The Focal Point

The Atlanta Astronomy Club
Established 1947
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Editor: Peter Macumber

From the Prez

By Ken Poshedly

By the time you read this, the Atlanta Astronomy Club will have experienced its first REALLY close call with light trespass, more commonly called "light pollution." And, dear friends and fellow-members, it's not going to get any better.

Thanks to the watchful eyes of our own Keith Burns, we learned of a proposed housing subdivision and public hearing for a zoning change request that would potentially and severely damage the night skies at our Walter F. Barber Jr., Observatory site near Villa Rica.

On one of his recent trips to the site for maintenance, Keith noticed flags and markers for a new development almost across from our own facility on Tapley Rd. After posting this information on Eric Shelton's Atlanta Area Astronomers listserve, things began to happen. We learned about plans for a 38-house subdivision with 1 house per acre; we learned the name of the developer/ builder, etc. On July 31, AAC members Chris Willis and Keith Burns met with the builder, Sammy Herrell. Mr. Herrell, already an established builder in the area, was very agreeable to requests made by Chris and Keith – after all, we're not contesting the zoning, but we do want to ensure that there will be minimal impact from lighting within the subdivision. Mr. Herrell was also aware that the AAC observatory was so close to his planned subdivision.

Note that Mr. Herrell was NOT approached as an adversary, but instead as an area resident, who can help us continue to use a facility, which has proven to be a true asset to the community. Mr. Herrell returned a phone call, agreed to meet with AAC members at any time and agreed to our requests. The result was an agreement to include restrictive covenants in the zoning change request that describes the type of exterior lighting allowed in the subdivision. Mr. Herrell was also to provide to his own equipment supplier some documentation from Chris Willis on light-pollution control light fixtures.

The zoning hearing was Tuesday, August 3, and Mr. Herrell's request was unanimously approved with the lighting convenants in place. AAC members are invited to attend the Tuesday, August 24 meeting of the Carroll County board of commissioners for a show of support where the zoning change request is expected get final approval.

Directions: Head west on I-20 to Exit 5, then turn LEFT. Proceed about 12-14 miles (depending on your car's odometer) into Carrollton. Look for the "Family Dollar Store" on your right, then turn RIGHT onto College Street shortly afterwards. The address is 423 College St. and the time is 6:30 p.m.

Should everything proceed smoothly, we hope to work with other builders throughout that area. We can't prevent development, but we CAN work to minimize its negative impact on us.

Thank you, Sammy Herrell! Your foresight and support of your community is much appreciated. And it should be noted that we encourage AAC members who may be house hunting to contact Mr. Herrell about his subdivision on Tapley Rd. called Sweetwater Crossing. Groundbreaking is expected sometime this autumn. His phone is 770-459-8889.

Current E-mail Addresses Needed: If you have e-mail access, there are 3-yes-3 things you can do to help the Atlanta Astronomy Club. First, send an e-mail RIGHT NOW!! to treasurer Sharon Carruthers at scarruthers@nightsky.org so that she can include your e-mail address in our emergency database; second, check your e-mail account more frequently as the meeting night approaches; and third, sign up to get the club's newsletter, *Focal Point*, electronically.

The term "emergency database" pretty much describes the situation. It wasn't until after the *Focal Point* had been distributed several months ago and only two days before the general meeting that we learned of the temporary closing of Emory University's White Hall and our reassignment to the Geosciences Building. Being too late to mail postal cards or far too impractical to phone all nearly 600 AAC members, I sent an e-mail message to all members of record at the time who had provided us with an e-mail address. The message notified you of the meeting site change and where to park. But nearly one-third of those e-mails bounced back to me as user not known and the like.

As a result of those probably 90 or so bounced e-mails, many folks who showed up at White Hall learned only then of the meeting site change. And this doesn't even include those of you without e-mail access. The results were much confusion, many frayed nerves, and lots of inconvenience.

Just as you would notify your bank or utility company of your snail-mail change of address so you can continue to receive a one-page invoice and ten-page advertisement in a small envelope, we ask you to PLEASE tell us when you change your e-mail AND snail mail address. First class snail-mail is forwarded, but only for a set number of months. E-mail is NEVER forwarded once you change accounts (unless you setup a routine to notify those who write to you, and most folks don't do that). Once you close your e-mail account, all incoming e-mail has no place to go but back to the sender.

And don't forget to check your e-mail more frequently as the meeting night approaches. Let's face it, e-mail is getting to be the preferred method of communications in the business world, and checking it only weekly or every three days or so can mean you missed an important note that a meeting was canceled.

Finally, sign up to get the *Focal Point* electronically. Not only do you save the club money on postage and printing – a horrendously big expense – but also your copy will include color graphics and even sound effects (sometimes).e

Minutes of the July 16, 1999 Meeting

The July 16, 1999 meeting of the Atlanta Astronomy Club was called to order at 8:12 p.m. with 56 persons attending and Ken Poshedly presiding. The location was room 303 of the Emory University Geosciences Building.

