



North Central Florida's
Amateur Astronomy Club
29°39' North, 82°21' West

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Issue 58.1/59.1



Member
Astronomical



Member
International

FirstLight

Newsletter of the Alachua Astronomy Club

Thinking Ahead - Gold Head Branch State Park Star Party

October Star Party & Picnic
Mike Roess Gold Head Branch State Park
Saturday, October 13, 2007

Make plans ahead of time to join us for our second Gold Head Branch State Park star party and picnic dinner.

"The park is an easy, one-hour drive northeast of Gainesville, Florida, or about 1½ hours drive southeast of Jacksonville. Gold Head is set upon 2,366 acres of rolling sandhills, slopes, sinkholes, lakes and marshland.

During our first visit in 2006, stargazers spoke favorably of the amenities and surroundings. Cabins are spacious and comfortable. Tent and RV sites are a good value. Wildlife abounds within the park. Hiking, birding and canoeing are readily available. There's dark skies, too!" - Mike Toomey

Registration includes picnic dinner on Saturday, Glow-in-the-Dark name tag (worth the price of admission alone) and a list of registrants and their respective campsites. Book early and get a lake view camp site!

Reserve your camp site early as this park books up months in advance. See our website: floridastars.org/goldhead.2007.html for maps, registration and camp site reservation info.





In our club, we have a number of “deep sky” observers, who enjoy observing galaxies, star clusters, and nebulae. We also have some members who especially enjoy observing the Moon, and planets. They are “shallow sky” observers. But I would like to encourage you to become an observer of phenomena that originate even closer than the “shallow sky.” There are a number of interesting phenomena that occur within feet or miles of our eyes, within our own atmosphere. I’d like to encourage you to become a “near sky” observer.

I first became interested in observing the near sky when I came across a book called “Light and Color in the Open Air,” by the Dutch astronomer Marcel Minnaert. Since then, several books have been written on the subject of atmospheric optics and near sky phenomena. Contact me for details, if you are interested.

Probably the most familiar example is the rainbow, formed around the anti-solar point by water drops. Refractions into and out of the drop, and an internal reflection off the back surface, result in a bow of beautiful spectral colors. From outside inward, they are, in decreasing order of their wavelengths, red, orange, yellow, green, blue, indigo, and violet, remembered by the mnemonic ROY G. BIV. Occasionally, if there is a really strong thunderstorm down sun from the observer, we are treated to a double rainbow, with a swath of dark sky known as Alexander’s dark band between the two. The fainter, outer rainbow has the color order reversed, and is the result of double internal reflection of the Sun’s rays.

Another familiar phenomenon is the 22-degree halo around the Sun or Moon, caused by properly oriented ice crystals high in the atmosphere. It appears as a pearly halo a few degrees wide, perhaps with a reddish inner border and a more diffuse bluish outer border. Inside the halo, the sky is somewhat darker.

A much more rare phenomenon is the fogbow. It is formed from much smaller droplets than the rainbow, perhaps 0.05 mm. in diameter. It is faint and pure white, due to wave interference, with perhaps a tinge of red on the outside edge. I was privileged to see one of these rare beauties driving west from Kennedy Space Center to the Orlando airport late one morning. It was visible for five or ten minutes.

Another startling phenomenon I witnessed had to do with sunlight scattering of water droplets. Driving eastward to work at KSC, the road was flanked for several miles by drainage canals. On cold mornings, as I drove toward the rising Sun, I would see tendrils of suspended water drops rising above the surface of the canals. They are caused by water evaporating from the still warm drainage canal into the colder air, and condensing back into small droplets. The startling thing is, as you draw abreast of them, they fade away. And when you look back down sun for them, they totally disappear. It turns out that these very small water droplets scatter light forward readily, sideways poorly, and backwards hardly at all. I would have never guessed.

Well, Jackie needs my column turned in for publication, so I will close for this issue. I’ll write more about my adventures in Optics Land in a future column. We still have to talk about glories, shadows, and sunset/twilight phenomena.

Till then, clear, dark, steady skies!

Bill Helms
Alachua Astronomy Club
President@FloridaStars.org

June Club Meeting



Tuesday, June 12, 2007, 7:00 p.m. EDT

Speaker: Dr. John Axe

Title: *Gamow's Fireball*

Location: Powell Hall, Florida Museum of Natural History (*Lucille T. Maloney Classroom*), UF Campus, Gainesville FL

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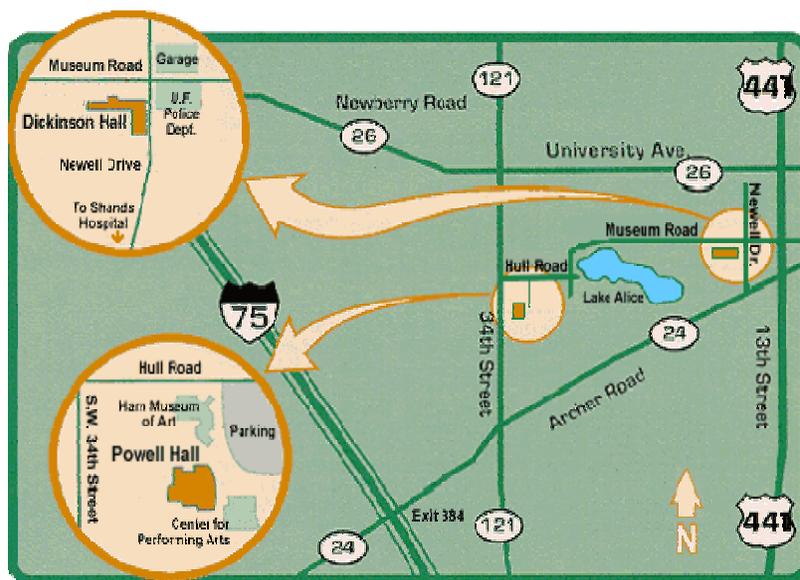
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Preview: The Russian-American physicist George Gamow thought that all the chemical elements were formed in a hot early time in the history of the universe. He wasn't right, but his work transformed cosmology from an esoteric philosophical and mathematical pastime into respectable branch of science. Dr. Axe will talk about the man, his idea, and its importance in our understanding of the universe.

About the Speaker: Dr. John Axe received his Ph.D. in Physical Chemistry from the University of California - Berkeley in 1960. He then began a 40-year career masquerading as a physicist in physics departments at Johns Hopkins University (1961-1963); IBM Research Center (1963-1970); and Brookhaven National Laboratory (1970-1998), serving eventually as Associate Laboratory Director. Since retiring to Florida, he is indulging twin early interests in golf and astrophysics.



