

# The Focal Point

The Atlanta Astronomy Club  
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Editor: Keith Burns

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## The Washington Refractor

By Lenny Abbey

Anyone who has studied history in high school or college knows that a text book is a poor source of education. The images conjured up by even the most skillful of writers are at best fleeting. You are lucky to remember them until exam time. On the other hand, experience is a powerful teacher. An actual visit to the scene of a great event enables you to take home a memory which will live for years. The sites of many historical events have been preserved for our education and enjoyment. The scenes of other historical events, perhaps of less interest to our teachers, have been forgotten, and put to other uses. Finding these places, many of which may be of importance to you, even if not to the general population, can be a rewarding experience.

On a 1972 trip to Washington, D.C., I decided to visit the original location of the Naval Observatory's 26" refractor, where Asaph Hall discovered the satellites of Mars in 1877. The 26" refractor was at the time the largest refracting telescope in the world. It was Alvan Clark's first really large instrument, and it was this telescope that catapulted the Clarks to fame. Though the big refractor now enjoys a modern mounting on the outskirts of Washington, it was originally located in a building in town, "near the river and the Navy Yard", as one history book put it. That was our only clue.

Before departing for the nation's capital, a long-distance phone call was made to Bob Wright, President of the Astronomical League, and long a resident of the D.C. area. He said that he would be out of town while we were there, but would find out what he could about the old observatory.

We arrived on a very rainy day. Bob Wright had left a message that the original Naval Observatory, now called "The Old Transit House", was part of the present Navy Bureau of Medicine and Surgery, near the Lincoln Memorial. Calling the Navy Bureau of Medicine and Surgery, we were told that no one there was really sure which telescope had actually been located on the grounds. Now a "Transit House" surely does not suggest a very large refractor, and besides, the Lincoln Memorial is nowhere near the Navy Yard. We decided to gamble on a visit to the Navy Yard.

A quick call to the Pentagon – if you have ever called the Pentagon, you know how funny that is – resulted, after a number of transfers, in a conversation with the Navy's Public Information Office. They said that there were many old buildings in the Yard, but nobody was very familiar with their history. He recalled that there was an old employee there who had at one time made a study of the Yard's history, but he was now dead or retired; no one was sure which.

At this point the explorer within us rebelled, and we decided to visit the Navy Yard in person to seek out the hallowed spot. After all, who was better qualified to recognize an ex-observatory? After a meandering, error-ridden journey through parts of Virginia, Maryland, and the District of Columbia, we finally located the Yard. A quick drive through revealed no observatory, but we did find the Navy Yard Museum. Picking our way through assorted cannon, anchors, and capstans, we found our way to the office of the Curator. Yes, he had heard of the old Naval Observatory. After rummaging through several old filing cabinets, he announced that it was located at – care to guess?

– the Bureau of Medicine and Surgery.

It was now 4:00 p.m., dangerously close to quitting time. The rain was heavier than ever, but a mad dash across town brought us to our goal in record time. Success was near! "Bu Med", as the Curator had called it, was located on the top of a modest hill. This was a good sign. When we had found the main building, we asked for the Public Information Office, and were ushered into the office of the Assistant Surgeon General, who doubled in this capacity. This, he told us, was indeed the site of the original Naval Observatory. The building next door had once housed the Great Refractor. Looking out his window, we saw our goal: a shining silver dome atop a rather large building.

The building is now used for office space. Even though the dome still sits regally above the roof, the observing room beneath it is now used as a reception room for several offices. No trace of the telescope's old pier remains. The wheels have been removed from the dome, and it is bolted in place. A number of large pictures about the room commemorate the telescope and that famous night ninety-five years ago.

But something was wrong. A 26-inch, f/16 refractor would have a focal length of almost thirty-five feet. This room was a scant twenty-five feet in diameter. As the twenty-six inch was not part of the observatory's original equipment, it was reasonable to assume that there had been another, smaller equatorial refractor which dated from its inception. (A later trip to the Smithsonian Institution revealed a 9.5-inch lens which had once belonged to the Naval Observatory. At f/16, this lens would have a focal length of 13-feet, fitting rather nicely into the Bureau of Medicine's modest dome.)

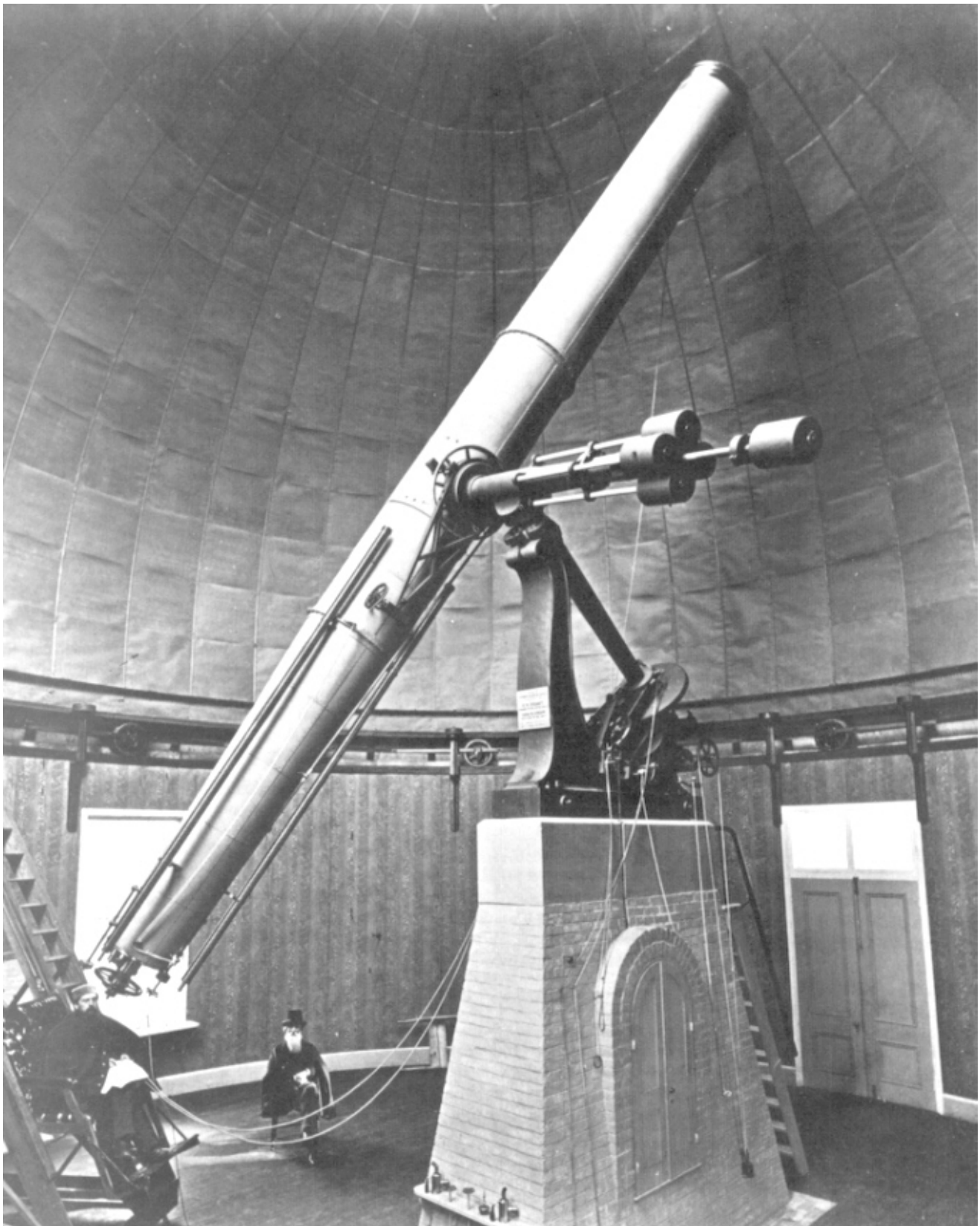
Further investigation revealed a likely solution to the problem. Extending south from the small dome was a narrow room, about 100 feet long. This must have been the transit room, hence the name "Old Transit House". The Washington Meridian, which was almost selected as the Prime Meridian, must have been defined by the instruments in this room. At the southern end of the transit room is a large circular room approximately 50 feet in diameter. This would in no way cramp the style of a 35-foot telescope tube. The room is at present topped by a conical roof, and it contains a large number of file cabinets; a necessarily inefficient use of a room specifically designed for another purpose. Conversation with the workers in this room revealed that they were totally unaware of its original use. There is no indication, by historical marker or photograph, that perhaps the most unusual objects in our solar system were discovered here.