Prior to the formal program of the evening:

A motion was made and approved by acclamation to dispense with a reading

of the minutes of the June AAC meeting.

Ken Poshedly asked all AAC members to provide their current e-mail address to club treasurer Sharon Macumber. She can be reached at SCarruthers@nightsky.org or by phone at 770-941-4640. The reason for the e-mail addresses is the ability to pass along last-minute or emergency information that cannot be distributed in a timely manner otherwise. We urge those without e-mail to sign up for it.

Peter Macumber, membership and corresponding secretary, announced that we remain at approximately 350 memberships (or about 600 persons, according to Peter).

Observing committee reports were made by Gil Shillcutt, committee chairman, Tracy Wilson, ATM coordinator, and Keith Burns, Walter F. Barber Observatory (Villa Rica) coordinator. Phil Sacco, the AAC's Charlie Elliot Wildlife Management Area coordinator, was out of town and not able to attend the meeting.

Keith Burns, our club's Astronomical League Correspondent (ALCOR), presented a Messier certificate and pin to Steve Joiner for his completion of finding and documenting the objects originally catalogued by French astronomer Charles Messier over 200 years ago. Steve's search extended from April 25 through October 17 of last year; "It was definitely a learning experience," he said, "I'd recommend this to anyone."

Mark Banks, chairman of the Sidewalk Astronomy committee, provided an overview of the club's sidewalk astronomy activities, including a list of upcoming sidewalk astronomy events; be sure to note them in upcoming issues of the *Focal Point* newsletter. You can reach Mark at banks4@mindspring.com or by phone at 404-257-2766.

Program chairman Eugenia Abbey then introduced our featured speaker of the evening, Doug Gies of the Georgia State University Department of Physics & Astronomy. His program was a most fascinating look at B-e type stars. His own explanations, along with a masterful handling of both color transparencies and overhead projection slides, made clear the how's and why's of these truly interesting types of stars. Note: For more information, visit the Be newsletter website at:

http://www.chara.gsu.edu/BeNews/be_star.html

After Doug's talk, Eugenia announced that the AAC has been invited to the GSU observatory at Hard Labor Creek State Park for our August 20 program. This will be for AAC members and their guests only.

Finally, longtime AAC member Eric Shelton announced that he and his wife were leaving the area to return to Virginia. All present wished Eric and his wife well in their new endeavours.

The meeting was adjourned at 9:50 p.m. for informal conversation and refreshments at Athens Pizza.

Respectfully submitted,

Ken Poshedly (acting recording secretary for the evening)

From the Observing Chair

By Gil Shillcutt

July was a terrible month for observing, but was a good month for the club. Scheduled activities during the month kept many of us busy and productive, if not observing.

The work party at Villa Rica was a success, even with the few people who showed up. Amongst other things, Peter Macumber finished the work on the new toilet facility, including power and linoleum flooring. Now, if we can only refrain from using the room as storage, it will be a great place to contemplate the wonders of the universe. Ralph Bowman has completed the focuser plates and secondary mirror plate for the 20", and Keith Burns completed the painting of the 20", so it will soon be back in full operation. Dan Ford and Paul DiBono were also out, and helped with some of the cleanup. I have corrected the crosshairs and thumbscrews on the spotter scopes on the 20", the 10" and the Maksutov. Ralph and Stef Whetstone replaced the door on the Maksutov dome, and I painted the majority of the interior. Ralph has also nearly completed the work on the Maksutov mount, and it shall return to operation soon, hopefully prior to Jupiter's and Saturn's appearance in our evening skies. Sharon Carruthers and David Macumber painted the floors in both the observatory and the warm-up shed. Funny thing about the warm-up shed: with the paint on the floor, the characteristic aroma has been dissipated. Next time you see any of these folks, please give them a well-deserved thank-you.

In other Villa Rica news, Keith discovered that a new subdivision has been zoned in the area. News on this is preliminary, but our effort to salvage the situation seems to be fully in hand. Chris Willis, a new member of the club, has taken on the lead on this, and has shown a great deal of leadership and passion in tracking down the particulars. On Friday, July 30th, he and Keith Burns met with the developer. The meeting went well, with the developer agreeing to allow the AAC to write the section of the homeowners' covenant regarding light pollution. There is also to be a re-zoning commission hearing in Carroll County on August 3rd. Results of this hearing will be shared later.

On August 13th and 14th, we'll be having our summer Zombie Party at Cox Field with our friends from the Flint River Astronomy Club. This is the same location that the "Astro Cows" were found last year. Luckily, an expanse of barbwire fence kept the bovine raiders at bay, and their presence, though at first intimidating, provided great sport during that outing and in the following year. The site is rustic, but rest facilities should be provided. Make sure you bring food and drink, as well as sleeping gear. Directions to Cox Field are posted at the conclusion of this article.

