

# THE FOCAL POINT

Vol. III, No. XI

The Newsletter of the Atlanta Astronomy Club

July 1991

## CLUB CALENDAR

**Next Meeting:** Our next meeting is at 7:00 p.m., Saturday, July 20, 1991 at the Monastery of the Holy Ghost located in Conyers. Find the map inside!

**Program:** There will be a picnic on the Monastery grounds. Hungry members are encouraged to bring their own supper. Not-so-hungry members should plan accordingly. Weather permitting, we will have a public observing session.

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*Contributing Editor:* .....Hal Crawford

**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](mailto:mike%beow.uucp@gatech.edu). The submission deadline for the next issue is *August 1*.

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## UNGRINDING A MIRROR

by Bob Brady

Ungrinding a mirror is a strange operation for an amateur telescope maker, but let me tell you the story. Once upon a time, many years ago, some thirty to be exact, I had two young sons. I was always a believer that it was a parent's duty to give their children the opportunity to get familiar with things they might be interested in later. Also, children should be given a little insight into things that they would not ordinarily run into in grade school. After the chemistry set and the toy microscope the time came for astronomy. My oldest son was in his early teens. Finances at that time did not cover even the cost of a modest telescope, therefore the next best thing was to make one. After reading all three volumes of *Amateur Telescope Making* and Texereau's *How to Make a Telescope* we ordered a six inch mirror grinding kit. We acquired a fifty-five gallon steel drum and built the necessary accessories to begin mirror grinding. At this time our interests switched to rocks and minerals and cars, so all these mirror-making supplies sat idly.

As a youngster, I visited Dearborn Observatory at Northwestern University in Evanston, Illinois. This visit sparked my interest in astronomy. The spark was still lit, so I embarked on my own to grind the mirror and build a telescope. After I began, the work went reasonably well. Even though I arrived at a nice spherical configuration, the focal length was  $f/3$ , too short for a conventional telescope. The mirror was polished after long hours, but the project stopped there. The mirror, pitch and rouge, along with a dandy Foucault tester I had made, were all neatly packed and put away. The fifty-five gallon drum was placed on bricks on

the back patio, and the project came to a sudden halt.

Time flew, and the boys grew up and married. Although I had bought an 8" telescope, I still had the urge to build my own. I wanted a mirror bigger than the one I owned, perhaps one with a 12" diameter. I got the astronomy box and reviewed its contents. I still had the 6" mirror and most of the other accessories. The polishing lap was missing, but I still had a glass tool. After surveying the parts, I decided it would be safer to finish the 6" mirror and see if I then wanted to grind a bigger one. All I needed was an abrasive kit which I ordered. As you remember, my mirror was  $f/3$ , and I needed to increase the focal length. I decided it would be far better to start from scratch, and that is where the process of "ungrinding" the mirror started.

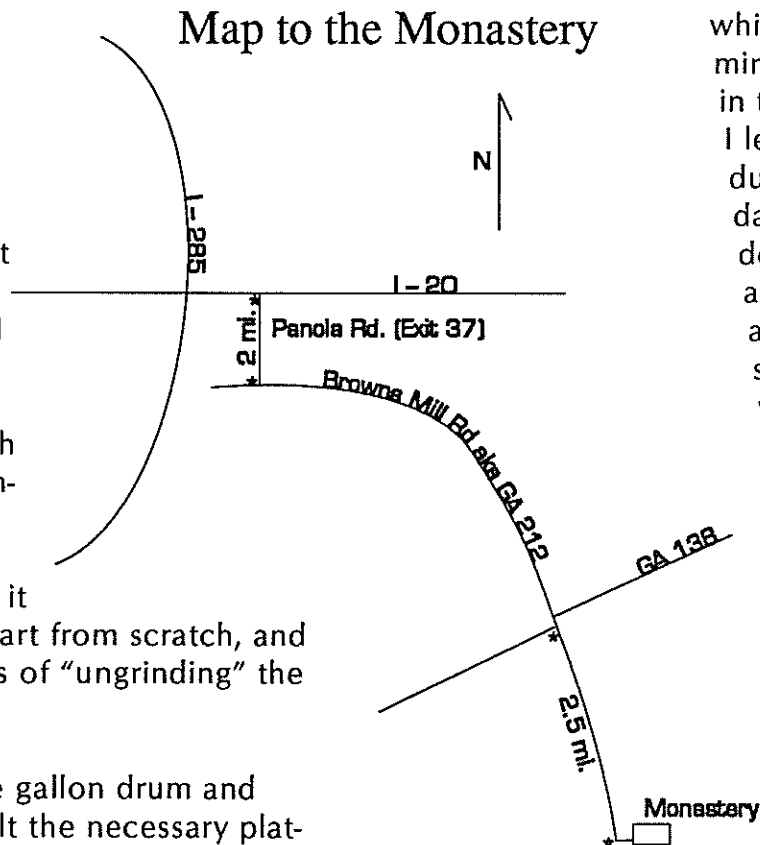
I cleaned the fifty-five gallon drum and painted it red. I then built the necessary platform on the drum on which to mount the steel lap for "ungrinding" and the glass blank to do my grinding and polishing in the future. I was fortunate to have a 10" steel lap from our rock and mineral days which I used to ungrind my 6" mirror. Using the three basic movements of an amateur telescope maker I proceeded to grind out the spherical shape of the mirror. For the uninitiated, these movements are: back and forth movement of the mirror blank; slowly rotating the blank in my hands; and slowly walking around the barrel. I obtained great practice using these motions which will be necessary for grinding and polishing future

mirrors. I kept all the grinding operation within the confines of the 10" steel lap to avoid grinding any strange dips or ridges. I did not keep track of how many wets this required, but after four to five hours, I had a nice flat mirror blank from which to begin grinding anew.

