

THE FOCAL POINT

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CLUB CALENDAR

Next Meeting: October 19, 1990, 8:00 P.M. at Fernbank Science Center.

Program: We will enjoy the planetarium show, "Birth of a Cosmos". Please meet around 7:50 so we can be seated and start the show promptly at 8:00. A short business meeting will follow in the Center with (weather permitting) an observing session through the 36" telescope.

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The *Focal Point* is published monthly during the academic year by the Atlanta Astronomy Club, Inc. The AAC is a non-profit organization dedicated to the advancement of amateur astronomy. Meetings are held on the third Friday of each month (the second Friday in December) at the Bradley Observatory on the Agnes Scott College campus. Dues are \$35 annually and include a subscription to *Sky & Telescope* magazine and use of the observatory in Villa Rica.

Submissions: Article submissions are welcome and encouraged. Please deliver to the editor for consideration. Electronic submissions are accepted at mike%beow.uucp@gatech.edu.

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SOLAR ECLIPSE 1991: A REPORT

by Ralph L. Buice, Jr.

During August three members of the Atlanta Astronomy Club, Steve Gilbreath, Mark Lancaster, and myself went to the big island of Hawaii to check out firsthand the hotels, airlines, and viewing sites for the total solar eclipse of July 11, 1991. It is pretty clear that the travel companies have "locked in" all accommodations and car rentals on the island. Whether or not this will continue to be the case as the day of the eclipse approaches depends upon the advance bookings and the ability of the travel agents to come up with the sizable deposits necessary for them to continue to hold their reserved blocks. For the moment, the appetites of the travel agencies have been voracious. The day after our plane reservations were made for the eclipse, for example, some 230 seats on our plane were reserved. On the big island itself, four wheel drive vehicles, necessary for travel on the Saddle road, are now unavailable (any bids for ours?).

The question of traffic congestion during and before the eclipse is of some concern throughout the island, and there is quite a bit of discussion about making certain roads (including the Saddle road) one-way on the day of the eclipse, as well as whether or not to mobilize the National Guard for a few days. The road to the top of Mauna Kea will be closed to almost all traffic several days before the eclipse. My guess is that only selected scientists conducting specific solar eclipse experiments and VIPs associated with astronomical funding will gain access to the summit without a lot of effort. Even the technicians who normally run the telescopes and equipment for the astronomers on the summit are being excluded from the complex of observatories at the top of the volcano during the eclipse. I am pleased to report, however, that the Keck facility is almost completed, and looks magnificent, and that the access roads have been redone, and in some cases rerouted, to make travel a little easier.

After talking with a number of the technicians and astronomers on the summit, several areas were checked out as possible eclipse viewing sites, using our trusty four wheel drive vehicle. The prevailing opinion is that the Hilo side of the island has a good chance of being overcast, while the Kona/Waikoloa side has an excellent chance of being clear. The weather around the Saddle road, which cuts across the middle of the island, as well as that of lower Mauna Kea, is highly variable — one minute, clouds, the next minute, sun.

Just a few miles travel to either side of a location can mean the difference between rain and sunshine with clear blue skies. Using a four wheel drive vehicle, several areas were investigated where surely no one has gone before, at least, in a long time! The best bet seems to be the Waikoloa coast, where the chance of having an unobstructed view of the eclipse is about 90 per cent. The eclipse should be clearly visible between two giant volcanoes, Mauna Loa on one side and Mauna Kea on the other. Next to the hotel where we will be staying on the Waikoloa coast is a large golf course which provides an unobstructed view of the horizon, and arrangements have been made to make this area available to the guests of our hotel during the eclipse. Besides, who would be playing golf at 7:28 in the morning besides Mark Lancaster, anyway? The view between the two volcanoes is magnificent (I took a number of slides), and if Pele cooperates, we will have reason enough for a luau the evening after the eclipse.

NASA'S TROUBLES KEEP RAINING DOWN

by Hal Crawford

As late as the first week of October, NASA suffered the latest of a multitude of setbacks when a beam used as part of a work platform was accidentally left inside the space shuttle Atlantis. The 70-pound, 8-foot long beam was discovered as the space shuttle was raised to an upright position inside the assembly building. At that point it was heard crashing around inside the engine compartment. Initial investigations reveal that the beam probably caused minimal damage and would probably not delay a secret military flight scheduled for November. However, the episode only underscored the problems that have plagued America's space agency.

