

# S.C.R.A.P.S.

Society's Chronological Astronomical PaperS



## From the President by Bob Arr SMAS Meets Sunday, January 18th at 2 PM

John Dobson's schedule is causing us to change our regular meeting in January. Instead of a Friday night meeting, we will have a daytime meeting on Sunday, January 18, at 2 PM. (John's presentation to SMAS will begin one hour later, in the same location.) This 2 PM meeting is important because of two club issues: renewal of our liability insurance, and nomination of next year's officers (the actual voting for the nominees will take place at the February meeting.) Renewal of the insurance will be required at the end of January, and must be OK'd by the members.

SMAS shared their telescopes with over 1500 members of the public in 2003. As president, I would never have advocated so great a liability exposure without our insurance policy. We can afford it, and I recommend renewal without reservation.

Nominations for next year's officers are an exciting prospect. Those elected will, in fact, set the direction and activities of the club for the next year (possibly two). Yes, they do the chores as well, but it's a labor of love, for our whole purpose in being is to enjoy astronomy.

Our Secretary, Angela Quick, will conduct the nominations (January) and election (February). She will spell out the procedures. The only prerequisite for being a nominee is that one be a member in good standing (i.e., your dues are paid.) Members may be nominated by another member in good standing, or they may nominate themselves. (If you intend to nominate someone, please discuss it with him or her first, to be sure they will accept it.)

## Dobson's Schedule

Here's John's final schedule, with specific buildings and rooms. Remember that any one can attend any or all of these events.

**WEDNESDAY, Jan 14, 7:00 PM, City Room, Oak Ridge Campus, Roane State:** John will discuss "Linking Sidewalk Astronomy and Steady-State Cosmology"

**THURSDAY, Jan 15, 7:00 PM:** Everyone is invited to bring your telescopes for John's Sidewalk Astronomy to Parking Lot A of the Oak Ridge Campus, Roane State, RAIN or SHINE! (It will be held in the City Room, if inclement weather.)

**FRIDAY, Jan 16, 7:45 PM, Main Campus, Room 223/Alexander Bldg., Pellissippi State:** This presentation is devoted strictly to John's cosmology. Big Bang vs. Steady State, with a bow to the consciousness that recognizes itself.

**Continued on Page 2**

## Dobson's Schedule (continued)

**SATURDAY, Jan 17, 6:00 PM, Tamke-Allan Observatory:** John will lead a public stargaze.

**SUNDAY, Jan 18, 3:00 PM, Main Campus, Goins Auditorium/Goins Bldg., Pellissippi State:** John will discuss general astronomy and cosmology. This will be his last presentation. Note: SMAS meets at 2:00 PM Sunday, just before John's talk.

## The Wiz

DA: Hey Wiz, ya want me to nominate you for president?

Wiz: Well...I see the screw-up fairy has visited us again...

DA: C'mon be serious. You'd be a good one.

Wiz: How about never? Is never good for you?

DA: Listen, if you wuz pres, me 'n' you could do great things.

Wiz: I don't know what your problem is, but I'll bet it's hard to pronounce.

DA: We could make everyone else get Walmart Tascos, so's me 'n' you would have the biggest telescopes in the club.

Wiz: You remind me of myself when I was young and stupid.

DA: An' we could set a fee for not showing up at Star Parties, like \$10. Dang, we'd get rich!

Wiz: What am I? Flypaper for freaks?

DA: You know well as I do, these guys are suckers for gimmicks. We could sell 'em semi-automatic collimators. Stick 'em in, give 'em one full turn, take 'em out and yer done. We can use empty toilet paper tubes painted black--fifty bucks!

Wiz: Any connection between your reality and mine is purely coincidental.

DA: Look, they don't know. What they really need is a little confidence; me 'n' you would be great confidence men.

Wiz: I will always cherish the initial misconceptions I had about you.

DA: Great! I knew you'd see it my way. HEY, MADAME SECRETARY...

Wiz: Wait a minute. IF I THROW A STICK, WILL YOU LEAVE?