AAC Meeting Location

AAC regular meetings are held on the second Tuesday of each month at 7:00 p.m. at the Florida Museum of Natural History, **Powell Hall**, in the Lucille T. Maloney Classroom, on UF campus, unless otherwise announced. All meetings are free and open to the public. Join us for some great discussions and stargazing afterwards. Please visit our website for more information (floridastars.org).

Iota Cancri Occultation Success

- Howard Cohen

On 2007 April 17 members of the AAC and others successfully observed the occultation of Iota Cancri by asteroid 411 Xanthe despite impending clouds. Remarkably good coverage of this event should help refine the size and shape of this asteroid



On Tuesday, 2007 April 17 (EDT), over a dozen amateur and professional astronomers spread over northern Florida and southern Georgia. Only here could people hope to watch the occultation of a naked eye star, Iota Cancri A, by the small asteroid, 411 Xanthe. Shortly after sundown, observers expected to see the fourth magnitude component of this colorful double star vanish from the sky as the asteroid's 76-km wide shadow raced southeastward over them at 9.2 km per second.

Potential clouds and haze in late afternoon threatened to ruin this exciting event. Everyone knew they needed clear skies to find the star during evening twilight since this occultation would take place only about one hour after sunset. Everyone also knew they had to have clear skies just at the right moment since the star's disappearance would be brief, only about 8½ seconds at most. Also, everyone knew that errors in the occultation predictions could put them outside the predicted shadow path.

Shortly before nine o'clock, anxious eyes focused on the star hoping skies would remain sufficiently clear to see the occultation if it should occur. As tension mounted, Iota Cancri A, almost on schedule, quickly faded out allowing most who tried to time the occultation to have remarkable success both observing and timing this event. This was achieved despite potential haze and broken clouds, occasional weak WWV time signals and last-minute instrumental problems. This success was even more remarkable since many observers had never observed or timed an occultation before.

People who have never seen an asteroid occultation may find it difficult to understand the thrill of watching a star go out. However, those who have will usually say otherwise. This event was especially dramatic since this brighter, yellowish star winked out but left its fainter, sixth magnitude bluish companion still glimmering in twilight skies. In addition, those who timed this event did so knowing they were contributing data that would eventually help refine the diameter and shape of asteroid Xanthe and possibly lead to an estimate of the diameter of the occulting star.

Most AAC members who observed this event had little experience with this type of observation. Nevertheless, nearly all successfully managed to time the disappearance and reappearance of the occulted star with various telescopes and instruments scattered along the width of the predicted occultation path. AAC members who contributed to this effort included Chuck Broward, Tandy Carter, Marian and Howard Cohen, Larry Friedberg, Bill Helms, Don Loftus, Scott McCartney, Bob O'Connell and Mike Toomey. In addition, Dr. Francisco Reyes of the U.F. astronomy department obtained additional times. Approximately nine others, some from out-of-state, also made observations.

Preliminary results show the path and time forecasts were very accurate. Credit is due to Steve Preston, who specializes in occultation predictions. However, the actual path apparently shifted about 15–20 km north of the expected track. Consequently, just south of NW 16th Avenue in Gainesville, Scott McCartney, who should have been just inside the southern limit, did not see any occultation. In addition, observers in southern Georgia, who did not expect to see the event, saw Iota Cancri A disappear for several seconds. Meanwhile, observers such as Don Loftus, about fifteen miles north of Scott and apparently just inside the asteroid's shadow, noticed only a two-second disappearance. Finally, those near the center line of the path enjoyed a near maximum occultation of 8 to 9 seconds as expected. In fact, the greatest duration observed may have been approximately 8.6 seconds, or about 0.3 seconds longer than the maximum predicted disappearance.

Several observers such as David Dunham, contributing editor to *Sky & Telescope*, went to Deltona, Florida fearing that a shift of the expected path to the south would leave most observers out of the asteroid's shadow. He, of course, observed a miss.

Finally, the occultation apparently came about 15 seconds sooner than expected. Fortunately, observers were prepared for this possibility and began watching several minutes in advance.

Results will come later this year when all reports and data are studied. Brad Timerson, Head Coordinator for the IOTA Asteroid Occultation Program, has already begun to analyze the preliminary reports. The AAC plans to present a program later this year on asteroid occultations including this very successfully observed event.

Occultation enthusiasts should note that more than two dozen asteroid occultations are still visible in the north Florida area during the remainder of 2007. However, the occulted stars are typically hundreds of times fainter than Iota Cancri A making observations much more difficult.

Still, for those who unfortunately did not see this remarkable April event, June 2007 will bring another exciting occultation but of a different kind. On Tuesday evening, June 19, the Moon rather than an asteroid will occult the first magnitude star Regulus. For details, see the related article in this issue, "When the Moon Meets Regulus." Don't miss this one!

July Club Meeting:

Tuesday, July 10, 2007, 7:00 p.m. EDT

Speaker: Dr. Sally Hoffman, Professor of Natural Sciences,
Santa Fe Community College, Gainesville, Florida

Location: Santa Fe Community College Kika Silva Pla Planetarium,
Northwest Campus, Gainesville FL

Classifieds:

For Sale:

1. 100 mm F 6 Achromat refractor--Orion. This scope will handle 200 X magnification, and color, while present is not objectionable. This is a nice telescope. Includes a diagonal, mounting rings, and a padded travel box (not pretty but robust). \$225
2. 90 MM Orion Shorttube achromat refractor. Includes a diagonal, mounting rings, solar filter, and a case. A good performer. This too is a nice telescope. A great grab'n go 'scope. \$160
3. Meade 60 mm refractor with diagonal and eyepiece. A fine little refractor that could be a great finder, a good birding scope, or pack-a-long telescope. \$70
4. A unusual boxed brass drawtube telescope 30mm X 400 mm. Engraved on tube " The Return of Halley's Comet 1985-1986" Box has a similar label and includes a serial number. Optically decent collectible. \$75
5. Several surveyor tripods. Solid, low vibration, used, so they are not pretty. Very functional. \$75 each

Chuck is moving, and is trying to slim down the collection of astro-stuff. Email at broward32666@yahoo.com or call 352-214-3085

For Sale: Orion Waist Case, barely used, \$25. Call or Email Mike Toomey.



Star Parties

Spring did not deliver our typical clear skies. Instead, it brought thick clouds of smoke and many days of high haze. As a result, we canceled the April and May star parties. We thought we had caught a break at the Loftus Family Farm on the May rain-date, but just as the sun was setting, a thick brown cloud drifted in from the fires. Within an hour, the moon was barely visible. Still, it was nice to see everyone again.

