

THE FOCAL POINT

Vol. IV, No. III *The Newsletter of the Atlanta Astronomy Club* November 1991

PROGRAM NOTES

by Bud Rosser

The November 1991 meeting of the Atlanta Astronomy Club will be held at 8:00 p.m. at the Bradley Observatory on the Agnes Scott campus (pending no more campus emergencies) on Friday, November 15th. Refreshments will be served, I promise!

This late fall program is entitled "Star Arrangements: From Asterisms to Globulars." It has very little to do with Hollywood personalities and lots to do with gaining a deeper understanding of the various star groupings we observe. Included in the combination lecture/slide show will be handouts of various asterisms, open and globular clusters to observe and, yes, some will be those nefarious Messier Objects.

I suppose the inspiration for this program comes partially from my own fondness for the TV series "Star Trek, The Next Generation." I've been lately disturbed by the thru-the-window-view of countless stars streaming by the Enterprise and not getting any brighter, nor any larger as the craft passes them by at "impulse power." I began wondering just how far apart these background stars would have to be from each other, and from the Enterprise, to permit any three-dimensional perception of movement among them. Probably too close to pass by unharmed, eh?

Well, I like special effect, since it makes the Enterprise look like it's really smokin' across the galaxy. Nonetheless, what would it look like if one could travel into a globular cluster? How far apart are those stars...does the distance between

sister stars in a cluster decrease in a predictable ratio to distance from the center? Is that ratio the same for all globulars? Are all the stars in a globular of the same spectral class? If so, why? If not, why not, and what would that tell us about these mysterious formations?

As you can see, there will be much to discover on November 15th, and I will be the most excited to share with you all that I can assemble from the experts in the field.

There will be a brief meeting of all officers and directors at 7:30 p.m., November 15th (immediately before the regular meeting) at Bradley Observatory.

PRIME FOCUS PHOTOGRAPHY WITH THE 20 INCH REFLECTOR

by Dave Riddle

I have been interested in astrophotography for the past few years and I was understandably curious about the capabilities of our club's 20 inch telescope. Some readers may be interested to hear of my initial results.

Let me stress that I took a very casual attitude during my first attempt and the outcome was very encouraging. Focusing was done by eye using my camera's ground glass screen. If done with care, the star images will be pinpoints. I have found that no guiding is needed for exposures up to one minute long. [*Even longer exposures are possible near the celestial pole.* — Ed.] One minute may sound very short, but it is enough to record an image of M-42 that compares well to a photograph published in the September issue of

Sky & Telescope. That ten minute photograph was made with a 10 inch Schmidt-Cassegrain working at f/6.3 using Fujichrome 1600. Bright nebulae are within easy reach of the club telescope. M-42, M-57 and NGC 2024 are fairly easy targets due to our telescope's fast f/4.5 optics.

The 20 inch records faint stars very well with short exposures. Using Fujicolor 400 film, I have recorded 10th magnitude stars with exposures of only eight seconds. One minute exposures with this film will record stars fainter than 13th magnitude. On a cold night when the photographic emulsion is chilled (the poor man's cold camera), I have recorded stars to magnitude 15. All this means that clusters such as M-35, the Auriga clusters and NGC 2546, are easy subjects. I was surprised to find that using a faster film (Konica 3200) did little to record fainter nebulosity in M-42. In fact, I liked the ISO 400 shots better due to the much finer grain of the film. On standard 4 x 6 inch prints (the one hour variety) the scale is close to 8.5 arc minutes per inch.

In closing, it is obvious that the 20 inch reflector, with its large aperture and f/4.5 optical system has great photographic potential. Experiments using the dual axis drive correctors and an off-axis guider should greatly expand its capacity. I would like to talk with other members that have experience using these accessories. With the addition of a coma corrector and a deep sky filter, first class photographs at prime focus are fully within the grasp of our club telescope. [*Editor's Note: David is interested in contact with other astrophotographers out there. Please call or write him.*]

OBSERVING SESSIONS AT VILLA RICA

Future observing sessions have been scheduled for the following dates:

Saturday, December 7th
January, 1992 (to be announced)
Saturday, February 1st, 1992

Also, the Geminid meteor shower will not be spoiled by moonlight this year! Please call 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.]