Asaph Hall and Alvan Clark have been gone for many years, but to stand on this spot is to remember their achievement, and to somehow share in their great discovery. It is an experience to be recommended to everyone.



### Focal Point Deadline

The deadline for the July Focal Point is **July 26<sup>th</sup>**. Please submit your articles for publication to Keith by then.



The 26-inch refractor sitting on it's mount in the original observatory located in Washington D.C. The telescope has a focal ratio of F/16 meaning the scope would be 35 feet long. This photo was taken during the scopes installation process. This spot almost became the location of the prime meridian. The observatory in Greenwich, England eventually was chosen as the prime meridian.

## General Meeting June 16, 2000 (8:10p)

Joanne Cirincione, Recording Secretary

[Starrynights@mindspring.com](mailto:Starrynights@mindspring.com)

Number in attendance: 50 Vistors: 1

Sharon Carruthers, President - opened the meeting by thanking last year's officers. They did an outstanding job!

Peter Macumber, Treasurer – Memberships 390: Memberships in many cases includes several people in the household so the number of actual members will be larger than 390.

Keith Burns, Focal Point Editor - He provided the deadline for articles and asked everyone to please submit material to him. He will be accepting articles on anything astronomy related, i.e., your experiences, equipment, trips, etc.

Keith Burns, ALCOR – Gave out some awards: Frank *Marchese* received his Binocular Messier certificate and pin, *Jim Segars* received his Binocular Messier certificate and pin, *Harry Falise* received his Telescope Messier certificate and pin.

Rich Jakiel, Observing Chairman – Bobby Williams donated a 6in reflector to the club. New loaner scope check out system is being worked on. May charge rent and if you bring back the scope for the next training class you won't be charged. Money will go to keeping up maintenance on the scopes.

A training session was scheduled for June 24 at Villa Rica – (MEMBERS ONLY AND INVITED GUESTS) Navigator Program (A beginner's class and also a requirement) will start at 6:00p. The training on the 20" will begin at 8:00p. Only 4 trainees at a time for the 20". You need to go through all the prior training requirements to start training on the 20".

Mid- July – Training.

July 1 – Fort Mountain State Park (Ladies of the Night...Sky – LOTNS) open to all

July 22 – Tallulah Gorge State Park (LOTNS) open to all

July 29 – Deep Sky – Brasstown

Ralph Bowman, Villa Rica Supervisor – Working on a work party schedule. Need volunteers. Please contact him at [rdbowman@avana.net](mailto:rdbowman@avana.net).

Joanne Cirincione, Ladies of the Night...Sky (LOTNS) – Working with Friends of Georgia State Parks. We are developing relations with them for sidewalk astronomy and slide presentations. July 1 we will be at Fort Mountain State Park. We are asking that you contact me at [starrynights@mindspring.com](mailto:starrynights@mindspring.com) to let me know if you would like to volunteer your time in exchange for some fun. We will need a headcount so contact me if you plan on going. July 22 will be Tallulah Gorge State Park. Please contact me if you would like to volunteer to help. All LOTNS events are open to all. Volunteers will get special privileges. I will have more details as the time goes on. We will be working with them throughout the year and plan on traveling to the coastal state parks as well as parks in southern Georgia.

Mark Banks, Sidewalk Astronomy - June 15<sup>th</sup> event turned into a slide show due to weather. The Cherokee event was postponed until fall due to summer haze. Look for information on a July 27 star party. Please contact him if you are interested in helping or having a sidewalk astronomy event. [bank4@mindspring.com](mailto:bank4@mindspring.com) or (404) 257-2766.

Philip Sacco, Charles Elliot Wildlife Center Chapter (CEWC) Coordinator – Start-up committee is developing new by-laws. CEWC Chapter has their first member to be trained on our 24" telescope! A training session was scheduled for June 24. Included in this training will be a viewing session and mythology talk. For more information and future sessions, please contact Philip Sacco at (404) 296-6332; e-mail [ppsacco@mindspring.com](mailto:ppsacco@mindspring.com). Philip also emphasized that due to the current drought conditions across Georgia and the southeast, the entire Charles Elliot Wildlife Center is very dry. As a result, astronomers must be very careful to avoid any open flames. Addition-

ally, anyone driving into the Charles Elliot Wildlife Center astronomy site should drive extremely slowly in order to minimize the amount of dust thrown into the air. This is especially important, as airborne dust will coat telescope mirrors and lenses. Dust on lenses and mirrors reduces light transmission as well shortens the life of mirror and lens coatings.