Our next star party is scheduled for Saturday, June 9 at Bob Jacob's residence. We also have a rain-date available to us on June 16. As always, I send out a "go" or "no go" announcement on the club's listserv. If you cannot receive these emails, give me a call. Please wait until after 3pm (as I may not have reached a decision before then).

We are not planning a July star party at this time. The poor weather, late sunsets and traditional travel period does not support the effort.

Please visit the website at your soonest convenience and check out the details of our upcoming Gold Head State Park star party on the weekend of October 13. You need to make your campsite reservations early, especially if you would like to reserve one of the cabins. After you've made your reservations, please take a few moments to complete the registration form. This way I'll be able to provide everyone with a guest list, and also plan our picnic dinner for that Saturday.

You can track down the link from the star party page, or type in this address:
floridastars.org/goldhead.2007.html

Mike Toomey



An Occultation Adventure

- Bill Helms

On Tuesday night, April 17, I participated with fellow members of the Alachua Astronomy Club in observing and timing the occultation of Iota Cancri by Asteroid 411 Xanthe. We undertook this as a club project, under the able lead of our vice president, Dr. Howard Cohen, retired Associate Professor Emeritus of the U of F Astronomy Department. By timing the occultation against WWV time signals, and taking into account our latitude and longitude, it should be possible to calculate the size and shape of the asteroid. The predicted central line of the occultation passed through Florida about 30 miles north of Gainesville, on a WNW to ESE track. We had observers scattered throughout North Florida, and were joined by Members of the UF Astronomy Department and the Northeast Florida Astronomical Society (NEFAS) from Jacksonville.

I chose a site on the grounds of the Suwannee River Regional Library in Live Oak. The skies were clear, with a bit of high cirrus, and temperatures were in the high 60's. Iota Cancri is a magnitude 4.1 double star, Sun-yellow with a royal blue magnitude 6.0 companion (Sissy Haas's description in "Double Stars for small Telescopes"). It is easily visible under a dark sky. Unfortunately, the occultation took place near the end of nautical twilight, when the sky is not yet completely dark. Xanthe is a 14.7 asteroid, so we were not likely to see it with telescopes no larger than 10-12 inch aperture. Dr. Cohen encouraged all of us to practice finding Iota at the end of nautical twilight for several nights. This turned out to be excellent advice.

I arrived at the Library shortly before 8:00 P.M. and let someone inside know I was there, and what I was doing. I set up my Celestron C8 with a PanOptic 35-mm eyepiece, a short wave radio tuned to 10 MHz., a WWV-synchronized clock, and a cassette tape recorder. While waiting for the sky to darken, I observed Venus high in the West and Saturn just East of overhead. Venus's image showed typical turbulence, but the waning gibbous shape was clearly visible. Saturn was much crisper, with Titan and at least one other moon showing well. The Cassini division was visible, but I did not spend a lot of time searching out details. It was a beautiful and very pleasant night to be outside in North Florida.

As it gets darker, I begin searching for Iota, but without much success. The lights around the library are causing me problems. Iota is almost directly overhead, approximately halfway between 1.58 magnitude Castor and 2.97 magnitude Epsilon Leonis. I search the area with my 15*45 IS Canon binoculars as WWV ticked inexorably toward the predicted occultation time. "At the tone, the time will be zero hours, fifty-three minutes Coordinated

An Occultation Adventure - continued

Universal Time." Then "zero hours, fifty four minutes." Where is that dratted star? This is really painful to my neck muscles, and looking straight up is an invitation to fall over backwards if I am not careful. Then "zero hours, fifty five minutes." Oh, no! Am I going to miss the event?

Finally, "Yes!", there against the darkening blue of the sky. OK, Telrad, center up. Now, in the right angle finder. Is that it? Maybe. OK, to the eyepiece. Yes! The blue and gold double star is unmistakable. Now, concentrate. Shallow breaths. You don't want to be short of breath when you have to call "Out" for the tape recorder. WWV fades in a burst of static. Come on, radio! Then, in an instant, less than a second before WWV's tone for 8:56:00, the brighter star of the pair just disappears! "Out," I shout, with perhaps a half-second delay. I'm almost holding my breath. Don't blink! Stare, stare, concentrate. Then, "In," the star reappears in an instant, just after 8:56:07. About an 8 second duration. "Got it!" I shout.

I have never seen anything like that in my life. I have done two lunar occultation events with Hal Povenmire, but this was somehow different. On those occasions, the Moon, a large one-half degree wide, 2000-mile diameter object blocked out a star. For this occultation, an asteroid about 50 miles wide and maybe 300 million miles distant has blocked the light of a star nearly 300 light years (1,800,000,000,000,000 miles) distant. And to think, scientists are able to predict it, and I had the privilege of observing it. A sense of awe gives me chill bumps for a moment. I am exhilarated as I pack my equipment to go home.

Several of our observers reported a less than instantaneous disappearance and reappearance. It did not appear that way to me. It seemed to just blink out, and the same on the reappearance. I don't know if that was "buck fever" on my part, or the fact that many of the other observers used video cameras rather than the Mark One eyeball. I detected a two step dimming and reappearance of a star on one of the earlier lunar occultations, and it turned out that the star was a double star. David Dunham (noted occultation guru) suggested that the slow disappearance and reappearance "was probably due to Fresnel diffraction of the star's light at the edge of the asteroid, probably enhanced by the star's angular diameter." Sounds good to me.

I hope you enjoyed this rather personal report on my occultation adventure. I trust it will inspire you to observe one in the future. If you would like to learn more, check our Alachua Astronomy Club web page on the occultation at <http://floridastars.org/occult.iotacan.2007-04.html>.

Bill Helms
President, Alachua Astronomy Club
Suwannee Skies Observatory, Old Town, FL

STAR PARTY SCHEDULE: Upcoming Events - 2007

Star Party	Date 2007	Location Check the website for directions and map	Start/End Time
AAC June Star Party	Saturday, June 9th (rain date June 16th)	Bob Jacobs	Sunset 8:29 pm EDT
AAC July Star Party	None Scheduled at this time	n/a	n/a
AAC August Star Party	Saturday, August 11th	To Be Determined	Sunset 8:15 pm EDT

See bright Regulus flicker out behind the earthlit, dark limb of a waxing crescent Moon during evening dusk and then later reappear from behind its bright limb

Didn't see the beautiful occultation of the bright, vividly colored double star Iota Cancri this past April? You still have another chance to see an occultation but of a different kind. Tuesday afternoon and evening, 2007 June 19 (EDT), observers from coast to coast can witness another special astronomical event. The darkish, but earth lit eastern limb of a waxing crescent Moon will rapidly move across the first magnitude star Regulus (Alpha Leonis) causing this star to disappear quickly from view. Later Regulus will rapidly reappear from behind the bright, opposite western edge of the lunar disk as the Moon glides eastward on the sky.

