



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

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Member
Astronomical



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International

FirstLight

Newsletter of the Alachua Astronomy Club

AAC Lunar Observing Group first Meeting.

After several months of informal discussion with members about starting a Lunar Observing Group (LOG), the first observing session will be held at the November ATM meeting on Tuesday, November 20th at 7:00 pm.

Meeting Location

2240 N.W. 14 Ave.:
Off NW 22 St. (3 streets N. of NW 8 Ave or 2 streets S. of NW 16 Ave)
Look for the mailbox
Chuck, ATM, 352-214-3085; E-Mail atm "at" floridastars.org for more info and maps

The focus of the observing session will be Mare Imbrium "The Great Lava Plain" which will be well placed for observation on this night. Chapter 4 of Chuck Wood's book *The Modern Moon: A Personal View* will be used to guide the observing. There are many interesting features in this area of the Moon. I will prepare materials ahead of time for the observing session and hand them out to interested members at the October AAC general meeting. Members will be encouraged to study the material in advance and hopefully be prepared to share with others some aspect of this impact basin during the observing session.

I will set up my 7.1" Mak-Cass with binoviewers and feed a live video image to a flat screen monitor from a piggy-backed 2.4" Unitron refractor. The video image will allow for a general discussion as individual members are observing through the scope. Other members are encouraged to bring their scopes.

If the weather cooperates, and if there is general agreement after the session that it was a success, then future LOG observing sessions can be planned. I would welcome any input from members on this idea – nothing is set in stone and this should be a group effort. Please contact me at my e-mail below. The approach is intended to move amateur astronomers beyond the basic "gee wiz" approach to lunar observing. To quote the expert lunar observer Harold Hill, "Many look, few observe."

Bob O'Connell

E-mail: thestardoggedmoon@gmail.com



Among software programmers, the term “hack” refers to a clever or quick and dirty way to solve a programming problem. The term received a negative association when some programmers used their expertise to illegally gain access to government and other computer systems. I use the term this month in its original sense, and am proud to be a collector of astronomy hacks. Let me share some with you.

Let's start by talking about finder scopes. These include the mini telescopes often mounted on top of your regular scope, red dot finders, and bulls-eye pointers such as the beloved Telrad. To align your finder, you must find a recognizable object IN THE MAIN TELESCOPE, then adjust the finder to point at or show the same object. Since the main scope probably has, if you are lucky, perhaps a one degree field of view (about the size of your little fingernail held up at arms length), it isn't easy to locate that “recognizable object.” Here's how. First, put in your lowest power eyepiece. This will usually give you the widest field of view. Then find something that is tall and distinctive enough that you can easily find it in the restricted view of the main telescope. (Conventional wisdom says you MUST use a very distant object, but if you start out with something only 50 feet away, you will end up with only a one half degree vertical error in your finder, and can correct that later.) This can be a fence post, a lamppost, a cell phone tower, etc., anything tall enough to easily find. Sight along the scope body and try to point the scope near the object. Then look through the scope eyepiece and scan along the azimuth or left-right axis until you see the tall object. Then move up or down in elevation to center a distinctive part of the object, such as the top of a fence post, a lamp on a lamppost, an insulator on a power pole, or the lights on top of a cell tower.

Lock the scope in position if possible. If not, try to avoid moving it while you adjust the finder scope to sight in the same object. If you have the typical finder with three adjustment screws at the front, and perhaps an additional three at the rear, this can be difficult. There is an easier way. You can put a small spring (hardware stores such as Ace have a good selection) on one of the lower front screws to provide tension on the finder scope tube. Better, you can use one of the elastic hair bands used to hold ponytails in place, hooking it over the finder tube and the top screw and one side screw, so it pulls the tube snugly against those screws. Once done, you only have two screws to adjust, one for vertical and one for (mostly) horizontal movement. Gently adjust these screws until the finder is sighted in on the same object centered in the main scope. Tighten up the remaining screw and Voila! Your finder is aligned. Once under the stars, touch up the finder alignment using Polaris, the North Star, since it hardly moves at all.

If you like binoculars as much as I do, you will appreciate a way to minimize the jiggles due to involuntary movements of your hands and body. One way is to pull your elbows in tightly to the sides of your body, and hold the binoculars near the very front instead of further back. You will be surprised how this helps. If you are observing sitting or lying back in a chair or recliner, roll up a bed pillow and tuck it under your chin, and rest your arms on the pillow. In either case, you should also try to let the binocular eyecups rest against the bony parts of your eye sockets.

If you need to stabilize a lightweight tripod for your scope, suspend a water-filled milk jug between the legs of the tripod by a rope, or a light chain and S-hooks. For a heavier tripod, add more milk jugs.

If your tripod does not have a handy shelf for storing eyepieces, red flashlights, go-to control box, etc., you can fashion one by measuring and buying appropriately sized pizza or baking pans from the cooking section of your favorite discount store. You may have to drill a hole in the center if your tripod has a center post or screw. Otherwise, you can drill holes and file them smooth to allow you to attach them with plastic tie wraps.

If you have a favorite hack, send it to me at the address below, and I'll share it, with appropriate credit to you, in a future article.

**Bill Helms, Alachua Astronomy Club,
President@FloridaStars.org**

October Club Meeting

Tuesday, October 9, 2007, 7:00 p.m. EDT

Speaker: Dr. Howard L. Cohen, AAC Vice President and Associate Professor Emeritus, Department of Astronomy, University of Florida

Title: *Celestial Perversions: Distorted Visions of Our Heavens*



Dr. Howard L. Cohen

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

Preview: Ever since our ancestors first gazed upwards, people have used the sky to express emotions in words and images. Today we continue to exalt the sky. Sometimes we get it right; often we get it wrong! This unusual, entertaining, informative and sometimes humorous presentation illustrates how we have often mangled stars, planets and moons in an attempt to capture the heavens in our literary and artistic works. *You won't want to miss this multimedia program filled with many examples of celestial perversions!* This program is suitable for both beginning and advanced star gazers. You may even learn some astronomy along the way. (Note: This program is based on a presentation about "perversions of the heavens" given by Professor Cohen in 2001.)

About the Speaker: Howard Cohen has been actively pursuing astronomy for over 50 years. He is a founding member of the Alachua Astronomy Club, Inc. and is AAC's vice president for 2007.

Serving on the faculty of the Department of Astronomy, University of Florida for more than thirty-five years, Dr. Cohen's original research interests included binary stars, star clusters, occultations and the Hebrew Calendar. He was among the first to test the Air Force ground-based electro-optical deep-space surveillance system (GEODSS) for the detection of asteroids and comets.