THE BINOCULAR MESSIER CLUB

by William Snell

Now that fall has arrived we can look forward to some halfway decent cold fronts moving across the state and leaving clear skies in their wake. This is certainly a good time of year to begin an observing program. At the September meeting Bud Rosser spoke about the work of Charles Messier, the 18th century comet hunter, whose list of deep sky objects still provides amateur astronomers with rewarding observing projects. Recently, the Astronomical League introduced the Binocular Messier Club which will prove to be a breakthrough for amateur astronomy.

The Binocular Club is similar to the original Messier Club but gives recognition to observers who log fifty or more Messier Objects with any ordinary pair of binoculars. Since most people either already own or can easily afford a good pair of 35mm aperture or larger binoculars the new club has great potential for cultivating an interest in the sky. Furthermore, binoculars do not become obsolete when you start using a telescope. My old pair of 7x35s are as important a part of my equipment as my eyepieces and star charts. Binoculars have many advantages for use in astronomy. The wide field of view, typically 5 degrees or more, allows you to find objects quickly. The upright view also makes it easy to compare what you see with what is plotted on your star chart. The portability of binoculars encourages you to observe often, which is a very important factor in improving your skills and learning your way

around the sky. You will also be learning to "star hop" since this is really the only way to aim binoculars. When you start using a telescope, finding objects will already be second nature to you. Binoculars provide quick results for beginners while more experienced observers will come across many "new" objects that they have previously ignored. Most of the Messier objects are actually visible in a finder scope but since the finder is attached to a bulky telescope it will not always be used to its full potential.

You should equip yourself with a detailed star chart that shows stars to at least 7th magnitude. The Deluxe Tirion Sky Atlas is a good value at about \$45, but the loose-leaf Field Edition Tirion is a bargain at \$20. Norton's atlas is not quite as good while the Uranometria (\$80 for two volumes) is probably overkill. Also, an inexpensive planisphere is a handy accessory to have when you are planning an observing session. All of these atlases are available from Sky Publishing. The Astronomical League sells a guide to the Messier Objects which is very reasonable at \$3.50. Recent books on deep sky objects include *Turn Left at Orion*, *The Universe from Your Backyard*, and *Touring the Universe through Binoculars*. For details about how to log the objects, how to report your observations, or which objects to try please call me at 633-4050 or send a SASE to: John Wagoner, AL Binocular Coor., 1409 Sequoia Drive, Plano, TX 75023.

The club observatory at Villa Rica is a good site from which to observe these M-Objects. Last spring I was easily able to spot a dozen with a pair of 7x35s. I plan to work on the Binocular certificate during the coming months. To help plan your observing schedule please note that the moon will rise after midnight beginning Nov. 29th and sets before midnight until Dec. 15th. Listed below are some binocular Messier objects for December.

About to set:

M-27, M-29, M-39, M-57

No hurry:

M-2, M-15, M-31, M-32

M-33, M-34, M-52, M-103

OBSERVATORY FIELD TRIP

The Roper Mountain Science Center will be hosting an observing session, weather permitting, using their historic 23 inch Clark refractor. This glorious event in Greenville, South Carolina, will start at 7:30 p.m. on Saturday, November 16th and last until ... They also have a Digistar Planetarium for excellent shows. Please contact Bill Snell at 633-4050 for further information.

NEW MEMBERS

We would like to welcome these new members who have joined the club recently:

Rodney Shrader
Doug Cheeser
Chuck Cartwright
Mark Wallis

Please take a moment to welcome these new members when you see them at our meetings or observing sessions.

CLUB DISCOUNTS AVAILABLE

Several members have inquired about the notice that appears on your *Sky & Telescope* renewal notice about ordering books and atlases through the Club at a discount. I am glad that you asked! We are pleased to be able to offer this service to our members. The discounts generally range from 12 to 23%. Many of

these publications appear in the *Sky Publications Catalogue* which most of you receive regularly.

We will place an order once a month, usually a few days after each club meeting. Payment must be made in full at the time of the order. The publications should be available for distribution at the next club meeting. [Editor's Note: *The Astronomical League* has a service which entitles you to a 10% discount on any astronomy book. Read your Reflector or call an officer for information.]

The club Treasurer, Jackie Cochran, will have a list of publications available and their prices at each club meeting, or you can contact her (evenings) at 955-0145.