Although occultations of first magnitude stars are not rare, circumstances may not be optimal. The occultation may not be visible from your location or may occur during daytime, both the disappearance and reappearance may not be visible, the Moon's phase may be near new or full (too bright), etc. For example, the last time Florida saw the Moon occult Regulus was eight years ago (1999 May 22). Observers making accurate timings of lunar occultation help astronomers improve maps of the lunar terrain at the occultation points. Regardless, go outside and enjoy this brief sky show on the evening of June 19.

For this June's occultation, most of the United States will need to watch this event against daylight skies since the disappearance of Regulus takes place in the afternoon for locations west of Florida. Therefore, most observers will need telescopes to spot Regulus against the brightness of a daylight sky.

Not so in Florida where this sky show will take place against darkening, twilight skies making this event easier to see and even more dramatic! Not only does the occultation take place at a "convenient time" (early evening) but also the Moon will be well placed for observation in the western sky. Moreover, the lunar phase will be a waxing crescent with both the disappearance and reappearance visible before the Moon sets. Finally, disappearance takes place behind the dark limb making the occultation more vivid and interesting, especially since the gray limb should be dimly visible from reflected earthshine.

The 2007 June issue of *Sky & Telescope* (pp. 56–57) has more information about this occultation including U.S.A. maps showing zones of visibility and approximate times of disappearance and reappearance. A *Sky and Telescope* figure also shows the path of Regulus behind the Moon as seen from various cities. But,

Gainesville, Florida is not included so one needs to interpolate a path for North Florida. However, I have compiled a time schedule for Gainesville (Table 1) to help you plan for this event. Also included below is a diagram (Figure 1) showing the path of Regulus behind the lunar disk specific for the Gainesville area. And, unlike the Iota Cancri occultation that required observers to be inside a narrow occultation path, you can experience the Regulus occultation from any Florida backyard if the weather cooperates!

Indeed, Table 1 shows Florida observers are more fortunate than most since this stellar occultation begins about thirty-eight minutes after sunset and ends almost forty minutes later. Furthermore, the disappearance of Regulus occurs about ten minutes after Civil twilight ends in North Florida when the brightest stars have become visible. Although Regulus is the faintest of approximately twenty-one "first magnitude" stars (those looking brighter than magnitude +1.5), this whitish star still shines at magnitude +1.36 and so should be easily visible to the naked eye.

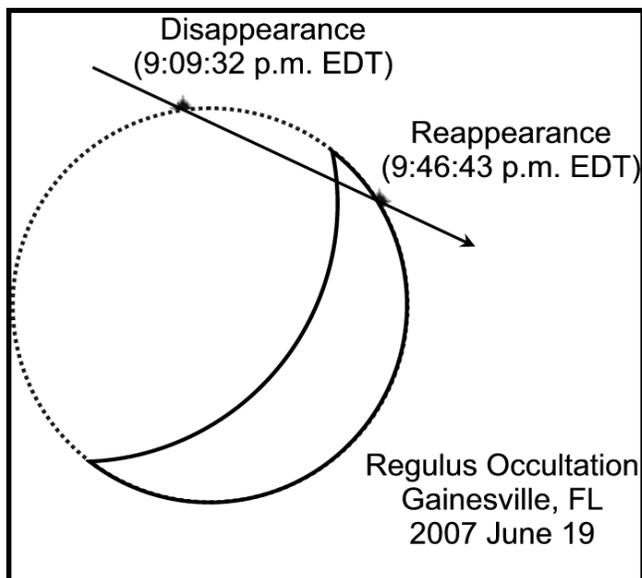


Figure 11. The path of Regulus behind the dark lunar limb and its emergence from behind the bright limb for Gainesville, Florida.

Sorting It All Out

- Mike Toomey

I've had a bad tendency to show up at star parties having forgotten some important part of my observing equipment. Sometimes the result would be a simple annoyance, such as an eyepiece adapter that I might be able to borrow or get along without. On other occasions, I'd forget a creature comfort, such as a jacket on a cold night. Asking to borrow basic needs from someone more organized requires a degree of humility.

However, every now and again, my forgotten-something would be an insurmountable error: the truss tubes to the Dobsonian, or worst of all, my eyeglasses! Since taking over star party duties, I have even more stuff to add to my mental checklist.

One might assume (as I had) that packing would become routine after enough practice. Perhaps by storing everything in one corner of the house there would be no need for a checklist. Unfortunately, some circumstance would always conspire against me. There seemed to be no way of remembering every little detail, or automating the process without some investment.

Problem one: outdated stuff. Over the past 10 years, I have owned six telescopes, at least 30 eyepieces, seven sets of binoculars, and all the gadgets that go along with those. Of course, I like testing products, too. And yet, I was reluctant to part with equipment I was no longer using, even when it was obsolete... or even broken!

My Pelican case was a testament to forgotten telescopes. Fully loaded, it weighed over 30 pounds. It was 3 feet long! Most of the cutouts no longer conformed to the equipment I was using. I had tried too hard to get everything into one case, which was my second problem: I wasn't using a scalable system.

Finally, I realized that too much of my star party equipment had dual purposes. For example, the step stool that was supposed to rest by my telescope for public events would be helping someone paint the garage. The set of Allen wrenches that adjust my secondary mirror might be hiding in the tool shed. My "break-down" white flashlight might be sitting next to the electrical panel after a recent power outage, and so on. Multi-taskers might be great for the kitchen but in a hobby like this, they are tools begging to be left behind. As much as I was trying to break away from the pack-rat mentality, it became clear that I would have to buy *more* stuff in order to get organized.

With that, here are some of my prescriptions for organizing that have helped me pack faster and enjoy star parties with fewer frustrations.

AstroMart

When I'm done with something, I get rid of it! Sell it, trade it, donate it, trash it. It's better to get rid of 100% of your stuff and buy back the 20% you really need.

Once you're bitten by the downsize bug, it's a lot easier to experiment with new products that may enhance your observing experiences. Updating might mean less space, less weight and less set-up time. It has also meant testing different storage devices, observing aids and reference materials. If something doesn't "fit", return it or resell it quickly, while it still has some value.