With his wife Marian, a travel specialist with Continental Carpers Travel & Cruises, Dr. Cohen helps plan, organize and escort unique tours centered on astronomical themes. Tours have included trips to observe total solar eclipses in the Caribbean, Africa, Australia, the South Pacific and Egypt. In 2005 Dr. Cohen helped organize and guide an unusual 12-day tour of Arizona astronomy, archaeology and geology with the Florida Museum of Natural History. He and Marian are now planning a 2009 June tour to Asia to visit China and observe the great solar eclipse of June 22, 2009. They are also planning a 2008 tour that will take people above the Arctic Circle on a Norwegian Coastal Cruise, regarded by some as the most beautiful cruise in the world.

Exciting changes are taking place within your astronomy club. The ATM-Observers SIG (Special Interest Group) has evolved over the past year to become a ATM-OBSERVING-SOCIALIZING group. Later this year this will become a bit more formalized when the first get-together of the LUNAR OBSERVING GROUP (LOG) meets the third Tuesday at Judy's house (see Floridastars) in November. The LOG is a longtime dream of Bob O'Connell, and will feature a unique approach to observing that should appeal to lots of you. Be sure and drop by and see what is going on. It will be a exciting in-town experience.

Your ATM coordinator has a busy two months ahead. Judy and I are getting married in October, and then taking a long train trip across the country. Because of this Mike Toomey will be taking the October ATM meeting (info on line and adjacent page), and of course, the LOG group will be meeting in November.

In the future, Bob and I hope that the ATM meeting night (third Tuesday of each month) will alternate between ATM'ing and Observing. Mixed with this of course is the socializing that occurs as we set up equipment in Judy's driveway. The schedule will bend to meet observing needs.

Some ATM notes. I own three telescopes: A 4 inch refractor, a 8 inch SCT, and a 10 inch DOB. I have been refining the three scopes into three areas of use. The 4 inch refractor is a very good lightweight 'scope that often sits astride my German Equatorial mount when I want to do lunar/planetary observing on short notice, or when I want to do low power photography with the DSLR. The SCT also sits atop the Equatorial Mount and is used for high power observing (the Moon at 300 X is awesome). The DOB, is my homemade lightbucket (well, almost a bucket). It is light enough to be carried without further damaging my back, it is small enough to put in the Volvo fully assembled, and it is my venue for building and trying out stuff I make or modify. It has enough light grasp to permit my old eyes to see things that I can't see in the smaller scopes.

I recently added a Sky Commander digital setting circle system to the DOB (and also on the GM-8 equatorial mount). I did this in part because it is becoming increasingly difficult for me to bend and twist to see thru a Telrad or Rigel finder. The Sky Commander is a \$400 box with encoders that can be mounted on almost any 'scope. On the DOB the user aligns the 'scope on two stars, and then the digital readout will provide you with Right Ascension and Declination information. Incredibly useful for pointing toward a area of the sky without having to get on all fours to sight the 'scope! This device has made observing really a pleasure for me. It also is a incentive for learning the celestial coordinate system, and to use star charts.

Another item that I cherish is my BINOVIEWERS. These lend a richness to observing that has to be experienced. While some pooh-pooh the binoviewer as a gimmick, or complain that they must reduce image brightness, I find that using two eyes to observe really doubles visual image quality. For instance, M-17, the Swan is nice in one eye, but become a stunning observational experience using the binoviewers. I have owned two pair of binos. One was a \$100 Burgess, the other a \$300 Denkmeir (both purchased off Astromart for less). Both worked well. The only problem is that they weigh, with two eyepieces, several pounds, so telescope balance has to be adjusted, and the scope's structure has to be stiff enough to take the weight without shifting out of collimation.

Thanks to all who support the ATM-Observing Group. We are moving out of the summer mucky sky into the good observing nights of autumn. Come share your ideas, observations and skills with ATM.

Clear Sky!!

Chuck Broward,
GhastlySky Observatory, Gainesville, Fl.

Note: Please see the AAC website (floridastars.org/atm) for meeting locations and maps.

October ATM Meeting

Mike Toomey

While Chuck Broward is out galloping across Canada, Mike Toomey will host the October ATM meeting. It will be held at 7pm on October 16, the third Tuesday in October. The venue for this month is new – Mike's office in the Haile Village Center: 5230 SW 91st Dr, Suite A, in the New York Life building.

From Newberry Road, go south on Tower Road (just west of I-75); from Archer Road, go north on Tower Road. From Tower Road, take Haile Boulevard westward to the 4-way stop sign. Turn right onto SW 91st Street, then an immediate left into the Haile Village Center (SW 53rd Ave), then a quick right onto SW 91st Drive. As you make the turn, you should see the New York Life building in front of you.

We'll introduce ourselves to the club's new collimating tool by Howie Glatter. Bring a telescope you would like to collimate. We'll tackle as many as we have time for. Mike will bring an Orion StarBlast (Newtonian reflector) for the sake of a demonstration, so you don't have to drag along your light-bucket if you don't wish to.

Public Night at UF Observatory

The University of Florida, Department of Astronomy hosts an on-campus Teaching Observatory for educational and public programs. These events are free to the public. The observatory is open Friday evenings, from 8:30 to 10:00, whenever UF classes are in session.

The October schedule features:

Oct 5	Jupiter
Oct 12	Jupiter
Oct 19	Uranus & Neptune
Oct 26	Uranus & Neptune

Additional viewings may include the Ring nebula, Alberio and some globular clusters.

All volunteers are welcome!

The November schedule features:

Nov 2	No Public Night - Homecoming
Nov 9	Uranus & Neptune
Nov 16	Uranus & Neptune
Nov 23	No Public Night - Thanksgiving Holiday

The Kika Silva Pla Planetarium

Located on the Northwest Campus of Santa Fe Community College, the Kika Silva Pla Planetarium has been dedicated to enriching the learning environment of Santa Fe Community College students and our community.

Planetarium Schedule and Tickets

Every Friday at 8:30 PM beginning Sept 21: The "Southern Nights" series, features everyday astronomy as well as learning how to identify planets and a few constellations in the current night skies of North Central Florida. These presentations will also include some mythology from cultures all over the world.

Every Saturday at 8:30 PM beginning Sept 22: "Planets in the House!" This is a guided tour of the Solar System which the latest information from NASA robot explorers. Land on Mars and the moons of the outer planets, and discover for yourself what REALLY happened to Pluto!

All Admission Fees will be waived until January 2008! View the website at www.sfcc.edu/planetarium for more information.

