy@atlantaastronomy.com](mailto:sidewalkastronomy@atlantaastronomy.com)

**Woodruff Observ. Coordinator:** Sharon Carruthers  
[Treasurer@AtlantaAstronomy.org](mailto:Treasurer@AtlantaAstronomy.org)

**Webmaster Atlanta Astronomy:** Peter Macumber 770-941-4640  
[pmacumber@nightsky.org](mailto:pmacumber@nightsky.org)

## Directions to White Hall at Emory

Our meetings are generally held in a classroom in White Hall. To get to White Hall, turn onto Dowman Drive from North Decatur Road at the five way intersection (across from Everybody's Pizza). White Hall is located across from the new Science & Math building. Parking is available along Dowman Drive on both sides of the road. **The parking lot on the left behind the Admissions Building is closed.** Additional parking is available in two parking decks near White Hall. For maps to the decks see <http://map.emory.edu>. For more detailed directions to Emory University, visit [www.atlantaastronomy.org](http://www.atlantaastronomy.org) or go to the Emory web site.

## Calendar by Tom Faber (Times EST unless noted)

- January 1st, Thursday: Moon above Venus.  
January 2nd, Friday: Quadrantid Meteors.  
January 4th, Sunday: Latest Sunrise (~7:42 AM EST at Atlanta). Moon First Quarter. Mercury Greatest Elongation East.  
January 10th, Saturday: Full Moon.  
January 14th, Wednesday: Venus at Greatest Elongation East.  
January 16th, Friday: **AAC Meeting at White Hall, 8PM, Emory University.**  
January 17th, Saturday: Moon Last Quarter. **Telescope & Instr Workshop - Contact Sharon Carruthers.**  
January 18th, Sunday: **AAC Board Meeting - See pg 2 for details.**  
January 20th, Tuesday: Mercury Inferior Conjunction.  
January 22nd, Thursday: Venus 1.5° from Uranus.  
January 23rd, Friday: **February Focal Point Deadline.**  
January 24th, Saturday: **CEC Meeting - See pg 3 for details.**  
January 26th, Monday: New Moon.  
January 27th, Tuesday: Thin crescent moon in WSW after sunset.  
February 2nd, Monday: Moon First Quarter.  
February 3rd, Tuesday: Moon passes through M45 (Pleiades).  
February 6th, Friday: **AAC Meeting at White Hall, 8PM, Emory University.**  
February 7th, Saturday: **Telescope & Instr Workshop - Contact Sharon Carruthers.**  
February 9th, Monday: Full Moon.  
February 13th, Friday: Bradley Observatory Open House, 8PM. See pg 3 for details.  
February 16th, Monday: Moon Last Quarter.  
February 17th, Tuesday: Mars near Jupiter.  
February 20th, Friday: **March Focal Point Deadline.**  
February 21st, Saturday: **CEC Meeting - See pg 3 for details.**  
February 23rd, Monday: Grouping of thin crescent Moon, Mercury, Mars, & Jupiter.

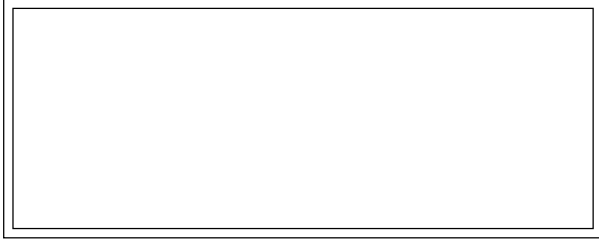
## Atlanta Astronomy Club Listserv

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 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 and including the deadline date. **The February deadline is Friday, January 23rd at 4:00 PM. Submissions will not be accepted after the deadline.**

## FIRST CLASS



Newsletter of The Atlanta Astronomy Club, Inc.



FROM:

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