

The Focal Point

The Atlanta Astronomy Club

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Editor: Peter Macumber

From the Prez — Where Do We Go From Here?

Say goodbye to 1999, everybody. And say hello to a year sure to be full of surprises and challenges for the Atlanta Astronomy Club. What are some of the challenges?

Peach State Star Gaze

It's a boring topic to some, but it's a mighty Succe\$\$ful topic to others. Last spring's event brought out the largest crowd ever, almost 270 folks — some from as far away as Connecticut. Began as a fundraiser for the club's still unfound new dark site, the event raises more money than perhaps anyone ever thought it would. And for the first time that I am aware of, the AAC will be the first club to go international by bringing in a featured speaker from overseas just for this event. Specifically, author of Kalmbach's *Atlas of the Moon*, Antonin Rukl will be our honored guest at the Y2K PSSG when it is held April 6 through 9, 2000.

"Big Bad Dob", the 24-inch Scope

After a contentious beginning, the club's newest instrument is nicely settling in as one of the most sought-after pieces of equipment. Growing pains still occur, however, as folks still jockey to see who can use it and when. Perhaps we should have a name-that-scope contest with the winning entry (and winner's name) nicely engraved on a plaque attached to the scope base. What say ye? What does the future hold for this mighty, but huge, friend of ours? Possibly a permanent home east of Atlanta, or then again, maybe not.

Villa Rica

Is it a new subdivision? No, it's just the club's Walter F. Barber Jr. Observatory site near Villa Rica all spruced up. Never has so much attention been given to this simple plot of land now snubbed by some club members as being too light-polluted, but highly valued by a majority of members as our most valuable asset. From the new porta-potty at the rear of the warmup building to the addition of new equipment, to structural repairs and so on, the Villa Rica site continues to draw current AAC members AND attract visitors who subsequently join after their visit to Villa Rica.

Here, for only the cost of an annual dues payment, AAC members can use any of a variety of scopes — from the venerable ol' 20-inch reflector, to a Cave 10-inch Newtonian reflector (both permanently mounted in the huge, roll-off roof observatory), to a Maksutov scope housed in its own domed building onsite as well; or bring your own scope, set it up, and plug in using any of the outside 110-volt outlets.

The future of Villa Rica? I don't know. It's disturbing to hear brickbats about this site when it has served and continues to serve us so well. I would like to see a new, larger warmup building erected (and we do already have a price)

and use the outdated and cramped facility that seats only 7 persons used for storage. I'd also like to see a land telephone line installed at the site. Too often, club members have been stranded out there with no means of communicating with emergency services. You, the AAC members, deserve better.

And So On

Other matters concerning the club involve two fronts: a) forming chapters for members who live too far to conveniently attend general AAC meetings; and b) hopefully continuing to work with area governments and developers to keep light pollution to a minimum. Ball-of-energy Phil Sacco has spearheaded efforts to begin the move to creating club chapters, and the team of Tom Buchanan and John Lentini are working to come up with proposed light pollution control legislation and similar documents.

Where do we go from here? Probably anywhere we darn well please. From the Prez — Where Do We Go From Here?

Scott Deitchman

Now that the new issue of Sky and Telescope has arrived with its coverage of the eclipse over Europe, I want to share with the Club the belated perspective of the last members of the AAC to report in.

First a bit of background. My wife and I are infrequent participants in AAC events - we miss the meetings because Friday evening is our night to collapse. You may have seen us at some viewing events - we observe with an old red Celestron C90 and binoculars. But we maintain our enthusiasm, and I am working on both telescope and binocular Messier lists which I hope to complete before the skies over all of Georgia get as bright as Atlanta's...

Several years ago my wife heard about a set of hiking trails through Europe that can be traversed in sequence to form a hiking route through the Alps from Munich to Venice. Since she grew up in the Munich area, she hopped onto this idea and three years ago we did the first half. In the course of a two-week hike we started in Munich and walked through Austria into northern Italy. We left planning to return some other summer to finish the route.

Flash forward to autumn, 1998, when Irene asked me what I wanted to do for our vacation in 1999. There were several options, one of which was to return to Europe to finish our hike. When she told me we would fly into Munich to start, that clinched it - I gave her the date of the eclipse and we started planning.

We arrived in Munich 2 days before the eclipse and spent the time visiting my wife's uncle and sightseeing. Munich was going eclipse crazy - street vendors in the Marienplatz, the historic main square, stood next to the beer garden selling paper and mylar eclipse "glasses" at twice the price in the US. The markup may be because Zeiss was somehow involved in production, and nothing labeled "Zeiss" is ever less than 150% the cost of the nearest competitor. Many businesses had notes posted that they would be closed during the eclipse ("Sonnenfinsternis" in German). With typical German thoroughness, the news-

papers printed repeated warnings against looking at the eclipse with unprotected eyes, and one article even included a detailed description of the anatomy of the retina!