OBSERVING PLANETARY NEBULA

by Richard Jakiel

Planetary nebula are the ghostly glowing embers of a star nearing the end of his life. What we see as a dim

greenish glow are a series of "shells" expelled by a dying red giant star. This is only a very brief stage in a star's life, lasting only 10,000 years or so. The red giant rapidly evolves into an intensely hot white dwarf which irradiates the expanding planetary nebula. These dying stars are among the hottest known with temperatures from 25,000-100,000 K. In comparison, our sun is a mere 5800 K. The intense ultraviolet radiation produced by these stars ionizes these gaseous shells producing an emission spectrum of only a few bright lines. One of these involves ionized oxygen, or O-III, which produces the greenish glow often associated with these objects. The great observer William Herschel coined the term "planetary nebula", because of the green color and the small, rounded size which reminded him of the (then) newly discovered planet, Uranus.

Many deep sky observers believe that planetary nebula are hard to observe and are not worth the effort to track down, but this isn't really

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 *November 29*.

Duplication: Permission is granted to duplicate and redistribute in a non-profit manner, in part or in whole, provided proper credit is made to this publication, club and the authors.

Editor: Dr. Mike Kazmierczak

OFFICERS' PHONE NUMBERS

Hal Crawford..... <i>President</i>	320-9156	Mike Kazmierczak	<i>Corresponding Sec.</i>	760-8502
Bud Rosser	<i>Program Chairman</i>	879-0304	Bill Washburn	<i>Recording Sec.</i>
Bill Snell	<i>Observing Chairman</i>	633-4050	Jackie Cochran	<i>Treasurer</i>
				955-0145

the case. All that is really needed is a good star atlas, some medium and high power eyepieces and a few observing tips. A good star atlas or finder chart is essential, as nebulae are, by and large, small objects located in rich star fields. Medium to high power is also highly recommended in observing these objects. Many are disks less than 20 arc seconds across, so at low magnification they often look like stars which are slightly distended, nebulous or just out of focus. However, many have a high surface brightness so you will find it easy to apply 20 or more magnifications per inch of telescope aperture (N.B.: 8 inch aperture at 20x per inch = 160 magnifications).

One of the most exciting advances in the art of observing planetary nebulae is the development of the nebular filter. Since these nebulae emit light in only a few narrow spectral lines, it is possible to selectively block out unwanted light. This enhances details in the nebulosity as well as greatly darkening the background and reducing the adverse effects of light pollution. The best kinds of filters for viewing are the ultra-high contrast and the O-III, although broad band filters will also help. [*The O-III filter will be reviewed in a later issue of The Focal Point - Ed.*] The change in the view can be dramatic, especially when viewing large, low contrast objects like the Helix Nebula or the Owl Nebula (M-97). When the planetary nebula is very small, I often use the "blink" technique to help find elusive objects. The blink technique consists of nothing more than alternately moving a nebular filter in and out of the field of view. When you do this, the stars dim and brighten considerably while the nebula remains the same. As a helpful hint, this works best with a dark cloth or hood over your head to block out extraneous light sources.

One of the best ways to sharpen up your observing skills is the fine art of drawing at the eyepiece. Not only will your ability to see detail improve, but you will have a permanent record of your observations to look on those all too common cloudy nights. Planetary nebulae come in a wide range of shapes, sizes and brightness levels, so they make ideal objects to practice on. Many are small and detailed like the planets they resemble. Making high resolution drawings will help you see details that might have been missed with a more cursory view. The primary tools of the trade are a solid clipboard, paper, pencils, and a red flashlight. When I want to make a drawing, I first survey the area, noting the position of the brighter stars, and the size and orientation of the target. I usually do this without a filter, and after plotting these details I switch to a filtered view to draw in the more subtle shadings in the nebula. Your first drawings may turn out

rather crude and unattractive, but in a short period of time you'll notice a marked improvement in both your drawing and observing skills.

The fall and early winter skies are full of bright and challenging planetary nebulae to observe. The upper reaches of the summer Milky Way are still visible along with the normal fall and early winter constellations. Small, bright nebulae include NGC 7009 (Saturn), 7662 in Andromeda, 1535 in Eridanus, and 7026 and 7027, both in Cygnus. Bigger, more diffuse nebulae include NGC 7293 (Helix), 246 in Cetus, 1360 in Fornax and M-76, the little Dumbbell in Perseus. Try your hand at observing and drawing these and other nebulae visible during the clear, cool fall nights. I'll greatly welcome any observations you have of these and other deep sky objects. I'd like to include your observations in upcoming deep sky articles.