Finally, on September 3rd at 8:00pm, Geoff Powers will be starting his series of Astro-Imaging meetings. These meetings will be held on a monthly basis, on the first Friday of the month, at Agnes Scott College's Bradley Observatory. Geoff will talk on a variety of topics concerning astrophotography, such as cameras, adapters, scopes, mounts and film.

Hope to see you all during the next month!

Clear Skies,

Astronomical League Spotlight-Meteor Club

By Keith Burns

Have you lay on the ground and stare up into the night sky? You see a bright meteor pass overhead. Wouldn't it be great to be able to lie there observe? Now you can do just that. You can log those meteors streaking across the sky and contribute to science. With a pair of eyes, you can do much in astronomy. Now just lay back and read this article. First let's start with a little background on meteor science, what a meteor is, what causes it, and the terminology.

On November 13, 1833, the eastern U.S. experienced a meteor storm caused by the Leonids meteor shower. Astronomy teacher Denison Olmsted witnessed the meteor storm. He noticed that the meteors originated from a point in the sky. The meteors seemed to come from the head of the constellation Leo. Denison also noticed the point moved westward over time like the stars did. He would later name this point the radiant. This observation suggested to him that meteors come from space and not the atmosphere. Mr. Olmsted collected eyewitness accounts of the storm from all over the eastern U.S.A. This was the start of Meteor science.

The light glow you see in the sky occurs when a particle enters the upper atmosphere. Friction from the air heats the particle. A flash of light is produced. This light is known as a meteor or shooting star. Particles range in size

from large rocks to individual dust particles. The flash you see usually occurs in the thermosphere part of the atmosphere that is 50 to 75 miles (80 to 120 km) above the earth.

You may have noticed that different terms are used to describe meteors. A particle that is found in space is a meteoroid. Many of them are bits and pieces left over from the formation of our solar system. The sizes range from individual particles up to large rocks. Many particles come from comets or asteroids. When a particle enters the earth's atmosphere, it is known as a meteor. Particles are vaporized in the atmosphere. The ones that survive the trip through the atmosphere and hit the ground are called meteorite particles. Micrometeorites are meteorite particles that have a diameter of less then a millimeter. Anything smaller than a micrometeorite is dust. Gee, I wonder if this is why the house gets dusty when the windows are left open.

Meteors occur on a daily basis. Meteor showers occur when the earth passes through a stream of meteoroid particles. The particles come from comets and asteroids that orbit around the sun. Anyone who has seen comet Hyakutake or comet Hale-Bopp has seen the dust tail. As the comet passes by the sun, it leaves a trail of particles behind. Over time the particles spread out and form a meteor stream. The earth passes through the stream at the same time each year. That is why we know what days the shower will occur. There are many different meteor streams. Some produce major meteor showers and most produce minor meteor showers. Here the number of meteors determines which type of shower it is.

Each meteor shower has a radiant. The radiant is the point in the sky that the meteors appear to come from. The point is actually the meteor stream and is not a single point. Meteors move in a parallel direction to one another. Your eyes are unable to see beyond a certain distance, which is why the meteors appear to come from one point. Each meteor shower is named for the constellation it's radiant occurs in. Besides meteor showers, there are sporadic meteors. Sporadic meteors are meteors not associated with any meteor stream. They occur all the time but not in great numbers.

The meteor club is a program provided by the astronomical league. To get a certificate, you need to observe meteors for six hours. Each observing session needs to last a minimum of one hour. Fill out the observing log sheet provided. Send a copy of the log to the AL club representative (Kathy Machin) or submit it to Keith Burns. The league will send a certificate to you or the Atlanta Astronomy Club for presentation to you. The log will be forwarded to the Association of Lunar and Planetary Observers. Submit a copy of the log to Kathy, or me for every six hours of observation you do after completing the first six hours. You will get another certificate for each additional six hours. Submit your observation log with 30 days of completing the observations. When you have completed thirty-six hours of observation, you will get an honorary certificate. Note that not only are you enjoying a fun hobby, but also your observations are helping ALPO. Your observations could end up being published in ALPO's publication.

Now we move on to the requirements of meteor observing. Meteor observing is a simple procedure that doesn't require fancy equipment. You don't need a telescope or binoculars. Just bring your eyes. A dark observing site is important. The darker it is, the more meteors you will see. If a dark site is not available, use whatever site you have. You need to dress for the weather. Summer also means having bug repellent to combat the bugs. If you aren't dress well, then you won't be out observing for long. Use a reclining lounge chair to lie back on. It keeps you off the cold ground in the winter and the buggy grass in the summer.