Atlantis had already been delayed because it and the space shuttle Columbia have been plagued with hydrogen fuel leaks since early June. Those problems have since been resolved, and repairs have recently been completed. The space shuttle Discovery had its share of problems when one of its 14 thrusters fell off a work stand and was dented.

Problems with the shuttle fleet are only the most visible of a number of shortcomings experienced by NASA. There are growing indications that NASA is simply trying to do too much with too little cash. NASA's most ambitious projects are the space station and the "Mission to Planet Earth" that would examine the Earth's environment for the next 25 years. The \$2.1 billion Hubble Space Telescope has also been highly criticized for its flaws, perhaps unjustly.

These problems will clearly hurt us in the eyes of the international space community. The international partners

for the planned space station are already reconsidering their commitments in the light of a downwardly revised electrical power capabilities and questionable funding from their American hosts. Some Washington insiders are even betting on which partner will drop out first — the Canadians, the Japanese or the Europeans. "The smartest will drop out first," one NASA official remarked recently.

NASA has had an unfortunate history of providing low-ball estimates on the most sophisticated space projects. But bold projects can no longer be launched with unrealistically low price tags. As long as Congress holds the purse strings, and as long as Congress is willing to make politically expedient but potentially hazardous tinkering with NASA's budget from year to year, there will be a crisis at NASA.

One other event that can't be ignored is the growing movement to restrict shuttle launches that carry nuclear payloads. Radioisotope thermoelectric generators (RTGs) are the preferred power supply of choice for NASA's deep-space missions. They are extremely cost effective and efficient. The most phenomenal use to date is the Voyager probes to the outer planets of our solar system, launched in the late '70s. Now well outside the ecliptic, they continue to provide data to Earthly observers and will hopefully map out the "bow shock" of the interstellar medium in the next century.

The Ulysses space probe was successfully launched this weekend, but not without a considerable court battle. Many of you are familiar with the situation since a debate was featured in the November issue of *Sky & Telescope*. In that issue's Focal Point section, Glenn Reynolds of the National Space Society and Lanny Sinkin of the Christic Institute offer opposing arguments for and against the use of RTGs. Jeremy Rifkin (called by *New Republic Magazine* a "tireless champion of technological stagnation"), the Florida Coalition for Peace and Justice, and the Christic Institute have been working toward preventing the launch of any shuttle with an RTG payload. Other groups that have worked against NASA in the past include the Foundation on Economic Trends and the Green Party of West Germany.

Just to show you how interesting some of these groups can get, a member of the Green Party, Dr. Helmet Lippelt, charged that the Galileo space probe (launched last year) would violate a 1967 international treaty, ratified by the United States and West Germany, banning the introduction of contaminants into alien environments. His group argued that the Galileo craft, once in Jovian orbit, will drop a non-sterilized, plutonium-bearing probe into the Jovian atmosphere.

Lippelt concluded that the probe constitutes a threat to any life on Jupiter and intends to press the matter before the

World Court and before a U.S. court. I have not seen any other material regarding those actions, but I personally hope he didn't get very far.

Other interesting factoids that I have recovered from these groups includes this one: If "Galileo reenters the Earth's atmosphere at an angle and burns before reaching the planet's surface, [the scenario is it will] release enough plutonium into the atmosphere to cause 100 billion cases of lung cancer." My thesaurus reports Earth's population to be approximately five billion people, so you can get the idea that there's more than a casual amount of hype going on.

To his credit, Mr. Sinkin of the Christic Institute did offer some compelling arguments for giving RTGs a second thought, although I disagree with his conclusions. We should always be open to questions regarding the safety of the equipment we use to explore space. But questions mean serious discussion, not hyping improbable situations.

MARS, THE NEW INTERFERENCE FILTER AND EMISSION NEBULAE
by Bill Snell

The sky cleared for several nights in September and club members jumped at the best opportunity for observing in months. If you have never been to the club observatory at Villa Rica or if you haven't done any observing recently, this fall is a good time to get into the habit. Mars is near close approach, the club has a new filter that will revolutionize deep-sky observing, and the sky tends to be clear. Barring hurricanes, the club will hold observing sessions at the observatory on October 20, November 17, and December 15, 1990.

All club members are entitled to use the observatory telescopes, including the ten-inch; just call any club officer for directions and lock combinations. However, the club requires that you be "checked out" on the twenty-inch telescope before you use it since you must stand on a ladder to look through it and because it is somewhat more difficult to handle. This check-out is painless and involves a short demonstration of procedures to open up the scope and a demonstration of things not to do. Please call the observing chairman to arrange a twenty-inch telescope check-out.