Best of all, the "Sport Scheck," Munich's famous old (and huge multi-floor) department store specializing only in outdoor sporting goods, planned an Eclipse sale - as soon as the eclipse began, prices in the store would be "eclipsed." Don't blame me, it's not my pun. Their advertising strategy was striking - rather than promote the sale with posters hung on the walls, and they laminated the posters TO THE FLOOR at every staircase and elevator. I guess they figure their clientele are careful of where they put their feet and this was the most-watched space. I walked across more eclipse photos than ever graced an issue of S&T. Despite this novelty we could think of no worse place to spend the eclipse than inside a department store, so we sacrificed and bought our supplies several days earlier at normal prices.

Our plan was to watch the eclipse, then travel the next day to northern Italy and begin our backpacking trip through the Dolomite Alps. Because we had to carry all our gear, I could not bring my C90 telescope, or even my Olympus SLR with long lens, and tripod - it would have been most unpleasant to be carrying those over the mountains. We were therefore limited to our paper-and-mylar eclipse glasses, which I bought at the Peach State Star Gaze from someone who'd used them in the 1998 Caribbean eclipse, and my 10x50 binoculars. Despite their 41-ounce weight, I was carrying these because I planned to work on my binocular Messier list from our high campsites in the Alps.

The weather was not auspicious. The day before the eclipse began cloudy, progressed to complete overcast with intermittent rain, and finally backed off to partially clear skies. The night was partly cloudy. And to top it off, I was feeling like some illness was creeping on. The morning of the eclipse did not begin any more favorably, I awoke feeling wiped out and running a fever over 101 deg. F. Still, I resolved that I would NOT miss the eclipse. However, the weather was also uncertain. The sky was worse than partly cloudy. I would guess it was about 60% overcast! As we looked up, we would see the sun for a few moments and then it would be completely hidden behind dense cumulus clouds. However, the weather was similar in the entire area, meaning there was not enough time to travel far enough to expect better skies. For better or worse, here we were and here we would take our chances.

We were staying in a small town about 30 minutes south of Munich, where our uncle lived. Totality here was to be about 1 minute 27 seconds, which was shorter than the two or so minutes expected in Munich. The advantage was that we would avoid the crowds of people converging in Munich from all over Europe. After I dragged myself out of bed, we walked up the hill from our guesthouse to our uncle's home and had an early lunch on the porch. The clouds were relentless, and at one point, we had to retreat under an awning when it began to rain. By then the idea of seeing an eclipse seemed so ludicrous that we simply laughed. Of course, my laughter probably sounded a little forced.

When the rain clouds finally passed sometime after 11 am local time, the sun appeared and began drying things out. We grabbed our eclipse glasses, peered upwards -, and saw that first contact had occurred! Of course, there was another cloud only minutes away, so we dared not let our hopes get too high yet. The next hour or so continued in that fashion: look at the sun, eat lunch while another cloud passed across, then look at the sun to check the progress of the eclipse. In this way, we watched the lunar silhouette nibble away the sun while we nibbled away marmalade, toast, German sausage, and salad.

When the solar disk was about 85% obscured, we hoped for the best and hopped in our uncle's car. We drove only about 5 minutes but it took us to the edge of a large hilltop pastureland. This was the highest open land in the area, and we joined about 250 other eclipse enthusiasts scattered across the acres. Some nearby milk cows seemed bemused by all the visitors but were otherwise unperturbed. Here we settled down to await either totality or disappointment, for the sky was densely festooned with clouds that scudded across overhead.

As we approached 12:14 PM, the moment of totality, we turned to face the direction of the expected moon shadow. We had a wonderful and unobstructed vista for several miles across farmed fields and pasture to a small village. We hoped to watch the moon shadow fall across the rooftops of the houses and the steeple of the village church. Unfortunately, there were so many clouds moving across the sky that their shadows on the landscape obscured whatever moon shadow might have passed. At the key moment, therefore, we turned our shielded eyes back to the sun - which, miraculously, was entirely visible in a large break between passing clouds!

We were able to see it all - the diamond ring AND Bailey's beads and finally totality, which the crowd greeted with clapping and cheers (the cows remained silent, and to this day nobody knows how they really felt). Now I safely took up the binoculars and was rewarded by a beautiful view of the corona stretching out in distinct glowing streamers, some slightly curved. I was so taken with it, the first time I'd ever seen this that I forgot to look for prominences. The corona filled the field of vision in the binoculars and was glorious, it was unlike anything I'd ever experienced, and it was the fastest 97 seconds of my life!