Matthew Macumber, Webmaster – If you have anything that you would like posted to the website, please contact Matthew at Webmaster@atlantaastronomy.org. Announced at our last meeting and again at this meeting was our new web page name: atlantaastronomy.org.

Sharon Carruthers, President – Gave away some door prizes by asking an astronomy-related question. The prize was a poster of the Milky Way.

Art Russell, who stood in for Alex Langoussis, Program Chair – announced next month's speaker will be Dr. Chris Dupree of Agnes Scott College and August's speaker will be Katie Moore, member and club librarian of the Flint River Astronomy Club. She is the recipient of the Jack Horkeimer Award for Exceptional Service by a Young Astronomer given out by the Astronomical League for the year 2000. Look for more detail about her in the focal point. (See June's issue for an article by FRAC's President, Smitty Smith.)

Art Russell introduced our guest speaker for the night, Dr. Richard Schmude of Gordon College in Barnsville, GA. Dr. Schmude, who is also a member of the Atlanta Astronomy Club, opened with news on Hale-Bopp. Late March of '97 a photograph suggested the possibility of a 9<sup>th</sup> magnitude fragment of H/B was 7 1/2 degrees behind the comet. Anyone who has a wide angle – 8 degree or more photograph on H/B, please send to Dr. Schmude. You will be credited for your photograph. These will be sent to a professional astronomer who is interested in collecting these photos. Please contact Dr. Schmude at [schmude@falcon.gdn.peachnet.edu](mailto:schmude@falcon.gdn.peachnet.edu) for more information. Dr. Schmude's talk was on findings of his recent brightness studies of the Moon, including the brightness of the full moon. He also talked briefly on the moon's coloration. This was a great talk and we look forward to more in the future.

Meeting was adjourned.

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## The Official AAC Song???

(Sung to "On top of Old Smokie")

On top of the ladder, All covered with dew, I looked thru the Telrad, For M-32.

And the green grass grew all around, all around. And the green grass died & turned brown.

I turned to the eyepiece, And what did I see, A lot of M-0, Just staring at me.

And the green grass grew all around, all around. And the green grass died & turned brown.

I climbed down the ladder, And onto the grounds, I stepped on a spider, That made barking sounds.

And the green grass grew all around, all around. And the green grass died & turned brown.

I went to the school yard, To show them the view, Came home with my mirror, All covered in goo.

And the green grass grew all around, all around. And the green grass died & turned brown.

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## Amateur Telescope Makers

Since the temporary loss of their home at Bradley, the ATMers meet randomly but often. Watch the AACLIST to find out more from Tracy. They have been meeting at Skip Cook's House. Skip is listed in the committee section.

## Faint Fuzzy Forum of the AAC

By Richard Jakiel

### Weed Whacking and Ramp Building at the Barber Observatory

Its time once again to help out with the renovation and improvement of the club's primary observing and training site at Villa Rica. The first scheduled work date is July 15<sup>th</sup> at about ~ 10 a.m. or so. Ralph Bowman will lead us into "battle" with an assortment of weed whackers, spike mowers, paint brushes and various implements of wood "destruction". Seriously, several major projects will get their respective start on this date, plus the general maintenance to keep our facility going. Here's a partial list of projects being considered:

- 1) Planning/construction of a ramp + small deck for the "PoShed." designing and entrenching the power (and computer line) conduits to the PoShed.
- 2) Setting up a computer network and the building modifications needed.
- 3) Insulation of the PoShed.
- 4) Upgrading the guiding motors on the 20-inch scope.
- 5) Conversion of the old warm-up building into a CCD/Computer control room and part-time concession stand for the AAC public sessions.
- 6) General maintenance of the grounds and buildings.

We hope to complete most if not all of these upgrades and renovations before the club's anniversary picnic and observing session in October. The club desperately needs individuals who are willing to pitch in and help out. For many projects, no special skills are needed beyond the desire to lend a hand. If you want to contribute – please feel free to contact either Ralph or myself before any scheduled workday.

### Rummaging around the Eyepiece Case

On June 24<sup>th</sup>, we had a member training session at Villa Rica. Over old and new 30 members showed up, including Art Russell with his 18-inch Tectron, and with his brand new 16-inch GOTO Starmaster. The weather was clear, but quite hazy – typical summer conditions. The bugs were at a minimum, although several of us spotted a fuzzy velvet "ant" strolling along the observing field (I tried to get Peter Macumber to play with it but for some odd reason he didn't...). Even the barking spiders were fairly quiet much of the night, though I heard a few near the old warm up shed. Training Coordinator Steph Whetstone helped instruct a small group of our newest members in the fine art of chart reading, constellation spotting and telescope basics. After several hours of hands-on instruction, four members are now certified to use the club's largest tracking telescope. For members interested in just the basics, or in the advanced use of the AAC's equipment please attend the training sessions. The next session will be scheduled in the month of August.

Speaking of the 20-inch building, the door lock will be changed at the July 15<sup>th</sup> workday. If you are already certified, please contact myself, Steph or Keith Burns for the latest combination. Also, there has been a lot of trash building up in and around the garbage containers. Because of the infrequent servicing of trash cans, please remove and take home any trash you bring on.

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### Change at Walter Barber Observatory

The combinations for the observatory doors will be changed as of July 15 out at the Walter Barber Observatory. Contact either Rich, Stef, or Keith for the new combinations.

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### AAC Membership & Magazine

You are sent a membership renewal two months before your membership expires. Your magazine renewals are sent to you by the publisher. Magazine renewals must be paid by the club. Remember to send renewals to the club with a check payable to the club. S&T is \$30. Astronomy is \$29. Club membership is \$25 or \$10 for a student.

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## From the Prez's Desk...

Sharon Carruthers

Greetings, members! I hope you all ushered in the Summer Equinox with wild bacchanalias (or at least a picnic.)

If you missed our June General Meeting, you missed an interesting and informative talk by Dr Schmude on photometry of the moon (the only astronomy talk that I have ever seen that used a stuffed Tweety as an educational aid!). Thank you, Dr Schmude.

Stef Whetstone, Art Russell and Rich Jakiel did an excellent job at VR with a re-vamped training session. Four more people got trained on the 20" (it would have been one more but SHE kept flitting around like a bee in a tornado!) Pat yourselves on the back, guys!