Star Parties

Scott McCartney and I finally completed the Messier list at the September star party. We had been thwarted by bad weather all summer long, and the realization that the Sun was closing in on our last group of targets put us at the edge of frustration. Despite a mostly cloudy afternoon, five observers ventured out to Flying Ten Airport that Saturday. As forecasted, the skies cleared by mid-evening. We wasted no time, focusing on the treasures of the Summer Milky Way – the Lagoon, Trifid and Swan Nebulae, the Sagittarius “Star Cloud” and some of the sky’s largest globular clusters. Most of these targets we were already familiar with, only we had been remiss in recording them before tackling the Astronomical League’s observing club. Chuck Broward is about half-way through his list, and Rich Russin recorded his first Messier target. Just 109 left to go, Rich!



In August, Don Loftus hosted us at his farm and vineyard. Clouds chased away most of the dozen or so attendees, but Don, Scott, Ron Marshall and I stuck it out. Our patience paid off after midnight, so we tracked down a number of planetary nebulae including the Dumbbell, Little Dumbbell, Ring, Blue Snowball and Blinking nebulae, each holding true to their namesake. The Blinking Nebula has a curious nature in that it is nearly invisible when gazed at directly, yet more easily seen when using averted vision – that is, to look at the target with the corners of the eyes, which are more sensitive to low light.

Inspired by those targets, Scott and I have decided to tackle the Planetary Nebula Club next – another 110 deep sky targets, only a few of which are on Messier’s catalog. This club requires a booklet from the Astronomical League. If you’re interested in following along, you can order the booklet from the League’s web site. Any size telescope can be used but smaller apertures will not be able to detect them all. That’s okay – the certificate is available at two levels, the lower requiring only 60 objects. CCD can also be employed. For the visual observer, however, a narrow-band filter, particularly an Oxygen III filter (“O-three” as you might hear at a star party), is a must for this pursuit. Don’t forget, you can borrow telescopes from the club and take them to star parties!

Our October star party will be at Gold Head State Park, an hour’s drive northeast of Gainesville. This is our only overnight star party of 2007. There is still time to register for the Saturday afternoon picnic. Please download and return the mail-in form from the web site (floridastars.org), or send it to me electronically. As expected, the cabins were filled last July but there are probably several camp sites remaining. Call Reserve America for booking.

Our last star party of 2007 will be at the Heinrich’s Stargate Observatory, a 1 ½ hour drive north of Gainesville. As always, I’ll be happy to help you get started with any of the Astronomical League’s observing clubs, such as the Messier, binocular or constellation clubs.

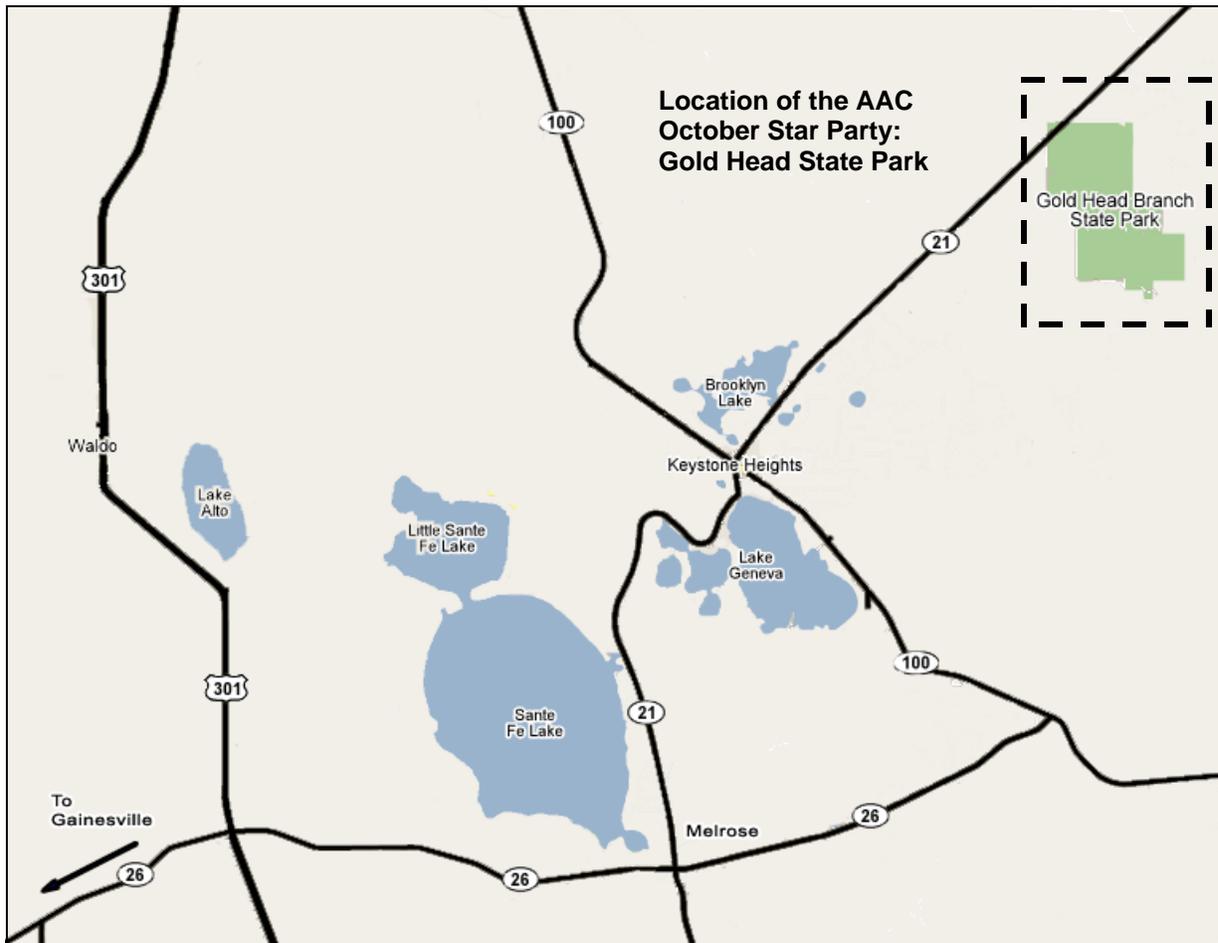
Finally, the club has a couple of new toys to play with. First, we have a Coronado Personal Solar Telescope (PST). We acquired the PST primarily for outreach, but members will have the opportunity to use it at upcoming activities. Take note, the Astronomical League has a sunspotters club, too – and, no, it isn’t just a list of one!

The second new acquisition is a collimating tool that should be compatible with most any type of telescope. We’ll put it to task at as many star parties as possible. There will be a demonstration of the tool at the October ATM meeting.

