

The Focal Point

The Atlanta Astronomy Club
Established 1947

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Editor: Peter Macumber

AAC Meeting Minutes on 15 May 1998

Number in attendance: 46

During the general announcements, Phil Bracken informed the club of a dark sky initiative forming in Cherokee County. One of the catalysts behind this initiative is Dr. Richard Sommers, physics professor, at Rheinhardt College in Cherokee County and one of the AAC newest members. This initiative has the backing of the National Forest Service for the development of a permanent dark field site somewhere between Amicolola Falls and Dahlonega. Phil and other AAC members meet with Rangers May 22nd to scout out potential sites. There was also a meeting at Rheinhardt College on June 1st to discuss issues surrounding this initiative. For more information on the progress of this exciting opportunity, please contact Phil.

Also, on the lighter side Bob Smith presented the club with an astronomy pop quiz. This was the same quiz as Jay Leno used on The Tonight Show, needless to say the club members did much better than Jay's participants.

And last but not least, Alex Langoussis presented Art Russell an award of his Presidency during the 1997-98 year for which he received a well deserved round of applause and Phil Sacco received a double star certificate. Awards were also presented to those who did not receive theirs at the banquet.

The speaker Dr. Richard Schmude was introduced by Rich Jakiel. Dr. Schmude discussed his most interesting work on a possible meteorite impact crater in Nevada. His talk which was a slide and overhead presentation that illustrated the different types of crater (impact and manmade) seen around the world and the different types of meteorites with samples of the different types passed around the room. Dr. Schmude, then, discussed his work on Irwin Crater, which was first discovered in the 1920's. His work involves determining if this is indeed an impact crater versus some other phenomenon. He provided us with several observations for and against this being an impact crater, which generated some discussion among the club members.

During the business meeting section, two list servers were brought to the attention of the group. The Big DOB list which discusses the problems encountered with building and maintaining a large Dobsonian style telescope. To subscribe to the BigDob list, send an email to listserv@ucsd.edu and in body type *subscribe* <your email address> *bigdob-l*. The Atlanta Area Astronomers list maintained by Eric Shelton provides information on local astronomy events and club activities. To subscribe to Atlanta Area Astronomers list, send an email to listserv@atlastro.ml.org and in body type *subscribe atlastro* <your name> (not email address). In both cases, leave the subject blank.

Continued on P-7

AAC Support of ALPO Conference Invited

Inside this issue of your "Focal Point" newsletter are materials about the upcoming conference of the Association of Lunar and Planetary Observers (ALPO) here in Atlanta Thursday through Saturday, July 9-11.

This will be the first time the ALPO has held a conference here, though two of its members-of-note live right here in metro Atlanta; Lenny Abbey, practically a founding father of the Atlanta Astronomy Club joined the ALPO about 1950 as a teenager and several years later was named as the ALPO's first Remote Planets Section Recorder (now called the Remote Planets Section Observing Coordinator). And AAC member Dr. Richard Schmude, who teaches at Gordon College in Barnesville and is one of our more dynamic speakers, is the current holder of the ALPO Remote Planets Observing Coordinator.

While all AAC members are invited to register, attend and even make a presentation at the conference, we also need a few members to help with onsite assistance at the conference (staffing the check-in table, local transportation for those with no car, etc.).

For members who live too far from the conference site and who wish to stay in town for the event, the ALPO has arranged for a block of rooms to be held at the Holiday Inn-Select in Decatur for a special rate of only \$79 per room (plus tax). There are no additional per-person charges. For more information on the lodging, call the Holiday Inn-Select at 404-371-0204 (or if long distance, 1-800-225-6079).

Ken Poshedly <ken.poshedly@mindspring.com>

William A. Calder 1906 - 1998

Bill Calder, our Club's founder, and the founding director of Agnes Scott College's Bradley Observatory passed away in Suwanee, Tennessee on May 22. He was ninety-one years old.

The accompanying article, "A Tale of Two Telescopes," which was being prepared for this publication at the time of his death, describes Bill's interest in astronomy from childhood until he arrived at Agnes Scott College in 1947. It is an impressive mixture of subtle humor and genius, which - through him - became our heritage.

During his long tenure at Agnes Scott Bill taught astronomy to an astounding 85% of the student body. It has been estimated that he taught astronomy to more undergraduate students than any other teacher in the country. A more complete account of Bill's life, and his impact on astronomy in the South will be presented in our next issue.

Lenny Abbey

THE FRAC PACK

Although unaffiliated with AAC, the Flint River Astronomy Club has close ties with your club, beginning with the fact that Art Russell, Rich Jakiel, Phil Sacco, Chrissy Mondell, Alex Langoussis, Steven "Smitty" Smith and several other AAC members are also members of FRAC. Why? Because FRAC's annual \$10 membership fee offers them access to the dark skies of our Williamson observing site.