It could not have been a minute and a half - it felt like only 30 seconds or so - when totality ended and we watched the process reverse itself. I was just as glad not to have spent my time messing around with a camera, so that I was free to drink in the event. A few minutes later the next cloud covered the sun and show truly was over. We returned home and took up our position on the porch, watching between clouds as the solar disk was revealed. All in all, a lucky day and a great experience.

Meanwhile, we heard later, the cloud cover in Munich was even more frustrating, even more so because the view of the eclipse varied depending upon your perspective to the cloud cover. Some parts of the city saw totality and others only a block or two away missed it entirely. I guess we were more fortunate than the other AAC members who traveled across for the event.

I paid for that good fortune in the Dolomites, however. Despite the fact that we were staying as high as 2700 meters in the mountains, I did not get a single clear night in two weeks of hiking! The very first night there was a sliver of clear sky at one horizon, through which I could see Cassiopea and M103 just before the clouds finished me. Every night after that was completely overcast. I carried almost 1.5 kilos of binoculars, planisphere, and pocket star atlas (and when you are backpacking, 1.5 kilos is a lot) and no astronomy to show for it. We heard from some locals that this weather was uncharacteristically cloudy. On the other hand, we spent one morning hiking with the US Air Force weather officer stationed at the air base in Aviano, Italy, who told us that the weather we'd experienced was very typical of these mountains. Who knows?

Still, it was a successful trip - the daytime skies, though cloudy, were mostly dry and we were rained upon only one afternoon. We spent 13 days hiking across high limestone cliffs, through alpine meadows ablaze with late summer flowers, and occasionally up rock scrambles so steep that steel cables were permanently fixed to give handholds (and security). We stayed in the climbers' "huts," which are really backcountry hostels with restaurants on the ground floor (simple menus but hearty food) and bunk rooms upstairs. We had a wonderful hike and met great people on the trail. We finished with 3 days in Venice, which is a bad place for astronomy (the famed Venetian glass apparently does not include parabolic mirrors) but was great for history, architecture, art, and canal travel. If I had to do it all again, I would indeed.

For Sale

Frank Guiton (770) 922 3386

DOB 8" Newtonian f/7.5 with fiberglass tube.

JMI 2" electric focuser, 2 eyepieces, 8x50 finder.

Excellent optics - \$400

Eyepiece Cases and Foam

Or "All I want for Christmas"

By David Ward dward50@bellsouth.net

Recently many of you have discovered that Home Depot, Lowes, and Walmart have inexpensive metal cases for about \$20, which are perfect for eyepiece cases. Some have foam and adjustable dividers, others just have dividers. I have looked at all of them and my personal choice is the one from Home Depot for \$19.95 (it does not have foam, but does have dividers).

There has also been quite some debate about what type of foam is safe for optics as there was some concern expressed about out gassing from the foam possibly damaging coatings and fogging lenses. Many a story along the lines of "I once heard of a guy... Or A friend of mine knew a guy..." (Urban legend kind of stuff). No one seemed to have any first hand knowledge of damage or what type of foam would be "safe".

After much debate and searching, I have found the following source of safe foam for the Lowes/Home Depot/Walmart cases, which have been so popular as of late. I received email from multiple sources on this subject which indicated Polyether (ether based polyurethane foam) foam was the way to go.

Polyether (ether based polyurethane foam) is the same type of foam in the Pelican and Zero-Halliburton cases, which have been used for optics for decades. There appears to be independent confirmation (I have verified this confirming info on the web sites of several Pelican & Zero dealers).

A national (USA) source for this safe foam is: McMaster-Carr (www.mcmaster.com)

They have distribution warehouses all across the USA and they will sell directly to the public and over the counter at their warehouses. We are fortunate to have one here in Atlanta at 6100 Fulton Ind. Blvd SW, Atlanta, GA phone (404) 346-7000).