Divide and Conquer

Lay out everything you have, and then sort it according to its application. Sometimes an application is defined by *when* you use an item, not just how you use it.

Determine the best storage devices. It will probably vary for each application – eyepieces will need their own Pelican case, tools should get their own toolbox, resource materials need a file box, etc. By using clear filing boxes, I don't need to label them, and re-label them every time I make a change. They are also stackable.

Make an effort not to overfill a storage device. It's better to have only a couple small items in a big box than a crowded box that cannot be closed and neatly stored. Under-packing also allows for easier access to the equipment inside.

You may need storage devices that will stay home some or all of the time. Since I still use two telescopes (my “grab-and-go” and my “light-bucket”), I don’t need the same equipment for each star party. I have a padded drawer which holds my unused eyepieces and filters; it takes just a moment to swap them out with my Pelican case. In other words, I haven’t tried to create a one-size-fits-all packing solution.

My cleaning tools box usually stays home for public events. I have an entire box of binoculars in which I will usually select only one set. Last but not least, I have a box of odds and ends that never go with me – purpose-specific items that I only rarely need – the Grundig shortwave radio, solar eclipse glasses, a few manuals and so forth.

It's a *Hobby*

You’re allowed a few indulgences when you pursue a hobby, and astronomy is a very economical one at that. I keep a step stool for public events and for no other purpose. I have a toolbox specifically designed for telescope field repair – tools I *could* borrow from the garage, the shed or kitchen drawer, but I bought new instead. In my set-up box, I have an extra pair of eyeglasses, a digital watch, GPS, red light, white light, compass, level, etc. They stay in their box until called upon – at a star party, and never in between. Of course, just about every device that requires a battery has a back-up standing by in one box or another.

My survival box includes bug spray, hand sanitizer, trash bags. The electrical box has extension cords, splitters, red lamp and dimmer. I even have a box that remains *empty* until I begin packing for a star party. This box holds all those last minute things that would otherwise clutter my car and get lost under the seats, such as my wallet, keys, maps, gloves and camera.

Stacked on shelves, all of my equipment now occupies 12 square feet of the house (a small closet) with plenty of room for expansion. Keep in mind, that space includes two telescopes.

Checklists

Packing for a star party often comes on the heels of work, chores and other daytime activities. Therefore, lists may be more important to our hobby than many others.

Every star party is a little bit different. Different goals and conditions warrant different equipment. My approach to the checklist is to write down everything I have and then sort it by category – just like the equipment itself! I printed a few variations of the checklist (star party, public event, etc.) and tacked them to my equipment shelves. I can’t ignore them!

Because I have sorted my equipment by application, and because my lists mirror those applications, I can easily survey the boxes rather than fixate on the lists. The lists are my fail-safe, not my guide.

Overnight and week-long star parties are a bit different. I don’t have a dedicated tent, sleeping bag, pillow, cooler, and so forth. Instead, I have another comprehensive checklist!

Evolve

Forget perfection. Embrace the notion that a star party is never routine. Even backyard observing sessions merit a degree of organization; running back and forth from the house (in and out of the lights) is counterproductive.

In all likelihood, your storage and packing system will need to be revisited after each star party – at least initially. You’ll want to add innumerable things that will make every star party more productive and, as a result, more enjoyable. Does your toolbox need some cotton swabs and wing nuts? How about a Sharpie or WD40? Maybe your list should be attuned toward personal needs. T.P. anyone?

A popular astronomical wood engraving depicting a mortal peering beyond where the heavens and earth meet appears medieval in nature. However, it is not as ancient as often perceived but was created by a well-known French astronomer and author in the late nineteenth century

AAC members and guests who were privileged to hear Dr. Fred Gregory's interesting talk on "Extraterrestrial Life Over the Ages" at our 2007 April meeting saw a slide showing a popular astronomical woodcut engraving that appears to date back many centuries. AAC board member, Pam Mydock, asked about the engraving but Dr. Gregory was not familiar with its origin. The woodcut was very familiar to me but I could not remember much about its history except I believed it was not very ancient as many think. In fact, I also remembered reading about the woodcut many years ago in *Sky & Telescope* but could not recall when.

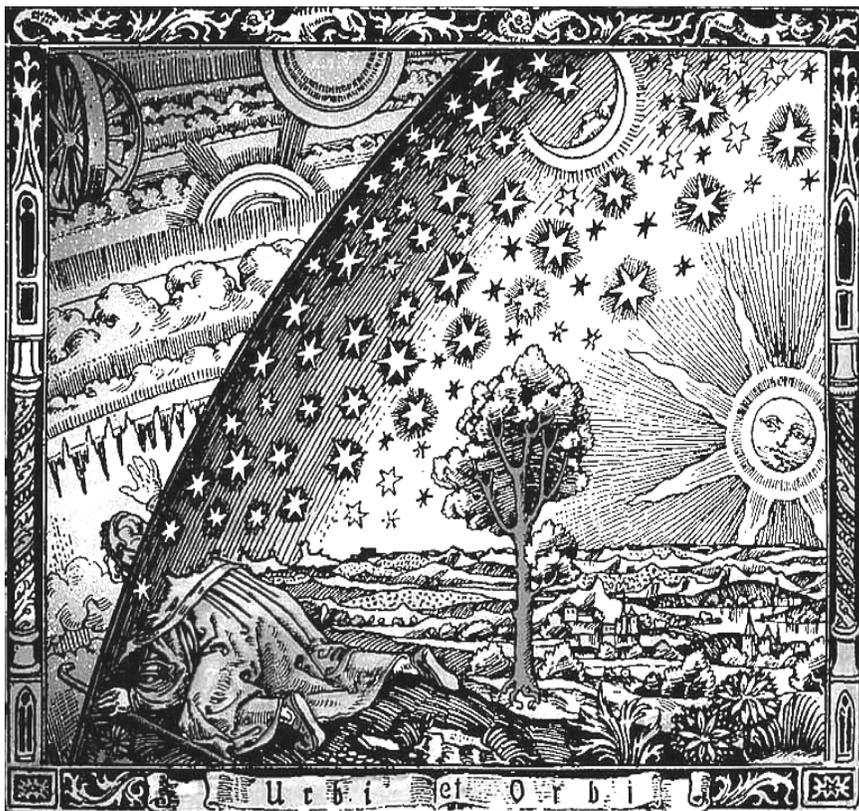
Shortly afterwards, Pam e-mailed me about the woodcut. She had done some investigative work on the Internet and, indeed, found the engraving was apparently not very old. However, she was unsure about the accuracy of the material she found.

