NOVAC

THE NEWSLETTER OF THE NORTHERN VIRGINIA ASTRONOMY CLUB

Issue Number 58 | Volume 15 | March/April 1995

Important NOVAC Numbers

NOVAC Information Hotline 703-256-8359
NOVAC BBS (2400 Baud) 703-256-4777
Crockett Park (Gary Kwolek) 703-788-4867
Savage Park (Paul McCray) 703 729-0596
Arlington Planetarium 703-358-6070

President's Column

by Bob L'Hommedieu

Winter will be over soon...I hope.
The thought of warmer weather and clear skies is very appealing. As spring approaches it is time to begin thinking about some upcoming NOVAC activities.

Astronomy Day will be May 6 and NOVAC has some big plans for the event this year. As we did last year, NOVAC will have a star party at Crockett Park and we will invite the public to come out and view the heavens with us. In addition, we will have a club picnic and swap meet prior to the star party. We have rented a picnic pavilion at Crockett Park for the festivities. A number of club members have expressed a desire for these two events in the past and this year we will give them a try. All club members and their families are invited and I hope we will have a big turn out.

Our project to get the Arlington Outdoor Lab. observatory in good working order is progressing. The improving weather will make things easier. All interested members should contact Sandy Sanders for more information about how they can help.

The Arlington Planetarium is updating the planetarium projector and when the job is completed we will begin using the projector at our monthly meetings. We hope that within the next month or two our observing report at the meeting will include use of the projector. If you might like to help with the projector and the observing report please contact me. □

The Recreational Astronomer: All About Eyepieces

by Jon Stewart-Taylor

Welcome back. In this column I'll discuss eyepieces for telescopes: what they're for, what kinds are available, and what you should keep in mind. Eyepieces magnify the image formed by the telescope's objective lens or mirror. All telescopes need eyepieces, and you can use the same kind of eyepiece for both reflectors and refractors. However, there are many different kinds of eyepieces, and each have particular features. In addition, even for the same kinds of eyepieces, there are tradeoffs to be made for weight, cost, quality, and so on.

Magnification

The magnification given by an eyepiece with a telescope is simply the focal length of the telescope divided by the focal length of the eyepiece. For example, the focal length of an 8" f/6 telescope is 6x8 = 48", or 1230 mm. If you used a 27 mm eyepiece with it, the magnification would be 1230 / 27, or about 46x. You can get any magnification by choosing the right focal length eyepiece.

So, why not just use the highest possible magnification? The field of view (the area visible through the eyepiece) generally decreases with increasing magnifications, so you may not be able to see all of some objects with high magnifications. And, there is a limit to how much magnification a telescope can handle before its image starts to blur. Don't use more than 50 to

(Continued on page 2)

Inside This Issue

(Continued from page 1)

(The Recreational Astronomer: All about Eyepieces)

60x per inch of aperture, or 2x per mm. This means that for our 8" scope, the maximum useful magnification will be less than 480x. For 60 mm refractors (often sold with advertisements promising very high powers) the maximum is 140x.

Another factor magnification affects is the exit pupil. Many people feel that the best exit pupil size is one which just fits inside your own pupil. If the exit pupil is larger than the diameter of your dilated pupil, some of the light will not be able to reach the retina, and will be "wasted". Most people's pupils do not dilate more than 7 mm, or 5-6 mm for older eyes. Exit pupil is the objective diameter divided by the magnification, so for an 8" scope at 46x, the exit pupil will be 8" x 25.64 mm/inch / 46, or 4.5 mm. The minimum magnification usable for the 8" scope, if your eye dilates to 6 mm, is 34x.

Magnification is also related to eye relief, which is how far from the eyepiece your eye must be in order to see the image. Although eyepiece designs vary, as a rule the shorter the focal length of the eyepiece, the shorter the eye relief. This is a problem for eyeglass wearers, since their glasses may touch the eyepiece before they can get close enough to see. Nearsighted or farsighted people can remove their glasses and re-focus, but people with astigmatism need eyepieces with greater eye relief.

Eyepiece Barrel Sizes

Eyepieces come in three standard diameters: 0.96", 1.25", and 2": the most common sizes for telescope focusers. There are adapters to allow you to use the smaller eyepieces with larger focusers, but in general you would only want to do this is you already had a substantial eyepiece investment in the smaller size.

0.96" eyepieces are generally of lower price, and low quality. Telescopes with 0.96" focusers tend to be of low quality also. 0.96" eyepieces are often used with cheap 60 mm refractors and 4.5" reflectors. As a general rule, you should avoid telescopes which use 0.96" eyepieces. If you already have such a telescope, you may be able to improve its performance by buying higher-quality 0.96" eyepieces. Another more expensive option would be to replace the 0.96" focuser with a 1.25" focuser, and use 1.25" eyepieces.

1.25" eyepieces are the most common. They are usually of higher quality than the 0.96" eyepieces, cost less than 2" eyepieces, and are suitable for most applications for recreational telescopes.