There are a lot of public events planned for the summer. Since serious viewing in the summer murk is a hit & miss proposition, I would encourage everyone to come out and lend a hand at one of our sidewalk or state park sessions. Newcomers, this is a good way to get time out under the stars - even if you don't feel very experienced, you know a lot more than the general public. (And everyone is welcome to any LON...S event)

The Club has acquired a slide projector and \$150 worth of slides from AstroCards. I am looking for people to write slide programs that focus on different groups (i.e. scouts, general public, AAC Open Houses). If you are interested, drop me an e-mail. Also, I would like to collect slides from photos made by our own members to include in our programs.

Our quarterly clean-up at VR has been scheduled for July 15(?). We plan to finish painting the trim and build a ramp on the new HotHouse, and clean up the grounds and buildings. We have a great time and we will feed you supper as a reward.

Now as to more serious matters - to settle this great debate: as of now, Mars probably has more water than Georgia.

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### Special AAC discount to Wolf Camera

#### 14<sup>th</sup> Street Store Only

Greetings AAC members. My name is Mike Hale. I work for Wolf Camera and Video. I'm also a new member of the AAC. In the last year we at Wolf Camera at the 14th street location have greatly expanded our stock and range of telescopes and astronomical supplies. We have an excellent selection of top grade eyepieces, scopes, and accessory items. If you contact, and identify yourself as an AAC member, at 404-892-1707 I will offer special discounts to AAC members. It is important that you talk to me as the normal prices are quoted by the staff. If I'm not there my voice mail is #122. Please call anytime. Thank you.

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### Cherokee Meeting

The Cherokee planning commission will hold a meeting on July 11 at 8 PM. The meeting will cover light pollution ordinances for the county. Meeting will take place in the Justice Center in Canton. It will be held in the Jury Assembly Room.

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### Timothy Ferris Announcement

Mark this date on your calendar. Wednesday, November 1, 2000 at 7 PM. Timothy Ferris, author of *The Whole Shebang*, *Coming of Age in the Milky Way* and many other books and the creator of the PBS series, *Life in the Universe*, will speak in Gaines Auditorium at Agnes Scott College.

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# Co-longitude

By Kenpo

And the saga continues . . .

Well, all's well that ends well and I confirmed this morning that just about all is well, or *\_almost\_* all is well. In our last episode, I provided a lengthy and boring description of my journey down the co-longitudinal path. Early attempts to calculate this seemingly evasive value — which used to be right up there with logarithms, in my estimation — proved time-consuming and frustrating. But more practice — like that which doctors do — helped, and I derived (Ooh — a math word!) a co-longitude value and sunset terminator location for this morning that were pretty much agreeable to the values provided by three nifty software programs out there.

The final proof was to visually confirm the calculations. So I awoke early this morn' around 5:45 a.m. EDT, took a few seconds to convince myself that I'd better do this or else the astronomy police would soon be knocking at my door demanding to see my papers and ban me from the hobby forever.

It's times like this when I'm glad I spent 13 months building a 3-month project in the backyard — the Justyn Time Observatory in suburban Atlanta, Snellville to be exact (just east of Stone Mountain). I completed the facility in August '99 and named it in honor of my now 8-year-old son, Justin, and my about-to-be-5-year-old daughter, Yvette (thus the letter "y" in "Justyn"), and in recognition that at age 50, I've completed it "just in time to still enjoy it."

But I digress.

After putting on the obligatory observing garb (jeans, teshirt, socks and muddy shoes (from stepping in puddles while doing late-night lawn sprinkling here in water-deprived Atlanta), I hiked down the steps, switched on the circuit breaker in the garage for the observatory power, trekked the 100 feet or so, opened the li'l building (it's really 12 x 12 ft) and opened the roof halves (sort of a modified clamshell design where each half opens on roof halves set of support arms and cables and then drops back and down outside their respective walls. It looks like a white vinyl-sided lawn equipment storage building when closed).

I opened my Rukl atlas to the Full Moon grid chart on page 27, installed a Criterion 18 mm (101x) eyepiece in the focuser of the homebuilt 12.5-inch, f/5.7 Newtonian, switched on the guide motor, and scanned the lunar sunset terminator looking for just the right feature — something to use as my benchmark. I needed something findable, but not too big.

Ah, though the beautiful Ptolemaeus-Alphonsus-Arzachel family cluster was easily found, it was almost-but-not-quite what I wanted. I scanned up the sunset terminator a bit and at 6 a.m. EDT (10:00 UT), I finally settled on the crater Murchison (Rukl, map 33, page 93). Rukl places the 58-km-wide crater at 0.1 degrees west longitude, but the map shows the 0-degree meridian bisecting it just to its right of center.

As a matter of fact, I'd say the terminator — as *\_I\_* saw it — was right ON the 0-degree meridian. You could see that the left two-thirds of the crater were in darkness, but that the remaining floor and the northeast and east walls were still adequately lit. Within only a few minutes, however, and as I switched eyepieces to my Criterion 7 mm (258x) and even my Celestron Ultima 5 mm (362x), I could tell that the shadow was creeping across Murchison's floor and up its eastern ramparts. By 6:30 a.m. EDT, the crater was way-noticably more covered up (I *\_love\_* those astronomical terms we use) with only the tops of the northeast walls still catching at least some rays.

With this out of the way, I was able to bag two more objects towards completion of my AL lunar list — Reiner Gamma and Grimaldi. Grimaldi, in fact, is noticeably more pronounced (larger?) than the view shown on Rukl pages 22 and 23 due to this month's favorable libration (ooh! another one of those words!).

Before this lunar month wraps up, I still need to view the waning Crescent Moon within 48 hours of New Moon, and hope for a fairly bright Earthshine so as to see the "New Moon in the Old Moon's Arms".

Then it will be the "Old Moon in the New Moon's Arms", the waxing Crescent Moon (again, within 48 hours of New Moon) and eastern limb stuff (i.e., Langrenus, Vendelinus, Petavius, Cleomedes, Picard, Furnerius, Petavius Wall and Promontorium Agarum).

At Full Moon, I'll see if I can see the Man in the Moon, the Woman in the Moon, the Rabbit in the Moon and the Cow Jumping Over the Moon without imbibing rums and Coke.

Thus, I am proud to say I've completed my self-imposed creative writing exercise for the day, as well as started Saturday on an upbeat note by proving that my calculations, as well as the figures given by "Moon Tools," "Lunar Calculator" and "Colongitude" are just about right-on.

With Akkana's big workload and other outside interests, I'll leave it to her to tweak the Shallow Sky "Hitchhiker's Guide to the Moon" web page to give a more accurate co-longitude or sunset terminator value.

