

# The Focal Point

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## Techtron Protocols

by Philip Sacco

As coordinator for Charlie Elliott Wildlife Center and the Supervisor for the new 24", I wanted to post an update to address the questions I have heard concerning the current protocols for the 24" scopes use. For those of you that are new to the club or have been living under a rock for the last 4 months <grin>, the AAC purchased a beautiful 24" Techtron Newtonian style telescope from Tom Clark, it's designer and builder, this past May. This scope was Tom's personal scope and he sold it to us with a Sky Commander Digital Setting Circle installed on it.

I want to thank Lenny Abbey for posting his query as to the current protocols, and hope this article answers any questions that any of you may have. I have taken all suggestions and comments into account, and this is the current state of protocols for training on the 24" and its sign out procedure. Two months ago, a shot at this was printed, but it wasn't properly edited, and if there were any feathers ruffled, I apologize.

I hope to see many of our members using the new scope as 12 members are currently checked out on it's use and sign-out with some 75-80 people having enjoyed studying the sky with it so far on the outings it has made to date. I want to thank Stef Whetstone for getting the ball rolling on setting up the training classes, and hope many more of you will take advantage of getting checked out on it as well.

For any comments or concerns you would like to voice, I am here as well as Gil to make sure the scope is handled in a safe and enjoyable fashion by any member so desiring....

You can expect to see notes similar to the following posted when appropriate in the FP, so that all members are kept apprised of any modifications to the existing protocol. Please read the following in answer to Lenny Abbey's questions . . .

1. How is the scope to be used? The scope was purchased to be the principle instrument of our new dark site. It is typically to be used exclusively at our Marben Farm Road site at Charlie Elliott Wildlife Center. If it is desirable to have the scope present at an official AAC event, I will keep its schedule open until the Sunday before the desired event so as to allow any trained member to call and arrange to bring it to the event. After that time, the scope will not be available to go to the event to allow non-attending members the chance to schedule their time to use the scope at CEWMA.

2. Who is eligible to use it? Any member or guest may use the scope while it is on the field and is being supervised by a member who has been trained in its use. (Any two members, one being officially checked off in the set-up procedure, may call the scope supervisor (me at the current time 404-296-6332) and make arrangements to pick up the scope and use it at the Marben Farm Road site, or an upcoming AAC event). At this time, the scope is not cleared for anyone to take to other locations unless the scope is to travel to an officially recognized activity for the AAC. This is to assure that when the scope is in use, it will be at a known location, and any member calling to arrange for its use

will be informed of its whereabouts if it has been previously signed out.

3. How long can he have it? This will be dictated by the schedule as arranged by the Observing VP and the CEWMA Coordinator. It may be the scope will be transported to a club function at VR and it may be required for the "User" to take custody of the scope to transport it. Typically, the scope will be used at CEWMA, and will be signed out on a nightly arrangement unless the "Users" are planning to make a long weekend at CE or other official AAC event and need not lock it up during the intervening day so long as the scope remains under secured conditions. Its proscribed use is for CEWMA at this time, and in the future, this location may be altered in favor of a preferred 'Dark Site'. The Techtron is NOT to be construed as a 'traveling scope', in the general sense of allowing "Users" free traveling with the scope. In the event the 24" is scheduled to go to an AAC activity, if it is assigned for traveling to the event by the Sunday preceding the event, I will post the information to the fact, otherwise it may be assumed to be reserved for use at CEWMA.

4. Where is he to get it? Currently the scope is stored in a secured storage location near Mansfield. This makes it convenient for its use at CEWMA.

5. What are his responsibilities? It is the clubs scope, and we all want to make sure that the scope is protected. To this end, club insurance is being discussed to the best of my knowledge. Any member checking out the scope for use will be responsible for reporting any problems or difficulties with it, and see that it is secured in its locker when they are done using it.

6. Where and when is it to be returned? Typically, the scope is to be returned to its storage locker after use. It may be secured elsewhere as determined by the Observing VP and Coordinator so as to facilitate its use by the club in the unusual interim should it be scheduled to be used at a club function other than at CE in a soon and coming date.

There have been many opportunities for any member of this club to be trained with the scope so far, and there will be more opportunities in the future. If you are interested in getting trained in the use of the scope at other than a scheduled training session, contact either: Gil Shillcutt, Philip Sacco, Alex Langoussis, Stef Whetstone, or Phil Bracken. They are the only official trainers at this time, and will do what is possible to facilitate the training of any interested members. Additionally, anyone wishing to become a trainer is welcome to let their intention be known, and when trained they will be added to the list of trainers.

Those members currently trained and cleared to sign-out the scope include: Phil Bracken, Bill Bradford, Sharon Carruthers, Rich Jakiel, Alex Langoussis, Peter Macumber, Dave Riddle, Art Russell, Phil Sacco, Gil Shillcutt, Stef Whetstone.

To check out the scope for use, two AAC members will be required; one of which must be trained in the set-up and use of the scope.

I hope this answers any questions you may have, or even informed you that the club has such a beast available for use. If you have any other questions concerning the club's scope, or the current protocols and training, please feel free to contact Gil Shillcutt or myself.

Here's hoping we have "Clear Skies"!



### By Geoff Powers

Hey Gang! The deadline for the December column has been accelerated one week because of New Moon falling on the first week of November. I won't have any recap of recent group activities, but I'll look ahead to future events.

