

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

Society's ChRonological Astronomical PaperS



### President's Message by Bob Arr

We have bought a one-year liability Insurance policy to protect our members from third-party lawsuits. It will be effective on February 7, our next meeting. It covers all members and their spouses, whenever engaged in club-sponsored activities. That includes star parties at Unicoi Crest or anywhere else. It includes all star parties--scheduled here in SCRAPS, or spur-of-the-moment. Details will be posted on our website.

In addition to the peace of mind it provides, it opens the door to inviting the public to our star parties. I personally believe this is the path we should take to bring this club to its full potential. We have enormous expertise already, but new people always bring new skills and attitudes. All of us will benefit.

Last fall, Gene Johnson sent out a call for us to lend two telescopes to the Do-It-Yourself program "Warehouse Warriors." They were going to build two backyard observatories, and needed the telescopes for props. We obliged, and so did they. You will see "Smoky Mountain Astronomical Society" prominently in their credits at the end of the 30-minute show, as well as a personal appearance by Gene himself. DIY network show times are Feb 1, 1 AM and 10 PM. Mar 5, 12 AM and 9 PM. Mar 9, 7 PM.

Nina McPherson, Dean of the Division St campus, has invited us to use the snack room for supper prior to our 7 o'clock meeting. If you'd like to get a little more conversation in, this would be a great time. Pick up something to eat on the way, and join the group. Some will be there as early as 6 PM. (No food in the classroom, please!).

### Presentation for February: Dr. John C. Mannone

John Mannone is professor of Physics and Astronomy at Cleveland State Community College. Photochemistry, electroexplosives, naval nuclear reactors, and plasma physics--are only part of his resumé. His astronomy interests include astrophysical plasmas, multi-wavelength spectroscopy, radio astronomy, and biblical astronomy. (What?) An avid instrument pilot, he is now completing another doctorate, this in Electrical Engineering at UTK.

As befitting such eclectic interests, John will talk to us about poetry. His talk is entitled "Poetry of the Universe: Examples of Astronomy in Historical Literature." There is no telling where this will lead!

### 2003 SMAS Dues

Membership dues for SMAS will be up for renewal as of March 1, 2003. Membership dues are \$20.00 per year (March 1 through February). Your membership dues include membership in the Astronomy League and receipt of their quarterly publication The Reflector, discount subscriptions to Sky and Telescope and Astronomy, discounts on publications of Sky Publishing, access to the growing SMAS library and access to the equipment of the club. You may remit your dues in person to the club treasurer by cash or check payable to SMAS or mail your check to the SMAS, P.O. Box 53265, Knoxville, TN 37950.

## Astro-Imaging Seminar at Tamke Allen Observatory

### By Mike Littleton

Starting in November 2002 and on subsequent first Fridays of the month, Dr. Dave Fields hosts an astro-imaging seminar at Roane State Community College's Tamke Allen Observatory overlooking Watts Bar Lake. The seminar concentrates primarily on CCD imaging. After the seminar, there are informal star parties if the weather cooperates and some impromptu discussions on a wide range of topics. The skies are on a par with Look Rock in terms of darkness and about as far from West Knoxville

On January 4th, I conducted a short presentation on equipment suitable for CCD imaging in various price ranges. (My equipment fell into the "As cheap as possible" category). The primary source for the presentation was Ron Wodaski's new book, "The New CCD Astronomy". I highly recommend the book for the beginner CCD imager. Wodaski recommends that the order of purchase of equipment for CCD imaging should be the mount, the telescope that fits the mount, and finally the CCD camera that fits the telescope and the type of objects you want to image. Generally, the mount limits the maximum exposure time with the system. Most of us usually buy the telescope and mount together and then try to use it for imaging.

#### As Cheap as Possible

**Mount:** The one that came with the telescope

**Telescope:** Small achromatic refractor with yellow or green filter or used 8" SCT or Newtonian, or 4" or 5" mirror-based scope like a Meade 90 mm ETX

**CCD:** Cookbook, Pictor 208, SBIG-ST-5c, or other small chip camera

#### Under \$3000

**Mount:** Vixen GP-DX Mount

**Telescope:** Celestron C8 with Fastar System or a used small apochromatic refractor like a Takahashi FS-78, FC-60, or TeleView 85