This encouraged me to look up the old *Sky & Telescope* article (May 1977, p. 356). Fortunately, my library contains over fifty years of this old, reputable and wonderful astronomical publication and I was able to find what I was looking for.

This important article about the origin of the woodcut appeared in a popular *Sky & Telescope* column called *Astronomical Scrapbook* and titled, "About An Astronomical Woodcut." Joseph Ashbrook (1918–1980), who authored the column, was first a technical editor of *Sky & Telescope* (1956) and then editor from 1964 until 1980 when he regrettably passed way at age 62. Ashbrook had helped establish galactic distances based on studies of Cepheid variables, was meticulous at data reduction and had used century old archives to determine a highly precise value for the Martian rotation period. He was passionate about amateur astronomy, variable stars and was a longtime member of the AAVSO (American Association of Variable Star Observers). Ashbrook was co-discover of Comet 47P/Ashbrook-Jackson. In addition, asteroid 2157 Ashbrook and lunar crater Ashbrook both carry his name. For our purposes, he also had a knack for transforming the most minute details of astronomical history into fascinating and reliable tales. Hence, most of the material for this article results from Ashbrook's wonderful efforts and talent for researching and recording astronomical history.

Many who write about the woodcut are quick to point out its apparent recent roots with some even pointing out that NASA seems to have discovered its relatively recent origin though the space agency wrongly attributed the engraving to early twentieth century. But, few mention that it was Ashbrook who first helped publicize the mystery of the woodcut and its origins.

For those not especially familiar with this astronomical woodcut (Figure 1), this engraving illustrates an elaborate landscape of houses and vegetation. A stately tree extends upwards toward the heavens filled with Sun, Moon and stars. A seemingly medieval figure appears at the lower left, dressed in a cloak and hat. His head and the top of a pilgrim's staff held by his left hand protrude unnaturally through the heavenly sphere where earth and sky meet. Here our daring and fortunate traveler marvels at wonders normally hidden from mortal eyes, a cosmos filled with mysterious clouds, wheels, cogs and other astonishing and bewildering creations.



This apparently medieval illustration, revealing the workings of the heavens to mortal man, has fascinated people in modern times and can be found in many articles, books and advertisements. For example, W.H. Freeman and Company put a small black and white picture of the illustration in a *Sky & Telescope* advertisement back in September 1975 (p. 179). More recently, this artwork appeared as a colored, stunning picture on the cover of historian Daniel J. Boorstin's masterful history of science, *The Discoverers: A History of Man's Search to Know His World and Himself*. Dr. Kerry V. Magruder of the University of Oklahoma notes another colorized version by Science Graphics (Tucson) is in a NASA publication called *Exobiology in Earth Orbit*. However, he writes that NASA got the date of origin wrong by including a caption that reads in part, "A famous early 20th century engraving (1911) . . ."

In fact, captions associated with this figure have varied over the years adding to its mystery and its apparent antiquity. For example, Ashbrook wrote that Donald H. Menzel printed the picture in his *Astronomy* (1971) with the description, "The medieval concept of the sky as a star-studded globe, through which a fortunate traveler might poke his head . . ." Ashbrook also noted that Lousi MacNeice's *Astrobiology* (1964) used the illustration with a caption that included the statement, "A 16th century German woodcut shows . . ." Ashbrook continued that the German historian Ernst Zinner wrote in 1957 that he was convinced the woodcut was probably engraved in the middle sixteenth century though no trace of the woodcut was known before 1906 when it appeared in a popular science book by W. Foerester.

These statements, of course, added fuel to the idea that the woodcut originated centuries ago. Indeed, Foerester's book added to the mystery of its origin by actually citing a reference for the woodcut, namely Camille Flammarion's famous *Astronomie Populaire* (1880). Why does this add to the mystery? Because Zinner looked at Flammarion's book and could not find the illustration!

The solution to the woodcut's origin, Ashbrook continues, seems to have begun with the independent work of Arthur Beer, a well-known Cambridge University astrophysicist and Bruno Weber, in charge of the Zurich Central Library's rare books. Beer found Flammarion had published the illustration but in another book, his 1888 edition of *L'Atmosphère, Météorologie Populaire*. Later (1973) Weber, apparently unaware of Beer's solution, advanced the same solution.

The answer to who created the woodcut came with the realization that the woodcut was likely not medieval. As Ashbrook tells it, Weber comments that the illustration contains modern signs such as dotted hillside. This was a difficult technique for medieval craftsman who cut wood with knives but later became common with the introduction of sharp cutting tools as the burin introduced about 1800.

In fact, both Beer and Weber both suggested Flammarion himself created the woodcut, for he was known as a gifted artist who was originally apprenticed as an engraver and who created extremely reliable planetary drawings. Ashbrook writes that the plausibility for Flammarion's authorship of the woodcut is Flammarion's familiarity with a 1550 edition of Sebastian Münster's *Cosmographia*, a popular 16th century work. Indeed, Flammarion was an inquisitive reader since early age and owned a rich collection of old books including a rare edition of Ptolemy's historical *Almagest*.

Here, in Münster's book, the first illustration depicts a hilly landscape bathed by the Sun, Moon and enclosed by a star-studded sky reminiscent of the woodcut. So far so good. However, no pilgrim appears in Münster's drawing.

Still, Ashbrook says Weber points to a clue—Flammarion's own caption that reads, "A missionary of the middle ages has reached a place where the sky and the earth touch . . ." Flammarion evidently took the idea for this caption and the pilgrim from a well-known medieval legend that he must have been familiar with since he retells the legend in his own 1865 book, *Les Mondes Imaginaires*. This myth tells about how St. Marcus Romanus was one of few mortals who had traveled to beyond where earth meets sky!

Thus, our so-called medieval woodcut was created just over a century ago by a creative man, Camille Flammarion, who was himself inspired by the ideas of others. Regardless, the Flammarion woodcut, no matter what its age, remains one of the most thought provoking illustrations depicting humankind's spirit to explore and discover the mysteries of our cosmos.

Figure 1. (Opposite page) The mysterious, astronomical woodcut depicting a mortal viewing the glories of the heavens.