I spoke with one of their engineers today, and he confirmed that "Polyether foam" is the same thing as Ether based Polyurethane foam. If you go to their web site and do a search by keyword for open cell polyurethane foam and you should find what you want on page 2906 of their current catalog: -- (following excerpts from their catalog)--

"Convuluted" polyurethane foam (egg crate foam)

Density 1.5lbs/cu ft compression 25% deflection - 0.38psi

tensile strength 8psi charcoal color, temp range -20°F to +250°F

SOLD IN SETS OF TWO SHEETS NESTED TOGETHER

2" peak height & 1/2" base thickness: 18"x24" - \$11.43 set 24"x36" - \$18.63 set

3" peak height & 1/2" base thickness: 18x24 - \$15.43 set 24x36 - \$25.63 set

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"Unifoam" polyurethane foam (ether based)

Density 2lbs/cu ft Compression 25% deflection - 0.69psi

tensile strength 27psi charcoal color, temp range -20°F to +240°F

1/2" sheets: 24"x24" - \$4.52 each 24"x36" - 6.45 each 24"x48" - \$7.71

1" sheets: 24x24 - \$8.00 24x36 - \$11.43 24x48 - \$13.50

2" sheets 24x24 - \$13.00 24x36 - \$19.50 24x48 - \$22.78

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If Unifoam is not 'dense' enough, try Foamex (stiffer). But it may not be the same color (charcoal. vs. grey)

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"Foamex" polyurethane foam (ether based) extra firm grade

Density 3lbs/cu ft compression 25% deflection - .93psi

tensile strength 30psi gray color

temp range -20°F to +250°F

1/2" thick sheets: 12"x12" - \$1.68 24"x72" - \$16.20

3/4" thick sheets: 12"x12" - \$2.42 24"x72" - \$23.37

1" thick sheets: 12"x12" - \$3.06 24"x72" - \$29.77

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Another source of "Pluck n Pick Foam" would be Foammart (www.foammart.com)

They have Pluck n Pick foam as follows:

1" sheets 17"x21" - \$9.89 2" sheets 17"x21" - \$19.50

*** This is polyethylene foam **** They list this a foam with "Perfect protection for the camera case." on their web site, but this is *NOT* the type of foam being used by Pelican and Zero/Halliburton in their cases.

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Michael Covington e-mailed me that he recently purchased some of the Unifoam and egg crate foam and appears to be quite happy with the product. I intend on picking up some for my Home Depot case and my old Zero/Halliburton case with sagging foam, the next time I'm over on Fulton Industrial Blvd.

Hope this helps everyone out...

Marking 1000 Years

By Philip Sacco

With the coming of the year 2000, there has been a veritable hubbub of anxiety ranging from the Y2K bug, the Apocalypse, to the New World Order and invasions from Outer Space. Many of these sentiments are not peculiar to us as human beings, but rather the cause of the effect of religious, governmental, and militant hype concerning the rolling of the date to a new millennium. The question many of us really face is when to celebrate the new millennium- this year or next year according to the official Gregorian calendar. Either date is actually rather arbitrary, and there is a better date, which has come to my attention, to celebrate on. (Much of the following information comes from the article "Millennium Dance" written by Bob Berman and printed in the Dec. 1999 *Discovery*, pg. 55)

Wouldn't it make more sense to mark the new millennium with a truly once in a 1000 years astronomical event? As the Winter Solstice has traditionally been used as marking the years end, I find the following information compelling:

This year has been a year of many unusual astronomical events beginning with two Blue-Moons, continuing through clear weather for two meteor showers, a Mercury grazing transit of the Sun, and finally an occultation of Aldebaran. This last event in particular is the one I'd like to have you all mark on your calendars. It coincides with the winter solstice this year- Dec. 21. That is just the beginning of the millennium weirdness...the winter solstice coincides with a Full Moon this year- Dec. 22. This in itself only happens every three decades or so, so there has to be more to the story... and there is! This Full Moon will mark the Moon at Perigee, or it's closest point to Earth. You may want to compare this plump Moon with its image from Dec. 8th as this will be the day our Moon will be at apogee, the furthest from Earth. There will be a 14% difference between the two Moon images...But Wait- THERE'S MORE...

Therefore, on the 22nd we have the fullest Moon rising with the year's lowest Sun and longest night. This (lunar perigee and winter solstice) hasn't happened since 1866! Even then, the moon reached its closest approach of the month- this year will see the moon at its closest approach of the Year! Now if you were a Bushman, or living in first Millennium England, this would be driving you crazy...it may still if you continue reading!

There's more- Earth's maximum tilt away from our Sun will occur while we are at our closest position to the Sun just 12 days after the solstice- Jan. 3rd. All this should develop what is known as proxigean tides or "closest of the close moon tides". Extremes in high and low tides will occur leading to possible coastal washes, and the exposing of rarely seen marine life. All this due to the simple fact that the two celestial bodies affecting Earth the most will be on opposite sides of the sky, while both are at their closest proximity to us. It won't take much in the way of a barometric low to create potential tidal waves. Also, consider the potential for earthquakes at this time . . . may be a good time to stay away from California for the holidays!

So, remember these dates: Dec. 8th Lunar apogee, Dec. 21st close occultation of Aldebaran, Dec. 21-22nd Winter Solstice/Lunar Perigee/Sun at it's furthest southern position, longest night, Jan.3rd Solar perigee and Earth's greatest tilt away.

