The Focal Point

Vol. 24 No. 11

The Atlanta Astronomy Club
Established 1947
April 2012

Editor: Tom Faber

Table of Contents

April General Meeting

Join us for the April meeting of the Atlanta Astronomy Club on Friday April 20th at 8PM. Refreshments will be provided starting around 7:30PM. The meeting will be held at our new meeting location (first used in December for the Christmas Potluck) at the Parlor Room of the Hitson Center, in the Sandy Springs Methodist Church, 86 Mt Vernon Hwy, NE, Sandy Springs, GA 30328 (see map on next page).

The Program:

Astro-Imaging 101

Are you curious about imaging and wonder what it takes to start? There are many types of imaging open to the amateur ranging from basic "snapshot" photography of atmospheric phenomenon, satellites, conjunctions, and constellation images, solar system (Sun, Moon, planets, comets), and "deep sky" (digital single lens reflex cameras (DSLR) and CCD's). AAC members Tom Faber, Dan Herron, Theo Ramakers, Dan Llewellyn, Rich Jakiel and Paul Tankersley will each give a brief presentation (5 to 10 minutes) of the type of imaging they do, their setups (and costs) and show a few examples of their work. During the last 10 minutes, there will be a general panel discussion with questions fielded from the audience. See some sample images on the right.

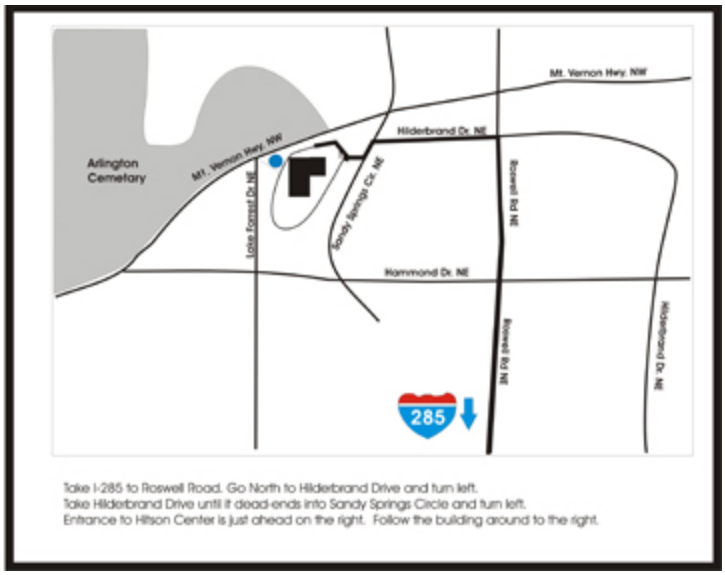
Upcoming AAC Meetings:

Our meetings will usually be held on the 3rd Friday of the month. Future meeting dates for 2012 are May 18 (Elections of club officers), June 15, July 20, Aug 17, and Sept 21. Meetings will be at the Parlor Room of the Hitson Center unless noted otherwise.

Photo Right: A magnitude -8 Iridium Flare near Pegasus at 9:17PM 9/15/2011. Iridium Flares are sunlight reflections off of one of the antennas of an Iridium communications satellite. They can go from barely visible to brighter than anything else in the night sky (other than the moon) then dim back down again in a span of 15-20sec. Photo by Tom Faber.

Moon and Venus by Richard Jakiel - 20:00 EDT, 3/26/12. Canon 350, 300mm at f/5.6, 1/200 sec.

Moon and Venus by Daniel Herron - 3/26/12. 2sec f/5.6 ISO400 300mm (35mm eq: 450mm).



Map to the location of the AAC Monthly Meeting.

March Meeting Minutes

By Pixie Bruner, AAC Recording Secretary.

The March meeting of the AAC took place on March 16 at the lovely Hitson Center. There were approximately 32 people in attendance. Refreshments were provided by Mark Banks and Sharon Carruthers. Dan Llewellyn was our speaker for the evening and spoke on "Stellar Cartography-where are we in the universe?". It was a fascinating panel. Dan proved what many thought, our programming chair really is the center of this solar system. Just joking!