Griffin-based FRAC was organized a little more than a year ago by AAC members Larry Higgins, Bill Warren and Ken Walburn to meet the needs of amateur astronomers living in the area between Atlanta and Macon. Mr. Loyd Cox, father of FRAC member Keith Cox, has generously granted FRAC the use of what was once his private landing strip for FRAC's deep-sky observing. Cox Field, as it is called, is located a couple of miles west of Williamson; its use has been restricted by Mr. Cox to FRAC members and onetime guests.

Cox Field contains none of the amenities (e.g., outhouse, warm-up room, concrete viewing pads, etc.) of Villa Rica; all it has to offer is a dark-sky observing site comparable to Dauset Trail.

The Flint River Astronomy Club issues its own monthly newsletter, *The Observer*. Club meetings are held on the 2nd Thursday of every month in the media center of Beaverbrook Elementary School. The school is located north of Griffin, ½ mile west of 19/41 on Birdie Road. AAC members who are interested in joining the FRAC pack to enjoy the dark skies of Cox Field are cordially invited to call Larry Higgins at 7770-227-2233 or Bill Warren at 770-229-6108 (e-mail: WE1212LW@aol.com), or send a \$10 cheque to Ken Walburn at P.O.Box 1179, McDonough, GA 30253. Membership in FRAC is open to anyone whose checks don't bounce.

A TALE OF TWO TELESCOPES

(From the *Atlanta Observer's Notebook*, February, 1978)

In October while looking for some ancient slides to be used for my infamous dedicatory speech at the Walter Barber Jr. Observatory (cancelled by look of darkness) I ran across items which were quite surprising. The box had been unopened for perhaps forty years, and I got some of the feelings of Howard Carter when he stuck his head into Tut's tomb. Pictures of a telescope I had made put a lump in my throat. Its story and my sad parting with it might be of interest to amateurs.

Astrologers tell us that the stars influence our lives. They are so right! And when a telescope gets between us and the stars, the effects can be disastrous!

My dad bought a draw telescope of 1-11/16" aperture (1.6875" by my calculation but I had not heard of significant figures at the time). From the tops of oak trees I could see the spires of a town 12 miles away, but the chief joy was the moon looking like rock salt on cold winter nights, (a pleasure forced on all neighbors). The Orion Nebula, especially when seen while out on my skis, was terrific. The library had a book, *A Beginner's Star-Book* by Kelvin McKready, which had excellent maps and accompanying lists of objects for opera glass, 2" telescope and 3". There were even objects recommended for naked eye (for viewers not too prudish). One of the happiest days in my life was a Sunday afternoon when the book explained to me the mysteries of right ascension and declination. The library could get me a copy of this (the best book on astronomy ever written, in my warped opinion) for \$4.00. So I waded through 5 miles of snow delivering papers each night for a month to get my copy. (The paper cost 12-cents a week, which took all Saturday mornings to collect.)

Then came World War I. German subs were sinking our ships and an



The 12" reflector at Knox College. In the background is Old Main, on the steps of which Lincoln debated Douglas. On that telescope is mounted my invention of a variable grating for photometry. This resulted from my taking up harping as I left Harvard. This was a reverse Herschel - he was fed up with the music profession and switched to astronomy. The explanation is too lengthy to be discussed here.

urgent request came for telescopes and binoculars. Sorrowfully we packed the 'scope and sent it off never expecting to see it again. However, at the end of the war it came back with a beautiful certificate; entitled "Eyes for the Navy" and a note of thanks, signed by Franklin D. Roosevelt, Assistant Secretary of the Navy (which is more than the 200" ever got!). Whereupon I built an equatorial mount using the brassy covers of peanut butter jars (President Carter, please take note!) for circles. The course of my life was set.

A scholarship and job offers sent me to a small but excellent college, but one with no formal courses in astronomy (but with a 3" refractor which later became mine). This was the golden age of collegiate horseplay and I had a wonderful three years, including such things as bumming on the railroad on weekends and playing bass drum in the band. The band, however, placed me at great risk, since it was the custom at the end of games for each college to try to kick in the drum of the opponent. But I had taken all of the math and physics courses available and this brought the worst dilemma of my life. I could finish the B.A. with ease and be fiddle soloist with the glee club on its tour, but I gave all this up and though prospects were grim I transferred to my State University of Wisconsin.