2" eyepieces are generally better suited to large telescopes, and to very short focal-length telescopes. They can provide wider fields of view than 1.25" eyepieces. However, the improved views come at a substantial cost in both money and weight, and you need to be pretty serious about your astronomy, or quite wealthy, before a large stock of 2" eyepieces becomes an option.

Eyepiece Designs

Eyepiece designs are normally classified by the number and type of lenses. The number of lenses affects how much light is transmitted through the eyepiece, since a little light is lost every time it passes through a glass/air interface. Special coatings can reduce the light loss dramatically, and these are usually worth the money if you can afford them. If extra lenses mean lost light, why not use the eyepiece design with the fewest possible lenses? The extra lenses can do some good things for you. Depending on the design, the extra lenses can correct aberrations, flatten or widen the field of view, increase the eye relief, and so on.

There are three main designs of eyepieces of interest to recreational astronomers: Kellner, Orthoscopic, and Plossl. Of the many other kinds, some (such as Huygens) are generally not of good enough quality to be useful, while others (such as various super-wide types) take more experience (and money) to fully appreciate and would not be a good choice for your first or second eyepiece. The three basic types are compared in the following table.

Name	Cost	Number of Lenses	Eye Relief	Field of View
Kellner	low	3	fair	fair
Ortho-scopic	med.	4	good	good
Plossl	med-hi	4	good	good

As the table indicates, Kellner eyepieces are less expensive than most other designs. Since they have only three lenses, they have good light transmission, particularly when made with anti-reflection coatings. They are best used at low to medium power, because Kellners with focal lengths much less than 12 mm have uncomfortably short eye relief, as well as poor images. Kellners are a good choice for viewing large or dim objects, but are less suitable for the moon or planets

Orthoscopic eyepieces are moderately expensive. They have four lenses, so anti-reflection coatings are important. Orthos are suitable for medium and high powers, giving better eye relief, color correction, and field width than Kellners. In general, Orthos are preferred for high-power lunar and planetary observing, double stars, and resolving star clusters.

Plossl eyepieces are moderately expensive, although there are inexpensive models available. They have four lenses, but are usually coated, so they give bright images. They have a wider field of view than Orthos or Kellners, and good color correction and image quality out to the edges of the field. Their eye relief is adequate even for shorter focal lengths. Many people feel that Plossls are the best all-around eyepiece.

Barlow Lenses

A Barlow lens increases the magnification of your eyepieces. They come in magnifications between 1.5x and 3x, with 2x being most common. The eyepiece whose magnification you want to increase is put into the tube of the Barlow, which is then put into the focuser as if the whole assembly were one big eyepiece.

As an example of how Barlow lenses work, suppose you have a 25 mm eyepiece. Using a 2x Barlow, your 25 mm eyepiece would give the same magnification as a 12.5 mm eyepiece. In addition, the eye relief will not shorten, as is usually the case for short focal length eyepieces. So, if you have two carefully chosen eyepieces and a Barlow, you can get four different focal lengths for the price of three, and get longer eye relief as a bonus.

If this sounds too good to be true, there are some drawbacks to Barlows. Many of them are very cheaply made, and seriously degrade the image quality. Practically any Barlow lens which comes in a package with a 60 mm refractor or a 4.5" reflector is probably useless. All Barlows add at least one, sometimes more, extra layers of glass, which can lead to a decrease in image brightness. As with eyepieces, anti-reflection coatings will help, but they also increase the price. Finally, most Barlows don't work well with short (f/5 or below) focal ratio objectives. In summary, Barlows can be a useful addition to your eyepieces, especially for eyeglass wearers. However, you get what you pay for, and you shouldn't expect cheap ones to work well.

Choosing Eyepieces

How many of which kind of eyepieces should you get? If you can afford it, get three or four eyepieces and a good-quality Barlow. In an ideal world, you would get Plossls for your longer focal lengths, and either Plossls or Orthos for the shorter focal lengths. If you have to compromise, consider Kellners for the longest focal lengths, and bargain-brand Plossls for the shorter ones. If you're really short on cash, get a long Kellner, and a medium Plossl.

The focal lengths you choose depend on the telescope you'll use them with. The longest focal length should give you the maximum useful exit pupil. The minimum focal length should give you the maximum useful magnification. The remaining focal lengths should be

(Continued on page 3)

Sky Sweep

by Kevin Jones

The targets of this issue's Sky Sweep will be rising in the northeast on March and April evenings.

They are all galaxies, with the exception of one double star and one planetary nebula, and they are all located in the constellations of Ursa Major and Canes Venatici.

M101
M101 is a large spiral galaxy located a few degrees to the north of the Big Dipper's handle. This galaxy shines at eighth magnitude, but has a low surface brightness because its light is spread out over an area twenty-two arc minutes across, nearly the angular size of the full moon. M101's large angular size and low surface brightness make low powers ideal for sweeping up this galaxy. M101 is a class Sc spiral seen almost directly face-on. Its loose, clumpy spiral arms show up beautifully in long-exposure astrophotographs.

