

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

Society's ChRONological Astronomical PaperS



From the Chair By Bob Arr

Here they come, the bearers of summer: Vega, Deneb, Altair. The night sky shines forth with the heart of the Milky Way in Sagittarius. This may be the year's finest viewing, considering the factors of temperature, observation points and spectacles in the sky.

We are blessed with uncommon opportunities to view summer's treasures. From nearby Tamke-Allen Observatory and Look Rock, to Big South Fork and Hoopers Bald/Unicoi Crest, we can choose our own level of effort and reward. There are even some who can observe from their own backyard.

Go to the Star Parties as often as you can, but don't limit yourself to them. Go whenever you can make the time. Call a buddy; be a mentor; share your wonder. In my opinion, it doesn't get better than this.

Presentation for July: "Alchemy and the Evolution of the Periodic Table"

The carbon atom in the tip of your finger was synthesized by a star as was the xenon atom exhaled by Cleopatra when she said "Ooh Anthony!" A lot of things have happened inside stars to create the chemical elements essential for formation of the planets, dinosaurs, people, plants, and Big Mac hamburgers. Indeed, life as we know it is made of stardust."

Longtime SMAS member Dr. Roy Morrow of Oak Ridge will talk on "Alchemy and the Evolution of the Periodic Table" at Friday's meeting. Roy, a retired analytical chemist, will present some current information as to how the periodic table has evolved over the 13 billion-year life of the universe. The presentation will be from the perspective of an amateur astronomer, and will make only minimal forays into the realm of the astrophysicist.

HOT, HAZY AND HUMID!

Most nights this time of year are poor for observing. If you can't observe the heavens, write about them! 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.

Kokusai Kohki
BY BOB ARR

*Bob discovers the joys of
international finance*

That translates as "International Telescopes" (so they tell you on their website, kkohki.com). It's just a retail store in Kyoto, Japan, but they advertise worldwide.

Six months ago I got very interested in buying a 2" ultrawide eyepiece, so I started reading the postings on Astromart and saa, and even letting Google find references for me. I wrote several persons who had posted, and got replies. I searched for a month and even printed all the pertinent information. I amassed over 100 printed pages.

Most people said that the amazing 32mm Nagler was the best: 84° AFOV, flawlessly sharp to the edges, and at 2.5 lbs, only \$800. Whenever one was posted for sale on Astromart, it was gone in less than an hour, used price \$700. Such a deal!

But there was a competitor, called the 30mm Widescan II, manufactured in Japan, and sold under several different logos, including Apogee, Pocono, APM, and Kokusai Kohki. I found half a dozen reviewers who said it was the optical equal of the Nagler, and that it weighed just one pound, had an 85° AFOV, and cost \$200. I was hooked!

I wrote to 14 U.S. retailers who listed this eyepiece. The 9 who replied said that they were out of stock, and the eyepiece had been discontinued. At the same time I watched Astromart, and only one was offered for sale, at the incredible price of \$450.

Google revealed that KK also sold the eyepiece. I emailed KK, and they replied that it was available for 24,520 yen, delivered. That was broken down at 19,800 for the eyepiece, 2220 for shipping, and 2500 for finance processing charges. I asked them what "financing processing charges" meant. They replied that that's what their bank charged them to cash an overseas check. I told them that the processing charge was silly--I was already giving them my money and they were charging me more money to accept the first money. They suggested I send an "International Money Order". I contacted my bank, and they said they would be happy to provide an International Money Order. I emailed KK with this news, and they said they would be happy to receive my bank's IMO, but their bank would charge 2500 yen to cash it. Unbelievable! Then they said, why don't you just go down to your local Post Office and get an IMO; Japanese banks accept them without surcharge - my local post office? You've got to be kidding. I then called USPS.

"Do you issue IMOs?" "Of course we do." "In Maryville, Tennessee, for Kyoto, Japan?" "Of course." "How much for 22,020 yen?" "We issue them only for dollars. You'll have to figure the exchange yourself." "It's \$165." "That would be \$3 for the IMO."

I got the IMO, mailed it, and 10 days later my KK Widescan II arrived via DHL. I emailed KK to tell them I had received it, and they replied, "Thanks for your business, please call again." I'm still amazed by my lesson in international commerce, and I absolutely love my Widescan II.

A GUIDE TO GUIDE SATELLITE TRACKING BY SHAWN GRANT

*Find the path of satellites with the
planetarium program Guide*

Artificial satellite tracking is one of the thousands of features of the planetarium program Guide. This is a useful feature that can be used to predict when a satellite trail will ruin an astrophotograph or CCD image or just for fun by watching the satellites march across the sky. Here is how to use this useful feature. First, you need to get the satellite orbital elements. Be sure to get elements that have magnitude data such as by using Molczan or McCants data on the Web. McCants site is my favorite and can be found at <http://users2.ev1.net/~mmccants/tles/index.html>. Click on McCants in the upper left-hand corner. Be sure to download this every week because satellite orbits are far from unchanging. Once they are downloaded and unzipped, run Guide and select from the menu at the top of the screen "Settings" and "TLE" and it will open a dialog box. Select the McCants file you unzipped. You only have to do this once if you download the elements and unzip them in the same folder. Now go to "Display" then "Data Shown", check to see that satellites are not filtered, and then select "Auto". Guide now displays satellites on the chart. You can click on them to get info such as when the satellite rises and sets, when it enters the Earth's shadow and its visual magnitude. You can also click on "More Info" and find out when you can see the satellite for the next few days.