Record your meteor observations on a log sheet. It is best to use one of the log sheets made available by the Association of Lunar and Planetary Observers. North American Meteor Network and the International Meteor Organization also have log sheets. You can also get a copy of the log sheet from me (the ALCOR representative of the Atlanta Astronomy Club). The form should include the following information. This information is at the top of the form. Time and date you observe. Be sure to include the start and finish times. Second is the location of the observing site, including the longitude, latitude, and elevation. The elevation should be in meters. Now with each hour of observing you do you need to note the percentage of cloud cover and *sky conditions. The form also has a place to note the direction and altitude you are observing in the sky. Note times you take any breaks including start and finish time.

The next part of the form is a table containing the following columns. Column one is the time for each meteor you see. Magnitude is the second column. This is your estimate of how bright the meteor was. Memorize the magnitudes of the five or six stars in the constellation the meteor shower comes from. Any star atlas should give you the magnitudes of the stars. The third column is meteor type. Meteor type is what shower the meteor belongs. This can be done by following the path of the meteor backward. This should give you the radiant. Column four is the color of the meteor. Speed is the next column. Here all you have to note is whether the meteor moved slow, medium, or fast. The smoke trail left behind by a meteor is called a train. Most trains only last a second. In the column, note the amount of time the train is visible.

Finally, there is a column for any comments you have about the meteor. This can include any visible sparks, fragments, or other information.

So where do I find a listing of the meteor showers? Look in the current issue of Sky and Telescope magazine or Astronomy magazine. The organizations listed below also have a table or listing of meteor showers.

Association of Lunar and Planetary Observers (Meteor Section)

Robert Lunsford

161 Vance Street Email: LUNRO.IMO.USA@prodigy.com

Chula Vista, CA 91910-4828

Web site: www.lpl.arizona.edu/~rhill/alpo/meteor.html

Meteor Club Astronomical League

Kathy Machin Email: gmachin@sky.net

4845 N. Smalley Avenue Web Site: www.astroleague.org/al/obsclubs/meteor/metrcl.html/

Kansas City, MO 64119 Phone Number: 1-816-452-2086

North American Meteor Network | **American Meteor Society**

Web site: InfoAve.Net/~meteorobs/ | Web site: www.amsmeteors.org

ALCOR Atlanta Astronomy Club

Keith Burns Email: Keith_B@Bellsouth.Net

3740 Burnt Hickory Road Phone: 770-426-1797 or 770-427-1475

Marietta, Georgia 30064

International Meteor Organization Web site: www.imo.net/

*Please use the following categories for reporting on sky condictions

Very Dark: such as a rural location far from light pollution and no Moon present;

Dark: a few lights nearby or a slender crescent Moon is present;

Average: moderate light pollution nearby or a quarter Moon is present;

Below Average: suburban location with many streetlights and porchlights obscuring the fainter stars or a gibbous Moon is present;

Severe: urban locations with only the brightest stars visible or a full Moon is present.

NOTES

The web site NightSky.Org is down due to hardware problems from the aftermath of a fire and water damage. I will post information about the site as soon as I am informed. They keep telling me it will be up by the weekend or in a couple days. (They must be using Phil's reformed calendar.)

Hard Labor Creek Observatory

One of the finest astronomy facilities in the Southeast is Georgia State's Hard Labor Creek Observatory, located an hour east of Atlanta in some of the darkest skies conveniently accessible to the city. HLCO is operated by Georgia State's Department of Physics, Astronomy, and the Center for High Angular Resolution Astronomy in support of basic astronomical research.

HLCO facilities include:

The 44-inch effective aperture Multi-Telescope Telescope.

This innovative telescope uses nine 13-inch diameter mirrors to focus star light into optical fibers that carry the light into the Observatory building to a high-resolution spectrograph in order to study the chemical properties and dynamics of stars. This instrument was designed and built at Georgia State with partial funding from the National Science Foundation.

The 16-inch Cassegrain telescope awarded to Georgia State in 1986 by the National Science Foundation following 25 years of research use at the Kitt Peak National Observatory near Tucson, Arizona. Equipped with a CCD camera and a photometer, this telescope is now used for monitoring brightness variations in distant galaxies and for training graduate students in the University's astronomy Ph.D. program.

Several portable telescopes with apertures as large as 12.5 inches are set up on the Observatory grounds for public viewing.

A network of computers and peripheral equipment, a fully equipped darkroom, an instrumentation development laboratory, and living quarters for researchers complete the Observatory's facilities.

Astro Images

By Goeff Powers

Hey y'all! Friday, September 3rd 1999 marks the startup of the A.A.C. astro photography and imaging instruction and information sessions, with yours truly at the helm. These meetings will be held at Agnes Scott College, in the Bradley Observatory auditorium, the first Friday each month, promptly at 8:00 p.m.

My intentions for these gatherings, my "mission statement", is to take anyone with the slightest interest or even curiosity in astro photography and imaging, and show that person how to get acceptable results the first time out, using basic and minimal equipment. We will begin with the easiest and simplest techniques, and as the months progress, move forward to the more advanced.