A few notes about the scope: I purchased it already built in early '97 from a friend who built it a few years earlier for his own use but sold it off after he realized it was too unwieldy for him (he's now age 70 or so and recently completed a 6-inch refractor). The mirror was ground and finished by noted "mirrorist" Leon Knott and was one of the last mirrors he completed before relocating to Louisville, Kentucky, I think. The Criterion eyepieces, of course, go with my venerable Criterion RV-6 Dynascope which I purchased second, third or whatever-hand in late 1990 and then restored to almost-new condition. I know that the Criterion achromatic ramsden eyepieces are not supposed to work well with shorter focal ratio scopes, but I have yet to hear disparaging comments from my guest observers from the Atlanta Astronomy Club — many of whom have considerably sharper eyes than mine. And these guys would *\_definitely\_* tell me if there was a real problem. Thanks for reading and comments welcome.

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## Ladies of the Night...Sky

Joanne Cirincione

We are still looking for volunteers to help us with our July 1<sup>st</sup> Fort Mountain State Park trip and our July 22<sup>nd</sup> Tallulah Gorge State Park trip. Look for directions and more information on our website at [atlantaastronomy.org](http://atlantaastronomy.org) or contact me at [starrynights@mindspring.com](mailto:starrynights@mindspring.com) for more detail.

### July 1<sup>st</sup>-Fort Mountain State Park

Slide Presentation - 8:30-9:00

Sidewalk Astronomy - 9:00-10:00 (Parking lot)

Observing Location - Parking lot (No Lights)

### July 22<sup>nd</sup>-Tallulah Gorge State Park

Slide presentation - 8:30-9:00 (Interpretive Center)

Sidewalk Astronomy - 9:00-10:00 (Parking lot)

Observing Location - Helicopter Field (Next to the Campgrounds)

If you would like to help out at either or both events please let me know. This is not for women only. We encourage all to come and have fun, camp and bring a scope.

All they require is a headcount. So please e-mail me at the above address (or phone me at 770-473-7196) to let me know if you will be joining us. Also, volunteers do get special privileges so you need to contact me to get more information on where to go and what to do for the sidewalk astronomy. Also we will have volunteer cards to place in your vehicle so you won't be charged an entrance fee.

Watch our listserve, website and Focal Point for updates on both events. Also keep a watch out for more events in August and September. Feel free to e-mail me with more specific questions.

## TALLULAH GORGE STATE PARK DIRECTIONS

### *This is for the July 22 sidewalk event.*

Take I-85 north from Atlanta to I-985. Note that the exit ramp for I-985 is located on the left side of the northbound lanes. The exit number is 113. Take I-985 north for 24 miles. I-985 ends after exit 24. Continue on as the road becomes US 23 but remains a four lane road. Take US 23 for another 27 miles. At this point, there will be an exit ramp to the right. Do not take the exit. Continue on US 23/ 441 north. Note that the road sign should say either Clayton or Tallulah Falls. Proceed north on US 441/23. You will enter into the city limits of Tallulah Falls. The road will shrink down from four lanes to two lanes at the bridge. After crossing the bridge, look for the entrance to the Tallulah Falls State Park. It will be a 1/4 mile down the road on the right hand side. Turn right onto Jane Hunt Yarn Drive. Proceed on Jane Hunt Yarn Road. About 1/4 mile up the road on the right is the campground. The observing field is just past the entrance to the campground. It is a gravel drive that passes through a gate and down a small hill to the field below. On the left side of the field is a separate men's and women's bathrooms.

For those of you who are going to the Ladies Of The Night....Sky talk, proceed on Jane Hunt Yarn Road past the campground and observing field for another 1/4 mile to a fork in the road. Take the right fork. You will pass between a stone wall. The road takes you down the hill to the Jane Hunt Yarn interpretive center. The talk will be held inside the building in the theater.

If you traveling from Cherokee and North Fulton counties try these shortcuts: NOTE these are just some ideas to save some time and distance. Check you Georgia map and see which way is better for you. 1) If you live east of GA 400, then take GA 20 to I-985. Turn left and enter onto I-985 and follow above directions from I-985 to end. 2) If you live west of GA 400 and east of GA 369, then take GA 400 north to GA 369. Turn right onto GA 369 and take it to GA 53. Turn right onto GA 53 and take it to I-985. Take I-985 north and follow above directions from I-985 to end. 3) If you live west of GA 369, then take GA 20 to GA 369. Take GA 369 to GA 53. Turn right onto GA 53 and take it to I-985. Take I-985 north and follow above directions from I-985 to end.

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## Directions to Brasstown Bald

### *Directions for the July 29th deep sky event.*

From GA 400:

From I-285 take GA 400 north for 47 miles to GA 60. Turn left onto GA 60. Note that GA 60 is also US 19. Take GA 60/US 19 north. Travel north on US 19 for 32 miles to GA 180. Turn right onto GA 180 and travel east for 8 miles. Look for the GA 180 spur on the left. There should be a gate and sign for Brasstown Bald Mountain. Turn left onto the 180 spur and proceed for 1 to 2 miles. The road ends at a large parking area.

From I-575:

Take I-575 north to GA 515. Take GA 515 north and eventually east to Blairsville. Note that the distance from the I-75/I-575 interchange to Blairsville is 93 miles. Take US 129 south at Blairsville and proceed for 8 miles to GA 180. Turn left onto GA 180 and proceed east for 8 miles. Look for the GA 180 spur on the left. There should be a sign for Brasstown Bald Mt. and a gate. Turn left onto Spur 180 and proceed for about 1 to 2 miles to a large parking area.

From I-85:

Take I-85 north to I-985. Take I-985 north for 21 miles to US 129(exit 22). Turn left onto US 129. Proceed north on US 129 for 28 miles to Alternative GA 75 north of Cleveland. Turn right onto Alternative GA 75 and proceed for 6 miles to GA 75. Turn left onto GA 75. Proceed north on GA 75 for 11 miles to GA 180. Turn left onto GA 180 and proceed west for 6 miles. Look for GA 180 spur on the RIGHT. Look for a gate and Brasstown Bald sign. Turn right onto spur 180 and proceed for 1 to 2 miles to a large parking area

at the top.

Information:

1) The Brasstown Bald parking area is located below the top of the mountain. 2) Bathrooms are located on the northwest corner of the parking area at the edge of the woods. Look for a stone building. 3) Please purchase a \$2 parking pass. If a park official is not at the ticket booth, either a designated AAC club member will have them for sale or you can deposit \$2 into the green box next to the ticket booth. Be sure to hang the paper ticket on you rearview mirror. The park people can come through at anytime day /night and ticket anyone not having a parking ticket. 4) I suggest you get to Brasstown before dark so as to make it easier to find the place. Some of these mountain roads are hard to navigate after dark.