When will you celebrate the turning of the millennium, A miscalculated date this year, the official Gregorian date next year, or when the celestial heavens perform a truly Once-in-a-Millennium-Dance?! Just something to consider- HAPPY NEW YEAR!

An Astronomer

A lonely astronomer called out with might

"Turn on the DARK, I Hate the Light"

David Macumber Nov 15, 1999

Bradley Observatory News

Chris Depree

Just a quick update to let you know a couple of things. Amy Lovell (ASC Class of 1990) will deliver the Open House lecture in December on December 10, 1999. Her topic is "Maria Mitchell: What Have we Learned about Comets in 150 Years?"

Plans proceed for the Observatory renovations. We will be out of the Observatory by December 20th so that demolition of some interior walls and preparation of the site for the addition can begin. The year 2000 will be an exciting time. Just a reminder: we will continue to have Open House events in the spring semester. The location of the spring open houses will be announced at the December Open House and in the Focal Point.

Thanks to all of you for all of your support and encouragement over the past three years since. I hope that you will all be delighted with the new building and planetarium that we will have in the fall and will attend our grand opening

For Sale
Astronomy 2000 Calendars only \$10
If you want a copy of Explore the Universe,
please call or e-mail me. I will be placing an
additional order soon.
Mugs only \$10

NASA News

Edited by Gil Shillcutt

Mars:

Mars Polar Lander successfully fine-tuned its trajectory on October 30, in preparation for landing on Mars December 3. This one has just got to go right. Follow the action at <http://mars.jpl.nasa.gov/msp98/index.html>

New images from Mars Global Surveyor show shadows cast on Mars' surface by the Martian moon Phobos. Check 'em out at

http://www.msss.com/mars_images/moc/11_1_99_phobos/index.html

The first report from the Mars Climate Orbiter failure investigation board was released today. Many of you already know that the primary cause was a failure to convert English units to metric. The report identifies a number of other "process" problems that allowed this error to go undetected. A lot of folks are sweating to make sure this doesn't happen again. press release: <ftp://ftp.hq.nasa.gov/pub/pao/pressrel/1999/99-134.txt> Board report: ftp://ftp.hq.nasa.gov/pub/pao/reports/1999/MCO_report.pdf

Our Deep Space 2 microprobes, due to smash into the surface of Mars near the planet's south pole on Dec. 3, have been named Amundsen and Scott in honor of the first explorers to reach the South Pole of Earth. The names were selected from 17,000 entries in a contest. That story is at <ftp://ftp.hq.nasa.gov/pub/pao/pressrel/1999/99-135.txt>. Mars Polar Lander will also be arriving at Mars on December 3. DS2: <http://nmp.jpl.nasa.gov/ds2/> MPL: <http://mars.jpl.nasa.gov/msp98/index.html>

Jupiter:

Galileo's latest flyby of Io, its closest to date, has provided some amazing images of volcanic activity on that moon of Jupiter. Read more and see the pics at <http://galileo.jpl.nasa.gov/>

Jupiter's history may be much older and colder than previously believed, according to newly released findings from the descent probe of our Galileo spacecraft. This could have implications for theories of planetary system formation. http://george.arc.nasa.gov/dx/basket/pressrelease/99_75AR.html

Solar System:

The Leonid meteors have come and gone (Nov 17th - 18th). Once again this year NASA supported the Leonid Multi-Instrument Aircraft Campaign to try to learn more about the comet dust that enters our atmosphere. See <http://leonid.arc.nasa.gov/> for that. A suggestion has also been made that it may be possible to see meteorites impacting the moon with amateur telescopes! Sounds wacky, but I think I'll give it a try. http://science.nasa.gov/newhome/headlines/ast03nov99_1.htm

The Transition Region and Coronal Explorer spacecraft captured some great images of the recent transit of the Sun by the planet Mercury. These events happen about 13 times each century. Images and movies: <http://canopy.lmsal.com/schryver/Public/mercury.html> TRACE: <http://vestige.lmsal.com/TRACE/transit> page: <http://sunearth.gsfc.nasa.gov/eclipse/OH/transit99.html>

Some solar scientists are arguing that the triggering mechanism for coronal mass ejections — tremendous releases of energy — comes from deeper within the sun than current theories hold. http://explorezone.com/archives/99_11/18_solar_ropes.htm

Extrasolar Systems

Astronomers have found evidence of the first known planet orbiting a pair of stars. Previously, planets outside of our solar system have been found circling only single stars, although some of those have been in multiple-star systems. press release: <ftp://ftp.hq.nasa.gov/pub/pao/pressrel/1999/99-127.txt> more info: <http://bustard.phys.nd.edu/MPS/>