I went up Observatory Hill where I got the brush-off by Stebbins

because of my lack of formal courses in astronomy. (He was the pioneer in photoelectric photometry.) A few years later when I was active in that racket at Harvard, he asked me how I came up through the University of Wisconsin without passing through his hands. (I explained very bluntly). So I went down the hill to Sterling Hall, home of the physics department, where I was treated kindly by one of the best men who ever lived. By bending things a bit he told me there was a possibility of finishing in a year, but this involved a nearly lethal dose of hard-core physics plus other general requirements. This was terrifying but I resolved to try it, and if successful I would buy one of the pretty red watch fobs with a big watch. (Pants don't even have watch pockets any more — another sign of decadence.)

Sterling Hall proved to be a hotbed of future Nobelists and fathers. I sat next to Karl Jansky in two courses. He was unaware that he would be involved in a paternity case (and immortality) as the father of radio astronomy. In the class, Mathematical Theory of Heat Conduction, was John Bardeen who was always finding mistakes of the professor who had written the book. Bardeen later got the Nobel as father (or father-in-law?) of the transistor.

On late Friday afternoons was the colloquium, usually on the new and abstruse subject of quantum mechanics, by J. H. Van Vleck, (Nobelized in '77 as "father of modern magnetism"). But it so happened that across the street was a nurses' dormitory, and at this time of day the future Nightingales were getting ready for the night shift (stepping into it or pulling it down over their pretty shoulders). The result was that all heads but one were turned towards the window (there was one girl in the audience). But this was not surprising. Mathematicians are trained to look carefully at significant figures since the time of Galileo and his falling bodies. Physicists are known to be a "broad-minded" lot. (This has nothing to do with telescopes, but is included as an aspect of higher learning.)

But how high can that get? One afternoon there was a lecture by the world famous Herman Weyl. I happened to be sitting behind the more famous British physicist Dirac, long time Nobelist, and father of the electron hole concept, etc. I was, as usual, despondent because the lecture was way over my head. But feelings improved when at the end a man leaned over and asked Dirac if he understood the talk. Dirac replied that parts were comprehensible but that was because he had heard the lecture before.

I got the watch fob at the end of the semester and by further bending, management got me an assistantship as lab instructor, which involved working all the experiments and writing them up for approval. It was impressed upon me that this was the only case of such a position being given to an undergraduate. With a beaver of an experimental thesis I worked seven days a week from 7 a.m. till midnight. June finally came and Charles Lindbergh and I drew the largest crowd in the history of commencement at U.W. (The Lone Eagle had laid some goose eggs in physics and was a dropout, but his travel to Paris was so broadening that he was given an honorary degree and membership in the glorious Class of '28.)

Well, to make to make a short story long, I stuck it out for one more year. I was led into a room full of high-vacuum equipment where some poor cuss had gotten a Ph.D., and told to do something smart for an M.A. By the end I was so fed up with physics that I had to get out. (Years later some terrorists bombed Sterling Hall - an original idea!) So I took a job teaching in a high school and got married. I also taught a Sunday School class and started an orchestra that included all sects, agnostics and atheists. It balled into symphonic size (but not quality), much to the consternation of organized music of the town.

Then I got into mischief. Probably nobody in our Club has seen the first edition of *Amateur Telescope Making*, a skinny but fascinating volume. I got materials for a 6" mirror and began nightly grinding, walking around a barrel in a clothes closet. Galileo had said that given a long enough lever he could move the world. I went further by saying that given a pound of rouge I could paint it red. Without finishing the 6" I ordered mate-

rials for a 12", (glass in those days., but O.K.). A young electrical engineer joined in the fun. His old man was a machinist who made an equatorial head with 2" axles. We finished the mirror but I got the itch to go back to school, this time in astronomy.

I wrote an earnest letter to Dr. Shapley at Harvard who was sympathetic and invited me to an interview in June. I arrived Saturday afternoon and not knowing any better, rang the doorbell at the Residence. I heard somebody thumping down the stairs about four at a time. The door opened and here was the great Shapley wearing sneakers and golf knickers! The upshot was that he gave me a stack of books on math and astronomy for summer study (I studied 8 hours a day) and I was to return in the fall.

When Albert Ingalls learned I was to go to Harvard he wrote that he was delighted and that I would find Harvard like an old shoe. (True, but definitely a work-shoe!) In the autumn it is the custom at Harvard College Observatory (HCO) to give a written exam to two groups of graduate students; those presumably to receive their doctorates at the end of the year, and those entering, to see if there is any use in their going on. I hate to say it, but my private study seemed to pay off and I was in 7th heaven. I inherited a desk at one time used by Henrietta Levitt, and did my work under a bronze plaque telling of her pioneering work which led to the Period-Luminosity law. I was given almost full-time use of the historic 15" Great Refractor, with which the first picture of a star was taken. The shop made me a double-slit interferometer with which I experimented with measuring the diameters of Jupiter's moons, etc.

