

The Focal Point

The Atlanta Astronomy Club
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Editor: Kat Sarbell

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February General Membership Meeting

The meeting will take place on Friday, February 18th at White Hall at Emory University. Please join us for refreshments from 7:30-7:55 PM. The meeting will start at 8:00 PM. For directions see page 7.

Our February speaker will be Dr. Cortney Henderson, Ph.D., a Post-Doctoral Fellow with the University of California San Diego (UCSD) Department of Medicine. Her main interest is physiology in microgravity. She currently is working on a research project studying lung function of the astronauts. The topic of her presentation will be "Gravity and the Lung: Lessons from Microgravity". You can visit the research lab webpage at <http://alfe.ucsd.edu/>.



Dr. Henderson likes to hang out in the physiology research lab.

(Left) During STS-90 crew training, Dafydd R. (Dave) Williams, mission specialist (seated), and Alexander W. Dunlap, alternate payload specialist, instrument themselves for sleep studies in the Space Shuttle mid-deck mock-up. The equipment includes the sleep net (a mesh cap that monitors and records brain waves), a device used to monitor respiration, and a device worn on the wrist to detect and record body movement.

GASP - A Year in Review

by Joanne Cirincione
photos by Holly Ritger and
Joanne Cirincione

Georgia Astronomy in State Parks has a loyal group of volunteers and I want to start out by thanking them.

First I want to thank Sharon Carruthers (below) for her endless enthusiasm in her slide presentation and observing session for the campers.



Thanks to all of you for making these events a blast!

This past year we've been to Tallulah Gorge, Cloudland Canyon, FDR, Florence Marina and Unicoi State Parks. We have had some clear skies and some rain but always managed to make the best of it and have fun. We always put on the slide show and hang out with the folks even if it is raining or overcast and we always have prizes for the kids.

One of the memorable things that stay with me is that in a few of the parks we've been told that folks have come to camp that particular weekend because they heard we were there. Some of the crowds were small, some were large but no matter the number we always give it our best and we are thanked with such pleasure.

We even have time to do some of our own observing. At Tallulah Gorge, a few of us woke up in the wee hours of the morning to catch the Triple moon/shadow transit of Jupiter and Kat Sarbell (below, looking through telescope) and Nancy Cronin Berninger (below center) had time to work on their Lunar List at Cloudland Canyon.



To Peter Macumber (below left, in white shirt) and Keith Burns (below right) who are always there with their scopes and are ready to jump in where and when they are needed.



To Holly and John Ritger, Kat Sarbell and Tom Faber, Harold, Claudia and Ginger Champ..... for always being there with either your scopes, your knowledge of the night sky, and with your humor. Humor is one thing we all have to have to survive this gang for the weekends!



Steve Bieger and Mike Smith, Atlanta Astronomy Club members, came out to Unicoi in November to help us out. Though it wasn't a clear night, Mike set up his equipment anyway just so the campers can see what we are all about. We have had other club members join us here and there but we are hoping we get more of you in 2005. The good thing about GASP is you don't have to be a member to join us.



We are looking forward to the 2005 season which already has FDR State Park and Unicoi State Park booked for September and November and will be booking Florence Marina in October. We are working on Hard Labor Creek for April but remember always check our website for any updates to the schedule. (www.AtlantaAstronomy.org)

If you have any interest in joining us please email me at starrynights@atlantaastronomy.org. We can use the help and support!



January General Membership Meeting Minutes

The January meeting for the Atlanta Astronomy Club took place on Friday, January 21st in White Hall at Emory University. President Charles Painter called the meeting to order. Club officers and members made announcements and updates. Keith Burns presented a program on the Astronomical League (AL) Messier Observing List. Club member Jerry Armstrong talked about CCD imaging and showed many of the pictures he has made. After the meeting was adjourned, many of the members drove to Athens Pizza.

Charlie Elliott Chapter January Meeting Minutes

by Clevis Jones, CEC Recording Secretary

Thirteen members and visitors attended the CEC January program. Larry Owens, Chapter Director, began the monthly programs of the Charlie Elliott Chapter (CEC) of the Atlanta Astronomy Club (AAC) at about 3:00 PM, Saturday, January 8, 2005. Larry made announcements and talked about current space and astronomy events. Clevis Jones talked about what is currently visible in the night sky including Comet Machholz which just passed M45. Art Russell presented an excellent program on Star Hopping. Although the sky was mostly cloud bottoms, most of the group moved to the observing field. Not forty-five minutes after arriving at the field, the solid overcast entirely cleared – providing everyone with some very nice skies for viewing.

