The FOCAL POINT

Newsletter of the Atlanta Astronomy Club, Inc.
Volume V, Number IX May 1993

THIS MONTH'S PROGRAM

Friday, May 21, 8:00 p.m., at Bradley Observatory of Agnes Scott College

Jim Sowell of the Georgia Tech Research Institute will speak about Tech's speckle interferometry program.

Speckle interferometry is a sophisticated observing technique that allows astronomers to gather data (stellar shapes, sizes and surface features for example) that would otherwise be unobtainable. For all the details, be sure to attend this month's meeting and hear a great program on great speckle interferometry!

MAY OBSERVING SESSION

David Riddle

May is a month of transition. The chill of late spring evenings is finally replaced by more comfortable temperatures that invite gathering under a starry sky. The heavens are also in transition. Orion disappears to the west after a long reign over the winter sky. To the southeast a celestial scorpion crawls slowly above the horizon, its flickering red heart, Antares, contrasting beautifully with the fresh green foliage in late twilight. As darkness falls, a galactic window opens for observers to peer far beyond our galaxy and see the infinite vistas of the realms of the galaxies. Those hardy souls who linger under the stars at a late hour will see the hub of our Milky Way rise along with the treasures it holds.

Our observing session for May is on Saturday night, the 22nd. Weather permitting, guests from the Nature Company will be present. If you would like to help acquaint our guests with the beauties and mysteries of the night sky, please make plans to be present.

ATLANTA ASTRONOMY CLUB COMPUTER BULLETIN BOARD SYSTEM

William Snell

Club member Doug Chesser has been hard at work running a computer BBS for the Club since March and the number of users on the board has grown dramatically. Approximately one thousand calls have been made and numerous messages posted so far. The user list of the BBS already includes at least fourteen Club members and several dozen other people with an interest in astronomy.

What are the benefits of using the BBS?

First, you can read and post messages just as you would on a conventional bulletin board, except that you can use the BBS from almost anywhere in the country—or the world. Second, the BBS organizes messages according to subject and you can choose to read only the most recent messages. There are ongoing 'conferences', not only about astronomy, but also science fiction, philosophy, NASA and another category, titled "Beyond Human Understanding" (it probably contains discussions about polar alignment, the right-angle finder scope and programming your VCR!)

There are other advantages. The BBS provides up-to-date information on Club activities or late-breaking astronomical events. Consider, for example, the recent appearance of the supernova in M81. Not only was information disseminated quickly, but the BBS also made available graphics files that showed where to look for the supernova.

The BBS is also a source of computer shareware programs of astronomical interest.

These give information about the rising and setting times of objects, the positions of Jupiter's moons and passages of Earth satellites, for example. There are also files that contain images of celestial objects such as the asteroid Gaspra, Jupiter and M81, text files containing news and information related to astronomy and space exploration, games and utility programs.

You can also send private mail to other BBS users. This can be much easier than playing 'telephone tag' if the recipient uses the board regularly.

What do you need to use the BBS?

If you have a personal computer of almost any type you can probably buy a modem for it that will allow you to dial in to the BBS. Modems for MS-DOS computers in particular are now very reasonable (perhaps as little as $40) and easy to install and use. 2400 bps modems are probably the most cost effective but you might appreciate a faster though much more expensive 9600 bps or 14400 bps modem if you download or upload very many (or very large) files. Don't buy a new modem that is slower than 2400 bps though!

The number for the BBS is (404) 455-3089. Once you are logged in, you will find that the 'menu driven' software of this BBS is very easy to use.

The more people use the system, whether to leave messages or reply to them, or download or upload files, the more useful and fun the BBS will be for all users.

However, computers can be very addictive. So if it is a clear night, turn off the computer, feed the kids, load up the car and go to the observatory!

Many thanks to Doug Chesser, who runs the BBS and to all those who use it.

NEBULAR FILTERS: A USER'S REVIEW

David Riddle

Nebular filters are among the most useful accessories an amateur astronomer can own. When used properly, these filters can greatly increase the number of nebulosities visible through a telescope. I would like to share some of my observations on the usefulness of these filters with others so they may better use the ones they already own and to guide those observers who are considering the purchase of these rather expensive items. All my filters are marketed by Lumicon and are designed to fit 1.25-inch eyepieces.