One frequent visitor was a retired capitalist of some sort, Charles Elmer. He had paid a dime to look through a street telescope in New York and was hooked on astronomy. He hired the chief machinist at HCO to make a mounting for a 12" reflector. It had a beautiful open tube, with provision for the upper section containing, the secondary and eyepiece to be rotated. This was just what I needed for my 12", and Mr. Elmer let me use the patterns so that I could have castings made for later use. Mr. Elmer joined with Richard Perkin to form the well-known optical company.

When the new station (Agassiz) of HCO was built on a hill near the town of Harvard I was placed as the first resident astronomer. There were many famous visitors (too many), but one very useful friend was an amateur who was a machinist. A few rides on the elevator of the 62" inspired him to make a 12" ring gear and worm. Just what I needed for my telescope! Alas, four years of lonely night work (beastly cold and long in winter) was all I could take. I told the boss that I could not let the universe spoil this world and took a job at Knox College, Galesburg, Illinois.

The telescope was finished in time for the 1939 opposition of Mars (but no life was found!) and mounted on the roof of the observatory beside the dome of the 6" Clark refractor. It really was a beauty. One student said that she could believe that the Hercules Cluster was 34,000 light-years away, but she was skeptical of seeing moths around a street light a mile away (as I had boasted). She was convinced, however.

World War II came on and I went back to Cambridge for two very interesting projects. One involved the Harvard Optical Research Lab which had been set up to improve aerial photography. For once I got my fill of flying, mostly with my feet straddling a hole in the fuselage of a B-17 and the pilot banking so the sky was visible between them. When hostilities were over, Dr. Shapley asked me to set up a department of astronomy at Howard University in Washington. (He was as much concerned with people as with galaxies.) I took along my beloved 12" which was soon mounted on top of the roof of the Engineering building. We began a telescope-making effort. A picture of 17 finished instruments and their makers was included in *Sky & Telescope*, February 1948. When I left Howard to come to Agnes Scott, I did not have the heart to take the telescope, so I sold it at a flea market price. What has happened to it is not known, and I am afraid to ask.

Bill Calder

From the Oval Office

By Philip Sacco <ppsacco@mindspring.com>

I would like to say that this past year, acting as the AAC Observing Vice President, has been a year of great fulfillment and satisfaction for me. I have had the pleasure of meeting many of our new members and getting to know a fair number of them. I have found the 'new crop' to be both enthusiastic, helpful, and hardworking. Whether it was scraping paint or cooking hot dogs in a downpour, we all had a great time!

None of the projects we accomplished last year would have been possible without the input and elbow grease of our new membership.

I thank you all for your votes of confidence in me to act as your President this year. As we all know, no great task can be done by a single man so YOUR continued support will be greatly appreciated. With teamwork like this, we will experience the greatest year in the history of the AAC.

With teamwork like this and with everyone's involvement, the great things being envisioned for the club will come to fruition. The club has grown too large to expect a hand full of people to sit on the phone and make call after call looking for help.

Look for major improvements to continue at the Walter Barber Memorial Observatory. This year she becomes a young lady at 21. Maybe the celebration this year will be more than a 'pool party'. :)

Please look for a questionnaire in your July "Focal Point". This Questionnaire will be used to assist us in making constructive decisions and all members will need to respond; the few members regularly coming to the meetings don't represent YOUR sentiments. If you are interested in what is going on behind the scenes and why we are polling the membership...give me a call!

Allow me to put in a plug for the ALPO convention that will be in Atlanta in July. This could be a pivotal experience for many of you in your Astronomical experiences. Contact Ken Poshedly for registration information.....Oh Wait this just in.....take a minute to look at the INSERT in this issue for more information - I don't know what you could *Possibly* want to know that's not on the enclosed form, but contact KenPo anyway..... he'd love to hear from you.....(he's a very lonely guy.....and LOV-VES to talk on the phone) 770-979-9842.

Please note that the format for the meetings has changed. Everyone should come early for the goodies and socializing....no later than 7:45. The meeting will start with our speaker at 8, and the business meetings will be abbreviated with the exception of new business.

Any committee heads or officers with information they would like to present at the meetings must give me two days advanced notice. Announcements not scheduled ahead of time will not be announced. I understand things come up and these will be dealt with accordingly, however, meetings run much smoother when carefully planned. I need to know in advance, who needs to address the membership.

I wish all of us a GREAT Year!!

"NO NEW TAXES!"