Next month, there will be a panel on Astro-Imaging. If you have any questions or problems taking pictures of the sky, this is the panel that will help you solve your imaging problems.

In May, Art Zorka will be presenting on the Venus transit. The Venus transit is maybe a once in a lifetime and a half event.

April also has a big event - not only is there going to be a Rocket Boys event, the AAC's Tom Faber will be presenting and talking about early manned spaceflight. The AAC calendar has more information, but this is a family friendly event, and the public is more than welcome to join us. There will be a lot of fun and a lot to learn including a bouncy planetarium. Note - if you are a big astronomer, you cannot go into the bouncy planetarium.

AAC elections are in May; if interested in running for office, please throw your name into the hat and contact Mark Banks AAC president. Experience is not necessary to be a officer, but having basic knowledge of the position is helpful. Thank you very much, and we wish you clear skies!

Bradley Open House Series 2011-2012

Return of the Alumnae

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

April 13 - Open House Lecture Series: Science Writing and Writing Science

May 11 - Open House Lecture Series: En Route to Smart Materials

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

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

From the President's Desk

We need to give our science teachers a little help. Due to our ongoing economic problems, many of our science teachers are not getting materials they need to help our next generation of scientists. I'm sure many of you have your old copies of science books and magazines collecting dust in a closet or a book shelf somewhere. On several occasions in the past I have donated my old stuff to the local high school science teachers, and they were very happy to get the materials. So please, if you can, roundup your old books and magazines and any other science related stuff and donate them.

A partial list of items to donate would be: *Astronomy* magazine, *Sky & Telescope, Scientific American, Nature, Science News, Popular Science, The Planetary Report,* or other science magazines.

Any other astronomy or related science books or equipment would be welcome.

When you donate, you can also help out the A.A.C. by placing stickers on the items that says: "Donated by the Atlanta Astronomy Club. Atlantaastronomy.org. Looking up since 1947."

You can make a small 3 line sticker and get 30 stickers on a sheet. Please let me know of any success you have with donations so we can share this with the other club members.

Mark Banks, AAC President

The Astronomical League

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

* You will receive *The Reflector*, the AL's quarterly newsletter.

* You can use the Book Service, through which you can buy astronomy-related books at a 10% discount.

* You can participate in the Astronomical League's Observing Clubs. The Observing Clubs offer encouragement and certificates of accomplishment for demonstrating observing skills with a variety of instruments and objects. These include the Messier Club, Binocular Messier Club, the Herschel 400 Club, the Deep Sky Binocular Club, and many others.

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

CE Chapter Outreach Programs

By Theo Ramakers - http://ceastronomy.org/tramakers

We had to cancel four events this month. Two because the groups we participated with did not secure what we needed for our events. One was cancelled because the group we were to participate with cancelled on the day of their program. Weather precluded the last one and it is postponed to a later date.

We had a great time at Fairview Elementary, Grayson Elementary and Summerour Middle for Solar. Summerour's Astronomy Night was the third year for us and went very well with us securing three slots in the presentation rotation, including Jeff and Kieran Rebitzke who "cooked" a comet to show what comets consist of and how they develop their tails.

Rock Eagle 4H had asked us to cover one of their "Saturday @ the Rock" programs and had a great article in the newspaper about it. The two hour solar program included presentations about the sun and how we study it, and was followed by Solar observing. Three more events are scheduled for March at the time of this writing. Overall, March was a great outreach month. Thanks to all who did give up some of their time to reach out to the community.

CE Chapter Meeting Report

By Theo Ramakers - http://ceastronomy.org/tramakers

Photos by Larry Owens

We had a great meeting yesterday. Potluck dinner while watching a BBC movie: *Stargazers*. It almost cannot get better! After the movie, Steven Phillips presented his "This Month's Sky" for March and April, and Marie Lott presented "Build a Sun Funnel". A few announcements completed the meeting. At the Jon Wood field, the skies gave way and everyone, including the visitors from the AOC and about a dozen students from GWA got to watch the beautiful conjunction of a small crescent moon, Jupiter and Venus, M42 and some other deep sky objects. Our next meeting is Saturday, April 21, 2012 at 5:00 P.M.