One little trick I used while ungrinding the mirror might be useful in the future to others. I learned this trick during my gem cutting days. When you are doing fine grinding and starting to polish a facet on a cut stone, many cutters will use a soft pencil to shade the soft surface of the facet. Then when polishing is begun the pencil shading will disappear evenly if the lap is parallel with the facet. Of course, if the lap is not parallel to the facet the pencil shading

will disappear from the high side and an adjustment can be made. When I finished the ungrinding, I drew a series of lines through the center of the blank and after further light grinding, all the pencil marks disappeared evenly. I knew I had produced a reasonably flat surface.

Now when I get my next abrasive kit, I'll be ready to start on a brand new mirror. I hope this mirror will be finished and many more will follow it. However, if this one should wind up on the shelf like its brother, I'll still know all about "ungrinding" a mirror.



ATLANTA ASTRONOMY CLUB  
FINANCIAL REPORT

	3 mo. ending 5/31/91	9 mo. ending 5/31/91
Cash Balance — Beginning	668.00	96.38
<u>Receipts</u>		
Dues	778.00	2984.00
Sale of Publications	236.00	398.00
Contributions	7.95	22.95
Interest	<u>14.97</u>	<u>24.63</u>
	1036.92	3429.58
<u>Disbursements</u>		
Sky & Telescope	378.00	1538.00
Newsletter	117.45	442.45
Sale of Publications	200.00	410.00
Observatory	30.90	135.26
Office Expense	<u>88.70</u>	<u>110.38</u>
	815.05	2636.09
Cash Balance — 5/31/91	889.87	889.87

Note: Annual dues (\$223.05) to the Astronomical League were remitted June 18, 1991.

BUTTERFLIES AND CLOUDY SKIES  
by Bud Rosser

It was a great opportunity... The Education Department of Callaway Gardens' Sibley Center had begun hosting a series of astronomy nights for the public. The call came in to Hal Crawford asking if the AAC would be interested in conducting an evening there. Hal said "Yes!" and asked if I would bring a telescope and join in. I agreed. After all, they would put us up at the Callaway Gardens Inn for the night (a great resort) and I could make sales calls in the area the following day.

It was a superb opportunity... The previous two Tuesday night sessions had been rained out. The public (and, we hoped, the staff at the Sibley Center) would be *hungry* for astronomy.

It was a chancy opportunity... The skies on Tuesday, June 11<sup>th</sup> were mostly cloudy with a 40% chance of rain during the drive down.

At the Inn, we met to prepare our presentation for the 8:00 p.m. session. The plan was to give an hour-long overview of amateur astronomy, current and future sky events, printed resources, basic terminology, binocular techniques (the Sibley Center had plenty of binoculars for public use) and then show whatever crowd there was a few sky sights.

Driving to the Sibley Center through the lush, peaceful expanses of the gardens, I kept searching the darkening skies for hopeful breaks in the clouds. There were few. The humidity and heat were like New Orleans, and we didn't know where we would be situated in terms of open viewing.

We set up outside in a beautiful courtyard of grass and were met by two delightful staffers who promptly produced a couple of boxes containing a Questar. After prayers to the cost gods, we reverently assembled this optical

device. We need only wait for the crowd to appear. The humidity was still oppressive at 7:53 p.m. When we relocated to the comfort of climate control in the Sibley Center, we found about 40 people waiting to be enlightened. During the talk, we made several dashes outside to check the sky conditions. As we finished, it was very cloudy, but we led them outside to see the Mars, Jupiter, Venus conjunction.

The sky started to clear around 9:10 p.m. and continued to clear. Hal & I moved to the telescope, and the people lined up to see the heavens. It was going to be a complete show after all! M-13, M-57, the moons of Jupiter and more were seen by all. The security guard ran us out at 10:15 and we left in clear, dark skies that became hazy and summer-gray by the next morning.

Oh yes, the butterflies... The Day Center has thousands of butterflies in an aviary structure that you *must* see. In fact, that is where I made first sales call the next morning.

#### ON A MORE SERIOUS NOTE...

Atlanta Astronomy Club benefactress, Cleo Barber of Villa Rica, is undergoing major surgery. Three separate operations are scheduled as of this writing, and she is at St. Joseph Hospital. At the best, it will be a rough recovery, so let our thoughts and prayers be with her.

### PRINTING COURTESY OF



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