What if you want to find out what satellites you can see at the next star party? First you need to tell Guide the location of the star party so it can accurately predict the satellite's path. Go to "Settings" then "Location" and enter the longitude and latitude of the star party and the date of the star party. Next, select "Tables" and "List Satellite Passes". A dialog box pops up with several options. The top option is to enter the name of the satellite. Here you can type in the name of the satellite such as ISS to get a prediction of one satellite or you can type "*" to get predictions of all satellites in the element set. In the "number of days", type in how many days. Since the star party is just one night, type "1". Make sure the selection "Sunlit Satellites" is checked. Set the altitude of the satellites for Guide to display. I prefer 15 degrees. Any lower altitude of the satellite is hard to see. Next, select the faintest magnitude to display. For Look Rock, where we have most of our star parties, I select 5 because we can see satellites down to 5th magnitude. Click "Ok" and Guide generates a list of satellites within the filtering parameters. Pick a satellite you are interested in seeing and click on its rise time. Guide will set its time to the rise time of the satellite and center on it. Right click to select the satellite and then select "Ok. Next go to "Animation" and "Add a Trail". Most satellites are fast and stay above the horizon for only a few minutes. So give a step size of just 30 seconds and select 10 steps or more in number of steps. This will make a trail about 5 minutes. Click "Add a Trail" and you can see the path the satellite takes in the night sky.

For astrophotography or CCD imaging, select the object you want to image and zoom in to the field of view of your camera. Set Guide's time to the time you plan on imaging. Run an animation for a little longer than your planned exposure. Watch to see if a satellite will move across the camera's field of view. Enjoy this feature and experiment and play with it. I think Guide is the best astronomical software around.

For Sale or Wanted

10" f/10 LX200 with custom Milburn equatorial wedge, dew heater, dew/light shield, focal reducer and counterbalance system for sale. For more info please contact Mike Fleenor at 675-5488 or mfleenor@tds.net

Filters BY THE WIZ

Dear Wiz,

Do filters really do any good? Some of those darn things cost a hundred bucks; I don't even have an eyepiece I paid more than \$30 for.

A. Byunit

Dear Aint,

I don't mean to wax philosophical, and I am sympathetic to your situation. Filters are expensive toys; if you can afford them, you'll find that there really are times when they make the difference between seeing and not seeing--but not many. In particular, the Veil Nebula looks great with an OIII, which also enhances a few planetary nebula as well. \$100 worth? I suppose it depends on your disposable income/spouse.

Ultra high contrast? Definitely helps bring out nebulae such as M8, Rosette and Orion M42. But everything gets dimmer. Light pollution reduction filters? Good results about 10% of the time. Light reduction filters for the moon (adjustable polaroid or neutral density)? Outstanding. I like the polaroid because I can set it where I want it. Colored filters for planets? It's a good thing they're a lot cheaper, because improved seeing is in the eye of the beholder. Jupiter is the only planet I can see a difference in, but I'm darned if I know whether it's better or worse.

Keep one thing in mind: all filters reduce the amount of light getting to your eye. If your aperture is small to begin with, you probably are making bad matters worse with a filter (with the exception of the moon.) Don't forget Star Parties--any member will happily let you try their filters out on your own telescope. And for what it's worth, Astromart is a rich source of used filters, and prices are generally 50-60% of new.

The Wiz

JUNE MEETING

The meeting was held on Friday June 14 at the Discovery Center. There were 15 members in attendance. We had seven visitors, Kat Hatcher, Ed Gorney, Wes Tipton, Greg Dye, Sherry Sloan, and Greg and April Shepherd. Wes Tipton, Ed Gorney and Greg Dye have become new members. Welcome Wes, Ed and Greg!

For June's presentation, Bob Arr described the history of measuring astronomical distances. One of the key discoveries of the last century was the discovery of the relationship between the period and absolute luminosity of Cepheid variable stars in the 1920's. This relationship allowed the measurement of the size of the Milky Way and the distance to the nearer galaxies. Thus, the known universe expanded from a universe of a few hundred thousand light years in diameter to millions of light years containing many "island universes" (galaxies).

In Charles Ferguson's *Night Sky*: He described the constellation Hercules, the strong man in the sky. All though representing a strong man, Charles showed Hercules could be more easily recognized as a big butterfly. Two of the nicest globular clusters in the Northern Sky are in Hercules, M13 and M92. Burnham in his *Celestial Handbook*, described M13 as "...the finest cluster of its type in the north half of the sky..." and M92 as "...a beautiful rich globular cluster..."



July 2002

Chair:
Bob Arr

Vice Chair:
Tom Rimmell

ALCOR:
John Sparks

Secretary:
Lee Erickson

Treasurer:
Janice Erickson

SCRAPS Editor:
Mike Littleton

SUN	MON	TUE	WED	THU	FRI	SAT
	1	2 Last Qt. Moon	3	4	5 UTK	6 Hooper's Bald
7	8	9	10 New Moon	11	12 SMAS Meeting	13 Look Rock
14	15	16	17 1st Qt. Moon	18	19 UTK	20
21	22	23	24 Full Moon	25	26	27
28 Delta Aquarid	29	30	31			

SCHEDULE OF EVENTS

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

Webmaster:
Mike Fleenor

- **7/5/02 and 7/19/02** Public observing from the roof of the Physics Building at UTK
- **7/6/02** Star Party at Hooper's Bald
- **7/12/02** SMAS meeting 7 PM at the Discovery Center
- **7/13/02** Star party at Look Rock
- **7/15/02** July is not favorable for observing the bright planets. Venus sets at 11:06 PM; Mars sets at 9:24 PM; Jupiter sets at 9:02 PM; Saturn sets at 6:42 PM
- **7/28/02** The meteor shower Southern Delta Aquarid peaks. The gibbous moon will restrict viewing.