Executive Council Meeting Minutes

March 6, 2007, Grill Masters Restaurant

1. TC in attendance: Tandy Carter (TC), Charles Broward (CB), Thomas Olmstead (TO), Mike Toomey (MT), Bill Helms (BH), Scott McCartney (SM), Larry Friedberg (LF), Howard Cohen (HC), Marian Cohen (MC), Pam Mydock (PM), Bob O'Connell (BO'C)
2. BH The meeting was called to order by the president at 6:48 PM
3. BH (LF) moved and (TO) seconded to approve the minutes of the previous meeting as published.
 - a. Minutes approved by voice vote
4. LF Treasurer's Report
 - a. Income: i. Contributions \$20.00; ii. Interest Inc \$4.62; iii. Member Dues \$204.00; iv. Total income \$228.62
 - b. Expenses: i. Bank Charge \$0.00; ii. Charitable Contributions \$213.00; iii. First Light \$70.21; iv. Insurance \$323.20
 - v. Licenses & Permits \$71.25; vi. Speaker's Dinner \$15.17; vii. Total Expenses \$692.83
 - c. Overall Total (\$464.21) d. Total membership 58
5. TO There was a discussion of how to handle the Alachua Astronomy Club's contribution to (HC) brother
6. TC reported on the status club telescopes
 - a. 8" Dobsonian – Larry Friedberg - i. eyepiece cap is missing; ii. there is a small smudge on the primary mirror
 - iii. the red light is broken; 1. given to MT for repair
 - a. MT replaced; b. Museum telescope (6" Equatorial Newtonian) – Don Loftus - i. in good shape
 - c. Celestron C8 – Gary Cook i. In good shape d. 4 ½" Reflector – Marianne Gamble - i. in good shape
 - e. 8" Parks Equatorial Newtonian – Chuck Broward - i. in good shape
 - f. RLT – Chuck Broward - i. Working on it
7. MT reported on star parties
 - a. MT reported that because of the change to daylight savings time the star party at Hickory Ranch has been move one hour
 - b. The star party on March 24th needs volunteers
 - c. TC reported the star party for Camp Kulaqua went well. There were four members to show up. It was decided to suggest a donation of \$100.00 to \$200.00
 - d. BH reported on the status of the Alachua Astronomy Club's participation. It was requested that members bring solar viewing equipment. Several members volunteered to bring solar viewing equipment.
 - e. BH reported that the Florida Museum of Natural History has requested events for 2008 and 2009
8. BH There was a debate on how to fill any vacancies on the AAC board
 - a. The amendment would be under the heading of Management of the Club The amendment reads
 - i. Vacancies in the board of directors shall be filled by a vote of the majority of the remaining members of the board of directors for the balance of the year.
 - b. HC moved and SM seconded the amendment
 - c. TO moved and LF seconded to call the question
 - i. The amendment passed on a voice vote
9. TC reported that all email addresses are receiving SPAM
 - a. It was decided to handle each address on a case by case basis
10. BH reported that the replacement for the School Liaison would be Gary Liljegren
 - a. HC requested a clarification on the need for a School Liaison
 - i. It was determined that a School Liaison was necessary
11. HC requested approval to reproduce the revised club brochure
 - a. There was debate on what personal information for the club officers should be printed on the club brochure
 - i. It was decided that only club email addresses should be on the brochure
 - b. TC moved and TO seconded to print 500 revised brochures
 - i. The motion passed on a voice vote
12. HC reported that the projected the path of the occultation of Iota Cancrui has moved four miles to the north
13. SM reported on the schedule of speakers for the general meeting
 - a. SM reported the general meetings speakers are full through June
 - b. HC reported that there was a volunteer to speak on the birth of planets and stars
 - c. TC asked about the potential discussion of the occultation of Iota Cancrui
14. HC reported that the Northeast Florida Astronomical Society (NEFAS) has offered to donate a number of telescope to the AAC
 - a. BH reminded the board what the policy for the AAC to accept telescopes
 - b. BH is to email NEFAS to clarify what is being offered
 - c. BO'C volunteered to get any accepted telescopes
15. BH will talk to the Gainesville Sun about publicity
16. MT offered 36 plastic lawn chairs and two 6' folding tables from the warehouse
 - a. BO'C moved and TC seconded to accept the donation
 - i. The motion passed on a voice vote
17. BH The next board meeting will be at Grill Masters on April 3, 2007 at 6:30 PM
18. BH Adjournment
 - a. BH moved and TO seconded to adjourn
 - i. The motion passed on a voice vote
 - ii. The meeting was adjourned at 9:02 PM