November 6<sup>th</sup>, which is a Saturday, not our usual Friday get together; will include two Astro Imaging sessions at Charlie Elliott Wildlife center. At 2:00 p.m. in the Aquatic Center: "Getting Started in Astrophotography", a review of camera-on-tripod techniques. At 4:30 p.m.: "Polar Alignment". "P.A." group will meet at the observing site on Marben Farms Road.

Friday December marks our return to the Bradley Observatory at Agnes Scott. New Moon occurs on Tuesday December 7<sup>th</sup>. I'm unsure if our D.S.S. will be the first or second weekend of December, but that first weekend will be great for observing if skies are clear. (*D.S.S. is Saturday December 4<sup>th</sup>*) Our "first Friday" schedule has been coinciding with New Moon all along, and this is a bit of a concern to me. I just feel participation might be better farther from the New Moon event. I'm going to explore the possibility of moving the Astro Imaging group to the fourth Friday. Maybe. You'll see it here first if a change is made, so stay tuned! I'll have to go over the 2000 calendar and get with our Observing Chair, Gil Shillcutt and Chris Depree, Astronomy Prof. at Agnes Scott before a change can be made.

December is still a first Friday get together, and after a (hopefully) successful Polar Alignment session in November, we'll move up to using the Telescope as our camera lens. The December 3<sup>rd</sup> meeting will cover prime focus and projection set-ups for shorter exposures related to lunar. Lunar close-up, and planetary photography. Focusing and other techniques will be covered, sharing everything I've learned to this point. Focal length and focal ratio calculations, exposure times and so forth will be on the agenda.

There will **NOT** be an Astro Imaging session in January. Due to Y2K concerns, yadda, yadda, yaddi. Seriously, I just don't feel I'll have time during the holidays to prepare an adequate program for January. I will write this column, looking back and looking forward to the New Year. Hope to see many of you at Charlie Elliott and other upcoming events, and remember: Stay IN FOCUS!!! (P.S. Who the heck is Frank Bowman? Sorry, Ralph!)

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## What's been happening at the Walter F. Barber JR observatory?

### Keith Burns VR Coordinator

We had a work party on (Saturday) October 23. Many projects scheduled were completed. The observatory walls have been painted dark gray. The floor of the observatory has a coat of slide resistant paint on it now. Thanks to Jerry Tarter for doing all the painting. Tracy Wilson and Stef Whetstone made a trip out to VR Sunday and collimated both the 20 inch and 10 inch scopes. All the brush that has grown up since the trees were cut on the south end of the field has been cleared.

This was made possible by the single effort of John Lentini. All but a few details on the electrical has been completed. Charles Hinely is responsible for most of the work. Peter Macumber, and Matthew Macumber helped Charles with this. We now have outdoor lights, they are only to be used for emergency purposes and when everyone is done observing for the night. There will be a separate switch that to turn on the lights. We have made it so that no one can accidentally turn on the lights. Of course, it goes without saying that Chrissy, Joanne, Sharon, and even Karen stepped in to help with various projects. There is now a microwave at VR in the warm up shed. A big thank you should go to

the Ladies. This month Dan Ford has donated a riding mower to the club. Big thank you goes to Dan for this. George Wynne brought the mower out to the observatory for us. NOW who wants to cut the grass?

The Bowman Dome is closed for repairs again. The scope works fine but the building leaks. Plans are in the works to install some sheeting on the roof to prevent this. So until the repairs are made, Ralph's Rotunda is closed. Thanks to Gil Shillcutt for painting the inside the Dome. It's all blue now.

Of course, I forgot to mention that the warm up shed has insulation now. Wow, what a difference real insulation in the ceiling makes. I don't know who did the work on this. Hint Hint. On a closing note, I want to tell everyone that training on the scopes at VR will be handled by either Stef Whetstone or Gil Shillcutt.

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## ASTRONOMICAL LEAGUE CORRESPONDENT

Here is a little information on the Astronomical League Correspondent (AL Cor). It's not the name of the Vice President of the United States. The AL Cor is the Atlanta Astronomy Club's representative for the Astronomical League. Everyone who joins the AAC is automatically a member of the AL. Keith Burns is the AL Cor for the Atlanta Astronomy Club now.

Everyone who is a member of the AL gets the AL newsletter called "The Reflector". If you are having problems getting the Reflector, contact me. Please note that The Reflector is sent out four times a year. If you address changes, please send the new address to me. This allows us to keep the membership list of the AAC updated. The reflector is sent out via bulk mail so they do not forward the newsletter to your new address.

Besides the newsletter, the AL offers many other services. It is my duty to keep you informed of the various services available. Included are books, informative articles, merchandise, AL happenings, and observing clubs. So, if you have any questions about the above stuff, please contact me. That is why I am here.

The observing clubs are many now. This is the best thing about the AL. Many AAC members are working on AL observing programs right now. I will try to keep information on all of the observing programs on hand or at least hook you up with the right people (and places) to contact. For questions about the observing programs, contact me. You can also submit your finished programs to me or Gil Shillcutt (Observing Chair).

You can contact me in one of three ways. First via email at (Keith\_B@Bellsouth.net). Second is via telephone at H (770-426-1797) or H (770-427-1475). Third, you can reach me via snail mail at

Keith Burns 3740 Burnt Hickory Road Marietta, Georgia 30064.

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## Astronomical League Spot light- The Road Less Traveled.

### By Keith Burns

Since this series began last year, we have covered astronomical league observing clubs ranging from the Meteor club up to the almighty Herschel list. We've only covered eight lists so far and there are eleven more to go. However this time I wanted to take a break from the Astronomical League observing club feature and explore those observing journeys you can design and build yourself.