Mike Toomey

STAR PARTY SCHEDULE: Upcoming Events - 2007-2008

Star Party	Date 2007	Location <small>Check the website for directions and map</small>	Start/End Time
AAC October Star Party	Saturday, October 13th	Gold Head Branch State Park (Register Now!!)	Sunset 7:02 pm EDT
AAC November Star Party	Saturday, November 10th	Fred and Lucille Heinrich's Stargate Observatory	Sunset 537 pm EST
AAC Holiday Party	Saturday, December 8th	Celebrating AAC's 20th Birthday location TBA	6:00 pm EST
Southern Cross Astronomical Society Winter Star Party	February 4-10, 2008	West Summerland Key, Florida	See www.scas.org/ wsp.htm for details



October 20, 2007 marks an approximate date when a radio signal sent from the University of Florida campus will reach a distant sun. Will a returning signal reveal the presence of extraterrestrial life in early 2027?

In the northeast corner of the third floor lobby of Weimer Hall, home of the College of Journalism and Communication on the University of Florida campus in Gainesville, is a small glass case. Few have seen this inconspicuous display that contains a bit of space history that began nearly twenty years ago and will end in 2027. Then, some hope a returning signal from outer space will display the presence of extraterrestrial intelligence living on a distant world.

This radio signal began its light speed journey Tuesday, 1988 May 24, at the groundbreaking ceremony of the Flanagan Telecommunication Wing of Weimer Hall. Dr. Ralph L. Lowenstein, Dean of the College from 1976–94, and known for his visionary goals and unconventional methods that helped put his college at the forefront of modern journalistic technology, proposed that the college broadcast the dedication ceremony into outer space. In fact, Dr. Lowenstein wanted the live signals of the groundbreaking ceremony directed at a specific spot in the heavens where potentially “someone” on a distant planet might receive the transmission and even respond!

Consequently, Dean Lowenstein asked my help finding a suitable “target” for his live broadcast. We decided the target star should not be too distant lest the signals be too weak and take too long to reach their destination. The star also needed to harbor potential planets where other world beings might reside. And, of course, the target star must be visible to the broadcasting dish that would send the live signals on its way.

I suggested we look for a “sunlike” star within a few dozen light years. Such a star might have a higher probability of bearing an “earthlike” planet with potential creatures that could communicate within a reasonable time span! One of the most sunlike stars in our neighborhood is Alpha Centauri A, a member of the closest known star system to Earth and only 4.4 light years away. But, this nearby star lies in southern skies not visible from North Florida.

(A *light year* is the *distance* light, including radio waves and all other types electromagnetic radiation, travel in a vacuum during one year. Thus, light requires 4.4 years to travel from Alpha Centauri to Earth.)

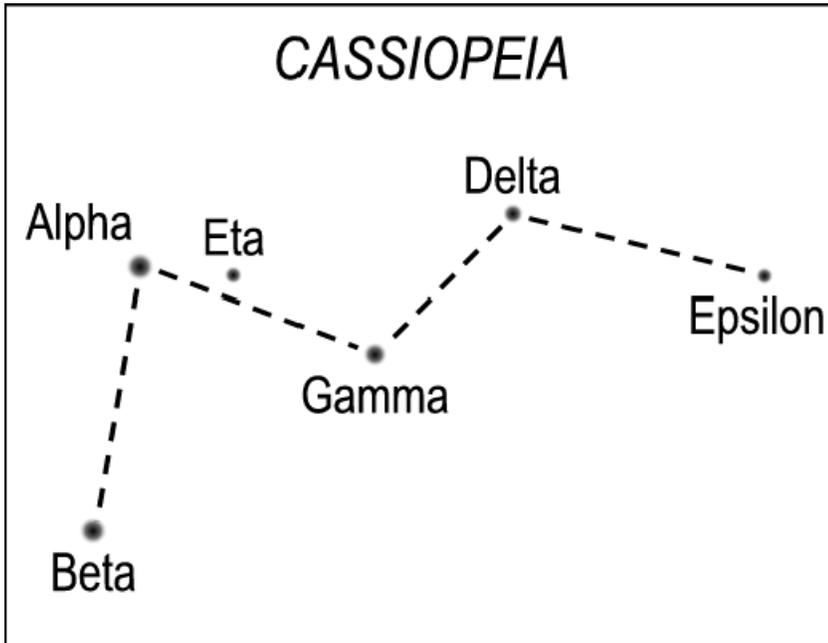
Unfortunately, most remaining known stars within about 25 light years are cool, faint, dwarf-like stars. Sirius and Procyon are among the rare exceptions. Sirius is only 8.6 light years away but approximately 25 times as luminous as the Sun and attended by a very hot, earth size white dwarf. Procyon, 11.4 light years distant, is about seven times the solar luminosity and also bound with a small, hot white dwarf. Both stars are also much younger than the Sun by perhaps several billion years, which might be a limiting factor in developing intelligent life.

Among our remaining “neighboring stars” within a few dozen light years, the Sun literally shines! It is larger, hotter and more luminous than most others in our vicinity. Therefore, contrary to popular belief, our Sun is far from typical or ordinary in our part of space. While some of our neighbors might be older than the Sun, many astronomers thought the low luminosities of most nearby stars might lessen chances for habitable planets. (In recent times, we have detected non earthlike planets orbiting some cool, small stars.)

Still, one star stood out as a potential candidate, Eta Cassiopeiae (abbrev. Cas), occasionally known as *Achird* according to A. Becvar. (Probably a modern recent designation as R.H. Allen’s *Star Names* lists the star as unnamed.) Various other names include 24 Cas, h Cas, HR 219, HD 4614, GC 962, SAO 21732, BD +57 150, ADS 671, WDS 00491+5749A, Σ 60, TYC 3663-2669-1 and HIP 3821! (From now on, we will refer to this star by its standard abbreviation, Eta Cas.)

This somewhat inconspicuous star does *not* make up part of the well-known “W” or “M” shape of Cassiopeia but lies less than two degrees from second magnitude *Schedar* (Alpha Cas). Shining at only visual magnitude +3.45, Eta Cas is thus a “naked eye object” but sometimes difficult to spot in lighted, suburban skies. (See sky map.)

Nevertheless, Eta Cas is more sunlike than most of our other stellar neighbors and relatively close, lying only 19.4 light years from Earth. Technically, Eta Cas is a G0 V star compared with the Sun’s G2 V spectral class. Its temperature and mass are like the Sun although both this star’s radius and luminosity appear about 20% larger compared with the Sun. This makes Eta Cas a whitish-yellow, hydrogen-fusing star not unlike the Sun.



Still, several characteristics of Eta Cas may reduce its chance of having habitable planets and therefore the probability that “someone” could respond to our beamed transmission! These factors include both its binary nature and chemical composition.

Eta Cas has been known for several centuries to be a visual binary star. Although Eta Cas shines only at fourth magnitude, small telescopes easily reveal its glorious nature—an eighth magnitude, yellowish-orange companion (visual magnitude +7.51) shines only 11 arc seconds away! So, small telescopes easily resolve this “double star” with the two slightly different star colors easily noticeable. The companion star (K7 V) appears much dimmer

than its brighter component since it emits only 7 percent of the Sun’s luminosity due to a smaller radius (half the Sun) and lower temperature (about 4,100K compared with 5,800K for the Sun).