The Atlanta Astronomy Club Logo

See the newly selected Club Logo. It was cleaned up and digitized from the original overhead at the General Meeting. The Author of the Logo still cannot be found. I know he was there, people talked to him. Where is he? Help your club solve this mystery. Find the logo man, or do we need to send for Dana and Fox?

Bradley Notes June 1998

I was very saddened to hear of the death of Dr. Bill Calder a few days ago. As many of you know, Dr. Calder was the astronomer at Agnes Scott College for many years, and was the founder of the Atlanta Astronomy Club in 1947. I never met Dr. Calder, but feel that I did get to know him in preparing for the dedication of the plaque in his honor earlier this month. Those of you who were there know that it was a truly happy occasion, filled with music and anecdotes about Dr. Calder's years at Agnes Scott. I know that there are other articles in this month's focal point about the life of Dr. Calder. I will only add that his son, Alan, and I are going to write an article about his career and about astronomy in the south, and hope to publish it in Sky & Telescope. Alan is a theoretical astrophysicist who works at the National Center for Supercomputing Applications (NCSA) in Illinois. If you have not heard it elsewhere, there will be a memorial service for Dr. Calder at Columbia Presbyterian on Saturday, June 13 at 10 AM.

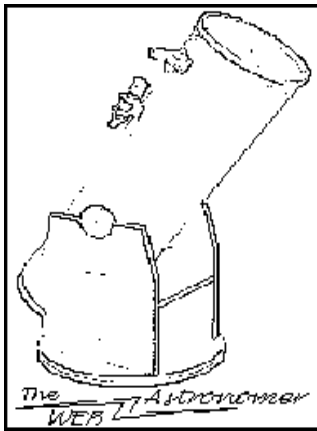
I have been away from the Observatory for the last two weeks, working in Socorro, New Mexico on a recent data set from the Very Large Array (VLA) where I make most of my observations. I have made high resolution (0.04", yes that's 40 milliarcsecond!) observations of one of the Galaxy's most luminous star-forming regions, known as W49A (or sometimes referred to as W49 North). What interests me about this region is that it contains a large number of massive stars in a very small patch on the sky. In fact, we detect at radio frequencies about 45 sources within a 4 arcminute field of view. Thus, we have good statistics (i.e. a large number of sources) to test various models of the evolution of young, massive stars. What we are detecting is thermal emission from the ionized gas near the stars. W49A is just like Orion, only much more luminous and much farther away (about 11 kpc vs. about 0.5 kpc to Orion).

The observing frequency is 7 mm, and that is the highest frequency that one can make observations at the VLA. There are two advantages to observing at such a high frequency. First, the highest frequency gives the highest resolution, and this resolution allows us to separate many of the very closely spaced regions of ionized gas (HII regions) in the field of view. Second, the ionized gas around stars (when it is dense) can be "optically thick", meaning that we can't see through it. At higher frequencies, even dense material becomes "optically thin" allowing us to image all of the gas that is there. When I return from Socorro next week, I will post images from this work on the Bradley Observatory web site.

Melissa Nysewander ('98) is spending her summer at the VLA, working with Dr. Miller Goss, who is the Director of the observatory. She is working on spectral line and continuum radio observations of two of the most luminous star forming regions in the southern hemisphere, NGC 3576 and NGC 3603. She will give a talk about her summer's work in the fall, and I hope that some of you might attend that.

In July, the Observatory will have a special Open House at the Bradley Observatory. I have invited Dr. Ed Albin of the Fernbank Science Center to tell us about some of the recent developments in the study of Mars. I will post the specifics of this special Open House as soon as I can, and I hope to see you all there.

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The Web Astronomer

by Gil Shillcutt

Writing for "Impact"

Popular attention is a funny thing. One month, it's the Spice Girls, the next month it's astral doom. Hollywood often seems to play a part in the trends that drive our collective imagination. This summer, two "blockbuster" movies about celestial calamity are being sent to earth to impact upon the public's

awareness. The human drama of these stories is what gets them on the big screen, but it all starts with astronomy.

The first of the movies is "Deep Impact" from Paramount, focuses in on the discovery of a 7 mile wide comet, Wolf-Biederman, which is determined to be on a collision course with Earth. The story develops that the comet is found, and reported to the government. The government, in secrecy, builds a spacecraft, the "Messiah" to intercept and destroy the comet. The story centers around three story lines that illustrate how people faced with inevitable doom play out their lives. The studio has put together a web site to publicize the movie at:

<http://www.deep-impact.com/index.html>

The film makers' art is to take a story like this, make it believable, and to stir the imagination. As a movie-goer, I was impressed with the special effects, and the emotionalism of the story. Veteran actor Robert Duval (one of my favorites), as commander of the Messiah, does an admirable job. Morgan Freeman (also a favorite) as the president, seems to have phoned in his performance. Likewise, the science in the movie is similarly inconsistent. The opening scenes detailing the comet's discovery are contrived, and appeared to have little in common with how astronomy is done. One phone call to a local astronomical society could have solved these problems easily. It would seem that physics are immutable everywhere in the universe, with the exception of Hollywood, and with the possible exception of the Pentagon.