Why do we do these lists in the first place? Well to answer that question I must give you my reason for doing the Astronomical League observing programs. When I started in astronomy and had gotten a telescope, I along with a group

of friends would do our monthly observing ritual out in the country. When the observing conditions were good, we still had one problem to content with, What do we look at in the sky tonight? Of course, we always went for the old familiar objects. Now after a while this would prove to be boring and not at all challenging to our observing abilities. I realized that I needed some kind of observing program to improve my observing skills and provide me with a challenge. It helps to have an observing goal to make the hobby interesting and exciting. This is where I was first introduced to the Telescopic Messier Club. Of course, your first list and how you got there is a completely different story. The result is the same. Soon you out grow the AL observing programs and need something else to do.

Now it is time to pull out the road map so to speak and plot a new course to take. While a personal observing program does not come with a pin or certificate, it does give you the satisfaction of knowing that you have designed your own observing program. Heck it might lead to a new Astronomical League observing program with your name on it. The ideas are endless about what to observe. There are some really obscure lists available for those of you up to the challenge. You do not have to go obscure. The choice is up to you. You want ideas? Well then, I will give you ideas. Even these only scratch the surface of programs you can put together. The idea is to have fun and learn something.

Some folks prefer the straight approach on this matter. Pull out your favorite star atlas. Starting with the first map, you can observe every deep sky object on that page. Note that this only works for constellations that are visible from your location. So you may have to start with a different map. Several people have observed every object in the Uranometria 2000 (Volume I-Northern Hemisphere) atlas or at least tried to.

Books can provide inspiration for observing projects. How about observing every object mentioned in the Burnham's Celestial Handbook. With three volumes involved, this project will take many years to complete. Here again remember that constellations like the Crux are not visible here in Georgia ever. You can also do this program with the new Night Sky Observer's Guide. The Night Sky Observer's Guide is a two-book set. This project will give you years of observing. How about the moon? Rukl's Atlas of the Moon has many objects you can observe. Even the moon has an assortment of unique objects. There are the lunar domes for example. These are extinct volcanoes on the moon. The list is continuing to change since only now are some of the domes being identified. Making things more of a challenge is the fact that these objects are only visible a few nights during each lunar month. Magazines also provide you with ideas. Each month Sky and Telescope along with Astronomy magazines give you ideas of objects to observe.

If you are not one who likes using books, then try observing one of many catalogs or lists of objects available. We start with catalogs containing a variety of objects. Of course, both the Messier and Herschel lists have to be included but these catalogs already have observing programs available from the Astronomical League. Then there is the New General Catalog and Index Catalog. Both catalogs are massive in size but both are currently being corrected for errors. You may notice that all star maps have deep sky objects labeled with either NGC number or IC number. It might be fun to observe every NGC and IC object in one constellation or at least try to. With programs like this, you will not always be successful in finding every object.

There are catalogs that contain only one type of deep sky object. So if you prefer observing one type of object then try one of these lists. Now we are approaching a list of catalogs that some people think of as obscure. Note that obscure does not always mean difficulty to locate but it can. If it was easy to do, then there would be no challenge or adventure. There are two catalogs for planetary nebula. First is the Perik-Kohoutek Catalog. Most maps label a planetary nebula as PK objects. This catalog does have many mistakes in it so beware. The second is the Abell Planetary Nebula catalog.

Open clusters seem to have an abundance of catalogs. Here are just a few. We have the Collinder catalog. A famous member of this list is the Coat Hanger

(Cr 399). Then there is the Melotte catalog of open clusters. Two well-known members of this list are the Hyades star cluster (Mel 25) which is the head of the constellation Taurus. There is also the Coma Star Cluster (Mel 111) in the constellation of Coma Berenices. This is a naked eye object. It is visible in the spring time sky just above the realm of galaxies.

Below is a list of really tough catalog objects to find. There are people in our astronomy club who have ventured into this realm and are still alive to tell tales of adventures. I'm only letting you know of what is available for you to try. Walk cautiously now as the road gets bumpy for a time. Now we move on to catalogs of globular clusters. Just a few include the Arp Globular Clusters, Palomar, and the Terzan.

We move on to clouds of dust and other stuff so to speak. There are catalogs with dark nebula or diffuse nebula. First is a catalog of dark nebula. Barnard Catalog of 349 dark nebulas (objects) is one. Then there is the Cederblad Catalog of Bright Diffuse Galactic Nebula. Finally, there is the Sharpless Catalog of HII regions. One member of this is Barnard's loop (Sharpless 2-276) in the constellation of Orion. I for one will try to do the Sharpless catalog in the future. Note that when you are looking for dark nebula, all you are seeing is nothing. It's the dark patches contained within the Milky Way.

Next are catalogs of galaxies. Here again I will only include a few since there are many. The Arp Atlas (list) of Peculiar Galaxies comes to mind to. The Astronomical League has an observing program already available for the Arp catalog. I wrote an article on the Arp Catalog in the April 1999 edition of the Focal Point. You've seen galaxies listed as NGC's or IC's. So here again the NGC and IC catalogs come to mind. Down the list is the MCG or Morphological Catalogue of Galaxies. Then there is the Uppsala General Catalogue of Galaxies. Now my head is starting to spin. These lists are not for the weak of heart. Okay we are now moving back onto smooth pavement.