Continued on next page

What's Up? Citizen Science

Professional and Amateur Collaborations

By Sharon Carruthers, AAC Treasurer

Imagine you helped professional astronomers to find an exoplanet (a planet orbiting a star outside our solar system)? Your name might only be a small historical footnote, but you would be part of the bigger picture of mankind's expanding knowledge of the cosmos.

In the mid-1800's, when the introduction of photography to astronomical observation overwhelmed professionals with an embarrassment of data, observatories began to hire amateurs. These amateurs, called "computers", were often women who were trained to sort and catalogue the stars on the photographic plates.

Today, professional astronomers have much the same problem, even with computers to aid them. Preliminary searches find many exoplanet candidates that are at the low end of probability and not worth the high cost in telescope time and manpower to confirm or eliminate. Computer searches often eliminate possible candidates because the data is too faint (either the star's wobble or the star's light curve caused by a transit are too small). Humans, with our patience and our keen sense of pattern recognition, can often pick out patterns that computers miss.

In the past 15 years, since the first exoplanet was found in 1995, amateurs have added at least a half dozen confirmations to the list of over 450. They have done this either by conducting searches on potential candidates using their own telescopes and CCD cameras or by analyzing data provided by professionals.

Information about doing exoplanet searches with your own equipment can be found at www.Transitsearch.org - including a pdf outlining the techniques, *Exoplanet Observing for Amateurs* by Bruce Gary, under the "Get Started" tab.

To assist in analyzing data produced by the Kepler telescope, go to www.planethunters.org/

But finding exoplanets is not the only astronomy project in which amateurs can aid professionals.

Even if you are not interested in participating in any of these projects, please check out their websites. They have great tutorials about how and why their research is important. Some of them are child friendly and would be good projects for students, scouting groups or summer camps.

Observing Projects

The Great World Wide Star Count is an international program to monitor light pollution by having people select a constellation, go out and attempt to note the stars they can see and report their results on an online form. This is done in October every year. (Note that their website has not been updated for the 2012 count as of this month), http://www.windows2universe.org/citizen_science/starcount/

The Globe at Night: "Program is an international campaign to raise public awareness of the impact of light pollution by inviting citizen-scientists to measure their night sky brightness and submit their observations to a website from a computer or smart phone." GaN selects three constellations and sets up four observing dates in the winter and spring (the next date is April 11-20, 2012). They promote it as a project for students, parents and teachers. http://www.globeatnight.org/

Citizen Sky is a project devoted to the study of Epsilon Aurigae, a variable star with a mystery attached. They want naked-eye (no telescope needed!), photometric, spectroscopic or DSLR camera observations. http://www.citizensky.org/

Meteor Counts: If you have an iPhone or iPad, you can download an app to help keep track of and report to NASA any meteors you happen to observe while spending a night under the stars. This sounds like a great activity for kids or the non-observing spouse who joins you on one of your observing sessions. http://science.nasa.gov/science-news/science-at-nasa/2011/13dec_meteorcounter/

Center for Backyard Astrophysics (CBA): Using their small telescopes and CCD cameras, volunteers make photometry readings of the light curves of cataclysmic variable stars. Results are collected, the data pooled and the results are published. http://cbastro.org/

Variable Stars: "There are simply too many stars and too few professionals to fully explore the field of variable star science." -From the website of The American Association of Variable Star Observers (www.aavso.org/). The AAVSO needs people to track and time changes in variable stars, help with data analysis and also to do public education and outreach on their behalf.

The IAU Minor Planet Center requires a telescope, a camera and an accurate time keeping device to catalogue observations of asteroids and other small solar system bodies. Many times these objects are observed, but not long enough to plot their orbits so they are "lost" to astronomers. The MPC has lists of "lost" objects, and newly found ones, that need to be tracked to determine their orbits. http://www.minorplanetcenter.net/

Lunar, Planetary and Asteroid Occultations: The International Occultation and Timing Association (IOTA) collects data from amateurs who observe and time occultations. A telescope and an accurate timing device are necessary. You can download a free observers manual. http://www.occultations.org

Continued on next page

Non Observing Projects

Zooniverse (www.zooniverse.org) is the main site for nearly a dozen different citizen science projects (including projects about climatology, archaeology and whales!).