Charles Elliot Chapter Future Meetings

FEBRUARY 12, 2005 Programs: Saturday at 3:00 PM.

- Current Events: Clevis Jones
- What's UP Tonight: Observing report by Debbie Jones
- Feature Presentation: "Double Trouble" by Chapter member, Dr. Bill McKibben, Professor Emeritus Oxford College of Emory University. Double Trouble is a program about what we can learn from double stars. Dr. McKibben took graduate courses in astronomy at Georgia State University and worked under the supervision of Dr. Douglas Gies on three research projects, all yielding publications, involving analysis and interpretation of observational data relating to binary star systems. Dr. McKibben taught astronomy at Oxford College from 1991 to 2000. Please join Bill for a great presentation - everyone is welcome!

MARCH 12, 2005 Programs: Saturday at 3:00 PM.

- Current Events: TBD
- What's Up Tonight: Observing report by Debbie Jones
- Feature Presentation: "How to Image the Planets" by Larry Owens, Chapter director.

APRIL 9, 2005 Programs: Saturday at 5:00 PM (NOTE: 5:00 PM is the NEW SPRING-SUMMER SCHEDULE)

- Current Events: TBD
- What's Up Tonight: Observing report by Debbie Jones

- Feature Presentation: "This is Your Life", Chapter member Jim Honeycutt, B.S. and M.A., Professor at Oxford College of the Emory University.

For updates, please check the CEC website for the most current meeting information! <http://www.atlantaastronomy.org/CEWMA/>

February Board Meeting

by Nancy Cronin and Donovan Conrad

The Board is scheduled to meet Tuesday, February 15th, at 7:30 PM, at Donovan Conrad's office in Buckhead. The address of the meeting place is

ReMax of Buckhead

2911 Piedmont Road

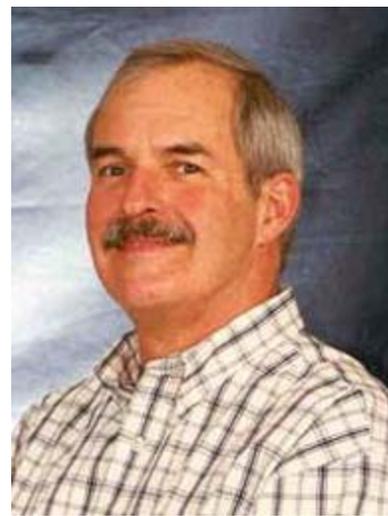
Atlanta GA, 30305

Directions to the office are as follows:

South of Peachtree Road, just past Pharr Road, Cactus Car Wash. Entrance into Montieff Commons Business Park is to the left. There will be a building right in front of you when you enter the place, ReMax (2911) is the first building directly to the left. The front door is facing Piedmont, across from the postal drop boxes. We will be on the second floor conference room...just wander upstairs, you can't miss it. If the door accidentally gets locked, just use the doorbell!

"The mathematician has a keen eye for intellectual elegance. The applied mathematician, though not a natural scientist, has a deep appreciation of the modern scientific method founded on the work of Galileo, Kepler and Newton as they tried to explain motions observed in the heavens. Astronomy remains the most intellectually elegant of the natural sciences. Nowhere is this elegance more evident than in the study of binary star systems, where much useful information is inferred by applying elementary principles to observational data."

-Bill McKibben



Light Pollution Shield

by Evelyn Whalen

Improvements Catalog is selling a light pollution reduction device that fits over regular floodlights to reduce glare and direct light down. If you are interested in this product, visit the website at

<http://www.improvementscatalog.com/product.asp?product=267888brzzz&dept%5Fid=10>