Interestingly enough, the site does have an interesting diversion into a page that explains the concept of near earth objects. In this page, the "n.e.o. database", the site covers comets, asteroids and meteoroids. Like the movie, the web site has good effects, but doesn't seem to contain the depth of material you might want to find. I'd give both the movie and the web site overall "thumbs down", and recommend waiting for the video. As of this writing, the movie has been out less than a month, and is already in the 1\$ theaters.

The second celestial impact movie of the summer, "Armageddon", starring Bruce Willis, from Touchstone Pictures, stretches the bounds of plausibility a little further. The story (the film has not yet been released) opens with the discovery of an asteroid "the size of Texas". In the movie, Bruce Willis and his team fly to the asteroid, drill deep into it, and destroy it with a nuclear weapon.

If I'm not mistaken, the US tried this kind of test back in the 50's and 60's in the middle of the Nevada desert. Last I recall, Nevada, which is smaller than Texas, is still there. Nonetheless, the studio has developed a web page for the publicizing of the movie. It is at:

<http://www.movies.com/armageddon/>

Now, I don't know about you, but I like some substance in my web pages. The page is primarily a launching spot for film trailers, and doesn't have much content. For the sake of the studio, let's hope the movie itself

doesn't follow suit. It does look to be an action-packed film, like many of Mr. Willis' other films. "Yippie kie yay, asteroid".

I for one, decided that I'd like to see how the finding of near earth objects are discovered and reported. The reporting part is fairly well known. The Central Bureau of Astronomical Telegrams, or CBAT, is the clearing house for discoveries of comets and asteroids, as well as novae and supernovae. CBAT maintains a web page at:

<http://cfa-www.harvard.edu/iau/cbat.html>

On this page, CBAT describes the process of reporting discoveries, confirmation of discovery reports, and lists out discoveries from the IAU Circulars. Of interest in this article is a link that lists the ephemerides and orbital elements of particularly interesting minor planets. You can follow this link to a page that concerns "unusual" minor planets, and then on to the infamous Potentially Hazardous Asteroids (PHAs) page.

How are these PHAs and other asteroids found? Well, certainly the professional astronomy community has provided a great many discoveries, but they are also found by small search teams and amateurs. One project, The Amateur Sky Survey, or TASS, "hopes to construct low-cost drift-scan cameras and distribute them to sites around the world", ostensibly to search for NEOs. Information on TASS can be found at:

<http://www.tass-survey.org/>

TASS was conceived as a comet finding project starting just after Shoemaker/Levy 9 crashed into Jupiter, but during the early part of the project, TASS is working on variable star measurement because it is a first easy task which will promote the development of the required systems. TASS expects to go on to comet and asteroid searches, eventually zeroing in on searches for earth-crossing asteroids. What a service for the amateur astronomer community to provide to the world at large!

The question though, is what do we do about it when we finally find a NEO that is aimed at the Earth. The movies have their solution – nuke 'em! Others a little closer to reality have come up with different answers to this question. Check out the Island One page at:

<http://www.islandone.org/>

This society may have some political leanings that may not appeal to you, but one thing is certain. They're serious (crazy, maybe?) about man being in space. What has caught my eye, though, at this site is the several discussions on low-impulse, long-term drive systems. What does this mean? It means that if you're supplying drive energy for a long time, you're going to get to very high speeds, even though the driving force doesn't kick you in the pants. Check out the link on "Propulsion Systems". For those who have seen "Deep Impact", the Orion Project drive system looks strangely like the one used by the "Messiah". Wouldn't it make sense to just push a NEO away, rather than try to blow it up? All it would take would be a drive system like this.

The Making of Rain Maker

Keith Burns <burns@mailexcite.com>

All this talk about constructing a portable observatory reminds me of another recently completed telescope project. I was lucky to enough to get a thirteen-inch Coulter for next to nothing. The previous owner just wanted to give it a good home. It was an older scope that had seen lots of use. This was a fixer up scope and boy did I have lots to fix.

So first things first, I installed a new mirror cell door and rocker box base. The old scope was painted a dark blue. All new Coulters are now red. The scope color made it hard to see the scope at night. I lost count on the number of times I would walk into the scope while out observing. Ouch! The peeling blue paint was repainted white. These improvements were

good enough to make the scope usable for a couple of years. Still I did not like the way the optics was done in the scope. Collimation was difficult at best and I was more than intimidated by the whole process. Therefore, I put up with the difficulties.