It should be noted that I I have barely passed from beginner to novice, and look forward to this as a learning experience. I hope to involve the expertise of many advanced club members, to share their knowledge and information.

The Sept. 3rd meeting will cover the basic, but essential camera-on-tripod techniques. Now, don't you long timers scoff. World-class photographers such as Alan Dyer, Terence Dickinson and Jerry Schaad constantly get these shots published! How many of you knew that by choosing the right location, selecting the right film, and following the proper procedures you can faithfully record stars beyond naked eye visibility, without trailing, using nothing more than a camera, tripod and cable release? Even some of today's "auto everything" cameras can lend themselves to this type of photography.

In addition to recording "constellation shots" and even deeper star fields, this is about the only way to photograph most planetary conjunctions. In addition, let's not forget those compelling star trail and eclipse images! I also hope to touch on twilight and sunrise-sunset photo opportunities, as well as using small (and I do mean small) telescopes-on-tripod for basic and beginning lunar photography.

I truly hope to see many of you dobsonian owners and dedicated observers at this meeting. This may be all the astro photo info. Some of you will ever want. Cameras are small. Tripods fold flat. You're going to dark sky sites frequently anyway. Why not shoot some film now and again?

Those who do attend can bring the camera they want to use, without film of tripod, to familiarize and practice procedures. More important, BRING YOUR CAMERAS INSTRUCTION MANUAL! I am woefully inept with today's sophisticated electronically controlled cameras. If you have it, the instruction manual will explain key features (mirror lock-up, manual override, shutter timers, etc.)

"Escape Velocity" for this meeting should be 70 to 90 minutes. This is quite a bit to cover in this time frame. In addition to the info hand out sheets I'll bring, some personal note taking will insure each individual has the data they need for success on their first attempt.

It was my desire, my motivation in joining our club, to share may fascination of what lies beyond this tenuous, nitrogen rich envelope we reside in and learn to capture nature's great photon exposition through the eye of a cameras. Leading our Astro Imaging group gives me more opportunity to pursue this goal than I dreamed possible a year and a half ago. So, C'mon Y'all! Let's explore the universe!

To locate the observatory, take your best route to the Decatur square (E.Ponce / W. Ponce.) Take Church St. south, with Decatur Marta on your right. One block past Marta, turn left on E. Trinity Place. Proceed one block across C.S.X. railroad, then cross E. College Ave. onto Candler St. Turn right on Hancock St., the third street after crossing E. College. The observatory driveway is on your right, just before the end of the block. Look for the new sign. Hope to see you there!

Lunar Observing Challenge #12

Naked Eye:

1. How old must the moon be to see: The Old Moon in the New Moons Arms? The New Moon in the Old Moons Arms? What is the primary difference between these two phases of the moon? How would you explain these two phases to someone?
2. Cow Jumping over the moon.
3. The crescent moon within 40 hours of new both waxing and waning phases.
4. If you viewed the Earth and Luna from well above the plane of our solar system, say above the sun...How could you best describe the Earth/Moon system?

Telescopic:

1. Crater Picard
2. Crater Furnerius
3. Crater Shickard
4. Crater Herschel, J.
5. How much would you weigh on the moon? How much do you think you could lift on the moon as far as dead weight of lead?
6. What is the highest point on the moon farside or nearside?
7. What is the highest point on the visible face of the moon?
8. What is the tallest central crater mountain?
9. What is the total surface area of the moon (as a percentage) available for earthside viewing taking into account Libration?

Pickerings Naked Eye Objects:

These objects were included in the earlier portions of the Lunatix Challenge and are included here in their entirety. The original listing in order of

difficulty.

1. The bright surrounding area of Copernicus
2. Mare Nectaris
3. Mare Humorum
4. The bright surroundings of Kepler
5. The region of Gessendi
6. The notch in the Mare Tranquillitatis/Plinius Region
7. Mare Vaporum
8. The light area around crater Lubiniezky
9. Sinus Medid
10. Shaded area near the walled plain Sacrobosco
11. The dark spot at the foot of the Apennines
12. The Riphaeus Mountains

Now.... how many of the Lunar domes did you collect?

NASA News

Edited by Gil Shillcutt

In July two cool new Discovery missions were announced. Following the usual grueling round of proposals and evaluations, NASA selected our two newest low-cost missions to the solar system. The first mission is the Mercury Surface, Space Environment, Geochemistry and Ranging (MESSENGER) mission, which will carry seven instruments to globally image and study Mercury. The second is Deep Impact, which is designed to fire a 500 kilogram copper projectile into the comet P/Tempel 1, excavating a large crater in order to expose its pristine interior ice and rock. Deep Impact will launch in January 2004, and MESSENGER will launch in March 2004.