GalaxyZoo(1): Classify galaxies in Hubble photographs according to their shapes; "a task at which your brain is better than even the most advanced computer." The principle behind this project is that many galaxies do not have clearly defined shapes. By having many people make a classification, a consensus can be achieved - a centering on a mean shape for the most difficult galaxies.

GalaxyZoo(2): Survey images from the Palomar Observatory for supernovae for follow-up observation by professional astronomers.

Planet Hunters: mentioned above

MoonZoo: Visually classify images from NASA's Lunar Reconnaissance Orbiter (LRO).

Solar Storm Watch: studying STEREO spacecraft images for solar storms

The Milky Way Project: Studying infrared image data from the Spitzer Space Telescope.

Stellar Classification Online Public Exploration (SCOPE): A project of the Pisgah Astronomical Research Institute, you choose a photographic plate of a star field and classify the stars on it into one of seven classes (just like the "women computers" of the 19th Century!). http://scope.pari.edu/index.php

Star Dust Search: In 2006, after an encounter with comet Wild 2, the Stardust spacecraft returned samples of inter stellar dust captured in aerogel. The particles are only about a micron in diameter, embedded in 1,000 square centimeters of gel. Of the estimated 45 particles, less than a dozen have been found. So they need the help of a dedicated and patient workforce to study high resolution photographs for traces line created by the particles. http://stardustathome.ssl.berkeley.edu/about.php

Distributed Computing Projects

Distributed Computing Projects use your home computer's idle CPU power, disk space, and network bandwidth to analyze data.

SETI@home: Begun in 1999, is one of the oldest "citizen science" projects. SETI (Search for ExtraTerrestrial Intelligence) provides a free program for your home computer that downloads and analyzes radio telescope data, searching for the anomalies in the signals that may herald intelligent life in the cosmos. http://setiathome.berkeley.edu/

Cosmology at Home: The goal is to search for the model that best describes our Universe and to find the range of models that agree with the available astronomical and particle physics data. www.cosmologyathome.org/

Einstein at Home: Uses your computer's idle time to search for weak astrophysical signals from spinning neutron stars (also called pulsars) using data from the LIGO gravitational-wave detectors, the Arecibo radio telescope, and the Fermi gamma-ray satellite.

Help Find Hubble's Hidden Treasures

News Release Number: STScI-2012-16 - March 27, 2012

NASA's Hubble Space Telescope has made over one million observations during its more than two decades in orbit. New images are published nearly every week, but hidden in Hubble's huge data archives are some truly breathtaking images that have never been seen. They're called Hubble's Hidden Treasures, and you can now help to bring them to light.

Between now and May 31, 2012, the European Space Agency (ESA), NASA's partner in the Hubble mission, invites you to explore Hubble's vast science archive to dig out the best unseen Hubble images. Find a great dataset in the Hubble Legacy Archive (HLA) at http://hla.stsci.edu, adjust the contrast and colors using the simple online tools, and submit to the Hubble's Hidden Treasures Contest Flickr group.

For an extra challenge, try using the same software that astronomical imaging professionals use to process Hubble images. Just download the data from the HLA at http://hla.stsci.edu/, process using powerful open-source software such as ESA/ESO/NASA FITS Liberator, or Photoshop and GIMP, and make a beautiful image for the Hubble's Hidden Treasures Image Processing Contest Flickr group.

For more information about the competition, visit the Hubble's Hidden Treasures webpage at http://www.spacetelescope.org/hiddentreasures.