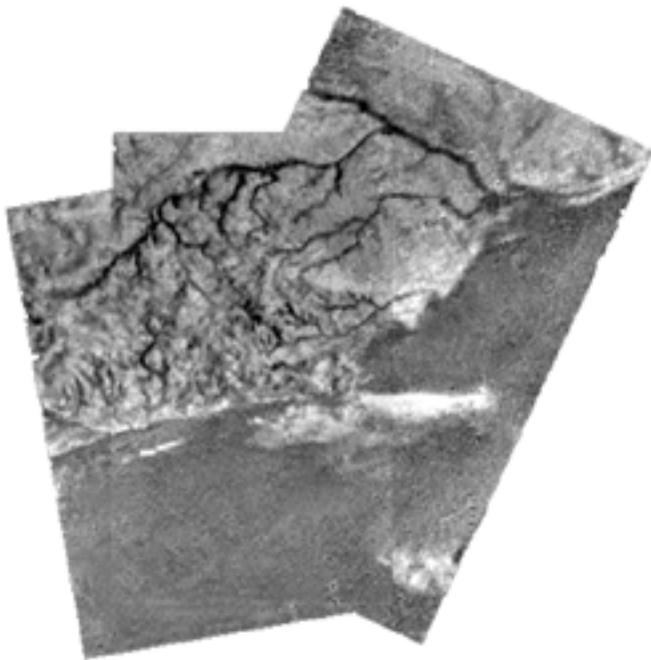
Seeing, touching and smelling the extraordinarily Earth-like world of Titan

Credit: ESA/NASA/ASI

On 14 January ESA's Huygens probe made an historic first ever descent to the surface of Titan, 1.2 billion kilometres from Earth and the largest of Saturn's moons. Huygens travelled to Titan as part of the joint ESA/NASA/ASI Cassini-Huygens mission. Starting at about 150 kilometres altitude, six multi-function instruments on board Huygens recorded data during the descent and on the surface. The first scientific assessments of Huygens' data were presented during a press conference at ESA head office in Paris on 21 January.

"We now have the key to understanding what shapes Titan's landscape," said Dr Martin Tomasko, Principal Investigator for the Descent Imager-Spectral Radiometer (DISR), adding: "Geological evidence for precipitation, erosion, mechanical abrasion and other fluvial activity says that the physical processes shaping Titan are much the same as those shaping Earth."

Spectacular images captured by the DISR reveal that Titan has extraordinarily Earth-like meteorology and geology. Images have shown a complex network of narrow drainage channels running from brighter highlands to lower, flatter, dark regions. These channels merge into river systems running into lakebeds featuring offshore 'islands' and 'shoals' remarkably similar to those on Earth.



Mosaic of river channel and ridge area on Titan. Image Credit: ESA PR 05-2005.



Data provided in part by the Gas Chromatograph and Mass Spectrometer (GCMS) and Surface Science Package (SSP) support Dr Tomasko's conclusions. Huygens' data provide strong evidence for liquids flowing on Titan. However, the fluid involved is methane, a simple organic compound that can exist as a liquid or gas at Titan's sub-170°C temperatures, rather than water as on Earth.

Titan's rivers and lakes appear dry at the moment, but rain may have occurred not long ago.

Deceleration and penetration data provided by the SSP indicate that the material beneath the surface's crust has the consistency of loose sand, possibly the result of methane rain falling on the surface over eons, or the wicking of liquids from below towards the surface.

Heat generated by Huygens warmed the soil beneath the probe and both the GCMS and SSP detected bursts of methane gas boiled out of surface material, reinforcing methane's principal role in Titan's geology and atmospheric meteorology -- forming clouds and precipitation that erodes and abrades the surface.

In addition, DISR surface images show small rounded pebbles in a dry riverbed. Spectra measurements (colour) are consistent with a composition of dirty water ice rather than silicate rocks. However, these are rock-like solid at Titan's temperatures.

Titan's soil appears to consist at least in part of precipitated deposits of the organic haze that shrouds the planet. This dark material settles out of the atmosphere. When washed off high elevations by methane rain, it concentrates at the bottom of the drainage channels and riverbeds contributing to the dark areas seen in DISR images.

New, stunning evidence based on finding atmospheric argon 40 indicates that Titan has experienced volcanic activity generating not lava, as on Earth, but water ice and ammonia.

Thus, while many of Earth's familiar geophysical processes occur on Titan, the chemistry involved is quite different. Instead of liquid water, Titan has liquid methane. Instead of silicate rocks, Titan has frozen water ice. Instead of dirt, Titan has hydrocarbon particles settling out of the atmosphere, and instead of lava, Titanian volcanoes spew very cold ice.

Titan is an extraordinary world having Earth-like geophysical processes operating on exotic materials in very alien conditions.

"We are really extremely excited about these results. The scientists have worked tirelessly for the whole week because the data they have received from Huygens are so thrilling. This is only the beginning, these data will live for many years to come and they will keep the scientists very very busy", said Jean-Pierre Lebreton, ESA's Huygens Project Scientist and Mission manager.