Note: Six dimmer optical components lie near Eta Cas but seem unrelated to the Eta Cas System and are probably more distant stars.

From a planetary prospective, the binary nature of Eta Cas may limit possible stable orbits for habitable planets due to gravitational interactions from the two stellar components (A and B). Although their stellar orbit period is long, 480 years, observations over more than two centuries have produced reliable data. Orbit analysis shows Eta Cas A has a mass very similar to our Sun with Eta Cas B having a mass of about one-half a solar mass. In addition, the two stars move in an eccentric path (eccentricity 0.50) with an average separation of approximately 71 astronomical units (AU), or about 1.75 times the distance of Pluto from the Sun. (An *astronomical unit* is the mean Earth-Sun distance, about 93 million miles or 150 million kilometers.)

Since their eccentric orbit brings the two components within about 36 AU of each other at closest approach and 107 AU at farthest approach, one might suspect that inner planets in a “habitable zone” (liquid water possible) might not have sufficiently gravitationally stable orbits for development of life. Still, some studies (for example, SolStation.com) show habitable planets might exist about one AU from Eta Cas A.

Note: At one time Eta Cas A has itself been reported to be a spectroscopic binary (binary nature detected through analysis of spectra). This would put even more stringent limits on a stable orbit. However, the multiplicity of Eta Cas A has never been confirmed.

The astronomer James Kaler writes that, "Except for the much-longer period, Eta Cas is something of a northern-hemisphere version of Alpha Centauri." (Alpha Centauri AB has an orbit period of 79 years.)

Interestingly, the Eta Cas System is also an *RS Canum Venaticorum* type variable star with a brightness variation of about 0.05 magnitudes (about 5%). This type of variation in luminosity results from active chromospheres (thin atmospheric layers) in close binary systems with possible variations due to mutual eclipses.

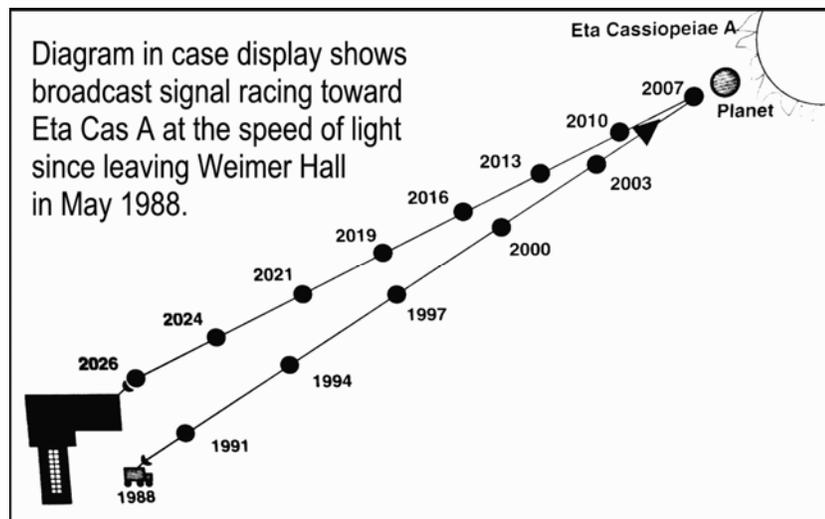
Unfortunately, besides its binary nature, the heavy element content of Eta Cas may also limit this system's ability to produce habitable planets. Some studies suggest the metal content of Eta Cas is much less than that of our Sun, with iron and other metals only about half the solar abundance. This often indicates such stars are older than the Sun since the heavy element abundance of our Galaxy has increased over time due to their production in high mass stars and their eventual distribution into space. So, an older age would give more time for life to develop and evolve, a positive result.

But wait. Research based on modeling Helium abundances in nearby visual binaries (J. Fernandez et al. 1998) suggests an age actually *younger* than the Sun's 4.6 billion year age by around 500 million years. However, this age is uncertain by a few billion years. It is also possible that Eta Cas was born in a different region of the Milky Way Galaxy than the Sun with different star formation rates and chemical abundances. This might explain its younger age regardless of low metal content.

Despite the star's age, the apparent deficiency of metals suggests a larger problem with finding habitable planets around Eta Cas. Planets like Earth (*terrestrial planets*) are mostly made of "rock." Thus, if the Eta Cas system really contains a low abundance of heavy elements, the lack of these materials might limit the ability of a star system to form metallic (i.e., rocky) planets like Earth.

Still, Eta Cas seemed the best choice in 1988 to beam a live broadcast signal at the time of the Weimer Hall dedication. Moreover, Cassiopeia was well placed in the sky for the broadcast dish, about halfway above the northwestern horizon. So, at the time of the Weimer Hall groundbreaking, a satellite uplink vehicle directed the live ceremonial signals toward Eta Cas, more than nineteen light years away, with the hope that this star possessed habitable planets.

October 20 of this year marks the approximate date the radio signals, traveling at the speed of light, should reach the Eta Cas system. If anyone on a planet in this system receives this broadcast signal, we could potentially get a message back in the year 2027!



The showcase hanging in Weimer Hall recounts the dedication ceremony in words and pictures including a photograph showing Dr. Lowenstein presiding over the ceremonies as "Dean of the College of Journalism and Interstellar Communications." Finally, a diagram shows the position of the interstellar signal as it journeys at the speed of light on its way to Eta Cas. In addition, the diagram shows the signal returning to Earth in 2027, assuming some alien being in the Eta Cas system immediately responds to the received signal! (See diagram.)

To Eta Cas and Back

Note: The Weimer Hall wall display lists the return year as 2026 but this probably resulted by taking twice a 19 light year distance and simply adding the year 1988. Using a more accurate distance of 19.4 light years, and adding twice this value to 1988

May 24, yields 2007 March 17 as the (very) approximate return date. (Uncertainties in distance could produce an error in the date of a few months.)

Next time you are on the University of Florida Campus in Gainesville, take a walk to Weimer Hall and visit the Eta Cas showcase on the third floor. Perhaps, over following years, advanced technology will make possible detection of earthlike worlds in the Eta Cas system. In fact, Eta Cas A is on the target list for NASA's planned Terrestrial Planet Finder (TPF). So, who knows, perhaps the 1988 Weimer Hall live broadcast will someday mark more than a dedication ceremony!