The HLA is designed to optimize science from the Hubble Space Telescope by providing online enhanced Hubble science products and advanced browsing capabilities. The HLA is a joint project of the Space Telescope Science Institute, the Space Telescope European Coordinating Facility, and the Canadian Astronomy Data Center. Image Credit: ESA/Hubble

Recycling Galaxies Caught in the Act

W. M. Keck Observatory News Release - March 29, 2012

When astronomers add up all the gas and dust contained in ordinary galaxies like our own Milky Way, they stumble on a puzzle: There is not nearly enough matter for stars to be born at the rates that are observed. Part of the solution might be a recycling of matter on gigantic scales – veritable galactic fountains of matter flowing out and then back into galaxies over multi-billion-year timescales.

Now, a team of astronomers led by Kate Rubin of the Max Planck Institute for Astronomy in Germany has used the W. M. Keck Observatory to find evidence of just such fountains in distant spiral galaxies.

In the Milky Way, it's estimated that every year about one solar mass (an amount of matter equal to that of our Sun) worth of dust and gas is turned into stars. Yet a survey of the available raw materials shows that our galaxy could not keep up this rate of star formation for longer than a couple of billion years. Star ages and comparisons with other spiral

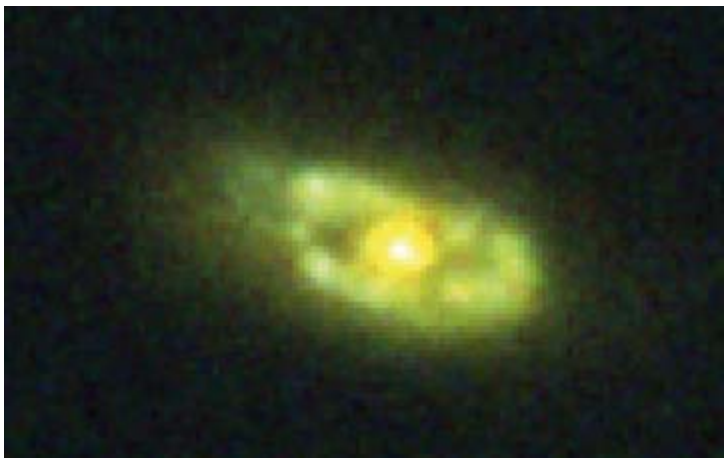
Continued on next page

galaxies show that one solar mass per year is a typical star formation rate. So the puzzle appears to be universal.

This means additional matter must find its way into galaxies. One possible source is an inflow from huge low-density gas reservoirs filling the intergalactic voids. There is, however, little evidence that this is happening.

Another possibility, closer to home, involves a gigantic cosmic matter cycle. Gas is observed to flow away from many galaxies, and may be pushed by several different mechanisms, including violent supernova explosions (which are how massive stars end their lives), and the sheer pressure exerted by light emitted by bright stars on gas in their cosmic neighborhood.

As this gas drifts away, it is pulled back by the galaxy's gravity, and could re-enter the same galaxy on timescales of one to several billion years. This process might solve the mystery. If so, then the gas we find inside galaxies may only be about half of the raw material that ends up as fuel for star formation. Large amounts of gas are caught in transit, but will re-enter the galaxy in due time. It's a gigantic juggling act, in other words, with some of the balls in the galactic hands and others in the air. Added all together, there is a sufficient amount of raw matter to account for the observed rates of star formation.



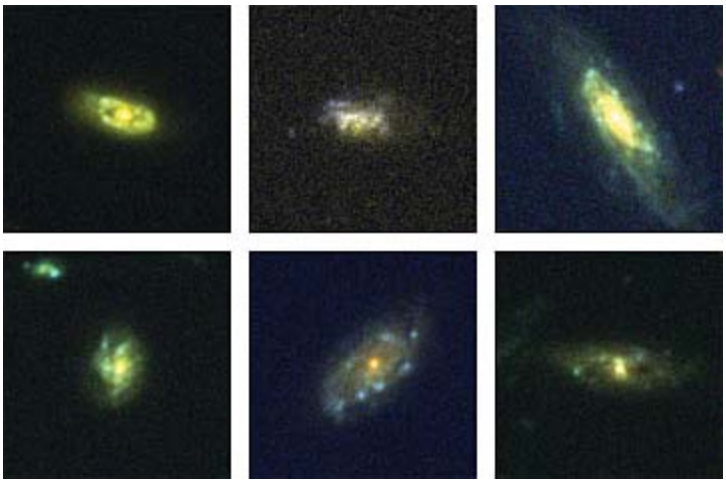
One of the six galaxies that has been found by the Keck I telescope to have significant inflows of gas, which together with outflows create a galactic juggling act. Credit: NASA/STScI