Astronomers see shadow of planet cross distant star, proving that extrasolar planets are real — just in case there were any doubters. This is perhaps the first direct detection of a planet, as opposed to previous measurements of the “wobble” of stars being dragged around by a planet’s gravity. Way cool. <http://astron.berkeley.edu/~gmarcy/transit.html>

Cosmology:

The good folks at Marshall Space Flight Center have posted another in an excellent series of articles about gamma-ray bursts. These enormous explosions are still a mystery, but progress is being made. http://science.nasa.gov/newhome/headlines/ast02nov99_1.htm

The Alpha Magnetic Spectrometer is an experiment to search for antimatter in space. It has flown previously on the space shuttle and is scheduled for launch to the international space station in 2003. There’s an AMS page at http://ams.cern.ch/AMS/ams_homepage.html; I’ve posted links to it on our Missions pages at <http://spacescience.nasa.gov/missions/index.htm>

Evidence shows lots of galaxies made the background glow - results from the Infrared Space Observatory, with implications for the early history of the universe. Story at http://explorezone.com/archives/99_11/10_esa_galaxies.htm ISO page at <http://isowww.estec.esa.nl/>

A new Chandra X-ray Observatory image of the distant galaxy 3C295 shows an explosive galaxy enveloped by a vast cloud of fifty million degree gas. The gas cloud, which is visible only with an X-ray telescope, contains more than a hundred galaxies and enough material to make a thousand more. Image and story available at <http://chandra.harvard.edu/>

NASA astronomers say they have uncovered a specific property of gamma-ray bursts that will enable them to gauge the distances to thousands of these powerful explosions, many perhaps beyond the reach of all existing telescopes. These results come from the Compton Gamma-Ray Observatory and optical telescopes. press release: <ftp://ftp.hq.nasa.gov/pub/pao/pressrel/1999/99-139.txt> CGRO: <http://coss.gsfc.nasa.gov/cossc>

Hubble astronomers conducting research on a class of galaxies called ultra-luminous infrared galaxies (ULIRG) have discovered that over two dozen of these are found within “nests” of galaxies, apparently engaged in multiple collisions that lead to fiery pile-ups of three, four or even five galaxies smashing together. Nice pics and text at <http://opposite.stsci.edu/pubinfo/pr/1999/45/index.html>

Instrumentation:

The Stratospheric Observatory for Infrared Astronomy (SOFIA) project team has achieved a major milestone: removing over 3,600 kilograms (approximately 7,900 pounds, or 80% of the original mass) from the back of the SOFIA primary mirror. Many of us have looked at the stars out the windows of planes before, but never with a 9-foot diameter telescope. press release: http://george.arc.nasa.gov/dx/basket/pressrelease/99_65AR.html SOFIA: <http://sofia.arc.nasa.gov>

The X-ray Multi-Mirror Mission (XMM) is scheduled for launch in early December. NASA is contributing to this major European Space Agency (ESA) x-ray mission. US XMM page: <http://heasarc.gsfc.nasa.gov/docs/xmm/xmmgof.html> ESA page: <http://sci.esa.int/xmm/>

A test flight was successfully conducted recently of a pumpkin-shaped balloon half the size of a football field, and approximately one-tenth the volume of our planned Ultra Long Duration Balloon (ULDB). The ULDB will stay aloft at altitudes of up to 115,000 feet (35 kilometers) for as long as 100 days with more than a ton of scientific instruments. For some experiments, this could be cheaper than going to space, and just as effective. This is a capability we have wanted for a long time; now it may be just around the corner. press release: <ftp://pao.gsfc.nasa.gov/pub/PAO/Releases/1999/W99-112.htm> balloon page: <http://www.wff.nasa.gov/pages/scientificballoons.html>

Hubble Space Telescope went into “safe mode” over November 13th, and its observations halted, when one of its pointing units failed. The possibility of this happening is why earlier this year NASA ordered an early repair mission, currently scheduled for December 9. So luckily, we will only be losing about 3 week’s worth of science. safe mode story: <ftp://ftp.hq.nasa.gov/pub/pao/pressrel/1999/99-136.txt> Servicing Mission 3A page: <http://hubble.gsfc.nasa.gov/>

An occasional series on Astronomy basics and trivia.

In recent months, there has been discussion and a bit of controversy in certain astronomical circles concerning the planetary status of the Pluto/Charon system. Perhaps we could refer to them as “The planet formally known as Pluto.” Or maybe just use the sign “PL”.