I have left out several interesting objects. Why not try observing binary stars? The sky is full of them and there are many interesting ones to find. You may think all binary stars are easy to see but that is not true. Even Binary stars can challenge you observing abilities. The Astronomical League has a program called the Double Star club that includes a list of one hundred binaries. I will cover that program in more detail in a future article.

I will close by telling you what I am doing for a personal observing program of my own. At this point, I have five different observing programs I am working on. All of you have seen the beautiful pictures of deep sky objects taken by the Hubble Space Telescope. I have devised my observing program of HST objects. Nothing like seeing an object with your own scope that you have read about. This really makes astronomy more interesting and down right fun. This list is known as the HST list. For the last couple of years, I have kept a list of objects that I would like to observe. It has been named my personal wish list or (PWL). It includes objects mentioned by other astronomers, in magazines, and in books. Besides that, there is the Abell list of Planetary nebulas to tackle. Of course, we cannot forget the Herschel 400 list that I have been trying to finish. Finally, on those moon filled nights there is the Lunar Challenge. This observing adventure was devised by Philip Sacco. So I hope I have given you some ideas of paths to take or at least think about it. The road less taken is always full of adventure. Try it. You may find that you like it.

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## VR TOILET

Someone has been rotating the toilet drum and leaving it in the wrong position. This means the next person is peeing over the toilet drum. (Yes - UUGGGHH!!) The drum only needs to be rotated when we leave the site. **DO NOT ROTATE IT !!** If you must rotate it, PLEASE MAKE SURE IT HAS BEEN FULLY TURNED AND THAT THE OPENING IS AT THE TOP AND THE TRAPDOOR OPEN. I will talk to the toilet rep this week & ask how to cure the smell.

# Geoff's DID YOU KNOW?

The first in an occasional series on Astronomy basics and trivia.

As Mars, the God of War retreats rapidly from his synodic onslaught of Earth, I thought it might be interesting to share some information on a facet of The Red Planet that few amateurs will ever observe. The Moons of Mars.

Mars has two small satellites; Phobos \fo – bose\ (fear) and Deimos \de – mos\ (panic). Both are tiny little moons, orbiting close to the planet's surface, in comparison to the Earth's Moon. Phobos lies 5,800 miles from the center of Mars, and a paltry 3,700 miles from its master's surface. It's oblong dimensions measure 17 x 13 x 12 miles, giving it an average diameter of approximately 10 miles, Deimos orbits much further out, 14,600 miles from the center, 12,500 from the surface. Deimos is also the smaller of the two, its potato shape yielding 9 x 7.4 x 7 miles of space displacement. Its' average diameter is a little over half that of Phobos, at 7 miles.

In addition to these puny dimensions, both moons are nearly impossible for most of us to observe because their albedo (light reflectivity) is only 4 to 5 percent. This means they are darker than the asphalt pavement I work on, even after a fresh coat of the charcoal black sealcoat we apply! Best evidence to date indicates both are comprised of carbonaceous (carbon bearing) rock, which is typically chemically bonded by H<sub>2</sub>O. However, a 1989 Soviet probe revealed no such water on Phobos. Perhaps meteor and micrometeor impacts have driven water away from the surface. The discovery of extractable H<sub>2</sub>O on Phobos would make it an important stepping stone (HEE-HEE!) to future exploration of Mars!

Carbonaceous objects are known to reside in the outer regions of the asteroid belt. Many believe that early in the Solar System formation, Jupiter's enormous gravity perturbed these bodies and Mars' gravity captures them before the "Cosmic Hoover" sucked them in! Although similar in composition, surface features vary on Phobos and Deimos. Phobos has a crater 1/3 its own diameter, even given a proper name, Crater Stickney. Phobos also bears unexplained, uneven grooves and "Crater chains." Deimos has no "chains" and its' craters are more smooth and well rounded. Perhaps gravitational effects on impact debris is part of the difference.

Super-Computer modeling suggests both little moonlets will ultimately careen in toward the planet, within the Roche Limit, and impact the surface. In the far distant future, it may be "Impact Basin Phobos" and "Crater Deimos", meaning "Nada Mas Lunas" for Mars!

Let's stretch our imaginations to the Roche' Limit and pretend, for the moment we are to track these mini-moons, we will need an extremely flexible equatorial mount. How so? Let me explain.

Both Phobos and Deimos revolve about the equatorial plane in the "normal" (north facing)

Counterclockwise direction. However, due to Phobos close proximity to the surface and therefore the gravitational center, a very high orbital velocity is required to maintain its altitude. Phobos orbits once every 7 hours, 39 minutes. The Martian day is 24.5 hours. How does this work out? Well... Phobos rises in the WEST and sets in the EAST some 4.5 hours later! Lets see... a "high speed" clockdrive with Southern Hemisphere rotation for use in the Northern Hemisphere would track it, I guess.

Deimos, being farther out and smaller (less mass) maintains its altitude with an orbital period of 30 hours, 18 minutes, which is about 6 hours longer than a Martian day. O.K. But what does that look like from Martian soil? Diminutive

Deimos rises slowly from the East, goes through two complete cycles of phases, (first quarter, full, last quarter, new – repeat) before slowly setting in the west. Slow that clock drive way on down to track this celestial peanut!

What a most peculiar sight all this would be with our earthly point of view!!!

Sources: Astronomy Made Simple by Micheal Hamburg © 1993 Doubleday Publishing.

The Grand Tour by Ron Miller & William K. Hartman © 1993 Workman Publishing and from the Author's recollections and deduction.