Deep Sky Filter

This general purpose filter transmits the entire visible spectrum except for the regions of about 540 to 630 nanometers. In effect, it is a true light pollution filter that blocks the transmission of high pressure sodium (550-650nm) and high pressure mercury (550-600nm) light pollution along with natural sky glow due to atomic oxygen emissions at 558nm and 630nm. In the field, I have found that this filter will darken the sky by about a factor of 2 when observing open and globular clusters.

Observers of reflection nebulae benefit by using this filter. Views of most galaxies are enhanced except for those of extremely low surface brightness on the threshold of vision. In this case you will benefit by switching to a higher power eyepiece with no filter. Use of a higher magnification will darken the field and the observer will avoid the light loss caused by the filter.

Lumicon suggests an exit pupil of one to four millimeters when using a deep sky filter. This can be calculated by dividing the focal length of the eyepiece by the focal ratio of the telescope. For example, using a 14mm

eyepiece on our f/4.5 20-inch reflector yields a 3mm exit pupil.

Observers will note that this filter tints stars with a bluish-green hue. I have found that the deep sky filter is a superb filter for observing Jupiter, giving a higher contrast view than an 82A light blue filter.

The Ultra High Contrast (UHC Filter)

With a more narrow transmission window (about 25nm) centered on the 496nm oxygen-III emission line, this is a good general purpose filter for planetary and emission nebulae observing. An exit pupil of 2-6mm is recommended. I have found this filter useful when observing small planetary nebulae where a high power is needed. The UHC filter does not offer the contrast provided by an Oxygen-III filter but it can be used at a higher power than an Oxygen-III. An experienced observer will find that the UHC filter is useful for defining the H-II regions visible in some galaxies.

The Oxygen-III Filter

This exotic filter is designed for use on planetary nebulae whose characteristic emission line is strongest at 496nm. Transmitting a narrow window about 11nm wide centered on the 496nm line, it offers superb contrast on planetary nebulae and is a great performer on many emission nebulae. Dark-adapted eyes are most sensitive to the green light this filter transmits, making it the real workhorse of all my filters. Lumicon guarantees this filter to reveal nebulosity that would be otherwise invisible, and I have found this to be true. Care must be taken when choosing an eyepiece to use with this filter. In general, it works best at low powers and darkens a telescopic field by a very considerable factor. I have found that placing a dark hood over my head to block stray light is very helpful when observing with an O-III filter. This allows my eye to further dark-adapt to the black field offered and makes detection of extremely dim objects easier. An O-III filter can change the shape of familiar objects like M27 from the 'Dumbbell' nebula into the 'Football' nebula. This line filter is truly one of the most impressive filters that I own.

The Hydrogen Beta Filter

The Hydrogen Beta filter (another 'line' filter) is not as versatile as an Oxygen-III but offers superb performance on a rather select group of exceedingly faint emission nebulosities. Nicknamed the 'Horsehead' filter, it also works well on the California Nebula, Barnard's Loop in Orion and some of the brighter emission nebulae such as M42. An unexpected use of this filter comes when observing a planetary nebula such as NGC 3242, the 'Ghost of Jupiter,' in Hydra. This filter will dim the planetary's bright disc down to a level where the central star is easier to see. Lower powers suit this filter's transmission qualities well.

It should be stressed that these filters work best under a good sky. Their performance is compromised by heavy light pollution, moonlight and haze. It is unfortunate that these filters will never take the place of observing from a jet black country sky but for those of us who don't have access to such an observing site, these filters are a good investment.

TRIVIA

Answer to last month's question (What is the rotational period of the Earth?):

Too easy! The Earth rotates once in roughly 23 hours 56 minutes, not 24 hours.

This month's question: What are the Kirkwood Gaps?

The *Focal Point* is published monthly by the Atlanta Astronomy Club, Inc., 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 of Agnes Scott College in Decatur, Georgia.

For up-to-date information on Club programs and activities please call the AAC's telephone hot-line at (404) 621-2661 or log in to the Club's Computer BBS at (404) 455-3089.

Membership: $20 annually for families and $10 for students. Membership includes a subscription to the Astronomical League's *Reflector* newsletter and use of the Club's observatory in Villa Rica, Georgia. Optional subscriptions to *Sky & Telescope* and *Astronomy Magazine* are available for $20 and $16 per year, respectively.

Article submissions are strongly encouraged; please deliver to the editor for consideration. The submission deadline for the June 1993 issue of the *Focal Point* is June 7th. Permission is granted to duplicate and redistribute in a non-profit manner, in part or whole, provided credit is given to the authors, the Club and this publication. Please call the editor at (404) 294-6055 for more information.

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First Class

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