## Finishing Up 2003

Dec Owen Hoffman finally did get his new Orion XT10.  
Bill Buchanan got Owen's Orion 8" SkyQuest

Thanks, Santa

## Hind's Crimson Star: R Leporis by Bob Arr

Carbon stars have been understood for a long time. Given the right mass, almost any star will evolve through a phase that puts a lot of carbon (made internally within the star itself) in the surface layer of the star. Since the carbon atoms are great absorbers of blue frequencies, the preponderant color that passes through the surface layer is red, which we see when we look at them--red.

One star in particular is the reddest red of them all, Hind's Crimson Star (HCS). In 1845, R. J. Hind of London found this idiosyncratic star. It was more than just red; it was a long period, pulsating variable. Over the next decade, its period was measured as about 432 days. (Measurements weren't all that accurate then, but it has stood up well). Why is the star idiosyncratic? Well, it doesn't just pulsate, but changes color when it pulsates. The star also changes in brightness by a factor of 100 times, which is extraordinary! Instead of being reddest when it's brightest, it's the other way around - it's reddest when it's dimmest. At it's brightest, it is barely visible naked eye and at its reddest, it can only be seen using a telescope. If you happen to catch it when reddest, you will see what inspired these comments from *Burnham's Celestial Handbook*:

"The most intense crimson, resembling a blood drop on the background of the sky; as regards color, no other star visible in these latitudes could be compared with it."

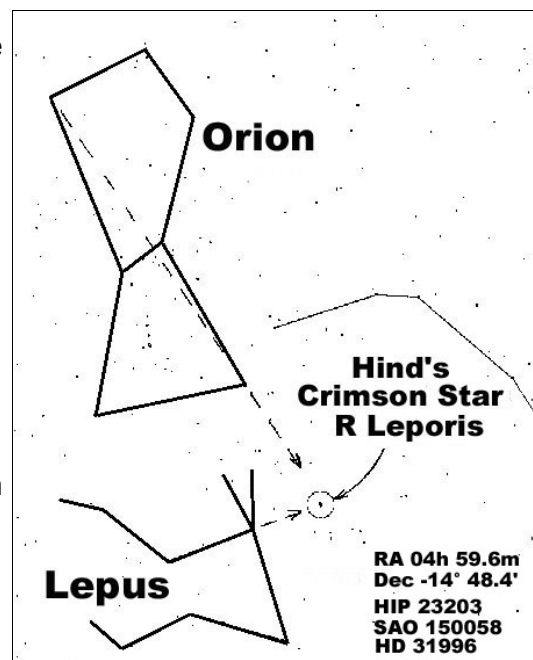
"Antares and Betelgeuse are mere pale shades compared with the wine-red hue of R Leporis"

"Like a crimson jewel in a field well-sprinkled with stars"

Have you heard of Simbad? It's a French Internet star database that catalogues all kinds of information about stars, including how to calculate the phases of variables. It said that Hind's Crimson Star would be at its reddest on Nov 24, 2003. Simbad was wrong. The star just looked ordinary on that date.

AAVSO says that HCS will reach its next minimum (i.e., its reddest) on April 17, 2004. Maybe so, but it will be also be lost in the sunset by that date. In mid-March it should still be visible when the sky gets dark, but that will be a month before its minimum. How red will it be? I don't know.