The Cassini-Huygens mission is a cooperation between NASA, ESA and ASI, the Italian space agency. The Jet Propulsion Laboratory (JPL), a division of the California Institute of Technology in Pasadena, is managing the mission for NASA's Office of Space Science, Washington DC. JPL designed, developed and assembled the Cassini orbiter while ESA operated the Huygens atmospheric probe.

First Color View of Titan's Surface

Credit: ESA/NASA/Univ. of Arizona

This image (right) was returned January 14, 2005, by the European Space Agency's Huygens probe during its successful descent to land on Titan. This is the colored view, following processing to add reflection spectra data, and gives a better indication of the actual color of the surface.

Initially thought to be rocks or ice blocks, they are more pebble-sized. The two rock-like objects just below the middle of the image are about 15 centimeters (left) and 4 centimeters (center) across respectively, at a distance of about 85 centimeters from Huygens. The surface is darker than originally expected, consisting of a mixture of water and hydrocarbon ice. There is also evidence of erosion at the base of these objects, indicating possible fluvial activity.

The image was taken with the Descent Imager/Spectral Radiometer, one of two NASA instruments on the probe.

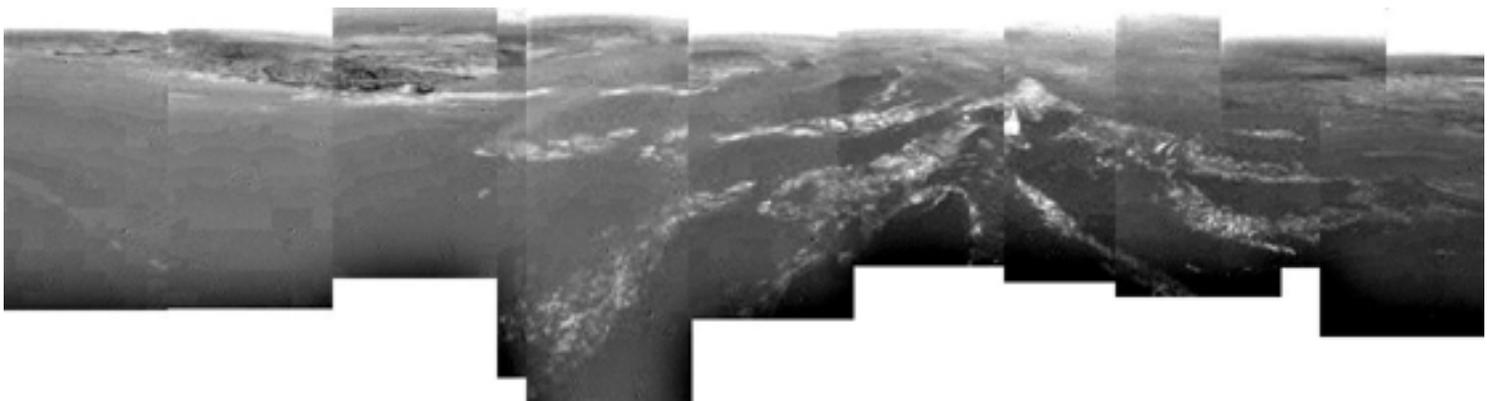
For more information visit <http://saturn.jpl.nasa.gov>

Composite of Titan's Surface Seen During Descent

Credit: ESA/NASA/Univ. of Arizona

This composite (image below) was produced from images returned on January 14, 2005, by the European Space Agency's Huygens probe during its successful descent to land on Titan. It shows a full 360-degree view around Huygens. The left-hand side, behind Huygens, shows a boundary between light and dark areas. The white streaks seen near this boundary could be ground 'fog,' as they were not immediately visible from higher altitudes.

As the probe descended, it drifted over a plateau (center of image) and was heading towards its landing site in a dark area (right). From the drift of the probe, the wind speed has been estimated at around 6-7 kilometers (about 4 miles) per hour. These images were taken from an altitude of about 8 kilometers (about 5 miles) with a resolution of about 20 meters (about 65 feet) per pixel. The images were taken by the Descent Imager/Spectral Radiometer, one of two NASA instruments on the probe.