press release: ftp://ftp.hq.nasa.gov/pub/pao/pressrel/1999/99-077.txt

MESSENGER: http://sd-www.jhuapl.edu/MESSENGER/

Deep Impact: http://www.ss.astro.umd.edu/deepimpact/

Life may owe its start to complex organic molecules manufactured in the icy heart of an interstellar cloud. A little bit of astrobiology at

http://www.sciam.com/1999/0799issue/0799bernstein.html

Large Martian Dust Devils Caught in the Act - images of towering, swirling dust clouds, plus more new images from Mars Global Surveyor, at: http://mars.jpl.nasa.gov/mgs

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Most of the asteroid that blasted Meteor Crater out of the Colorado Plateau melted, according to new evidence released by an international team of scientists. University of Arizona press release at:

http://www.newswise.com/articles/1999/7/CRATER.UAZ.html

A Hubble Space Telescope image of globular cluster M80 raises questions

about the number of stellar collisions occurring there. There are still

many unknowns about these ancient swarms of stars.

http://oposite.stsci.edu/pubinfo/pr/1999/26/

Taking advantage of Mars's closest approach to Earth in eight years,

astronomers using HST have taken the space-based observatory's sharpest

views yet of the Red Planet. http://oposite.stsci.edu/pubinfo/pr/1999/27/

Lunar Prospector crashed into the moon on July 31, in an attempt to verify the presence of water. The official "impact page" is at: http://www.ae.utexas.edu/~cfpl/lunar/ , and there's a nice story

about it at http://science.nasa.gov/newhome/headlines/ast21jul99_1.htm

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An experiment left on the lunar surface 30 years ago by the Apollo 11

astronauts continues to return valuable data about the Earth-Moon system.

JPL press release at http://www.jpl.nasa.gov/releases/99/lunarlaser.html

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21 new images of Mars from Mars Global Surveyor were recently released

at http://www.msss.com/ . The MGS page is at http://mars.jpl.nasa.gov/mgs/

Links to the Starshine project, the educational "disco ball in space", have

been added to our Missions pages.

Starshine project: http://www.azinet.com/starshine/

Space Science missions: http://spacescience.nasa.gov/missions/index.htm

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An international team has captured the first images of the very earliest stages of a "dark cloud" — the coldest astronomical object in the universe — becoming a new star. These results come from the European Southern Observatory. http://www.napa.ufl.edu/99news/darkclou.htm

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A University of Hawaii researcher and her colleagues from NASA have confirmed that a new form of carbon previously made in the laboratory also exists in nature. The finding indicates hat the pure carbon molecules known as fullerenes (or buckeyballs) could have been a factor in the early history of Earth and might even have played a role in the origin of life.

http://www.hawaii.edu/ur/News_Releases/NR_July99/full.html

Exciting new images of more than a dozen very distant colliding galaxies have been obtained by a European-led team of astronomers using the Hubble Space Telescope. http://oposite.stsci.edu/pubinfo/pr/1999/28/index.html

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NASA's Goddard Space Flight Center has awarded two $14 million firm fixed price contracts for trade studies necessary to develop a observatory concept and develop essential technologies relating to the Next Generation Space Telescope (NGST). NGST is conceived of as a follow-on to Hubble, expected to launch around 2008.

Press release: ftp://pao.gsfc.nasa.gov/pub/PAO/Releases/1999/99-080.htm

NGST: http://ngst.gsfc.nasa.gov/

SOHO and Spartan 201 have combined to discover that the high-speed portion of the solar wind achieves its unexpectedly high velocity — up to 500 miles per second — by "surfing" magnetic waves in the Sun's outer atmosphere.

Press release: ftp://ftp.hq.nasa.gov/pub/pao/pressrel/1999/99-076.txt

SOHO: http://sohowww.nascom.nasa.gov/

Spartan 201: http://spartans.gsfc.nasa.gov/201/

First, the great news: Our Chandra X-Ray Observatory was successfully launched on Friday, July 23 at 12:31 a.m. The spacecraft appears to be in excellent health. Cutting edge high-energy science coming soon!

Latest status: http://www1.msfc.nasa.gov/NEWSROOM/chandra/chandra.html

Chandra page: http://chandra.harvard.edu/index.html

Next, the awful news: the House VA-HUD-Independent Agencies subcommittee (responsible for our funding) marked up NASA's FY 2000 budget request yesterday, proposing a $1.3 billion reduction to the Agency, of which about half ($640 million) would come from Space Science. This would represent a cut of about 29% in Space Science programs, requiring many, many mission cancellations. The text of the subcommittee markup itself is available at http://www.house.gov/appropriations/pr00vasu.html . Good coverage is online at Florida Today at http://www.flatoday.com/space/today/index.htm, and elsewhere. the NASA Administrator has also released a statement at:

ftp://ftp.hq.nasa.gov/pub/pao/pressrel/1999/99-086.txt .