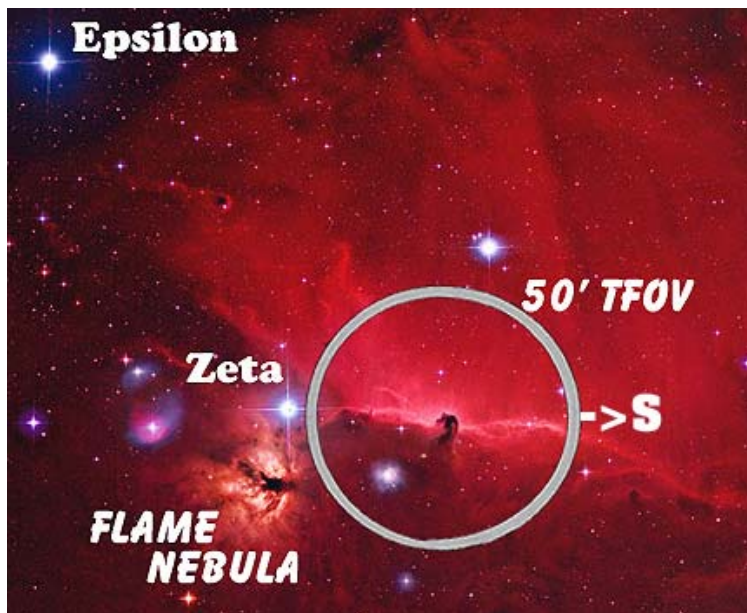
Whenever Orion is visible, I always sneak a peak at HCS (it's about 8° SW of Rigel). I have seen (and shown) it at its crimson best on a couple occasions. If you've never seen it, look for it! Its astounding redness is only apparent for about one month out of 14 ½. The rest of the time it's just so-so, but if you catch it right, you'll never forget it.



## The Horsehead Nebula Revisited

Thanks to some fortuitous timing, we can present a couple images that might help in your search for the Horsehead. An H-Beta filter nebular filter is recommended, but many folks have found it with UHCs and OIII nebular filters as well. Some have found it with telescopes as small as 6", but never without a very dark sky.

The image at the right show a 50 minutes true field of view (TFOV). TFOV for your eyepiece is the apparent field of view specified by the eyepiece manufacturer divided by the magnification of the telescope with the eyepiece. Use whichever eyepiece you have that comes closest to 50 minutes. This is a classic example of when that information can be all-important.



Zeta is the easternmost of the three stars in Orion's belt. The Horsehead is immediately south of Zeta. You don't want Zeta blotting out the view (or Sigma, just above Horse's head). That's why a specific size TFOV is important. Too big and you are blotted out, too small and you lose orientation. You need the big stars to help yourself get pointed accurately, but you don't want them at all after that. Use your weaker eye for the pointing, because your stronger eye needs its full night accommodation if you are going to see the Horsehead. (If you only have one eye, look at the Trapezium.) The bad news is, that the black and white image is just about as good as you can see it with a medium telescope. The good news is that you will have seen it, and that's terrific. Good luck!

## LIKE THIS NEWSLETTER?

If you do, keep it going by sharing your astronomical experiences and images with the rest of SMAS and everyone on the Internet by writing an article for SCRAPS. Contact Mike Littleton at (865) 671-1022 or email [mlittleton1022@charter.net](mailto:mlittleton1022@charter.net).



# January 2004

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| SUN                            | MON | TUE | WED                              | THU                | FRI                 | SAT          |
|--------------------------------|-----|-----|----------------------------------|--------------------|---------------------|--------------|
|                                |     |     |                                  | 1                  | 2<br>UTK            | 3<br>TAO     |
| 4<br>Quadrantid<br>Shower Peak | 5   | 6   | 7<br>Full Moon                   | 8                  | 9                   | 10           |
| 11                             | 12  | 13  | 14<br>Last Qt.<br>Moon<br>Dobson | 15<br>Dobson       | 16<br>Dobson<br>UTK | 17<br>Dobson |
| 18<br>SMAS<br>Dobson           | 19  | 20  | 21<br>New Moon                   | 22                 | 23                  | 24           |
| 25                             | 26  | 27  | 28                               | 29<br>1st Qt. Moon | 30                  | 31           |

SCHEDULE OF EVENTS

**SMAS Website:**  
<http://www.smokymtnastro.org/>

- 1/2/04 and 1/16/04** Public observing from the roof of the Physics Building at UTK 6:06 AM; Venus sets at 8:39 PM; Mars sets at 12:29 AM; Jupiter rises at 9:57 PM; Saturn rises at 4:20 PM
- 1/3/04 and 1/17/04** Public observing at Tamke Allen Observatory
- 1/14/03** For John Dobson's schedule, see Page 1
- 1/18/04** SMAS business meeting 2 PM at PSCC Main Campus (See Page 1)
- 12/15/03** Mercury rises at