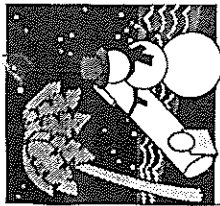
ASTRONOMY CLUB T-SHIRT DESIGN CONTEST

That's right, you read it correctly. The AAC needs a design for the new t-shirt we are going to produce. Since we don't want to listen to each dissatisfied person say, "I could have done better than that," we decided to have a contest. We are looking for a few good ideas. One need not be able to prepare the final artwork. The sketch of what each idea is what is desired. Of course, if you can prepare camera ready artwork, so much the better. Now, why would you want to help design the new shirt? Aside from personal fame and glory, the winning designer will receive both a complimentary shirt and a one year subscription (new or extension) to *Sky & Telescope*.

The rules are (once again):

- 1) One entry per membership.
- 2) All designs become the property of the Atlanta Astronomy Club, Inc.
- 3) Please submit designs to the Newsletter Editor for consideration (address below).
- 4) Please limit design to 3 colors. That's one color for the shirt and two colors for ink.
- 5) Void where prohibited by law.
- 6) All entries must be postmarked by December 31, 1991.

Apparently, I misestimated the deluge of entries I would receive. That deluge has been a drought so far, so let's get cooking out there and send in some great ideas!



The 1992 WINTER STAR PARTY®

SOUTHERN CROSS ASTRONOMICAL SOCIETY, INC.

1992's Premiere Astronomical Event January 28 - February 1, 1992

Why bundle up at the fireside reading about astronomy when you could be observing? The Southern Cross Astronomical Society invites you to our Eighth Annual Winter Star Party at West Summerland Key.

MORE NIGHT SKY

We give you more night sky than any other major star party. WSP-92 will be held at the Southernmost Dark Sky Campsite in the continental United States (24.6 degrees North). Here, you'll enjoy deep sky objects down to -65 degrees. Fully 80% of the sky will be visible.

Our Sun sets before 6 PM and doesn't rise again until after 6 AM the following day. This allows you to get in lots of quality observing time during the five nights of WSP-92.

SCAS once again will hold the WSP at Girl Scout Camp Wesumkee on West Summerland Key, 30 miles northeast of historic Key West. Since the Boy Scouts were unwilling to rent their adjacent Camp Sawyer, we expect an early sellout crowd of 550 attendees. WSP-91 registration was 520.

A STAR PARTY IN PARADISE

By day, the Florida Keys offer excellent outdoor recreation: skiing, sailing, deep sea fishing, scuba diving, tennis, golf, and nature watching. Camp Wesumkee is located in a National Wildlife Refuge. Of course, wildlife of another sort is readily available in nearby Key West.

At dusk, you can frequently catch the "Green Flash" as the Sun sets over the Gulf of Mexico. Bring your camera and telephoto lens to capture this event. Then find yourself a comfortable place to lie back and watch the satellites promenade. At this latitude, you'll see an abundance of low-inclination equatorial spacecraft.

Jupiter rises around 8 PM. As the night progresses, notice how many amazed "Light-Bucket" owners have their Dobsonians aimed at it. The stability of our skies is legendary, typically 0.2 arc second. This enables you to reveal planetary detail and split double stars like nowhere else on Earth. No wonder so many planetary observers locate in South Florida.

The featured performance comes when the sky darkens to reveal an outstanding vista of Southern deep sky objects such as Eta Carinae, Omega Centauri, and our namesake, the Southern Cross. Expect a cameo appearance from the Zodiacal Light too. It's a virtual certainty down here at this time of year.

See other side for details

FACILITIES

TRAVEL:

Getting to the WSP is easy. From the Miami International Airport, it's 45 minutes on the expressway, followed by two hours on scenic Highway US-1, "The Highway That Went to Sea." Connecting flights to Key West or Marathon are also available, reducing driving time to under an hour.

We have plenty of parking available and can reserve space for RVs or trailers. There are no hookups, however, so if you need a generator, bring one.

