

# THE FOCAL POINT

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## PROGRAM NOTES

by Bud Rosser

The December 1991 meeting of the Atlanta Astronomy Club will be held at Fernbank Science Center on Friday, December 13, at 8:00 p.m.

Fernbank will host the club in the Cherry Planetarium with a showing of *Christmas Around the World*. Because the program will start promptly at 8:00 p.m., you may want to arrive a bit earlier than that. I, for one, tend to find it more difficult each year to catch that special holiday spirit, so I look forward to this presentation to help me focus on the importance of the season.

Following the show, we will adjourn to a classroom for the business portion of the meeting. I want to hear tales of some *great* observations during the week of Thanksgiving, when we were blessed with some clear skies! Paul Dyches took a group observing Turkey Day night (is that an oxymoron?) and I'm interested in what the seeing was like.

To make the meeting even more special, David Coffey and Jackie Cochran have planned to offer up some festive hors d'oeuvres to celebrate nearly four decades of organized amateur astronomy in Atlanta with the AAC. Please join us for the fellowship and joy of Christmas.

There will be a brief meeting of all officers and directors at 7:30 p.m. (immediately before the regular meeting) at Fernbank Science Center.

Also, there will be a longer meeting of the officers and board of directors on January 10, 1992 at 7:00 p.m. at a location to be determined.

## THE HUNT FOR RED FLASHLIGHTS IN OCTOBER

by Bill Snell

Astronomers always worry about the light pollution caused by billboards and streetlights. Yet there is another, often overlooked but more easily controlled type of light pollution. This is the light pollution coming from flashlights and observatory lighting. I once heard someone use the phrase "nuclear flashlight" to describe a flashlight (mine) that seemed too bright. Several companies make specialized flashlights designed for astronomy, but I am not anxious to pay the 15-35 dollar price for any of them. Since the idea is to simply provide a dependable source of red light I decided that ordinary (cheap) flashlights with truly deep red filters would be just as good.

Why red light? Our eyes have two types of photoreceptors, rods and cones. The rods provide low-acuity vision, but are insensitive to color. They contain a photosensitive pigment called rhodopsin that builds up in the dark over a period of 30 minutes or more. Rhodopsin is converted to an insensitive pigment ("bleached") under contact with bright light. It is most sensitive to blue and green light, but deep red light does not provide the energy needed to convert the rhodopsin to its inert form. The cones are used for high-acuity color vision under bright conditions, but unlike rods, they are sensitive to deep red light. A deep red light can be

bright enough for reading star charts without bleaching out the rhodopsin in the dark-adapted rods.

How red is red enough? How can you be sure that your red flashlight isn't letting some orange or even yellow light sneak onto your retina to do evil to your rhodopsin? Armed with several sample books of filters used for stage lighting and a diffraction grating, I was able to select a combination of filters that not only yielded red light, but also diffused the harsh beam of my flashlight.

Each filter includes a graph indicating how much of each wavelength of light is transmitted through it. Rods are insensitive to light wavelengths above 650 nanometers (which equals 6500 angstroms), but all the red filters transmitted light well below this wavelength, almost to 570 nm. Even though they looked red enough, they were passing quite a bit of orange, yellow or even green light. I thought these filters were a dead end until noticed that some of the blue filters were transmitting not only blue light (as expected), but also deep red light above 660 nm. Thus, the blue filter is acting as a deep red filter, and the red filter is there only to filter out the blue light! The diffraction grating helped me confirm this and I am now the proud owner of a bright, deep red, cheap and reliable flashlight.

I have several improvements in mind, such as replacing the bulb with a bright LED, which won't burn out like a conventional light bulb, using rechargeable batteries. Perhaps I'll even make a penlight version, but for now I will use the light just as it is. If

you have some other ideas, or think that you have a nuclear flashlight that could use some "redshifting", please let me know.