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## Howl-een Fun

### by Philip Sacco, Lunatic #82

This list was compiled two years ago, and myteriously manages to elude me or....'dissappear' two months before the Howl-een season. Now that It is posted maybe you will have a chance to track some of these monsters down as they will be rising soon...

Well it's that time of year again....Witches, Ghosts and Goblins and 'Things that go Bump in the Dark'.....

Yeep....Hard to believe it's almost Halloween again. This is a time of year when we prepare ourselves for the unusual, the scary things to present themselves. But more curious than that, is the fact that many of us will go out of our way to go do something a little unusual or even spooky in the 'Spirit of the Season'.

If you are one of those individuals who like to hunt out the unusual and scary....than this 'Halloween Trick-or-Treat List' will be right up your alley! So fix yourself a cup of hot witches brew, put on something warm and take a trip on the Dark Side with a friend for an evening of a Howl-een good time.....!

## The Howl-een Hunt- or 13 Un-Lucky Objects

Let's do a little observing warm up before we get to the "13 Un-Lucky Objects" and do a little naked eye hunting to get in the mood of the evening.

If we're going to have ghosts and goblins and such creatures of the night....everything has a beginning and 'the end' is no different, so to start off this seasonal pleasure...something needs to be laid to rest. First stop will be somewhere high overhead by mid evening. Commonly known as the constellation 'Delphinus', located just N.E. of the Eagle(Aquila) this little constellation was at one time called '**Job's Coffin**'. I figure the name comes from the odd ol' timey coffin shape of this small group of stars. The second constellation to hunt down is just south of Pegasus....find the Sea Monster **Cetus**. The third easy monster to hunt down is the constellation **Draco- The Dragon**.

A little hunting thru some old atlas' will be required to locate the following lost constellations, but to the intrepid hunter of the obscure, these will bring you some satisfaction once you have learned them and found them....after all this is a Hunt.....

**The False Cross-** I'll give you a hint....Iota and epsilon Carinae and Kappa and Delta Velorum...good luck these are 'deep in the ground' so to say...hehehehe.....or is that ..."Ah-Haa-Haaaa!"

**The Horse and Rider-** Zeta and 80 Ursae Majoris....

**The Sickle-** Just Try to find this one at this time of year.....This ones a real Trick....

**Cerberus-** The three headed dog guardian of hell....**I'll give a Halloween treat to anyone who can tell me where to avoid this beast.....**wellll, I did say you may have to get out an old atlas...didn't I? (this is a very uncommon

constellation.....after all...How many Three Headed Flesh Eating dogs have YOU seen?! find this one and you will have a real Treat to share with others...

This last constellation I have included not so much for it's content- **Tubus Herschellii Minor**- but rather for the fact that it was created by a Jesuit astronomer named....**Father Maximilian Hell**....!

Now, if you began this trek about 9PM, you should now be approaching the 'Witching Hour' so let's get to the good stuff.....after one last easy naked eye object. Turn your attention to the constellation Perseus and hunt down "**The Demon Star**" commonly known as Algol. This star is one of the shortest term variable stars, and can be seen to brighten and dim in the course of just a few days....!

OK....OK....it's dark out now and the sky is full of creatures of the night...you just need to spy them out now....It's time for the "13 objects for a Howl-eeen Good Time"! A telescope will be required for these little monsters, after all.....they would rather you didn't see them and they can only be found under cover of night!

**1. Markarians Chain**- M84/86/88...You'll have to hunt early to find this chain in a woman's hair! Welllll....it was a LOT of hair so maybe a chain was necessary!?

**2. The Dragon Nebula**- NGC 5623, M 8...reputed to live in a tea pot!

**3. The Ghost of Jupiter**- NGC 3242...under the tail of Hydra....Good LUCK!

**4. The Cat's Eye**- NGC 6543...can be found under the first curl of the dragon....

**5. The Owl Nebula**- NGC 3587, M 97...you'll have to crawl under the belly of the Big Bear to find this guy...

**6. The Owl Cluster**- NGC 457...This one is a treasure of a Queen....

**7. The Veil**- NGC 6960...Just slipped off Job's Coffin!

**8. The Blinking Nebula**- NGC 6826...careful or this one will drop on your head when your not looking....or rather when you can't see it! Tricky little fella'....now ya' see him...now ya' don't! Flies with swans....

**9. The Ghost Ring**- IC 5148...hehehehe Happy Hunting!! dig REAL DEEP to find this one.....and up comes a GHOST.....BOO!

**10. Miracks Ghost**- NGC 404....this guy is related to a Chained up Princess.....Monster Meat if you will....he'll be hovering over head soon.....

**11. The Spider**- NGC 5829...no tellin' where you will find this little guy....try looking under your chair....!

**12. Medusa**- This one is an unable-Abell 21.....Are you sure you want to look for this one?!

**(13.) The Witch Head Nebula**- IC 2118 this one will be up early in the morning near the right foot of Orion.

Well there you are! Looks like you made the trip OK.....you did didn't you AH-HAA-HAAAA!!!....

For those of you interested, or not owning a telescope who would like to hunt these spooks down....I will be conducting "A Howl-ing Hunt" on October the 24th at our observatory the evening of the picnic. That will be a fun packed

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## NASA News

### Edited by Gil Shillcutt

Mars:

As of October 1, 1999, Mars Climate Orbiter failed to achieve orbit around Mars. The spacecraft's closest approach to the planet was far lower than planned, and contact with it was lost. This was a navigation error; the spacecraft itself was perfectly healthy

prior to its loss. The search for MCO has been abandoned, officially marking the end of the mission. Teams have been established to determine the cause of the failure, and the first results of the investigations will be released shortly. Fortunately, NASA has a robust Mars program, with many other missions planned, so NASA will recover from this loss.