A new aluminum deep sea probe, the prototype of one designed to withstand crushing pressures and extreme temperatures, is set to be lowered to depths of 9 meters (30 feet) in Monterey Bay Aquarium's giant kelp forest July 28 as part of NASA's hunt for clues to life's origins. JPL press release at:

http://www.jpl.nasa.gov/releases/99/monterey.html

Spinning faster than any object ever observed in the solar system, a lumpy, water-rich asteroid known as 1998 KY26, about the diameter of a baseball diamond, is rotating about once every five seconds. JPL press release at:

http://www.jpl.nasa.gov/releases/99/98ky26.html

The Deep Space 1 technology validation mission will fly by asteroid 1992 KD

on July 28 at 9:46 pm PDT. Follow the action at http://nmp.jpl.nasa.gov/ds1/

Editor's Note: The flyby was preceded by a spacecraft safing incident, and as such, images were not captured during the flyby.

Walter Barber Observatory Renovations

By Keith Burns

There was a work party Saturday, July 24. It was very hot and humid outside that day. The floor of the observatory was painted. Final painting of the 20-inch scope has been completed. There is now a big flat black colored paint box around each focuser. Each focuser has a new adjustable plate on it so that both focusers are aligned with the secondary mirror. This will make collimation possible on both focusers. All the telescopes have been cleaned. The 20-inch and the 10-inch scopes each have their own hair dryer now. The dryer for the 20-inch scope is located on the left side of the observing table. A hair dryer for the 10-inch scope is located on a hook on the right side of the accessory box. Both the eyepiece box and the accessory box have their own light now. The strip on the observing table was replaced with a thicker one so that the books and charts stay on the table now. We removed all the stuff not needed in the observatory and stored it in another location. You can see the walls and floor for a change.

The warm-up shed has been cleaned out. We are only storing foodstuff, chairs, water, and a few repair supplies in there now. The other stuff has been placed in a new location. Now the warm-up-shed floor is painted a grey color. With the new paint job, the old warm-up shed smell has disappeared. We will be restricting what is stored in the warm-up shed from now on. It's a warm-up shed and not a storage facility. Plans are in the works to remove all the shelves on the west wall and install new wire shelves near the top of the wall. This will give us some space to store certain items and free up the wall space. We are looking for a large insulated plastic cooler. The old foam cooler has been retired since it has a hole in the bottom.

The new bathroom building has been finished. We have installed a new composting toilet. The building has electricity now including two plugs and two lights. There is a red light and a white light. Each operates on a separate switch. The white light is hard to turn on so no accidental WHITE LIGHT! An explanation of how to use the toilet will be forth coming. The toilet is not usable yet so there is the old odd house (left one only). This entire project was paid for by the Ladies of the Night...Sky. Thanks ladies. Perhaps more ladies will come out to VR now.

The Bowman Dome is under renovation now. New adapter plates have been installed on the G-8 mount and the Maksutov scope. The scope is now installed on the pier but work is being done to fix the counter weight problem. Therefore, the Maksutov is still out of service. A new door has been put on the Dome building. Plans are in the works to install a rubber seal on the roof of the building to stop a water leak. The dome interior is being painted. We are only halfway done with the painting. Moon maps will be attached to the walls when the painting is done.

The grounds are still waiting to be leveled by a bobcat. This will be done soon. Mainly the south end of the field will be leveled and the brush cleared out. One odd house is being used for storage now. Look for the danger sign posted on the front of the building.

I wanted to thank the following people for coming out on a hot day and helping out. Steph Whetstone, Gil Shillcutt, Daniel Ford, Paul D., David Macumber, Sharon Macumber, and Scott (I think this was his name). Now special thanks go to Peter Macumber and Ralph Bowman for going above and beyond. Much of what has occurred with the Maksutov project is because of Ralph. He also helped with correcting the alignment problems on the 20-inch scope. Peter started and finished the new bathroom facilities.

Directions to Cox Field

From I-75 southbound:

Take I-75 south to Exit 77 which is Tara Blvd(US 41/19). Take US 41/19 south to Griffin Bypass. Take Bypass(US 41/19) south to exit 3 which is Ga 362. Turn right onto Ga 362 at end of exit ramp. Head west on 362 to town of Williamson, Ga. After leaving the city limits of Williamson, continue west on 362. You will pass the roads of Wood Creek Rd and Beeks Rd. The next road on the left after Beeks Rd is Turner Rd. Turn left onto Turner Rd.

From I-85 southbound:

Take I-85 south to Exit 10 which is McCollum-Sharpsburg Rd(Ga 154). Turn left at end of exit ramp and head southeast on Ga 154. Take Ga 154 to Ga 54. Turn left onto Ga 54 and take it to Ga 16. Turn left onto Ga 16 and head east to Ga 85/74. Turn right onto Ga 85/74. Proceed south to Ga 362. Turn left onto Ga 362 and proceed east for 6 miles. At this point start looking for Turner Rd on the right. Turn right onto Turner Rd.