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## The War on Light Pollution

by Philip Sacco

I have been facing a dilemma in my community with the prospect of street lights. It appears that those members of the community that never go outside at night except to walk to for 5 minutes, have a great concern for having lights in the neighborhood. While this will mean higher utility costs for all, whether or not they want the lights, as well as the continued erosion of the night sky in my immediate area, I raised the banner, and took a stand. The following is a letter drafted by the President of the Homeowners Association in my neighborhood. While not a complete victory, it is a reasonable compromise.

Phil and Lynn,

This is my draft of an article for the upcoming newsletter I'd like to distribute later this week, if possible. Please critique and suggest changes, if any. I plan to include with the article a photocopy of the photo Georgia Power sent us.

Street Lights and "Light Pollution"

As authorized by the March 26 General Meeting, the Board has carefully selected the type of street lights for our community.

In response to "light pollution" and "light trespass" concerns raised by 15-year resident Philip Sacco of Cherokee Heights, we agreed to attempt - if feasible - to choose street lighting that minimizes direct glare into windows of nearby houses and unnecessary glare facing oncoming cars. The lighting also should be designed to light streets - rather than wasting light by lighting up the sky. This meant rejecting the choices Mike Nolan of Georgia Power Company's Lighting Services Division had initially presented to us.

At Mr. Sacco's suggestion, your President then researched the issue with Lynn Bennett, the Atlanta area Astronomy Club's lighting expert, who is also employed at Georgia Power - but in another division. Mike Nolan of Georgia Power then came back with an alternative that Mr. Bennett advised that would meet our criteria - a flat-lens cobra head Cooper brand light fixture with full-cutoff. ("Cutoff" means that it doesn't waste light by throwing it up into the sky.) Its forward throw design projects more light tilted toward the street. It would likely be mounted on a fiberglass pole about 25' high. The 100-watt high pressure sodium (HPS) light bulbs that this fixture is designed to hold are better than white luminary bulbs because of their narrower band width - and also because they use less electricity than the design Georgia Power more typically recommends. The Georgia Power's own parking lot and most industrial parks have this type of well-designed lighting, rather than the undesirable level of glare and uplight-into-the-sky standard street light used by most governments, the Department of Transportation (DOT), airports, and car dealerships. For more background, visit the International Dark-Sky Association's web site at

{ [http://www.darksky.org/ida/ida\\_2/index.html](http://www.darksky.org/ida/ida_2/index.html) }

{ [http://www.darksky.org/ida/ida\\_2/mauf.html](http://www.darksky.org/ida/ida_2/mauf.html) }

Charles Mingle

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## Attack of the Astro Animals

The following is some interesting things that have happen to people when out observing in the country. They don't call it the country for the heck of it either. Sometimes even animals have a purpose when it comes to observing.



This cute little creature pictured to the left may look harmless and generally is. You have seen it slither along ever so slowly after a rain storm without a care in the world for how long it takes to complete the task. Just because it's slow, that doesn't mean it can't pull a fast one on you. Remember the turtle and hare race. Who won that? Sometimes it develops a craving for photons and no one knows why.

## Slimed!

**By Chuck Painter**

This is one of the weirder astronomical experiences I've ever had. When I set up on Friday night at CEWC, I popped my 40mm eyepiece into my diagonal and focused on Arcturus in preparation for polar alignment. When I looked through the eyepiece, everything was misty, and there was a large 3/4 circle dark obstruction. Oh oh, my scope is screwed up, I thought! When I took the eyepiece out of the diagonal, I discovered a garden slug had taken up residence in the diagonal! My theory is that I had been observing last monday evening from my house and had set my eyepiece briefcase open on the ground for a few minutes - the critter must have slithered in during that time. Closer examination of my briefcase revealed a faint slime trail over some of the case's foam. The diagonal must have seemed like a pretty good refuge.

So the slug now has a new home at CEWC. Beware of setting your eyepiece case on the ground there - this guy has obviously developed a taste for optics. I have removed all the slime from my diagonal and it works like new. Many thanks to Chuck Hancock for the loaner diagonal - I wouldn't have finished the H400 list without it.



Who said life as an astronomer is boring? I don't know but this picture is far more interesting than most board meetings. If you don't believe me, I'm sure he can bring the point across. I would not want to meet this guy in a dark alley or even a well lit one. Sometimes those meetings are unavoidable. After all, Boars are star gazers to. If you get hit by one, you will definitely see stars.

## Observing Is Never Boring

**By Kemper Smith**

I was camping at the south end of the lower field at the Texas Star Party in 1998. Most viewers on the lower field were at the north end. One of the highlights of that particular star party was a beautiful

Venus/Jupiter/Lunar conjunction on the morning of April 28. It happened just before dawn so I was up all night enjoying the rest of the beautiful dark skies as I waited for it. My trip companion, Eric, as well as a couple of people I had befriended on that part of the field retired an hour or so earlier and wanted me to get them up for the conjunction.

That night was the quietest yet of the trip. The previous days, though clear, had been very windy. The calmness that night was welcome. But about 5:00 AM, shortly before the awaited conjunction arose, the horses in the area began snorting, as if spooked by something. About the same time an unexplainable — probably primordial — uneasiness (not quite fear) overcame me. I turned from the telescope and looked around the field. In the almost perfect darkness, I barely made out a silhouette of an unidentifiable animal. My first instinct was that it was a bear, but I didn't think bears were indigenous to West Texas. But it was too small for a horse, too large for a dog.

The animal's profile appeared to turn towards me or away from me; I couldn't tell. The hairs rose on the back of my neck rose. I walked to my car and got my 4 D cell maglight out from between the seats — more for defense than anything else. Suddenly the still unidentifiable beast snorted and started towards my general direction and the north end of the field. I had no choice but to turn the light on him. Of course immediate shouts of "Turn off that \$\*%&\* light" filled the air, but almost immediately they turned to shouts of "What the \$^#% @& is that!?" as my light played on a huge boar with large round tusks.

I instinctively ran towards the (perceived) safety of the crowd at the north end while the folks there yelled, "Don't come over here!" as if the beast would follow me. At any rate, the boar turned and ran off to the southeast, away from all viewers. I did hear one last yell as someone coming from the snack shack with a cup of coffee was almost bowled over by the beast.