**CCD:** SBIG ST-237

#### Under \$5000

**Mount:** In this price range buy a solid mount like a Takahashi EM-10 or a Losmandy G-11

**Telescope:** Tak FS-102 apochromatic refractor or C8

**CCD:** SBIG ST-7E

#### Under \$10,000

**Mount:** Close to high end available like the Tak EM-200

**Telescope:** High end scope for example a 5" APO like Tak FS-128GJ or a CCD-oriented Newtonian-Excelsior Optics

**CCD:** Large chip, high resolution CCD like the SBIG ST-8E/10E

#### Greater than \$10,000

**Mount:** Software Bisque's Paramount ME robotic mount

**Telescope:** Tak FCT-150 Triplet APO or Ritchey-Chretien telescope

**CCD:** Large chip CCD like SBIG ST-10E or Apogee AP4

## Astro-Imaging Seminar (continued)

While the costs at the high end are eye opening, most of us can get into CCD imaging without getting a second mortgage on a house by buying used equipment. Once hooked, many CCD imagers sell their equipment to trade up. A good place to start is the website, Astromart at [www.astromart.com](http://www.astromart.com).

During the February and March seminar, we will discuss computer enhancement of astro images using common software like Maxim DL and Photoshop. These techniques lend themselves to both CCD and film as photographic negatives and slides can be digitized using scanners under \$100. Even if you are only thinking about getting into astro imaging, I urge you to attend.



**Participants Discuss Interpretation of Radio Signals from Io after the Seminar**

## Mike Fleenor's CCD Images Featured in Smithsonian Exhibit

In the summer of 2002, the Smithsonian Institution began to showcase the work of backyard astronomy enthusiasts on their bulletin board in the new Explore the Universe gallery at the National Air and Space Museum, as well as on its web site, First Light. They invited amateurs to submit examples of their work. Mike did, and he has been chosen as the sixth amateur in the country to be featured. It's an enormous honor, and most deserved. Congratulations, Mike. Your work is wonderful, and we couldn't be prouder! <http://www.nasm.si.edu/galleries/gal111/universe/firstlight/observers.cfm>



**Featured images are taken using an Astrophysics 1200 GTO, German equatorial mount and Takahashi FSQ 106 refractor with a Santa Barbara Instruments Group ST-10XME CCD camera**

## The Wiz

Hey Wiz, ya know what's wrong with star hopping with star charts? What ya see on the chart ain't what ya see in the sky! Don't make no difference what chart ya use...they all get it wrong.

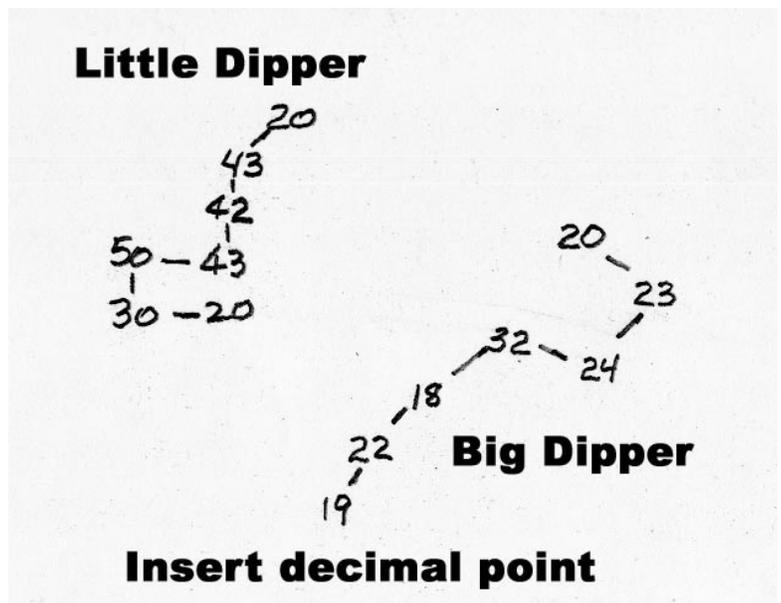
D. Getit

Dear Don,

Maybe you're missing a step (I'd bet on it). All star charts have a limiting magnitude--in other words, what is the smallest star they show? Mag 5? 6? 7? If they show too many small ones, the page will be so full of symbols it'll just be a jumbled mess.