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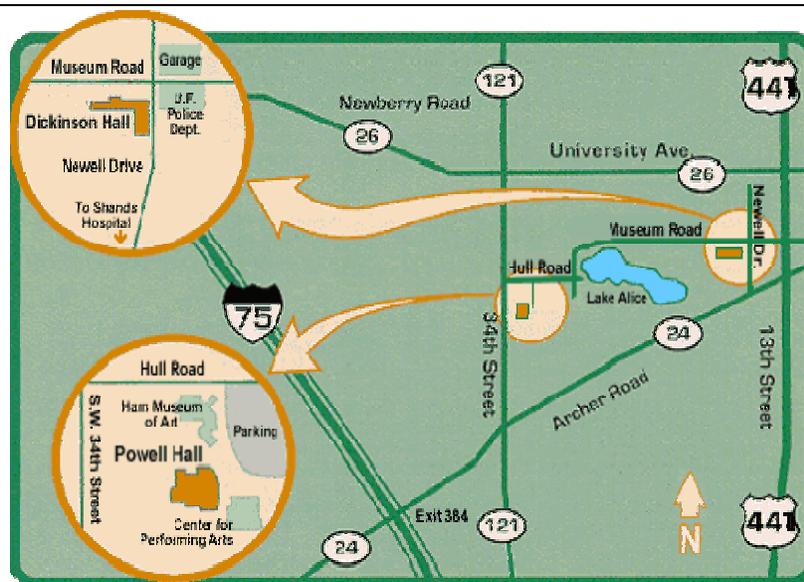
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SolStation.com, www.solstation.com/orbits/etacassys.htm (*Animation of Eta Cas AB Orbits*).



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).

Reviving School Outreach

This past summer, I had the opportunity to teach a 2-week astronomy class at Santa Fe Community College. The students, ages 10 to 15, were enrolled in College for Kids. With just a week's notice, I had to scramble to assemble 8 one-hour lesson plans. Knowing that not all of the students were enrolled voluntarily, the lessons had to be hands-on and fun whenever possible.

One lesson plan was a visit to the recently opened Kika Silva Pla Planetarium. Chuck Broward and Thomas Olmsted helped provide a second lesson plan by bringing a pair of solar telescopes, including a Coronado Personal Solar Telescope (PST), just like the one the AAC has since acquired. Two lessons covered, six to go!

An Internet search led me to the Astronomical Society of the Pacific (ASP). Within their web site, I found a few lesson ideas; samples from their Project Astro workbook. Realizing that the students would already be exposed to some astronomy, and that it would be too difficult to cater to all applicable levels of the FCAT, I wanted the students to learn how to think scientifically. As I would later learn, Project Astro's primary goal is to use astronomy as a lure toward science rather than to impart trivial memorization. Some of these exercises worked exceedingly well while others did not. Working with 5 different grade levels didn't make the task any easier.

One exercise that hit the mark was called "Galaxy Sort". The students were divided into groups of three or four, and each were given a set of laminated cards, each depicting a different galaxy. The students were given no background about galaxies. They were instructed to arrange the galaxies in any way they saw fit, so long as there was some reasoning behind it. They were also asked to give any groupings they created a name: spinners, blobs, whatever. One table of typically unruly students began an ad-hoc game of Go Fish! with their cards. This was not discouraged since they unwittingly described and sorted the cards as they went along. When the students were done, we discussed their findings and looked for similarities and differences between the groups categorization. The lesson was concluded with some slides that showed how different topics in science (the Periodic Table of the Elements, the Hertzsprung-Russell diagram, etc.) are treated by sorting and labeling data in an effort to make some sense of the universe, and that they had just engaged in the same process.

Another Project Astro exercise we tested was "Moon Crash." I gathered up about 20 items that might be considered survival gear, then placed them on a table in front of the class. Each student was asked to select one item from the "crash site" and explain why they made that selection. Kids never seem to get too old for games (and neither do I!). The greatest strength of this exercise is that instructors do not need to know any more about astronomy than their students. Furthermore, once the materials are developed, they can be used over and over.

At an Executive Council meeting earlier this year, some AAC members expressed an interest in reviving school outreach. In the late 1990's, members were very active in school star parties and, occasionally, members visited classrooms to help discuss basic concepts in astronomy, or simply to present Hubble Space Telescope slides. In time, however, some volunteers were over-extended, while many potential volunteers did not feel up to the task.

I realize that not everyone interested in school outreach believes as I do, that we could provide more focused instruction rather than "just inspiring" young people. However, I think everyone can agree that developing tools to address the various circumstances we are likely to encounter (special requests, clouds, over-attendance) would be worthwhile. Coordinating the evening activities had a number of traps, not all of which were disarmed. For example, waiting for clouds to pass by while a hundred or more antsy students milled about seemed to demand some type of release valve.

A few years ago, UF Astronomy invited AAC members and local teachers to a workshop that entailed Project Astro concepts, at least in part, such as building a teacher-astronomer relationship with planning and frequent classroom visits. My understanding is that the enthusiasm for Project Astro had a short shelf-life; that it did not blend well with the personnel we had within the AAC, and that some teachers were no better in maintaining enthusiasm for the program than we were. So instead, I'd like to borrow some of their lessons (I purchased the remainder of the Project Astro workbook) and fashion something more durable and customized for our type of outreach. Coupled with the AAC's new solar telescope, I hope that these new tools will help club members feel more confident when asked to volunteer at school functions, day or night.

To this end, I propose a workshop for interested members to explore these materials and discuss their concerns about school outreach. Whether you are interested in volunteering at a school of your own choosing, or to accommodate a few of the many requests the AAC receives, there certainly will be no shortage of opportunities.

Please contact me by phone or email if you would like to take part in this workshop. We can then try to find a Saturday or Sunday we can all meet. I expect the workshop will be 2 to 3 hours, and will include hands-on instruction of the PST.

Mike Toomey, starparty@floridastars.org, 352-219-0572

November Club Meeting:

Tuesday, November 13, 2007, 7:00 p.m. EST

Speaker: Dr. Patrick Simpkins, Director of Engineering, NASA
Kennedy Space Center

Title: To Be Announced

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

About the Speaker: Patrick Simpkins is the director of Engineering for NASA at the John F. Kennedy Space Center. In this position, Simpkins leads a group of engineers from multiple disciplines in the design, development and operations of spaceflight hardware and ground systems assigned to the Kennedy Space Center.

Simpkins began his NASA career in 1983 as a shuttle engineer and served in various roles of increasing responsibility in the Space Shuttle Program for 15 years. After realizing his strengths in helping others maximize their abilities, he pursued an education in human resource management and served as KSC's Personnel Officer. After completing the Senior Executive Service Candidate Development Program, he worked in human resources at NASA Headquarters in Washington, D.C., for two years.