NASA's Mars Exploration Rover Opportunity has found an iron meteorite on Mars, the first meteorite of any type ever identified on another planet. The pitted, basketball-size object is mostly made of iron and nickel. Readings from spectrometers on the rover determined that composition. Opportunity used its panoramic camera to take the images used in this approximately true-color composite on the rover's 339th martian day, or sol (Jan. 6, 2005). This composite combines images taken through the panoramic camera's 600-nanometer (red), 530-nanometer (green), and 480-nanometer (blue) filters. Image Credit: NASA/JPL/Cornell.

Directions to White Hall at Emory

Meeting Location Information:

Turn onto Dowman Drive from North Decatur Road at the five way intersection (across from Everybody's Pizza). White Hall is located on the right across from the new Science & Math building. Parking is available along Dowman Drive on both sides of the road. There is also a gated parking lot on the left behind the Admissions Building. After 6PM there is no fee to park there. For more detailed directions on how to get to Emory University, visit 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. Membership is open to all. 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 **\$29** 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 is: Atlanta Astronomy Club, PMB 305, 3595 Canton Road A9, Marietta, Georgia 30066.

Atlanta Astronomy Club Hot Line: Timely information on the night sky and astronomy in the Atlanta area. Call **770-621-2661**.

Internet Home Page: <http://www.AtlantaAstronomy.Org>

Send suggestions, comments, or ideas about the website to webmaster@AtlantaAstronomy.org. Also send information on upcoming observing events, meetings, and other events to the webmaster.

AAC Contacts

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PSSG Chairman: Peter Macumber pmacumber@nightsky.org **Co-Chairman:** Joanne Cirincione starrynights@AtlantaAstronomy.org

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

Atlanta Astronomy Club Website

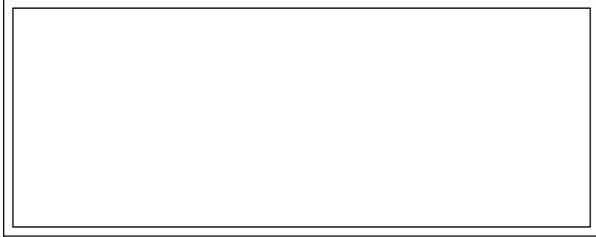
While this newsletter is the official information source for the Atlanta Astronomy Club, it is only up to date the day it is printed. So if you want more up to date information, go to our club's website. The website contains pictures, directions, membership applications, events updates (when available) and other information. <http://www.atlantaastronomy.org>



The Focal Point

Newsletter of The Atlanta Astronomy Club, Inc.

FIRST CLASS



FROM: Kat Sarbell
2025 Peachtree Road, Apt.#408
Atlanta, GA 30309

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

Atlanta Astronomy Club
PMB 305
3595 Canton Road A9
Marietta, GA 30066

Calendar

- February 8th, Tuesday: Moon New.
- February 9th, Wednesday: Small grouping of Io, Ganymede, and Callisto at about 11PM.
- February 11th, Friday: Bradley Observatory Open House. 8PM, Agnes Scott College. "Dust to Dust: the Birth and Death of Massive Stars" Speaker: Chris De Pree, Agnes Scott College.
- February 12th, Saturday: Open House at Villa Rica Observatory. Starts at 5PM - Contact Daniel Herron for details. Charlie Elliott Chapter Meeting starts at 3PM. See p.4 for details.
- February 14th, Monday: Mercury at Superior Conjunction.
- February 15th, Tuesday: Moon First Quarter. AAC Board Meeting. 7:30PM, in Buckhead. See page 4 for details.
- February 18th, Friday: AAC General Membership Meeting. 8PM.
- February 23th, Wednesday: Moon Full (Snow Moon, Wolf Moon, or Hunger Moon).
- February 24th, Thursday: March Focal Point submission deadline. 4PM.
- February 25th, Friday: Uranus conjunction with Sun.
- March 3rd, Thursday: Moon Last Quarter - Occults Antares. Sidewalk Astronomy at the Sierra Club, 7PM - Contact Mark Banks for details.
- March 10th, Thursday: Moon New.
- March 12th, Saturday: Mercury at Eastern Elongation. Dark Sky Observing at Woodruff BSC. Contact Daniel Herron for details. Charlie Elliott Chapter Meeting starts at 3PM. See p.4 for details.

Atlanta Astronomy Club Listserve

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 Info

Please send articles, pictures, and drawings in electronic format on anything astronomy related to Kat Sarbell at focalpoint@atlantaastronomy.org. **You can submit articles anytime up and including the deadline date. The deadline for March is Thursday, February 24th at 4:00 PM Submissions will no longer be accepted after the deadline.**