Now, as I remove my firmly planted tongue from cheek, I ask, “DID YOU KNOW?” ... An object smaller in size, but with similarities to “PL”, was discovered in 1979 between the orbits of Saturn and Uranus. Cataloged as an Asteroid, number 2060 originally, later observations revealed fluctuations in brightness, which led to further study. Astronomers on Mauna Kea, Hawaii in February 1988 were monitoring “interesting” asteroids and found this object, Chiron (KAI-ron) nearly twice as bright as it should have been! Mr. Marsden was notified and further observations revealed an icy, terrestrial object out gassing on its perihelion approach of the Sun. A comet in other words!

The objects’ size, likely 160 miles across, generates enough gravity to prohibit the enormous tail normally associated with comets. A coma, or halo, was observed directly at this time of discovery, and subsequent photo analysis revealed a similar out gassing nearly ten years previous.

With the confirmation of size and nature of 2060 Chiron, the search was on for similar objects, sure enough, others were found, the most notable being 5145 Pholus, with an oblong orbit going inside Saturn’s to beyond Uranus’. Pholus has the most reddish-brown color spectrum analysis of any asteroid or comet-like body yet discovered!

Probably of little concern to most of us, when 2060 Chiron was confirmed “cometary” some suggested changing its name to reflect its status as a comet. Big surprise, huh? For now though, Chiron is still Chiron, and Pluto is still a planet. Or not.

DID YOU KNOW? .. The “Villa Rica Firewood Bandits” were yours truly and Janine! She has a new wood burning stove and the words “Free” and “Firewood” sounded good together! The V.R. observatory looks a little too.

Sources: The Grand Tour by William K. Hartman and Ron Miller © 1993 Workman Publishing and the Authors cynical sense of humor!

AAC Board Meeting

Announcing the next AAC Board meeting, open to all.
LOCATION: FERNBANK SCIENCE CENTER
DATE/TIME: Wednesday December 1, 1999 7:30PM

While everyone is welcome to attend and we will happily accommodate anyone wishing to speak - please remember that only board members and officers may bring new business or make motions. Board Members are listed in your monthly bulletin.

COMMITTEE HEADS: Please note I have scheduled time for each of you. If you wish to use it great and let me know so also if you need more time - if you do not wish to use it and I don't hear from you I will drop your committee report from this meeting's agenda.

THIS IS PRIMARILY A MEETING CENTERED AROUND FY2000 BUDGETS 2 ITEMS HAVE BEEN BROUGHT FORWARD FOR PRESENTATION, SEE BELOW - WE WILL ONLY DISCUSS THE * ITEMS - OTHER ITEMS AS TIME ALLOWS.

FY2000 BUDGETS - All club spending authorities should come to the meeting prepared to discuss their FY2000 budgets. If you want to spend club funds in 2000 now it the time to get your request in front of the AAC Board. This includes regular expense items and new program/improvement expenditures as necessary.

IF YOU HAVE A 2000 BUDGET PREPARED, PLEASE DISTRIBUTE BY 5PM TUESDAY.

Due to my personal reasons alone, and I am very sorry, the proper preparations for this meeting have not been made, so, for those of you who do not have enough notice there will be a second meeting in the next few weeks to be decided upon on Wednesday.

Focal Point

If you have an interesting story, send it along to me for publication in the Focal Point. I can accept most formats and even handwritten articles. A number of people compliment the articles written by our own club members, whether it be about observations, technique or just plain human interest.

Astro Images



By Geoff Powers

Seasons Greetings, all ye merry astronomy enthusiasts! Some news and an unanswered question or two highlight my year ending column this month.

The meetings at Charlie Elliott went well. We had a decent turnout for both of the Saturday's presentations, with many new faces at both meetings.

The evening session, the Polar Alignment group, was a bit of a surprise. I thought I'd walk through a star drift procedure for precise alignment, suitable, well, required for imaging. Instead, the participants were most interested in more basic procedures suitable for casual observing. No problem. Give the people what they want! I hope I helped the folks who attended with the information they wanted to make using an equatorial mount more enjoyable, whether imaging or not. All of this material, including Polar Alignment is certainly subject for rehash and review at future gatherings.

Speaking of future gatherings, let's look ahead. December 3rd, Agnes Scott, 8:00 PM. Same night and time as Fernbank's annual "Christmas Star" program. An unavoidable schedule conflict. I received the same invitation most all of you did. There just isn't enough time or a better evening to move the Astro Imaging group to. Oh, well. 'Tis the Season to be busy! I'll be at Agnes Scott as previously scheduled. The topic is prime focus and projection set-ups for through the scope lunar and planetary imaging.