The time now moves to August of 1997. Having just joined the AAC, I came out to Dauset Trails for the deep sky gaze. I set up the scope and Art Russell came on over and checked out the scope. He immediately noticed the problems with the optics. Art and I talked about it for some time. This is where the now famous rebuilding project got its start. It took me until November of 1997 to consider redoing the optics on the scope. Research had to be done and I started by asking club members. The Internet was my other source of information. In December, I received a large bonus from work for Christmas. I now had the money to do the project. The estimated cost was three hundred dollars for a new secondary mirror, spider, secondary mirror holder, and new focuser.

In January and February 1998, orders were placed and parts were slowly coming in. Of course, my original costs were rapidly rising. My plan was to replace the old two-vane spider with a four-vane spider and new mirror holder. In addition, I wanted to replace the old bigger secondary mirror with a new smaller mirror. I would need to change the focuser to a 2-inch size. Of course, I forgot the sonotube. Smaller secondary mirrors mean longer sonotube.

The actual construction process only took two weeks to complete. Of course, I had to fix many problems afterward. First, the focuser tube was rubbing against the sonotube. Three times, I had to remove the focuser and file down the sonotube. Oh yeah, I had to move the secondary mirror spider twice. I used caulking to cover the extra holes in the tube. Next came the process of figuring out which mirror is squared first. Is it the secondary or the primary? The answer is the primary. The process goes like this. Center the spider in the tube. Then square and level the focuser. Third, center the primary mirror in the spider. Fourth center the secondary mirror and align it. Then adjust the primary mirror cell screws. Finally, you should be prepared to spend half a day doing all this. Been there, done that.

It was early morning on the 15th of February when I took the scope outside and looked through the eyepiece. It was a beautiful out of focus view of the moon. Uh oh! As it turned out, I did not realize what the problem was until later that week. My focal plan was inside the focuser tube instead of being above it like I had planned it to be. So I ended up moving the primary mirror up the tube about one and half inches. This meant more holes to caulk and paint. With Tracy's help, we got the optics square up again and both mirrors collimated. The view through the scope was fantastic. Now the scope project was almost through. I asked around and purchased some tube trim from Crazy Ed's Optical. Yes, there is a guy named Ed. He is a fun guy to talk to.

I posted regular updates to the AAA listserv about this remodeling project. I thought it would help those who were also constructing telescopes. It amazed me how much attention the posts were attracting on the listserv. The D'oh! List did not attract this much attention.

Now my remodeled scope needed a name and I decided to call it the EXCOULTER. It is the perfect name for a scope that is not a coultter anymore.

This project caused the horrible weather we have had this winter. The weather really got bad when I finally finished the scope in March. It was the type of weather where you wonder if you should start building an ark or not. Many people in the club decided to come up with an award to honor those who bring in the clouds and rain. The first rain man award was given to me. I proudly display it at home. I decided to change the name of the scope from EXCOULTER to RAINMAKER. It only makes sense since I am the rain man. I am an excellent observer. I am still looking for some-

one to paint the new name on the tube of the scope. Be sure to bring a paint brush, umbrella, and copy of the Rainman movie with you. Definitely!

Keith Burns, VP, Observing Chairman

Keith has a major task ahead of himself as the newly elected Observing Chair. I hope the membership, old and new, will stand behind him and lend support when called upon. Not everybody knows Keith Burns, so I asked him, 'Who are you?'. The following is what I can print of his response.

I was born on April 16, 1965. Spent my first 14 years living in Crystal Lake, Illinois.

In 1979, my father moved the family down here to Cobb County in search of better weather.

I attended Kennesaw State College for three years. Since then, I have been working various jobs in residential construction and other fields. Currently I work for Oakley Homes Inc in Kennesaw.

I have been a member of the AAC since August of 1997. My interest in astronomy started back in 1991. A friend of mine named Johnathan dragged me kicking and screaming into the hobby. Soon I realized how fascinating the night sky was and got hooked. I dabbled in astrophotography for about a year and tired of it. My first telescope was a pair of 7 X 35 Bushnell binoculars. Besides astronomy, my other hobby is weather observing. I have a weather station at home and make reports to WGNX channel 46.

Focal Point Editor and Treasurer Notes

Thank you! for choosing to elevate us to the two most important and powerful positions in the AAC. Sharon and Peter hope we can live up to the expectations of the club and move forward to a new year. *(Do you know how much POWER the Macumber family now holds? <G>)*

REMINDERS:

Before you spend any money, (even if it is budgeted), you must get the Treasurers approval. This prevents more than one person from spending the budget at the same time.