The JPL press release is at <http://www.jpl.nasa.gov/releases/99/mcolost.html>

Scientists studying high-resolution images from our Mars Global Surveyor spacecraft have concluded there is no evidence of shorelines that would

have surrounded oceans that may have once existed on Mars. Images and discussion at [http://mars.jpl.nasa.gov/mgs/msss/camera/images/gr1\\_99\\_shorelines/index.html](http://mars.jpl.nasa.gov/mgs/msss/camera/images/gr1_99_shorelines/index.html)

Press release: <ftp://ftp.hq.nasa.gov/pub/pao/pressrel/1999/99-114.txt>

Other images from Mars Global Surveyor suggest the presence of

"pseudocraters", formed by explosions due to the interaction of molten lava with a water-rich surface, a long time ago. So where did Mars' water go? [http://mars.jpl.nasa.gov/mgs/msss/camera/images/10\\_22\\_99\\_gsa\\_cones/index.html](http://mars.jpl.nasa.gov/mgs/msss/camera/images/10_22_99_gsa_cones/index.html)

Pathfinder images of Mars show evidence of rocks having been hit by pebbles from space. [http://explorezone.com/archives/99\\_09/23\\_mars\\_rocks.htm](http://explorezone.com/archives/99_09/23_mars_rocks.htm)

Jupiter:

Scientists working with Galileo data have found that sulfuric acid — a corrosive chemical found on Earth in car batteries — exists on the frozen surface of Jupiter's icy moon Europa. Are there any implications for the possibility of life there? There's a press release at

<ftp://ftp.hq.nasa.gov/pub/pao/pressrel/1999/99-112.txt>

and an image is available at <http://www.jpl.nasa.gov/galileo/>

The closest-ever image of Jupiter's moon Io, taken during a flyby of the

volcanic moon by our Galileo spacecraft, shows a lava field near the center of an erupting volcano. <http://www.jpl.nasa.gov/releases/99/glliohighres.html>

Uranus and Neptune:

Neptune and Uranus contain a high proportion of methane, which researchers have now shown can turn into diamond at the high temperatures and pressures found inside these planets. Don't ask your local jeweler for one of these, yet.

[http://www.urel.berkeley.edu/urel\\_1/CampusNews/PressReleases/releases/9-30-1999a.html](http://www.urel.berkeley.edu/urel_1/CampusNews/PressReleases/releases/9-30-1999a.html)

Other Solar System:

Two teams of researchers have proposed the existence of an unseen planet or a failed star circling the sun, far beyond the orbit of Pluto. The idea is based on a study of the orbits of long period comets, visitors from the Oort cloud. Fascinating story at: <http://www.msnbc.com/news/320182.asp?cp1=1>

Note: Is Nemesis back?

The controlled crash of our Lunar Prospector spacecraft into a crater near the south pole of the Moon on July 31 produced no observable sign of water. That doesn't mean that there isn't any, so the question remains open.

press release: <ftp://ftp.hq.nasa.gov/pub/pao/pressrel/1999/99-119.txt>

Lunar Prospector home page: <http://lunar.arc.nasa.gov/>

Ancient iron-rich rocks point to early occurrence of land-based life on

Earth — implications for astrobiology at

<http://www.eurekalert.org/releases/psun-air101899.html>

An analysis of old Pioneer 10 telemetry data suggests that it had a near encounter with an unidentified solar system object in 1992. The BBC story is at: [http://news.bbc.co.uk/hi/english/sci/tech/newsid\\_460000/460095.stm](http://news.bbc.co.uk/hi/english/sci/tech/newsid_460000/460095.stm)

Pioneer page: [http://spaceprojects.arc.nasa.gov/Space\\_Projects/pioneer/PNhome.html](http://spaceprojects.arc.nasa.gov/Space_Projects/pioneer/PNhome.html)

Solar System Dynamics:

The popular image of young planetary systems as thin, spinning pancakes of cosmic dust and debris may be changed by a new computer model that shows how a disk of debris is transformed into a very distinct ring once Pluto-like bodies start to form. <http://www-cfa.harvard.edu/cfa/ep/kenyon1099.html>

For the first time astronomers have seen a star move under the influence of the gravity of a planetary companion. This star was previously shown (by indirect means) to have

3 planets; now the effect of one of the planets on the star has been directly detected using Hipparcos data. BBC story at [http://news.bbc.co.uk/1/hi/english/sci/tech/newsid\\_459000/459889.stm](http://news.bbc.co.uk/1/hi/english/sci/tech/newsid_459000/459889.stm)

In a somewhat related story, a pair of astronomers suggests that searing flares thousands of times more powerful than those we see on the Sun are produced when a star and one of its planets get their magnetic fields in a tangle. These "superflares" might help us spot distant stars that have planetary systems. Story at: <http://www.eurekalert.org/releases/ns-mwp092299.html>

Solar Dynamics:

Stars Shed Debris Disks at Same Age: a new study from Infrared Space Observatory data suggests there's a distinct timeline in the evolution of solar systems - at least in the violent "clean up" stage believed to cap the planet-forming process. AP story: [http://dailynews.yahoo.com/h/ap/19990929/sc/stellar\\_cleanups\\_1.html](http://dailynews.yahoo.com/h/ap/19990929/sc/stellar_cleanups_1.html)

ISO page: <http://isowww.estec.esa.nl/>

Hubble News:

The Goddard Center has put together a page covering the upcoming Hubble Servicing Mission 3A at <http://hubble.gsfc.nasa.gov/> The Shuttle Program Requirements Board has reviewed the status of the shuttle wiring inspections and repairs, and has established a launch date of December 2, 1999 for the mission.