Until now, however, there was a great deal of uncertainty about the idea of cosmic recycling. Would such gas indeed fall back, or would it more likely reach the galaxy's escape velocity, flying ever further out into space, never to return? For local galaxies out to a few hundred million light-years in distance, there had been studies showing evidence for inflows of previously-expelled gas. But what about more distant galaxies, where outflows are known to be much more powerful? Would gravity still be sufficient to pull the gas back? If no, astronomers might be forced to radically rethink their models for how star formation is fueled on galactic scales.

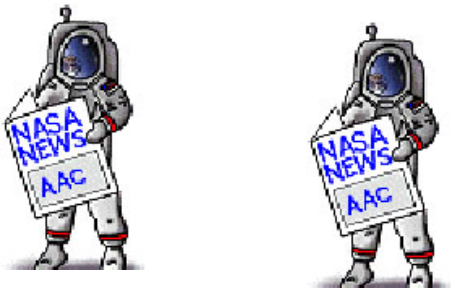
To sort this out, Rubin and her team examined gas associated with a hundred galaxies at distances between 5 and 8 billion light-years with the Keck I telescope's Low Resolution Imaging Spectrogtaph (LRIS). They found in six of those galaxies the first direct evidence that gas adrift in intergalactic space does indeed flow back into star-forming galaxies.

Even more encouraging, the inflow which can be detected by with the Keck I telescope might well depend on the angle at which we observe the galaxy. As Rubin and her team can only measure average gas motion, the real proportion of galaxies with this kind of inflow is likely to be higher than the six percent suggested by their data. It could, in fact, be as high as 40 percent. This is a key piece of the puzzle and important evidence that cosmic recycling could indeed solve the mystery of the missing star-making matter.

The results described in this release have been published as Kate H. R. Rubin et al., "The Direct Detection of Cool, Metal-Enriched Gas Accretion onto Galaxies at z ~ 0.5" in the journal Astrophysical Journal Letters, Vol. 747 (2012), p. 26ff. The co-authors are Kate H. R. Rubin (Max Planck Institute for Astronomy), J. Xavier Prochaska (MPIA and UCO/Lick Observatory, University of California), David C. Koo (UCO/Lick Observatory), and Andrew C. Phillip (UCO/Lick Observatory).



Images of the six galaxies with detected inflows, detected by the Keck I telescope. Most of these galaxies have a disk-like, spiral structure, similar to that of the Milky Way. Star formation activity occurring in small knots is evident in several of the galaxies' spiral arms. Because the spirals appear tilted in the images, Rubin et al. concluded that we are viewing them from the side, rather than face-on. This orientation meshes well with a scenario of 'galactic recycling' in which gas is blown out of a galaxy perpendicular to its disk, and then falls back at different locations along the edge of the disk. These images were taken with the Advanced Camera for Surveys on the Hubble Space Telescope. Credit: NASA/STScI



The *Focal Point* Archives

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

Discovery Awaits Flight to Smithsonian

Below are a couple of photos of the Space Shuttle Discovery inside high bay 4 of the Vehicle Assembly Building at the Kennedy Space Center taken March 18, 2012. Photos Copyright © 2012 by Tom Faber.

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

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

The Club address: Atlanta Astronomy Club, Inc., P.O. Box 76155, Atlanta, GA 30358-1155. AAC Web Page: **http://www.AtlantaAstronomy.org.** Send suggestions, comments, or ideas about the website to webmaster@AtlantaAstronomy.org. Also send information on upcoming observing events, meetings, and other events to the webmaster.

Atlanta Astronomy Club Online

While this newsletter is the official information source for the Atlanta Astronomy Club, it is only up to date the day it is printed. So if you want more up to date information, go to our club's website. The website contains pictures, directions, membership applications, events updates and other information. http://www.atlantaastronomy.org You can also follow the AAC on Facebook by joining the AAC group, and on Twitter at http://twitter.com/atlastro.