Respectfully Submitted,
Tandy W Carter Jr.
AAC Secretary

Executive Council Meeting Minutes

April 3, 2007, Grill Masters Restaurant

1. TC In attendance: Charles Broward (CB), Thomas Olmstead (TO), Bob O'Connell (BO'C) Scott McCartney (SM), Michael Toomey (MT), Howard Cohen (HC), Bill Helms (BH), Tandy Carter (TC).
2. BH The meeting was called to order at 7:05 P. M.
3. BH (HC) moved and (TO) seconded to approve the minutes of the previous meeting as published
 - a. Minutes approved by a voice vote
4. HC in lieu of LF
 - a. Income
 - i. Checking- 1. Membership dues \$144.00; 2. Donation \$1.00; ii. Savings - 1. Interest \$5.12
 - b. Expenses
 - i. None
5. TC Status of club telescopes
 - a. 8" Dob – Larry Friedberg
 - i. No change
 - b. Museum telescope (6" Equatorial Newtonian) – Don Loftus
 - i. No change
 - c. Celestron C8 – Gary Cook
 - i. No change
 - d. 4 ½ " Reflector – Marianne Gamble -
 - i. No change
 - e. 8" Parks Equatorial Newtonian – Warehouse -
 - i. No change
 - f. RLT – Chuck Broward -
 - i. Still in work
6. MT reported on 2007 Star Parties
 - a. Starry Nights at the Villages was well attended but not well organized
 - b. Starry Nights at the FLMNH on April 12
 - c. Monthly star parties going fine
7. SM reported on the speaker schedule:
 - a. SM to do the May meeting;
 - b. NASA in October or November
 - c. BO'C later this year;
 - d. Possible short report on occultation
8. HC There was a discussion of outreach programs:
 - a. It was decided by the board that the school outreach program was desirable
 - b. CB volunteered to be the coordinator;
 - c. TC volunteered to be the assistant coordinator;
 - d. CB to report on progress at July board meeting;
 - e. OPEN
9. HC There was a discussion of the brochure:
 - a. There was some debate on what personal information should be on the brochure
 - b. It was decided that for the club officers and certain chairs their club email addresses and telephone numbers should be on the brochure;
 - c. The three at-large board members will have club email addresses assigned;
 - d. CLOSED
10. TC There was a discussion of the desirability and feasibility of inspecting the club telescopes and other assets
 - a. MT reported that each telescope custodian has been briefed on their responsibility;
 - b. MT reported that each custodian has an inventory for each telescope;
 - c. TC reminded that the club has assets other than the telescopes;
 - d. The board agreed that labels for the club assets is a good idea;
 - e. TC to poll telescope custodians on their understanding of their responsibility
 - f. TC to report on results at May board meeting OPEN
11. TC requested clarification on the format of the minutes of the board meeting;
 - a. It was decided that each minutes item will have as the final bullet one of the following:
 - i. Responsible person, action date and OPEN;
 - ii. CLOSED - b. CLOSED
12. HC There was a discussion of the AAC 20th anniversary:
 - a. BH will call for volunteers at the AAC April main meeting
 - b. BH to report at May board meeting OPEN
13. BH reported on submissions to FirstLight
 - a. BH reported that the deadline for articles which require review is the last day of the even month prior to the month of issue
 - b. BH reported that the deadline for articles which do not require review is the last day of the odd month prior to the month of issue
 - c. BH is to email these deadlines to the listserv;
 - d. HC to post these deadlines to the web page - e. CLOSED
14. TC Reported that the club banner needed repair:
 - a. TC Inquired about modifying the banner;
 - b. There was a debate on several methods to modify the banner;
 - c. BO'C moved and TO seconded to postpone further debate;
 - d. The motion to postpone passed by a voice vote;
 - e. POSTPONED
15. BH Reported that the Northeast Florida Astronomical Society had telescopes to donate to rural schools
 - a. There was much discussion about the desirability of accepting the telescopes;
 - b. BO'C will assess the telescopes and report back to the board;
 - c. OPEN
16. HC There was a discussion of posting the FirstLight to the web page
 - a. It was decided that FirstLight should be posted to the web page as a .PDF file;
 - b. CB/SM to talk to JO about ways to post the FirstLight to the web page;
 - c. CB/SM to report at the May board meeting;
 - d. OPEN
17. HC requested that the amendment to the AAC bylaws passed at the March 2007 general membership meeting be read into the April board meeting minutes ;
 - a. Vacancies in the board of directors shall be filled by a vote of the majority of the remaining members of the board of directors for the balance of the year.;
 - b. The general membership passed the amendment by a voice vote
 - c. CLOSED
18. HC requested clarification on the status of the AAC Policy List:
 - a. BH reported that there had been a cursory inspection of the web page for AAC policies;
 - b. BH/MT to make a thorough inspection of minutes for AAC policies;
 - c. BH/MT to report at the May board meeting;
 - d. OPEN
19. BO'C requested a discussion of a new Lunar Observing Group ;
 - a. OPEN
20. HC reported that IOTA has a new ebook on occultation timing -
 - a. CLOSED
21. HC reported that there is a new AAC member -
 - a. CLOSED
22. HC reported that the plaque at the Royal Park Stadium 16 Theater has been damaged:
 - a. HC to email PM about having the plaque repaired;
 - b. OPEN
23. BH location and date of next board meeting:
 - a. Grill Masters 6:30 P. M. 2007 May 1 - b. CLOSED
24. BH Adjournment:
 - a. TO moved and BO'C seconded to adjourn;
 - b. The Meeting was adjourned at 8:59 P. M.

Respectfully Submitted
Tandy W. Carter Jr.
AAC Secretary

FirstLight

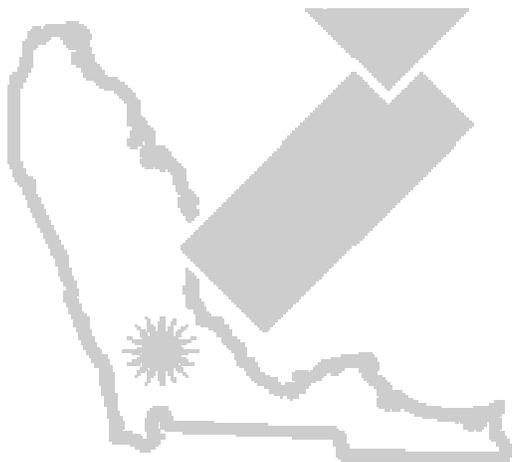
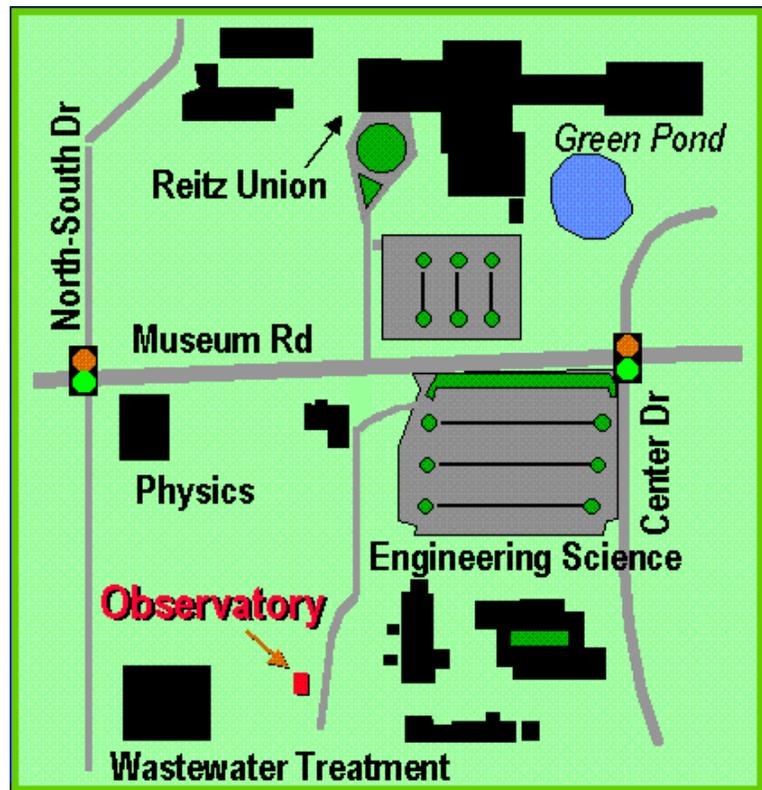
June / July 2007

UF Campus Teaching Observatory Public Night

Join Francisco Reyes for the UF Observatory Public Night on Friday nights from 8:30 till 10:00pm at the Campus Teaching Observatory. Telescopes start setting up at 8:00 pm. Volunteers are welcome.

Now Showing:

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