Images taken in infrared and visible light by HST recount a vivid story of the turbulent birthing process of massive stars.

<http://oposite.stsci.edu/pubinfo/pr/1999/33/index.html>

Hubble has allowed astronomers to resolve, for the first time, hot blue

stars deep inside an elliptical galaxy. Images confirm that ultraviolet light in ellipticals come from extremely hot helium-burning stars at a late stage in their life. <http://oposite.stsci.edu/pubinfo/pr/1999/40/>

X-Ray and Gamma Ray Science:

Cosmic gamma-ray bursts, the brightest known explosions in the universe, may come from the fiery deaths of very massive stars in supernova

explosions. CalTech study at [http://www.caltech.edu/~media/Press\\_Releases/PR12008.html](http://www.caltech.edu/~media/Press_Releases/PR12008.html)

New images from the Chandra X-ray Observatory of supernova remnants have been released. Perhaps the most fascinating is a stunning image of the Crab Nebula, the spectacular remains of a stellar explosion, which has revealed something never seen before: a brilliant ring around the nebula's heart. This provides important clues as to what is going on inside the Crab. CXO page: <http://chandra.harvard.edu>

NASA has two new medium-class Explorer (MIDEX) missions! Swift Gamma Ray Burst Explorer, to be launched in 2003, is a three-telescope space observatory for studying gamma ray bursts. The Full-sky Astrometric Mapping Explorer (FAME), to be launched in 2004, is designed to obtain highly precise position and brightness measurements of 40 million stars.

Swift: <http://swift.gsfc.nasa.gov/>

FAME: <http://aa.usno.navy.mil/FAME/>

Chandra image of Eta Carina reveals details of a mysterious star - the Hubble of x-rays strikes again. Good story and images of this dying star at [http://science.nasa.gov/newhome/headlines/ast08oct99\\_1.htm](http://science.nasa.gov/newhome/headlines/ast08oct99_1.htm)

Another Chandra image is of Centaurus A, a nearby galaxy noted for its explosive activity. The image shows an x-ray jet from a suspected black hole in unprecedented detail. [http://science.nasa.gov/newhome/headlines/ast26oct99\\_1.htm](http://science.nasa.gov/newhome/headlines/ast26oct99_1.htm)

Cosmology:

A NASA astronomer and his team have found evidence suggesting that the universe may be younger than previously thought (about 12 billion years old), and that it is expanding faster than expected. Food for cosmological thought at [http://george.arc.nasa.gov/dx/basket/pressrelease/99\\_58AR.html](http://george.arc.nasa.gov/dx/basket/pressrelease/99_58AR.html)

Two complementary surveys by independent teams of astronomers using Hubble show that the hubs of some galaxies formed early in the Universe, while others formed more slowly, across a long stretch of time. Press release at <ftp://ftp.hq.nasa.gov/pub/pao/pressrel/1999/99-107.txt>

Astronomers using radio telescopes have gained their first glimpse of the region near a black hole at the heart of a distant galaxy, where a powerful stream of subatomic

particles spewing outward at nearly the speed of light is formed into a jet. These are the most detailed images ever of the center of the galaxy M87, some 50 million light-years away. <http://oposite.stsci.edu/pubinfo/pr/1999/43/>

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## The November Dark Sky Session and Zombie Party

### November 5-7. Charlie Elliott Wildlife Management Area (CEWMA)

The event will be officially open at 4pm on Friday, November 5th and run through Sunday morning the 7th. There are no formally scheduled classes arranged for the evening of the 5th. There may be some impromptu sessions on Mythology and Unaided observing instruction if many of our new members show up Friday.

Orange traffic cones will lead everyone into the check in area for last minute info and registration. The event is free, and the public is encouraged to attend this membership drive for the new Chapter. The Zombie Party/Dark Sky Session for AAC members and their immediate guests will be held at the observing field on Marben Farm Road (MFR). Access to this area will be limited to members and their immediate guests and displayed nametags will be encouraged to facilitate control of the area and introduction of our new members. New members to the club should be able to pick up their nametags at the registration area.

Red Light rules and field protocol will be congenially enforced to facilitate the DSS on the Marben Farm Road site. Early departing participants will be encouraged to set up in the designated Camping area, observing field. A large, mowed observing field will be available for anyone in that area. This is to minimize the light interference on the MFR observing field as there will be an AAC Astro imaging session in progress at this location on Saturday evening starting at 4:30pm. This particular Astro Imaging session will be restricted to AAC members and their immediate guests only. There will be an imaging session open to the public earlier in the afternoon of the 6th as discussed below.

The Elliott Group has arranged a presentation on Reptiles for Saturday morning and we are all encouraged to attend and show our support. It will be at 10am on Saturday morning, and I believe it will be hosted at the Aquatics Bldg. to the south of the camping area and the public observing field. The Shooting Range will be open and I understand the fishing is excellent at the lakes as well!