## ASTRONOMICAL RESOURCES

by Hal Crawford

Over the years I have collected a large number of advertisements from groups interested in the many different facets of astronomy. From talking with members (and reviewing some of the preliminary results of our survey), many members are interested in the goings on at NASA. Others are interested in paranormal phenomena, such as UFOs. Others are interested in proving that most paranormal phenomena, such as UFOs, don't exist. I have prepared the following list for your perusal. It is hardly comprehensive, but updates are constantly made. Feel free to contact these organizations for more information:

### PUBLICATIONS:

*Astronomy* — Popular astronomy, emphasis on astrophotography. 12 issues/year, \$24.00 (can be purchased from AAC treasurer for \$16.00 a year).

*Sky & Telescope* — Popular and technical astronomy (although not as technical as in the "old days"). 12 issues/year, available via AAC membership.

*Air and Space* — Official magazine of the Smithsonian Air & Space Museum in Washington, D.C. Emphasis on aviation, space vehicles. 6 issues/year.

*Final Frontier* — Space Exploration, discusses the Space Station, Planetary Exploration, Advanced Propulsion, Lunar Bases and Space Colonies, SETI, Reports on Public and Private forms of Space Exploration — both national and international. 6 issues/year, \$14.95. Final Frontier, PO Box 20089, Minneapolis, MN 55420-2089.

### ORGANIZATIONS:

The Astronomical Society of the Pacific — Beware of pretentious imitators, this is the real thing. Has been a bridge between astronomers and public since 1889. Several newsletters, color catalog available. Subscription to Mercury magazine. Annual dues are \$29.95 a year. 8,000 members. Astronomi-

cal Society of the Pacific, 390 Ashton Avenue, San Francisco, CA 94112; 415-337-1100.

Planetary Society — Emphasis on planetary exploration. Probably the most notable pro-"Explore Mars" group around. Minimal political operations. Headed by Carl Sagan. Journal is "The Planetary Report," published 6 issues/year. Annual dues are \$25.00. 125,000 members. The Planetary Society, 65 North Catalina Avenue, Pasadena, CA 91106; 818-793-5100.

National Space Society — Devoted to promotion of the U.S. Space Program. Founded in 1974 by Dr. Wernher von Braun. Heavy political operations. Magazine is Ad Astra, 12 issues/year. Non-profit group, introductory dues \$25.00. 26,000 members. National Space Society, 922 Pennsylvania Avenue, S.E. Washington, D.C. 20003; 202-543-1900.

Ouspadev (The Outer Space Development Company) — Organization dedicated to the development of space commercialization. Quarterly newsletter Outward, also computer BBS. Dues \$25.00 / year. Ouspadev, The Outer Space Development Company, 4631 NW 31st Avenue, Suite 193, Ft. Lauderdale, FL 33309.

Space Studies Institute — 12 year organization that conducts research relating to space exploration. Requests \$25.00 minimum contribution. Newsletter is "Update," publication frequency unknown. Space Studies Institute, P.O. Box 82, Princeton, NJ 08542, (609) 921-0377.

International Dark-Sky Association — The Organization dedicated to fight Light Pollution. Co-founder is Dr. David Crawford of Kitt Peak Observatory. Quarterly newsletter. Non-profit group, dues \$20.00. 500 members. International Dark-Sky Association, 3545 North Stewart, Tucson, AZ 85726.

Association of Lunar and Planetary Observers (ALPO) — Organizes observations of planets and the moon. Works to coordinate volunteers on amateur projects. 700 members. Contact: Harry D. Jamieson, PO Box 143, Heber Springs, Ark. 72543; 501-362-7624.

International Occultation Timing Association — Occultation chaser Mike Kazmierczak knows all about this group. Publishes information regarding occultations and grazes of solar system objects. Contact: Terri and Craig McManus, 1177 Collins, Topeka, KS, 66604; 913-232-3693. 350 members.

Challenger Center — Strong promotion of science education in our nation's schools. Requests tax-deductible contributions. Challenger Center, 1101 King Street, Suite 190, Alexandria, VA 22314.