So what? Let's say your star chart is limited to Mag 5. When you look through your telescope, what you see is probably stuff down to Mag 10 or smaller. And it doesn't look anything like the Mag 5 picture in your chart--your eyepiece is so full of stars your can't tell a pattern. So what again? So magnitude. You've got to learn to judge magnitude. That's the missing step. The Little Dipper (Ursa Minor) is often the key, because its stars range from Mag 2 Polaris to Mag 5 Eta, a common limit. Take a good look at Eta, the 5th star in the Little Dipper, before you try star hopping. Always use your largest field-of-view eyepiece. You're going to need a good mental picture of what Eta looks like in that eyepiece. Remember, 5th star, Mag 5.

Your star chart will show you the Mags of the stars you are hopping. It's critical for you to have a good idea of how they will look in the eyepiece. And yes, you'll have to ignore the smaller ones. But that won't be possible unless you have a good idea of the size of the significant ones. It absolutely takes practice. You don't have to use Eta UMi, just so long as you can find a star in the Mag range of the ones you will be hopping. Your mental image of what the stepping stones will look like in your search eyepiece is the key. Want a good place to practice? Try Cassiopeia!



## WANTED AND FOR SALE

Smallest covered trailer that can haul Sasquatch and 8' ladder, and double as storage. Should have springs, shocks and pneumatic tires >14". Call Bob Arr 681-3999.

16" F8 Cave telescope. The mirrors need re-coating. \$2800 Contact Paul Lewis at [gplewis@utk.edu](mailto:gplewis@utk.edu).

Tuthill isostatic equatorial mount for Celestron 5", 8" SCT, Ultima 9-1/4, Ultima 1-\$250; dual axes hand controller and declination motor for Celestron C-8-\$100. Contact Mike Littleton 671-1022 or [littlem@ix.netcom.com](mailto:littlem@ix.netcom.com)

## January Meeting by Lee Erickson

The January SMAS meeting was held on the 10<sup>th</sup> at the new location at the Division Street Campus of Pellissippi State Technical Community College at 7 PM. There was also a presentation by Lee Erickson entitled, "Up And Up! Measuring From the Sun to the Stars". Lee also brought an inexpensive spectrometer and a few light sources for some hands (and eyes) on experience with the visible spectrum. The inexpensive spectroscope can be purchase at the American Science and Surplus mail order store from their web site at: <http://www.sciplus.com>.

### Club business.

The floor was opened for nominations for club officers for 2003/2004: President, Vice President, Treasurer and Secretary. Nominations will remain open until the start of elections at the February meeting. If you would like to be placed on the ballot, please notify Lee Erickson by email at [leerickson@earthlink.net](mailto:leerickson@earthlink.net) or by mail addressed to SMAS, P. 53265, Knoxville, TN 37950. You can also contact any current club officer or Bill Dargan Phone at 865-609-1292 and by email at [dargan2246@msn.net](mailto:dargan2246@msn.net).



**Bob Arr Kicking Off the First Meeting at the New Location**

A motion was made on the purchase of club liability insurance. The proposal was seconded and passed without opposition.

## SHARE YOUR KNOWLEDGE!

Share your astronomical experience 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 [littlem@ix.netcom.com](mailto:littlem@ix.netcom.com).



# February 2003

**Chair:**  
**Bob Arr**

**Vice Chair:**  
**Tom Rimmell**

**Observe Chair:**  
**Ron Dinkins**

**Secretary:**  
**Lee Erickson**

**Treasurer/ALCOR:**  
**Janice Erickson**

**SCRAPS Editor:**  
**Mike Littleton**

SUN	MON	TUE	WED	THU	FRI	SAT
						1 TAO Look Rock New Moon
2	3	4	5	6	7 UTK SMAS Mtg.	8
9 1st Qt. Moon	10	11	12	13	14	15
16 Full Moon	17	18	19	20	21 UTK	22
23 Last Qt. Moon	24	25	26	27	28	

### SCHEDULE OF EVENTS

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

**Webmaster:**  
**Mike Fleenor**

- 2/1/03** Astroimaging-Seminar 6 PM at the Tamke-Allen Observatory
- 2/1/03** Star party at Look Rock
- 2/7/03** SMAS Meeting at the Division Street Campus of PSCC. 2003 elections will be held. **(Note, the one-time date change from the second Friday of the month.)**
- 2/7/03 and 2/21/03** Public observing from the roof of the Physics Building at UTK
- 2/7/03** Mercury rises at 6:49 AM; Saturn sets at 3:33 AM
- 2/15/03** Mercury rises at 6:17 AM; Venus rises at 4:50 AM; Mars rises at 3:14 AM; Jupiter sets at