In addition, on Saturday, Rich Jakiel will present "Sketching Eyepiece Impressions", and Philip Sacco will present "Planetron" followed by a tour of the Cosmos slide show. The time of these two sessions has yet to be determined. Currently the plan is to have one at 1pm and the other at 3pm. At 2pm, Geoff Powers will be presenting "An Introduction to Astro-Imaging". All three of these classes are open to all for free, and will be held in the Aquatics Bldg. to the south of the camping area.

There will be telescopes set up in the observing field below the camping area for non-member set up and public entertainment. Non-AAC member participants are welcome and will be asked to set up in the public area near the designated camping area. The AAC/CE chapter membership drive will include, throughout the night, a free-form instructional session on observing, and the club in general, and telescope selection, purchase and use. New members joining on site will be escorted to the Marben Farm observing field to see what goes on at an event like this, but we will not disturb anyone not previously agreeing to be disturbed. Every attempt to keep the Marben Farm Road site dark and conducive to deep sky work will be made. Permission has been denied to set up along the road extending to the center of the observing field at MFR. Tenting/camping will be restricted to the designated camping area.

The observing area at MFR will be enlarged and mowed to accommodate the

large expected turn out. Attempts are being made to have Porta-Johns at the site.

There will be an additional observing area prepared near the camping area for early departing participants, and the to accommodate the public at large for the membership drive.

Early in the evening, there are plans to have a short welcome presentation for all new members at the Aquatics Bldg. Exact time will be posted.

I hope to see you all at the event!

Let's make this a good one in support of the new AAC/CE Chapter.

Any questions or comments you may have can be directed to: Philip Sacco  
404-296-6332

ppsacco@mindspring.com

Thanks and here's hoping we have...

Clear Skies!

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#### Club Officers

Ken Poshedly	President	770-979-9842 <a href="mailto:ken.poshedly@mindspring.com">ken.poshedly@mindspring.com</a>
Eugenia Abbey	VP Program Chairman	404-634-1222 <a href="mailto:eabbey@bellsouth.net">eabbey@bellsouth.net</a>
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#### Standing Committees

Richard Blackburn	Dark Sky Site Search	770-801-9759 <a href="mailto:rblackburn@mindspring.com">rblackburn@mindspring.com</a>
Mark Banks	Sidewalk Astronomy	404-257-2766
Stephen Blalock	AAC Webmaster	770-948-9820. <a href="mailto:stephen.blalock@gtri.gatech.edu">stephen.blalock@gtri.gatech.edu</a>
Tom Buchanan	Light Pollution	770-521-2136
Lynn Crowley	Beginner's Contact & Socials	404-233-6886
Julie Moore	Hospitality and Refreshments	770-242-6735
Ken Poshedly	Publicity	770-979-9842 <a href="mailto:ken.poshedly@mindspring.com">ken.poshedly@mindspring.com</a>
Chrissy Mondell	Ladies of the Night ... Sky	404-296-6332 <a href="mailto:chrissy@NightSky.Org">chrissy@NightSky.Org</a>
Geoff Powers	Astrto Imaging	770-454-6107

## November 6 — Astro-Imaging

CEWMA

## November 5-7 — Dark Sky, Zombie Party

CEWMA

## November 13 — ATM Workshop

9:00am, ASC Bradley Observatory

## November 13 — Astro Techniques

5:00pm, VR

## November 15 — Mercury Transits Sun

## November 20 — Training

5:00pm, VR

## December 3 — Astro-Imaging

8:00pm, ASC Bradley Observatory

## December 4 — Dark Sky

Rockmart

## December 11 — ATM Workshop

9:00am, ASC Bradley Observatory

## December 11 — Training

5:00pm, VR

## NightSky.Org

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

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

Peter

## Atlanta Astronomy Club

### The November Meeting

Friday, November 19<sup>th</sup>

Our November meeting will be held on **November 19**, at **8:00 p.m.** at Emory University's **White Hall**.

Our speaker will be Dr. Paul Wiita, of Georgia State University's Department of Physics and Astronomy. His subject will be: **Brighter than a Trillion Suns: Quasars and Black Holes**. These phenomena tend to occur together in active galactic nuclei and are some of the most extreme and unusual objects in the universe.

Dr. Wiita (<http://www.chara.gsu.edu/~wiita/wiita.html>) is a professor of astronomy at GSU, and is a well-known authority on Quasars and black holes. He has authored dozens of papers on the subject. He is a nationally ranked squash player, as is his son.

Don't miss this talk on the cutting edge of astronomy, presented by a cutting edge authority.

The Atlanta Astronomy Club Inc., the South's largest and oldest astronomical society, meets at 8:00 p.m. on the third Friday of each month at Emory University's White Hall or occasionally at other locations (check the hot line for details). Membership is open to all. Annual dues are \$25 (\$10 for students). Discounted subscriptions to Astronomy, and Sky & Telescope magazines are available.

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

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

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

Subscribe to the Atlanta Area Astronomers Mailing List!

Send a message to [AACList-subscribe@listbot.com](mailto:AACList-subscribe@listbot.com)

For further information send an e-mail to [LennyAbbey@Mindspring.com](mailto:LennyAbbey@Mindspring.com)

**FOCAL POINT  
Deadline  
November 27, 1999**



Newletter of The Atlanta Astronomy Club, Inc.

FROM:

Peter Macumber - [PMacumber@Nightsky.Org](mailto:PMacumber@Nightsky.Org)

1057 Trestle Drive

Austell, GA 30106

[We're here to help! Here's how how to reach us:](#)

Atlanta Astronomy Club

PMB 305

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