When you renew your magazine subscriptions through the club, PLEASE include your renewal notice or the address label. This helps both us and S&T or Astronomy know exactly who you are, otherwise they may treat it as a new subscription.

NOTES:

The publishers want us to submit renewals in batches, preferably only once a month. Please send us your renewals early so you won't miss any issues. For faster service, you can send club mail directly to our house and avoid the delay of using the PO Box. The address is on the outside of this Focal Point.

Please remember to send us your change of addresses, change of email and phone numbers. (Please note: We do not distribute this information outside the club.)

Please send me your feedback; Comments, Suggestions and Criticisms. This, my first Focal Point, has been an experience, to say the least.

The Club Logo was determined by a majority vote from a field of 13 entries. The winner can be seen at:

<http://www.mindspring.com/~aleko/accllogo.bmp>

or

<http://www.mindspring.com/~aleko/accllogo.gif>

Elections

The final activity was election of new offices. The nominees were: Phil Sacco for President, Rich Jakiel and Eugenia Abbey for Vice-President Programs, Keith Burns for Vice-President Observing, Peter Macumber for Corresponding Secretary, William Bower for Recording Secretary, and Sharon Carruthers for Treasurer.

The Board of Directors nominees for 3 slots were: Phil Bracken, Tracy Wilson, Art Russell, and Ken Poshedly (in absentia).

The unopposed positions were voted in by a show of hands.

After a brief synopsis of their qualifications, voting was held by ballot. The winners were Rich Jakiel for vice president programs and Phil Bracken, Tracy Wilson, and Art Russell for the three Board of Directors positions.

Club Officers

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Peter Macumber	Corresponding Secretary	770-319-8970
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Wm Bower	Recording Secretary	770-723-9891
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Board of Directors

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Gil Shillcutt	Amateur Telescope Makers	404-467-1437
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AAC Calendar of Events		
June 12, Friday	ATM	Bradley Obs
June 13, Saturday	Orientation	Villa Rica
June 14, Sunday	Board Meeting	Bradley Obs
June 19, Friday	General Meeting	Emory White Hall
June 20, Saturday	Deep Sky	Turkey Farm
July 9-11	ALPO Conference	Fernbank
July 18, Saturday	Orientation	Villa Rica
July 21-25	ALCON	French Lick, Indiana
July 25, Saturday	Deep Sky	Rockmart ??
August 22, Saturday	Deep Sky	Brasstown Mtn
August 29, Saturday	Orientation	Villa Rica

Atlanta Astronomy Club

June

General Meeting

The next general meeting of the Atlanta Astronomy Club will be held at Emory University White Hall on **June 19 at 8 PM**. Come early! *A new format for the meeting!* Come early, meet with other club members and socialize before the general meeting. Refreshments will be made available between **7:30 and 8 PM**. The general meeting will start at 8 with our guest speaker. The business meeting will immediately follow. Then join us for socializing and pizza, where, as Art used to say, the real business of the Astronomy Club happens.

This month there will be a door prize. *NO, not the kind we are putting to the hot house and observatory at VR.* A club member has donated a software package. Come and find the details. You must be present to win!

Guest Speaker: Mel Bartels

This month's guest speaker is Mel Bartels. Mel's interests include amateur astronomy, hiking, writing, music, art, and flying. He shares his abode with Kowsoom (Thai for lotus), a Korat cat. Mel works as a programmer/analyst in the Eugene Oregon area, working with business and production systems on a HP3000, and with LANs and communications equipment. Previously, Mel free-lanced as a teacher and performer on trumpet, both classical and jazz, and taught music in the public schools. Born in '54, Mel attended David Douglas HS in Portland, Oregon, and the Univ. of Oregon in Eugene, along with Lane Community College.

Mel will talk about future trends in amateur astronomy, including computerized and motorized telescope mounts, ever increasing mirror sizes, new mirror materials and shapes, the coming revolution in mirror support systems, the availability of digital information at the eyepiece, and increasing light pollution and safety issues. Also, Mel will talk about whether this is good for amateur astronomy, and how the next generation is likely to perceive amateur astronomy.

Mel: "I'm a product of the space age and a baby boomer. My first telescope was a 6th grade Christmas present from my parents. I've done my stint in astrophotography, building my own cold cameras. I've ground about 100 mirrors up to 30" in size, and now specialize in large mirror computer controlled telescopes. It's been a particular interest of mine to spread the good word about amateur astronomy and help other amateurs as I was once helped. I now do this through administering the ATM e-mail list on the internet and maintaining webpages largely devoted to amateur astronomy."