AAC Officers and Contacts

President: Mark Banks President@AtlantaAstronomy.org

Program Chair: Richard Jakiel Programs@AtlantaAstronomy.org

Observing Chair/BoD Chair: Art Zorka Observing@AtlantaAstronomy.org

Corresponding Secretary: Tom Faber Focalpoint@AtlantaAstronomy.org

Treasurer: Sharon Carruthers Treasurer@AtlantaAstronomy.org

Recording Secretary: Pixie Bruner Secretary@AtlantaAstronomy.org

Board Chair: Daniel Herron, Contact info TBA

Board: Brigitte Fessele, Contact info TBA

Board: David Lumpkin, Contact info TBA

Board: Theo Ramakers 770-464-3777 webmaster@CEastronomy.org

ALCor: Art Zorka 404-633-8822 (H) 404-247-2474 (C) artzorka@yahoo.com

Elliott Chapter Director: Ken Poshedly director@ceastronomy.org

Elliott Observing Supervisor: Steven Phillips 770-601-9816 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 770-464-3777 webmaster@CEastronomy.org

Elliott Outreach Coordinator: Theo Ramakers 770-464-3777 outreach@ceastronomy.org

Georgia Astronomy in State Parks:

PSSG Chairman: Peter Macumber pmacumber@nightsky.org

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

Sidewalk Astronomy: Brad Isley sidewalkastronomy@AtlantaAstronomy.org

Light 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, Contact info TBA

The Focal Point

Newsletter of The Atlanta Astronomy Club, Inc.

FROM:
Tom Faber
2206 Treeridge Parkway
Alpharetta, GA 30022

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

Atlanta Astronomy Club
P.O. Box 76155
Atlanta, GA 30358-1155
www.atlantaastronomy.org
On Twitter at http://twitter.com/atlastro

FIRST CLASS

www.beetagg.com

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

AAC Events are listed in BOLD

April 6th, Friday: Full Moon.
April 13th, Friday: Moon Last Quarter.
April 15th, Sunday: Saturn at Opposition.
April 18th, Wednesday: Mercury Greatest Elongation West.
April 20th, Friday: **AAC Meeting at Hitson Center, 8PM.**
April 21st, Saturday: **DSO at location TBA. CE Chapter Meeting, 5PM.** New Moon.
April 22nd, Sunday: Lyrid Meteor Shower.
April 27th, Friday: **May *Focal Point* Deadline.**
April 28th, Saturday: **Astronomy Day at Tellus Museum 10AM-11PM.**
April 29th, Sunday: Moon First Quarter.
April 30th, Monday: Venus at Greatest Brilliancy.
May 5th, Saturday: Full Moon. Eta Aquarid Meteors.
May 12th, Saturday: Moon Last Quarter.
May 13th, Sunday: Jupiter Conjunction with Sun.
May 15th, Tuesday: Venus Stationary.
May 18th, Friday: **AAC Meeting at Hitson Center, 8PM - Club Elections.**
May 19th, Saturday: **DSO at location TBA. CE Chapter Meeting, 5PM.**
May 20th, Sunday: New Moon. Partial Eclipse at sunset.
May 21st, Monday: Thin crescent moon low in west after sunset.
May 22nd, Tuesday: Moon near Venus.
May 25th, Friday: **June *Focal Point* Deadline.**
May 27th, Sunday: Mercury at Superior Conjunction.
May 28th, Monday: Moon First Quarter.
May 31st, Thursday: Moon near Spica and Saturn.

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 . This list is owned by Lenny Abbey.

Focal Point Deadline and Submission Information

Please send articles, pictures, and drawings in electronic format on anything astronomy, space, or sky related to Tom Faber at focalpoint@atlantaastronomy.org. Please send images separate from articles, not embedded in them. Articles are preferred as plain text files but Word documents or PDF's are okay. You can submit articles anytime up to the deadline. **The deadline for May is Friday, April 27th. Submissions after the deadline will go in the following month.**