CONTACT: Cultures of the Imagination — A rather obscure group, it seems to have strong interests in anthropolo-

gy and science fiction. It is a non-profit, educational and scientific organization. Publishes the CONTACT Newsletter 3 times a year. Minimal dues: \$15.00 a year. CONTACT, 1412 Potomac Avenue SE; Washington, DC 20003.

C.O.S.M.O.S. International (Consortium of Space Mining Operation Services — An ambitious research group to study the requirements for space commercialization; specifically relating to the mining of near-earth asteroids. Quarterly progress reports published. Dues structure begins at \$18.00 (associate). C.O.S.M.O.S. International, P.O. Box 442, La Junta, Colorado 81050.

OBSERVING SESSIONS AT VILLA RICA

Future observing sessions have been scheduled for the following dates:

- Saturday, January 4, 1992
Saturday, February 1, 1992

Don't forget about the Geminid meteor shower next month! Please call Bill Snell for information about observing sessions at Villa Rica the mornings of December 13th and/or 14th, depending on the weather. [Bring your sleeping bags. It will be cold! - Ed.]

There are more than twenty Messier objects that are easily visible in 7x35 binoculars during January. This is almost half of the fifty needed for the Binocular Certificate. The spring sky will provide at least another dozen. For more information, call Bill Snell at 633-4050.

DONATIONS WANTED

We are trying to clean up and upgrade the warm-up shed (wimp-out shed?) at our Villa Rica observatory. Do you have any used furniture such as a sofa, chairs, desk, or appliances such as a coffee maker or microwave oven lying around wasting space? If you would like to donate it to the Club, contact Bill Snell (955-0145). It is our understanding that such

donations are tax deductible at their fair market value.

NEW MEMBERS

We would like to welcome Becky Long to the Atlanta Astronomy Club. Please take a moment to welcome her at our meetings or observing sessions.

MEMBERSHIP LIST

Enclosed in this issue is the current membership list for the Astronomy Club. Use those phone numbers to call other members to arrange observing sorties or to report transient phenomena like auroras!

MEETING HIGHLIGHTS

The November meeting was highlighted by a program called "Star Arrangements: From Asterisms to Globulars" given by Bud Rosser. It was quite entertaining, and featured photographs from the Hubble Telescope. The business meeting

The Focal Point is published monthly 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. The submission deadline for the next issue is January 10.

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Bill Snell .....Observing Chairman .....633-4050 Jackie Cochran .....Treasurer .....955-0145

proceeded after the presentation, and featured messier certificate updates by Bill Snell. Something fun to look forward to are door prizes which will be given out during each meeting. The only requirement is your presence, so if you haven't been to a meeting in a while, here's an added bonus for showing up!

After (and before) the regular meeting, a meeting of the officers and directors was conducted. A broad range of topics was covered in the agenda, including the following:

- observatory maintenance and new equipment
- astronomy day preparations
- new observatory site selection and light pollution problems
- new ideas for field trips
- possibilities for reviving the club library
- star party ideas and public star shows

All of these tasks (plus others) need your help and support. If you would like to help with one or more of these committees, please contact your club officers and directors.

## For Sale

A C-8 Celestron, coated lens, wedge, electric drive and Cable, dew cap, tripod with quick-mount knob bolts, carrying case, 8x50 right angle finder is for sale. Also included are Celestron 40 mm and 25 mm eyepieces, as well as Meade orthoscopic 18 mm and 9 mm eyepieces. All the eyepieces are contained in a foam-padded case with a rechargeable flashlight and a 2X Barlow lens. I'll even throw in Wil Tirion's *Sky Atlas 2000* (Desk Edition). All the items are in excellent condition and the asking price is \$1,000 cash.

Offered by H. O. Teeple, 5015 Spalding Drive, Atlanta, GA 30360. Phone 394-5784.

Coulter Optics for 17½ inch (mirror and diagonal set) for \$500. Celestron 1¼ inch diameter, 45 mm Plössl (30° field), like new, \$25.

Offered by Dave Riddle. Phone 438-7818.

## THE FOCAL POINT

First Class Delivery

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