Recently, several members used the club's new UltraBlock light pollution filter with the twenty-inch telescope. This interference filter gives amazing views of emission and planetary nebulae by blocking out all wavelengths of light except for a narrow range that the nebulae emit strongly. The result is excellent contrast on such objects as the Veil (both the eastern and western parts), Lagoon, Trifid, Helix, Eagle and

the North America nebulae. The Veil Nebula extends several degrees and shows intricate detail. You won't have to try very hard to see it. The Helix looks similar to the Ring but much larger. The Lagoon Nebula looks similar to, well, a lagoon. The Eagle Nebula, associated with the cluster M16, is easily visible and looks just as it does in a photograph. I should mention that the filter is not as useful on stars, most galaxies, or reflection nebulae; the filter will only make them look dimmer. Coming soon: Awesome Views of the Rosette and Orion nebulae.

During the next few months Mars looms in the sky — well maybe "looms" isn't exactly the right word. The planet will have an apparent diameter of 17 arc seconds for all of November and will reach a maximum of 18.1 arc seconds on November 19. A magnification of 100 will thus make Mars appear roughly the same size the moon (1900 arc seconds) does to the naked eye. You need to use higher magnifications to see much detail but at 250x you should be able to see as much detail as you can on the moon with the naked eye. Atmospheric stability, or "seeing", will be the main limitation. If your telescope has at least three or four inches of aperture, take a look on as many nights as you can and make some drawings. The ten-inch at Villa Rica is great for planetary viewing, so use it! The new color filters, especially the orange and red, should be helpful. Also see the August '90 issue of *Sky & Telescope* for an excellent guide to Mars. This apparition is definitely above average and the best until the next century.

I hope you will use the observatory and attend as many club meetings as possible. If you have questions or ideas please call on fellow members or any of the officers to help in any way they can.

DISCOUNT SUBSCRIPTIONS

As announced at our last meeting, the Club is offering discount subscriptions for several astronomical magazines. For a year's subscription the prices are as follows:

	AAC Price (\$)	Regular Price (\$)
ASTRONOMY	14	21
DEEP SKY	8	12
TELESCOPE MAKING	8	12
ODYSSEY	12.50	19.95

As you can see with the unaided eye, there is a 33% discount. The subscriptions are on a calendar year basis; orders must be processed shortly after the October meeting. If you want to subscribe to any of these fine publications, either see Treasurer

Jackie Cochran at the October meeting or mail her a check (see address elsewhere in this newsletter) with your address and the magazines desired. Call Jackie at 955-0145 if you have any questions about this offer.

located in Olde Towne Conyers (929-8066) and if you call ahead and identify yourself as an AAC member, he'll give you a great deal on business cards, letterhead, forms or any other printed materials. Thanks again, Skip! (Skip and his wife, Sylvia, have even been known to gaze at meteors on several occasions.)

For Sale

Meade 2080 LX3 (8" Schmidt-Cassegrain reflector) with coated optics, tripod, six eyepieces and many accessories. The asking price is \$1,195.

Offered by Bob Brady. Phone (404) 457-9907

GRAZING OCCULTATION REMINDER

by Mike Kazmierczak

There are several grazing occultations in the upcoming weeks I would like to remind you about. The pair of Pleiades stars which graze on the night of November 3rd are none other than Maia (4.0 mag.) and Atlas (3.8 mag.) Both stars are double stars which may show step events during the graze. In fact, Maia's duplicity was confirmed during observation of a graze. The time of central graze for the first star is 10:39 EST with the second graze occurring 75 minutes later. Since these stars are about 0.6° apart, the possibility of two intersecting graze paths exists. This does occur in the vicinity of Tifton. The circumstances aren't perfect, however, since the first star grazes mostly on the bright limb of the 97% sunlit moon. That wouldn't be worth driving to without another good reason (the second graze). If you are interested, please call me well in advance (760-8502) to find out what equipment you may need or to discuss any details. Plan on arriving in Tifton *at least 1 hour* before mid-graze. I hope that all members will try to observe this fascinating phenomenon.

IMPORTANT ANNOUNCEMENT!

The Atlanta Astronomy Club has found itself a generous patron. Skip's Printing of Conyers, Georgia has graciously offered to donate the printing services needed to publish our newsletter. We accepted his magnanimous offer and appreciate his fine support of our astronomy club. These savings will allow us to purchase desired equipment for our observatory (perhaps, one of those CCD imagers!). Skip's is

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