I spoke with Chris DePree, Astronomy Professor, at Agnes Scott, today 11-23. He confirmed that demolition work would begin on 12-20 for Bradley's first major renovation, ever. Good news and bad, I suppose. The students, alumni and AAC people active at the Bradley have temporarily lost the facility until construction is complete. However, the good really outweighs the bad. Have you seen the plans for the renovation? WOW!!! New planetarium. Central heat and AIR CONDITIONING!!

S000 ... December is the last definite Astro Imaging meeting for the foreseeable future. I'm not going the completion date for the project at the Bradley here. Not at this point, anyway. My intuition not to schedule a January meeting now gives time to work out a new meeting place. I'm also seriously entertaining the idea of going to warmer climes for the "Orange Blossom Special" star party during February New Moon, the 3rd through the 6th. This is "First Friday" in February too. Nothing decided for February either way, but I will pick the Astro Imaging sessions in a temporary location (Fernbank?) in February or March.

Next month, I'll highlight upcoming subjects and try to shed some light on a new interim meeting area. I'll also explore the possibilities of shifting to the fourth Fridays to avoid prime observing weekends. 'Til then, enjoy the Holidays and please, BE Y2K COMPLIANT!!

Used telescope wanted.

Howard Landis <Indvstars@compuserve.com>

I am an old-timer member of the AAC and have honorary membership status, for which I am grateful. About 7 years ago I gave up my telescope and observatory. I miss a telescope and I am interested in finding a used 8" sct in a case with a field tripod. I have a suitable location about 500 ft. from my house, which I could walk to with the above equipment loaded into a large garden cart. On the lot here, there are too many trees, not practical. That is why I think the 8" with a field tripod would probably work out OK.

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

Club Officers

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Mark Banks	Sidewalk Astronomy	404-257-2766
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Tom Buchanan	Light Polution	770-521-2136
Lynn Crowley	Beginner's Contact & Socials	404-233-6886
Julie Moore	Hospitality and Refreshments	770-242-6735
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Chrissy Mondell	Ladies of the Night ... Sky	404-296-6332 <i>chrissy@NightSky.Org</i>
Geoff Powers	Astrto Imaging	770-454-6107

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

January 5 -- Focal Point Deadline

January 8 Dark Sky

Milky Way, Dahlonega

January 15 POHO

Villa Rica, 5:00pm

January 21 General Meeting

January 29 Quarterly Work Party

Villa Rica, 9:00am

February 5 Dark Sky

Rockmart

February 12 Astro Techniques

Villa Rica, 5:00pm

February 18 General Meeting

March 4 Dark Sky

CEWMA

March 11 Training

Villa Rica, 5:00pm

Remember to send renewals to the club and payable to the club.

Remeber S&T is now \$30

Astronomy is \$29

Club membership is \$25 or \$10 for student.

Atlanta Astronomy Club

The December Meeting

Friday, December 10th

Our December meeting will be held on **December 10**, at **8:00 p.m.** at Emory University's **White Hall**.

NOTE: THIS IS THE SECOND FRIDAY IN DECEMBER.

Our speaker will be **Michael Covington**, of The University of Georgia. His subject will be: **What's New in Astrophotography**. He will cover a number of new developments for both beginners and advanced astrophotographers. This is an updated version of a talk given to the BAA in London in March 1998.

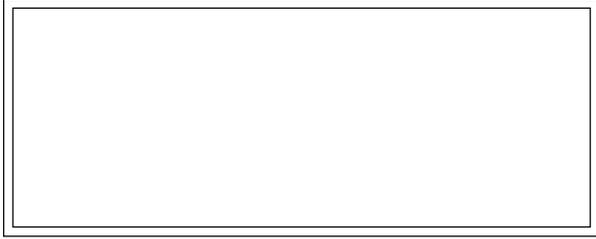
Michael Covington has been an avid astrophotographer since sixth grade (1968) and is the author of *Astrophotography for the Amateur*, a book that has its own web site (www.CovingtonInnovations.com/astro). By day he does research on computer modeling of human logic and language at The University of Georgia and writes numerous magazine articles, including the "Q&A" column for *Poptronics* (formerly *Electronics Now*). He lives in Athens with his wife Melody (a graphic designer and typesetter) and daughters Cathy and Sharon.

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



Newsletter of The Atlanta Astronomy Club, Inc.

FIRST CLASS



FROM:

Peter Macumber - *PMacumber@NightSky.Org*

1057 Trestle Drive

Austell, GA 30106

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

Atlanta Astronomy Club

PMB 305

3595 Canton Road A9

Marietta, GA 30066

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://stlsfpb.gtri.gatech.edu/asfrotxt/atlastro.html>**

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