Simpkins has been a recipient of a number of awards and leadership development programs throughout his career. He was selected to the Senior Executive Service Candidate Development Program in 2001 where he received executive level education from the University of Michigan and as a Harvard Senior Executive Fellow. His developmental assignments included a role as project manager in the Intelligent Synthesis Environment Program at the Langley Research Center and as a facilitator at NASA Headquarters in the design and development of the NASA Strategic Human Capital Plan enabling NASA to achieve the first "green" rating in Human Capital on the President's Management Agenda. Awards have included the Astronauts' Silver Snoopy Award and the Exceptional Achievement medal.

Simpkins helped modernize NASA's human resources information systems and led the design, development and implementation of the agency's competency management system. Other accomplishments have included leading the human resources community's involvement in the e-Payroll project, enabling integration of various processes and tools for improved HR Office service, designing and implementing organizations for consolidating engineering at KSC that were the most sweeping cultural and operational changes since the Apollo Program.

Simpkins holds a bachelor's degree in environmental engineering from the University of Florida in Gainesville, Fla., and a master's in human resource management from Florida Institute of Technology in Melbourne, Fla. He received a doctorate in business administration from Nova Southeastern University in Fort Lauderdale, Fla.

Simpkins and his wife Beth, his high school sweetheart, reside in Merritt Island, Fla. They have one child, Dainius, 12.

Executive Council Meeting Minutes

July 9, 2007, Grill Masters Restaurant

1. TC reported the presence of a quorum; a. Six (6) members present
2. BH called the meeting to order at 6:40 P. M. on July 9, 2007
3. TC members attending: Thomas Olmstead (TO), Pam Mydock (PM), Scott McCartney (SM), Bob O'Connell (BOC), Larry Friedberg (LF), Bill Helms (BF), Tandy Carter (TC), Chuck Broward (CB), Mike Toomey (MT)
4. BH approval of the minutes of the last meeting; a. There were no corrections; b. TO moved and PM seconded to accept the minutes of the previous meeting; c. The motion passed by voice vote; d. The minutes of the previous meeting were approved
5. LF Treasurer's report: a. Income: i. Contributions \$ 0.00; ii. Interest income \$ 4.97; iii. Membership Dues \$ 72.00
1. LF to determine the disposition of double dues payment
b. Expenses: i. Bank Charge \$ 0.00; ii. First Light \$ 0.00; iii. Insurance \$ 0.00; iv. Licenses & Permits \$ 0.00
v. Speaker's Dinner \$ 0.00; c. Total: i. Income/Expense \$ 76.97; ii. Checking \$1,515.03; iii. Savings \$6,048.30
6. TC Status of Club telescopes
a. SkyQuest XT8 – Larry Friedberg (C) i. Issued to Dante Buckley
b. Museum Telescope (6" Equatorial Newtonian) – Don Loftus (C) i. No change
c. Celestron C8 – Gary Cook (C) i. No change d. 4 ½" reflector – Marianne Gamble (C) i. No change
e. 8" Parks Dobsonian – Don Loftus (C) i. No Change f. RLT – Chuck Broward (C) i. No Change
7. MT reported there were no changes from what is posted on the web pages
8. SM reported on the Speaker schedule. a. SM reported that all speaker slots through March 2008 are filled
b. There was a discussion of the availability of seats for the planetarium show
9. PM reported that there was no change in the status of the plaque and murals at the Royal Park Stadium 16 Theater; a. OPEN
10. TC reported on the repair and modification to the Club banner; a. TC passed out a copy of the proposed banner and quote
b. TC queried LF if the Club has a tax free number i. LF reported the Club did not have a tax free number
ii. LF reported that he would obtain a tax free number for the Club and email the number to TC
c. SM suggested the use of a font that is easier to read from a distance such as a sans-serif font and a printer friendly copy of the Club logo; i. MT offered to create a printer friendly copy of the Club logo; d. OPEN
11. BH reported that there was no change in the status of the thank you letter to Mike Reynolds; a. OPEN
12. HC There was no report on posting the Club policies to the Club web page; a. DEFERRED
13. BOC reported that the policies for the Lunar Observing Group are in work; a. OPEN
14. BH/CB reported the laser collimator is on order; a. OPEN
15. HC/MC/LF had no report on the location of future AAC board meeting; a. DEFERRED
16. BH reported on the "Out-of-This-World" entry; a. Consider for 2008; b. CLOSED
17. HC requested a discussion of FirstLight deadlines; a. MT questioned the need for changing the FirstLight deadlines; i. MT stated that HC requested the change to the FirstLight deadlines
b. DL/CB/HC were selected as FirstLight reviewers; c. After some discussion it was decided that instead of having a list of "trusted authors" it will be required that all articles be submitted to firstlight@floridastars.org; d. Changing the publication schedule of the FirstLight be deferred to JO
e. PM was appointed to head the committee to put together the 20th Anniversary issue
f. HC/MC/JO were recommended as members of the committee to put together the 20th Anniversary issue
18. New Business:
a. MT questioned whether the Club wanted to purchase a PST; i. There was much discussion about what the Club wanted to do with a PST; ii. OPEN
19. Good of the Order; a. None
20. Announcements; a. None
21. BH location of the next meeting; a. Grill Masters 6:30 P.M. 2007 August 7
22. BH Adjournment; a. TC moved and TO seconded to adjourn; b. The motion passed on a voice vote
c. The meeting was adjourned at 8:24 P. M.