Cats are well connected to astronomy. They sleep all day and roam the great outdoors all night. Sounds like an astronomer to me. The constellations of Canis Major and Canis Minor are named for cats. So how did they end up being used for this purpose? How many cats does it take for it to be considered a cold night? There's a test at the end. Look on page 14.

## Animal Warmth

**By Lenny Abbey**

When I first began observing with my 1.75" f/35 refractor, I used to keep warm by putting kittens in my greatcoat. I would judge the coldness of the night by the number of kittens required for comfort. A 4-kitten night was pretty cold.

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Have you have had a close encounter of the astro animal kind? Write it up and let the rest of us know. Those isolated observing spots maybe great for star gazing, but you aren't the only one who occupies the land. It seems everywhere we go observing there is a cow pasture nearby. Perhaps the bovines know where the best viewing locations are.

## Shooting the northern lights

By JAN CURTIS

For the first-time or seasoned aurora photographer, a 35 mm camera on a tripod equipped with a cable release is a must. Use a wide-angle 24 mm to 50 mm lens and set it to an f-stop which is the fastest (or one stop slower) to avoid distortion of bright star images (usually f/1.4 to f/2.8). Exposures of 5 to 15 seconds work well unless the aurora is faint or mostly stationary, in which case the exposure time should be doubled. People tend to overexpose their photos, causing the aurora to look washed out. If the aurora is bright, moonlight and city lights should not interfere and can offer an interesting foreground. Never use filters because they could cause internal reflections. If it is very dark, a silhouette of a tree or lit cabin will certainly add to the scene. Video cameras are not sensitive enough to successfully record the aurora.

Because aurora occurs under clear skies, photographers will often be shooting in temperatures well below freezing. Since cold saps camera batteries, it is best to use an older camera with mechanical shutter instead of one that is fully automatic. Extreme cold also makes plastic brittle, so the cable release should be cloth mesh vice plastic. At minus 40°F (also -40°C), all cameras will freeze in less than 10 minutes; before taking it inside to warm, place it in a zip-lock plastic bag to reduce condensation. This latter suggestion only applies to those visiting extreme northern latitudes in winter. Tape the lens to infinity so that it doesn't slip and cause your images to be out of focus. Don't try for a 37th exposure; it might break the film, and it is best to overexpose your first frame on the roll so that the film processor knows where to start cutting your negatives. Wind your finished roll of film slowly so that it doesn't shatter or cause static buildup (this will appear as scratches).

While Kodak film processing mailers are generally reliable, it may be worth the extra cost to have the film processed through a custom photo lab. Going the custom lab route will save the film from being lost in the mail or scratched in the automated commercial process. Commercial print development tends to average the contrast of the negative so that bright aurora results in fewer stars while fainter aurora reveals more stars even though the camera settings are the same for both exposures. Slide film does not have this problem because the entire roll of film is processed independent of the contrast from one slide frame to the next. While slower speed film (print or slide) has better grain resolution; making for a sharper image (especially when enlarged), it may be too slow to record the fine detail structure of the aurora.

I recommend using 400 speed film which is a good compromise between detail and quality of the image. Different films will emphasize different colors of the aurora, so experimentation is advisable. Different colors of the aurora, so experimentation is advisable. Bracketing your exposures (i.e., one 5 seconds, 10 seconds and 15 seconds) will give you the characteristics of the film. Even in a roll of 36 exposures, there are only a few shots that are acceptable to me. So the lesson is, since the aurora displays are unpredictable, patience is the key to

success.



On 17 November, 1999, A few photos were taken between 9:15PM and 9:30PM under moonlit skies looking NW. Note how bright the snow looks on the road. I used Kodak's Royal Gold 400 film for the above shot.





## Background

My name is Jan Curtis. I live in Fairbanks, Alaska. I'm a meteorologist who got my BS degree at (City College of New York) C.C.N.Y. and MS at Naval Post Graduate School, Monterey, CA. I'm a retired Naval Officer and weather forecaster. Currently I work at the Alaska Climate Research Center, Geophysical Institute, University of Alaska at Fairbanks where I conduct research on global climate change and have written several science journal papers on Alaska.

He's been interviewed by radio stations, TV stations, newspapers, and magazines. Images have appeared in Astronomy Picture of the Day and in Weatherwise and other magazines. Many folks know of his aurora images via the internet. You can view his pictures at the following web address. <http://climate.gi.alaska.edu/Curtis/curtis.html> or The University of Alaska web address is <http://www.gi.alaska.edu/> There's a picture of the author on the previous page.



Picture on previous page taken on 6 April, 2000. The end of the 1999-2000 aurora season for central Alaska was spectacular! The biggest aurora storm since March 1989 was witnessed throughout Europe, South Africa (very rare), and in the lower-48, as far south as Georgia. While the storm ended within an hour after arriving in Alaska, I was successful in capturing a full, multi-colored corona and bands. Exposure 10 secs at f/2.0 using 35 mm lens and Kodak's PJ-800 negative (print film).



Who needs headlights! This two-laner highway is lit by a strong band along the horizon. Clouds to right fail to block the view. November 3, 11:45 PM.

All of the images used are copyrighted Jan Curtis 1997-2000.



Above picture taken on 7th November 1997 near Fairbanks, AK. ASA 400, f1.4 with 35 mm lens. Exposures are 15-20 seconds. Picture is a ray filled curtain that not only dominated the skies of Alaska, but was seen as far south as Alabama. November 7th, 7:00PM. Small picture left taken at 7:05PM.

# STARGAZING with Jack Horkheimer

**NEW MOON IN THE OLD MOON'S ARMS**

GREETINGS, GREETINGS, FELLOW STARGAZERS! I'D LIKE TO TELL YOU ABOUT AN OBJECT OF TRULY UNEARTHLY BEAUTY.



HAVE YOU EVER SEEN A VERY SLENDER CRESCENT MOON, GLOWING BRIGHTLY, WITH A DIM AND DARK, NEAR-FULL MOON TUCKED INSIDE THE CRESCENT?



FOR CENTURIES, THIS PHENOMENON HAS BEEN CALLED POETICALLY "THE OLD MOON IN THE NEW MOON'S ARMS."



HOW COME THE DARK, ALMOST-FULL OLD MOON SHINES WITH A PALE-GRAYISH GLOW? WELL, WE KNOW THAT ALL THE PLANETS AND THE MOON SHINE, NOT BY THEIR OWN LIGHT, BUT BY REFLECTED SUNLIGHT.



BUT THE PALE-GRAYISH GLOW IN THE YOUNG CRESCENT MOON'S ARMS IS ACTUALLY SUNLIGHT BOUNCING OFF OUR EARTH, THEN ON TO THE MOON, AND THEN REFLECTING BACK TOWARD US ONCE AGAIN.