ACCOMMODATIONS:

We have lots of campsites, hot showers, and clean bathrooms, too. Sixteen chickee bunkhouses are available on a first come, first served basis; each chickee sleeps six. If you prefer, there are several hotels on neighboring keys but remember, this is tourist season, so reserve early. For free information on area accommodations and recreational activities, call 1-800-FLA-KEYS.

FOOD:

This year we plan to initiate a family-style food service. Our magnificent cook can serve only 80 people per meal, so we must sell meal tickets in advance. Restaurants are located on neighboring Big Pine Key, or you can cook right at your campsite. Please note that all fires must be extinguished by dusk.

MISCELLANEOUS:

An outstanding list of speakers will educate and entertain you in the comfortable, 100-seat, air-conditioned Wheelhouse auditorium. Between talks, stroll downstairs through the Wheelhouse vendor area. There you can take advantage of special WSP discount pricing on all types of astronomy-related items.

Swap Meets are scheduled downstairs in the Galley on both Friday and Saturday, so bring along your trash and take home a treasure.

PHONES:

There's a pay phone in the Galley downstairs and cellular phone coverage throughout the keys.

SPEAKERS

A complete list of speakers will be given to you at the registration desk. At this time, the following speakers plan to make presentations:

Dr. Walter Scott Houston.....Southern Deep Sky Objects
John DobsonSidewalk Astronomy
Richard BerryCCD Imaging
Dr. Don ParkerPlanetary Observations
Jack NewtonAstroPhotography
Tippy D'Auria.....Newtonian Collimation

PRIZES

Thousands of dollars in door prizes will be given away to attendees on Saturday at 4 PM. You must be present to win. Also, an on-site photo contest will be held on Saturday at 3 PM. Images of all types may be entered: photos, video, digital imagery, or drawings. All images must be taken at the WSP-92 to be eligible.

R.S.V.P.

Don't miss WSP-92. Simply complete the enclosed registration form and mail it in today. Registrations postmarked by December 1, 1991 receive a discount for early payment. For further information write or call Bob and Sharon Grant, 5401 SW 110 Ave., Miami, FL 33165, (305) 595-8778.

1992 WINTER STAR PARTY

On the facing page, we have reproduced for you, courtesy of the NEFAS Newsletter, an advert for the 1992 Winter Star Party. Held in early February on the Florida Keys, it is an exciting observing opportunity. For further information, contact Mike Kazmierczak or the address listed in the ad.

MEETING HIGHLIGHTS

During the last two months, the programs have centered on observing and observing skills. Bud Rosser gave a highly entertaining talk on the "Comet Ferret", Charles Messier. Discoverer of at least 13 comets, Messier is now best remembered for his list of deep sky objects. Bud and Bill Snell discussed details on getting Messier Certificates, both for binoculars and telescopes. For all you 'old' pros, the binocular club is particularly intriguing, giving you a chance to reacquaint yourself with some old friends.

In October, Rich Jakiel gave a presentation on observing diffuse nebula, or H-II regions in other

galaxies. Observing skills were discussed, along with a brief review of filter types and their effectiveness. He challenged each member to observe M-33 with the club's 20 inch telescope. You'll be amazed at the detail discernible, as well as the ease of seeing these distant, giant, diffuse nebulae.

Ego Sale

Celestron Ultima-8 telescope with the following accessories. Easy Guider with Nikon T-Ring, declination motor, 48mm deep sky filter, 7 and 12 mm orthoscopic and 30mm Plössl eyepieces, four colored filters, dew cap, heavy duty tripod and other standard features of this telescope. All for \$2000 from Jack Harmon. 980-9108 (h) or 239-7887 (w).

Meade 2080 8 inch telescope. This is one of the first telescopes produced by Meade and is over 10 years old. It is in excellent shape and has a clock drive, tripod, carrying case and three eyepieces. The first buyer with \$700 (firm) snaps up this gem. Call Steve Bloodworth at 934-6729 or 938-8552.



THE FOCAL POINT

First Class Delivery

Article submissions and address corrections to:

Mike Kazmierczak, Editor
1789 Brandy Drive
Conyers, GA 30208-3032

W. Tom Buchanan
105 Carriage Station Cir.
Roswell, GA 30075

AAC membership renewals to:

Jackie Cochran, Treasurer
2854 Staunton Dr.
Marletta, GA 30067

**PRINTING
COURTESY OF**