Respectfully Submitted
Tandy W Carter Jr.
AAC Secretary

Executive Council Meeting Minutes

August 7, 2007, Grill Masters Restaurant

1. (TC) reported the presence of a quorum; a. there were six (6) board members present
2. (BH) called the meeting to order at 6:53 P.M. on August 7, 2007
3. (TC) The following members were present: Thomas Olmstead (TO), Chuck Broward (CB), Mike Toomey (MT), Scott McCartney (SM), Bob O'Connell (BOC), Larry Friedberg (LF), Howard Cohen (HC), Marian Cohen (MC), Bill Helms (BH), Tandy Carter (TC), Pam Mydock (PM)
4. B) Approve the minutes of the previous meeting; a. (BH) had numerous changes; b. (HC) moved and (LF) seconded to accept the minutes as corrected; c. The motion passed; d. The minutes were accepted as corrected
5. LF distributed the treasurer's report: INCOME/EXPENSE 07/01/07 -- 07/31/07
INCOME: Interest Inc \$5.14; Membership Dues \$24.00; Total Income: \$29.14; EXPENSES: Dues and Subscriptions \$325.00; P O Box Rental \$56.00; Printing and Reproduction \$80.00; TOTAL EXPENSES: \$461.00; OVERALL TOTAL: -\$431.86; Checking Acct - BALANCE 07/31/07 \$1,078.03; Savings Report -- BALANCE 07/31/07 \$6,053.44
6. TC reported on the status of club telescopes: a. SkyQuest XT8 - Larry Friedberg (C) i. Issued to Dante Buckley
b. Museum Telescope (6" Equatorial Newtonian) - Don Loftus (C) i. No change; c. Celestron C8" Gary Cook (C) i. No change
d. 4 " reflector ? Marianne Gamble (C) i. No change e. 8" Parks Dobsonian - Don Loftus (C) i. No Change f. RLT - Chuck Broward (C) i. No Change
7. MT Reported that the star parties are as posted; 8. SM Reported on the speaker schedule: a. SM reported that there was no change to the speaker schedule; b. SM reported that there was nothing yet from NASA about their speaker; 9. PM/HC Reported on the status of the plaque and the murals at the Royal Park Stadium Theater; a. PM reported that some employees desired to keep the murals in place however, upper management at the theater did not want to keep them; b. PM reported on the Regal Theater charitable activities. c. HC reported that the removal of the murals would not be an easy task; d. HC also reported that the original artist has volunteered to help in the removal; e. HC also reported that the city of Gainesville showed some interest in the murals, if they met the city's donation requirements; f. BH appointed PM and HC to be a committee to follow up on the disposition of the murals; g. OPEN
10. TC Reported in the repair or modification of the club banner; a. SM requested that any further iterations of the banner be distributed by e-mail; b. TO suggested that the club spend the additional money for setup at the printer
c. CB suggested that the logo be smaller on the banner to allow more room for the lettering; d. SM questioned the necessity of having the 'Inc.' on the banner and TO stated that the 'Inc.' was required; e. OPEN
11. BH reported that the thank you letter to Mike Reynolds had not been written; a. OPEN
12. BH reported that the posting of the club policies on the club web page are still in work; a. OPEN
13. BOC reported that the policies for the Lunar Observing Group are still in work; a. BOC reported that Walter Hass did not feel that a dedicated Lunar Observing Group was a workable idea.; b. OPEN
14. BH/CB reported that the laser collimator is on hand; a. BH suggested that CB be the custodian for the laser collimator; b. CLOSED
15. HC/MC/LF reported on the location of future board meeting; a. after much discussion, it was decided there was no interest in moving the board meeting location; b. CLOSED
16. HC requested a further discussion of First Light publication policies; a. BH reported that JO was comfortable with the following: i. a deadline of thirty (30) days prior to publication for article submission; ii. all submissions to floridastars.org; iii. a positive response from reviewers in 10 - 14 days; iv. agreeable to publishing a 20th anniversary issue in December, 2007; v. agreeable to publishing a January, 2008 issue but may not be as late as January 15; b. recommendations accepted by unanimous consent; c. HC suggested that the publication policies be placed in the masthead; d. CLOSED
17. MT requested a discussion of the purchase of a dedicated solar telescope; a. MT reported on the benefits of the club owning a solar telescope; b. TO pointed out that on a cost per year basis, this is a very inexpensive telescope
c. (CB) pointed out the necessity of an equatorial mount; d. TC moved and TO seconded to authorize MT to spend up to \$1,000.00 for a Coronado PST and accessories; e. The motion passed on a voice vote; f. OPEN
18. BH/BOC reported on the telescopes from NEFAS; a. It was determined that the telescopes were not worth distributing; b. BOC requested that the telescopes be stored in the warehouse; c. CLOSED
19. New Business: a. HC reported on Solar Walk Enhancements; i. the city of Gainesville would like to put a Comet Halley marker into the solar walk; ii. the city of Gainesville would like to put in an asteroid rock garden; iii. the city of Gainesville would like the AAC to produce a brochure for the Solar Walk; iv. (HC) reported that there is a meeting on the subject of improvements to the Solar Walk at 3:30 P. M. on October 3; v. CLOSED
b. (BH) requested a discussion on the club paying honoraria for speakers; i. The board determined to turn down the offer of the speaker who requested the honorarium; ii. The board determined to offer honoraria on a case by case basis; iii. CLOSED
c. HC/LF requested a discussion of the AAC tax exempt certificate renewal; i. (LF) reported that the club has a tax exempt certificate that is about to expire; ii. (LF) reported that the club is missing the final determination of the 501C3 status of the club; iii. (LF) will send out e-mails to past treasurers to try to find the missing documentation; iv. OPEN
20. Good of the Order: a. At the general meeting (SM) moved and (TC) seconded for the club to spend up to \$1,000.00 to purchase of a Coronado PST and accessories; i. The vote was 17 to 1; ii. The motion passed
21. Announcements; a. None
22. (BH) announced that the location and time of the next meeting will be at the Grill Masters at 6:30 P. M. on September 4, 2007
23. (BH) Adjournment: a. (TO) moved and (TC) seconded to adjourn; b. the motion passed on a voice vote
c. the meeting was adjourned at 9:30 P.M.

Respectfully submitted

Tandy W Carter Jr., AAC Secretary

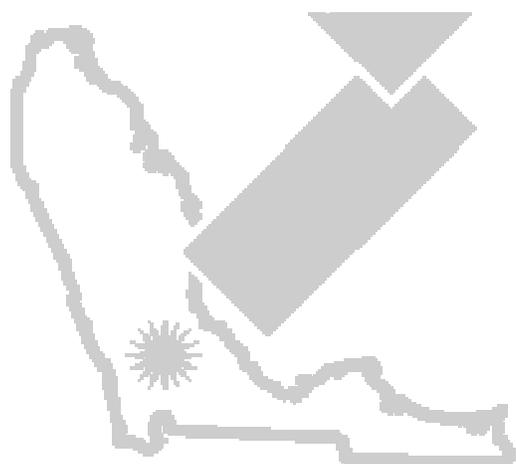
FirstLight

October / November
2007

A Galactic Star Forming Region in Infrared

Credit: S. Carey (SSC/ Caltech), JPL-Caltech, NASA

Explanation: How do stars form? To help study this complex issue, astronomers took a deep image in infrared light of an active part of our Milky Way Galaxy where star formation is rampant. In IRDC G11.11-0.11, thick clouds of dust and gas are congealing into stars that are so dark that humans living there would see an empty night sky. The image, though, taken last year by the Spitzer Space Telescope in infrared light, shows vast glowing fields of gas and dust, indicating that much of this dust is heated by forming stars. The centers of some clouds, such as the snake-like structure on the upper left, are so thick and cold that they are dark even in infrared light. Many of the red dots are glowing dust shrouds centered on very young newly formed stars. The unusual red sphere below the snake is actually a supernova remnant, the glowing shell of a young star so massive it evolved rapidly and exploded. The region spans about 150 light years and lies about 10,000 light years away toward the constellation of Sagittarius.



FirstLight
Newsletter of the Alachua Astronomy Club, Inc.
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