ASTRONOMERS CALL THIS PALE-GRAYISH GLOW IN THE YOUNG CRESCENT MOON'S ARMS "EARTH SHINE"!



NOW, IF YOU WERE STANDING ON THE DARK PART OF THE MOON AND WERE LOOKING BACK AT EARTH, WHAT WOULD YOU SEE?



WELL, YOU WOULD SEE A NEAR-FULL EARTH, JUST THE OPPOSITE OF HOW WE SEE THE MOON! IF THE MOON WERE NEAR FULL, THEN THE EARTH FROM THE MOON WOULD APPEAR AS A VERY THIN CRESCENT.



SO REMEMBER, WHENEVER YOU SEE A CRESCENT MOON WITH "EARTH SHINE" THE CRESCENT IS BRILLIANT SUNSHINE BOUNCING DIRECTLY OFF THAT PORTION OF THE MOON, WHEREAS THE DARKER PART IS BEING LIT BY LIGHT REFLECTING OFF THE EARTH. IT'S EASY TO UNDERSTAND, IF YOU KEEP LOOKING UP!



Illustrated by Rich Harrington & text by Jack Foley Horkheimer & Stephen James O'Meara.



## July Meeting

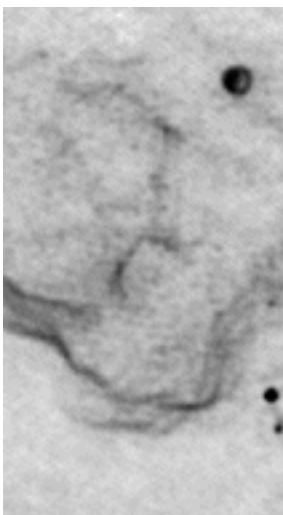
The next general meeting of the Atlanta Astronomy Club is at 8:00 P.M., 21 July, at Emory University's White Hall.

We are pleased to have as our guest speaker Dr. Chris Depree, Assistant Professor of Physics and Astronomy at Agnes Scott College in Decatur. Dr. Depree has done an outstanding job leading the Agnes Scott astronomy program into the future. His talk will detail many of the exciting new developments at Bradley Observatory, the birthplace of the Atlanta Astronomy Club.

Dr. Depree received his undergraduate degree in Physics from Duke University, and then earned his Masters and Ph.D. in Physics from the University of North Carolina. He spent two years at the Very Large Array in Socorro, NM as a pre-doctoral fellow while making his thesis observations.

In addition to teaching, he carries out astronomical research with a number of different telescopes including the Very Large Array, the Hubble Space Telescope and most recently the Chandra X-Ray Observatory. His research is in two main areas: the formation of massive stars in our Galaxy, and the evolution of galactic-scale jets and their interaction with the interstellar medium (ISM). He is the author of *The Complete Idiot's Guide to Astronomy*, and this summer is spending many hours overseeing the complete renovation of Bradley Observatory, which will reopen in the Fall of 2000. He lives in Decatur with his wife Julia and his two girls Claire and Madeleine. Please join us for what is sure to be an enjoyable and informative program.

And, looking ahead to August, our guest speaker will be local astronomy student extraordinaire Katie Moore.



## 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 **mizar**. These names are case sensitive! Type AAC in capitals, type mizar in lower case.

Peter

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### Club Officers

Sharon Carruthers	President	770-941-4640 <i>SCarruthers@NightSky.Org</i>
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Tom Buchanan	Light Pollution	770-521-2136
Julie Moore	Hospitality and Refreshments	770-242-6735 <i>julie@dwcs.com</i>
Chrissy Mondell	Beginner's Contact & Socials	404-299-8739 <i>starlight@mindspring.com</i>
Joanne Cirincione	Ladies of the Night...Sky	770-473-7196 <i>starrynights@mindspring.com</i>
Skip Cook	Amateur Telescope Making	404-325-4987 <i>scz9@cdc.gov</i>

## Calendar

July 15 - Work Party

10PM at Walter Barber Observatory

July 21 - General Meeting at Emory

8PM Dr. Chris Depree featured speaker.

July 22 - LON...S Talk at Tallulah Gorge

8:30PM, Jane Yarn Hunt Center

July 29 - Brasstown Bald Mountain (Deep-Sky)

July 29 - CEWMA Chapter Meeting

7:30PM

August 5 - LON...S TBA

August 18 - General Meeting at Emory

8 PM Speaker Katie Moore.

August 19 - CEWMA Chapter Meeting.

7:30PM

August 26 - PARI North Carolina - special deep-sky event.

CEWMA alternative deep-sky site.

September 2 - LON...S Sidewalk astronomy, deep sky, and campout.

FDR State Park near Pine Mountain, Georgia

September 22nd - 23 rd Zombie Party CEWMA

Pre-registration required.

September 23rd Open House at CEWMA

Also training on 24 inch scope. Time to be announced.

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## Astronomical League Stuff

### By Keith Burns

This is a monthly feature now. I will list all those folks who have completed an Astronomical League observing program and received an award. Your name can be here to. Just email me if you want information on the various observing programs available through the Astronomical League. Those folks in the club wearing one of the pins can also provide you some information on some of the programs. Your membership in the AAC provides you with a membership in the Astronomical League.

This month's awards include:

James Segars Certificate #417 on the Binocular Messier, Frank Marchese Certificate #413 on the Binocular Messier, Harry Falise Certificate #1752 on the Honorary Messier, Dave Eason Certificate #1582 on the Honorary Messier, and Chuck Painter Certificate # 1761 on the Honorary Messier.



Newsletter of The Atlanta Astronomy Club, Inc.

**FROM:**

Keith Burns Email: Keith\_b@bellsouth.net

3740 Burnt Hickory Road

Marietta, Georgia 30064

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

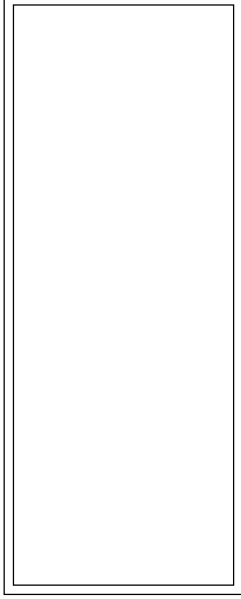
Atlanta Astronomy Club

PMB 305

3595 Canton Road A9

Marietta, GA 30066

**FIRST CLASS**



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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://www.AtlantaAstronomy.Org>**

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