Turner Rd

Turner Rd is gravel and marked by a concrete post with Turner Rd written on it. Proceed down Turner for ¾ mile to grassy runway on right side of road. Turn onto runway and look for spot to setup. This is the place. Note that the runway is almost perpendicular to Turner Rd.

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NightSky.Org

The Focal Point is available in color online in PDF format. The free Adobe(R) Reader allows you to view, navigate, and print PDF files across all major computing platforms.

Visit **NightSky.Org/AAC** on the web. In a private sub-web, the past year of Focal Points can be found. Check it out. If it works for you, send me an e-mail and I will stop sending you a copy snail-mail. It will also save the club a dollar. The Focal-Point web can be entered by using the Username of **AAC** and a password of **polaris**. These names a case sensitive! Type AAC in capitals, type polaris in lower case.

Peter

August 7 — Training, 6:00pm, VR

Training session on AAC club equipment. information required for checkout on the Club's Walter F. Barber, Jr. Observatory, including the 20", the 10" Cave, the 8" Maksutov, and the various loaner scopes.

August 13-15 — Dark Sky, Perseids, Zombie Party @ Cox Field

This August, the Perseid Meteor shower coincides with the new moon. What more reason do we need to hang out for a couple of days with our friends of the Flint River Astronomy Club?!? Join us at Cox Field, for beautiful summer and dark southern skies. This is a members-only event. There is a fee of $5.00 per person.

August 14 — ATM Workshop, 9:00am, ASC Bradley Observatory

Meet us at Agnes Scott College's Bradley Observatory for the ATM Workshop. The ATM group is building a 16" f/7 dobsonian. Various other scopes are also in progress. Come find out how to build your own scope, or bring your own materials for expert instruction with Tracy Wilson.

August 21 — Astro Techniques, 6:00pm, VR

General astronomy training on advanced topics. Dr. Schmude will lead this session, covering the use of Photometric Photometers. Given clear skies, we will perform some photometry of planets and stars.

August 28 — ATM Workshop, 9:00am, ASC Bradley Observatory

Meet us at Agnes Scott College's Bradley Observatory for the ATM Workshop. The ATM group is building a 16" f/7 dobsonian. Various other scopes are also in progress. Come find out how to build your own scope, or bring your own materials for expert instruction with Tracy Wilson.

September 3 — AstroImaging Meeting, 8:00pm, ASC Bradley Observatory

Meet us at Agnes Scott College's Bradley Observatory for astrophotography discussions. Geoff Powers will provide information on getting started in astrophotography.

September 11 — ATM Workshop, 9:00am, ASC Bradley Observatory

September 11 — Dark Sky @ Turkey Farm

Info to be provided in September Focal Point.

September 18 — Training, 6:00pm, VR

September 25 — ATM Workshop, 9:00am, ASC Bradley Observatory

Atlanta Astronomy Club

The August Meeting

Friday, August 20th

A special treat is in store for us in August. Many of you have expressed an interest in visiting a working professional observatory. So, on August 20 we will travel to Georgia State University's Hard Labor Creek Observatory.

Our hosts will be several GSU graduate students in astronomy, and maybe a few professors will wander in too. Plan to get there before dark (sunset will be at 8:19) so that you can inspect the instruments as well as observe through them.

This is a private open house for AAC members and their guests. Don't plan to bring a telescope. There are many of them there already! We will meet rain or shine. It will be a good idea to car pool, as the observatory has limited parking. There may be a quarter-mile walk for latecomers. Directions are given below.

Directions to the Observatory:

Take I-20 east from Atlanta to exit 49 (Rutledge/Hard Labor Creek State Park) and follow the signs 2.6 north miles to Rutledge, GA, continuing an additional 2.2 miles to the Hard Labor Creek State Park entrance. Another 1.4 miles will take you past Camp Daniel Morgan and across the lake to the Observatory dirt drive on the right, indicated by a small sign. The Observatory telephone numbers are 770/785-6931 and 706/342-9051 (note that the observatory telephones are only manned on an irregular basis, however).

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 (check the hot line for details). Membership is open to all. Annual dues are $25 ($10 for students). Discounted subscriptions to Astronomy, and Sky & Telescope magazines are available.

Hot Line: Timely information on the night sky and astronomy in the Atlanta area is available on a twenty-four hour basis on the

Atlanta Astronomy Club hot line: **770-621-2661**.

Internet Home Page: **http://stlspb.gtri.gatech.edu/astrotxt/atlastro.html**

Subscribe to the Atlanta Area Astronomers Mailing List!

Send SUBSCRIBE AAA-LIST Your Name to LISTSERV@SKYWATCHER.DORM.ORG

For further information send an e-mail to Eric Shelton shelton2@bellsouth.net

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ATLANTA ASTRONOMY CLUB EST. 1947

The Focal Point

Newsletter of The Atlanta Astronomy Club, Inc.

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