

THE FOCAL POINT

Vol. IV, No. XI

The Newsletter of the Atlanta Astronomy Club

July 1992

PROGRAM NOTES

by Bud Rosser

It took the right combination of factors to make it a **GREAT** meeting, but it was great. Good weather, good food, good friends, Tim Puckett's awesome CCD on the club's twenty-inch telescope, Walt Barber's setup of the table and chairs, Bill Snell's tireless efforts to insure that the twenty-inch was up to the task, and you, the members! Thanks to all of you for making the June picnic meeting a memorable event.

The July meeting of the AAC will be held at the Bradley Observatory on the Agnes Scott campus on July 17th at 8:00 p.m. All who arrive by that time will be given a number one through five. Well will thus assemble five teams who will compete for prizes in a six-category astronomy trivia quiz. The categories are:

- Visual Identification
- Historical Figures
- Physics and Mechanics
- Stellar (including the sun)
- Constellation names
- Universal Concepts

Prepare for the worst! Study Now!
See you there!



**What is the truth
about filters?
Read about it in
the Focal Point.**

HUNTING FOR RED FILTERS IN JULY

by Mike Kazmierczak

If you dig back through your back issues of *The Focal Point* (You do save them, don't you?), around last December you'll find an article by Bill Snell entitled "The Hunt for Red Flashlights in October". In this article, he describes why red light is used by astronomers and how most red filters don't quite do the job. He did some research and selected combinations of red and blue filters which appeared to be effective. Bill didn't have access to sophisticated spectrophotometric equipment to test his filter combinations. Well, sports fans, I have just such equipment available to me, and I did some measurements to check his findings.

Bill sent me a lot of blue and red filters. Each filter did have a transmission curve as provided by the manufacturer. A transmission curve indicates what percentage of the light is transmitted at each wavelength. Unfortunately, the scales were different and it was difficult to add them. Combining the filters, I placed them in the spectrophotometer. This is just a fancy word for a piece of equipment which generates a transmission curve for a particular sample. I chose three blue filters (designated 79b,

83b, and 195b) and two red filters (26r and 27r) from the pile I received. Listed below is a table comparing the results I got. The units are nanometers (nm). For comparison, 650 nm would equal 6500 Angstroms (Å).

	Filters			
	26r, 79b	27r, 83b	27r, 195b	26r
2% trans.	659	672	663	577
1% trans.	656	669	656	586
0% trans.	645	658	638	588

What do all these numbers mean? The percentage on the left of the table is the amount of light transmitted and the interior of the table is the wavelength (in nm) at which it happens. The first three columns are for the three combinations of one red and one blue filter. A higher wavelength is better, especially in the 0% row, which indicates where the cutoff wavelength of the filter set is. Comparing the numbers, the second column has the highest cutoff wavelength of the filters tested. Its other % transmission wavelengths are also better than the other two combinations.

Now let's look at the last column, which is the 26r filter by itself. It's cutoff wavelength is 70 nm lower than the best filter combination! Also, at 610 nm, it is passing almost 60% of the light it ever will pass! This filter is similar to the one which came with my flashlight. It has since been retired. It was a good filter, but we see that there are a lot better ones.

Another important wavelength range for the filter set is around 400 nm, which is near

the blue end of the spectrum. The blue filters transmit a lot of light in this area and the red filter is relied on to cut down any light here. Unfortunately, the red filters start to transmit light again below 450 nm. To solve this problem, just use two red filters instead of one with the blue filter. Therefore, the optimum filter combination would be three filters (two 27r and one 83b) stacked together. This will make your flashlight very dim. But the harmful lower wavelengths of light will be trapped there and not reach your eyes.

I hope this article has helped to explain this subject to all who read it. Now it's time for me to go buy some stock in a filter company as astronomers upgrade their flashlight filters!

OBSERVING SESSIONS AT VILLA RICA

There is a new method of scheduling observing sessions at the Club Observatory. You make the call! That's right, you pick the night that is convenient for you. Select the night from the time span listed below.

July 24th – August 5th

Just call Bill Snell (633-4050) and tell him which night you'd like to observe. He will (weather permitting) arrive there that evening to help you unlock the secrets of the telescopes which we have available for member use. Remember, just call Bill Snell to roll-your-own observing session.

Due to a lack of support, the Star Party at West Point Lake has been canceled.

**ATLANTA ASTRONOMY CLUB, INC.
FINANCIAL REPORT**

	6 MONTHS ENDED	
	5/31/92	5/31/91
CASH - BEGINNING	1290.87	267.44
RECEIPTS		
DUES	1443.00	1927.00
SALE OF PUBLICATIONS	194.16	295.00
INTEREST	34.06	21.94
OTHER	<u>46.00</u>	<u>17.95</u>
	1717.22	2261.89
DISBURSEMENTS		
SKY & TELESCOPE	738.00	990.00
NEWSLETTER	320.00	242.45
COST OF PUBLICATIONS	217.08	244.00
OBSERVATORY	290.32	62.63
OFFICE EXPENSE	120.20	100.38
HOTLINE	73.44	0.00
IDSA MEMBERSHIP	100.00	0.00
OTHER	<u>87.85</u>	<u>0.00</u>
	1946.89	1639.46
CASH - ENDING	1061.20	889.87

Although this isn't really part of the financial report, our membership has dropped from 131 to 117 over this past year.

NEW MEMBERS

We welcome Tim Puckett as a new member who has joined the club recently. Please make a point to make him feel welcome at all club functions.

**Recent
Observations**

A recent summer evening I was glancing over the total occultation predictions to see what was in store. On the morning of June 26th

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Submissions: Article submissions are welcome and encouraged. Please deliver to the editor for consideration. Electronic submissions are preferred and accepted at mike@bcow.mese.com. The submission deadline for the next issue is *August 4*.

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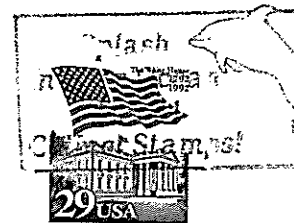
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Bill Snell	<i>Observing Chairman</i>	633-4050	Jackie Cochran	<i>Treasurer</i>
				955-0145

there were four good reappearances to time. But, I also noticed a "G" in the phenomenon column. A graze! A "G" will appear if the graze limit is within 10 miles or so. I looked at the predicted limit and it was within one mile of my house. The star was 8.6 magnitude with a sun altitude of -6. No wonder it wasn't on my normal graze predictions. I set the alarm for 4 a.m. hoping for clear weather.

I awoke and it was crystal clear outside. I timed the four total occultations as an *hors d'oeuvres* before the main event. The grazing star was about the same magnitude as the totals, so I thought it would be easy. But then the sun started to

rise. As time approached for the graze, the star got fainter and fainter, but I could still see it. I went up to 300 power to darken the field. I was ready. About 3 minutes before graze time I heard the clock drive make whirring erratic noises. The drive was stopping and starting! At 300 power, it doesn't take long for a star to move out of the field. It was so faint, I couldn't tell whether it was there or not during the graze due to my manual guiding of the telescope. After the time for the graze I looked along the dark limb for the star and it was faintly there with averted vision. That would have been the faintest graze I ever observed were it not for the mechanical problems. —Mike Kazmierczak



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