In Messier's original catalog, M101 was accidentally recorded twice and catalogued as numbers 101 and 102. M102 is, then, nothing more than a duplicate observation of M101.

M40
The unspectacular double star Winnecke 4 is all that makes up M40. This double is a pair of 9th magnitude stars separated by 49 arc seconds located just over a degree north of Megrez (delta Ursae Majoris). Messier stumbled upon this double while searching for a nebula reported by Johann Hevelius to be located in the area. Messier never located the nebula, but included this double star in his catalog.

Two faint Messier objects are located near Dubhe (beta Ursae Majoris), the farther of the two "pointer stars" from Polaris. These objects are M108 and M97.

M108
M108 is located almost two degrees to the east-southeast of Dubhe. This object is a class Sc spiral galaxy, physically similar to M101, but quite different than M101 in appearance. M108 is presented to us nearly edge-on, and through the telescope it looks like a 10th magnitude smear of light about eight arc seconds long. M108 appears smaller through the eyepiece than M101 because it is farther away. M108 is thought to be about 25 million light-years away, almost twice the distance to M101.

M97
M97, also called the Owl Nebula, can be found a degree to the southeast of M108. This nebula is a planetary nebula, seen through telescopes as a dim 11th magnitude disk three arc seconds in diameter. My experience has shown that M97 is an object that light pollution filters, such as Lumicon's UHC filter, can really work wonders on, particularly when seen from the light-polluted skies of Northern Virginia. M97 is a much easier target with a filter than without one. The name "Owl Nebula" comes from the nebula's appearance through large telescopes and on long-exposure astrophotographs: two dark disks are faintly visible within the larger disk of the planetary nebula. These darker disks give the appearance of a pair of big "owl eyes" staring at the viewer.

M109
Almost a degree to the southeast of Phecda (gamma Ursae Majoris), the barred spiral galaxy M109 can be seen. This galaxy is probably the easiest of this month's targets in Ursa Major to locate. It shines at 9th magnitude and appears fairly large as galaxies go, seven arc minutes long and about half as wide.

The four remaining objects in this issue's Sky Sweep are spiral galaxies located in Canes Venatici, underneath the tail of Ursa Major or the handle of the Big Dipper. These galaxies are generally brighter and more imposing objects than the preceding objects found in Ursa Major.

M106
M106 is located several degrees to the southwest of M109, in Canes Venatici just over its border with Ursa Major. This spiral galaxy shines at 8th magnitude and is rather elongated. It looks about three times longer than wide. M106 is located at nearly the same distance from the Milky Way as M108 in Ursa Major.

M94
Just over three degrees north-northwest of Cor Caroli (alpha Canum Venaticorum), the bright, oval-shaped spiral galaxy M94 can be found easily. This galaxy is seven by three arc minutes and shines at 7th magnitude. Its brightness makes M94 one of the real showpiece galaxies of this area of sky.

M63
M63 is another of Canes Venatici's bright spirals. It is located a degree and a half north of 20 Canum Venaticorum, the easternmost star in the V-shaped outline of Canes Venatici typically seen on star charts. M63 is of magnitude 8.5 and is ten arc minutes in length by five in width.

M51
The last object highlighted this issue is M51, the famous Whirlpool Galaxy, located in northeastern Canes Venatici four degrees to the southwest of Benetnasch (eta Ursae Majoris). M51 is a bright, large, face on, class Sc spiral galaxy. It is circular, about ten arc minutes across, and shines at 8th magnitude. Larger telescopes readily reveal M51's spiral structure. M51 is an interacting galaxy; it appears to be attached via one of its spiral arms to the little 10th magnitude irregular galaxy NGC 5195, located four arc minutes to the north of M51's nucleus. This object is another showpiece of this part of the night sky. It is beautiful seen through instruments as small as 7x50 binoculars and is absolutely stunning when seen through a large telescope.

Good luck finding these nine Messier objects. Clear skies!□

(Continued from page 2)

(The Recreational Astronomer: All about Eyepieces)

distributed evenly between. If you get a Barlow, make sure the eyepiece focal lengths don't overlap when combined with the Barlow. Even if you have to buy fewer eyepieces than you'd like, make sure they fit the sequence of focal lengths you want. If you get another eyepiece later your collection will still work well together.

Using Eyepieces
Now that you've got your eyepieces, you need to learn how to use them at the telescope. This really deserves a column of its own, but here's a quick overview. Use your widest-field eyepiece (usually also your lowest power) while finding things. Once you've found your target, make sure it's centered before trying a different eyepiece: the new eyepiece may have a smaller field of view. Every object reveals different features at different magnifications, so try a variety of eyepieces. When viewing extended or dim objects, keep using each eyepiece for several minutes. Use averted vision, and try to keep your eye as still as possible to let the image "register".

References
o The Orion Telescope Center catalog contains informative sidebars about the types and parameters of eyepieces.

o The *Purchasing Amateur Telescopes: Frequently Asked Questions* (available on the Internet newsgroups sci.astro and sci.astro.amateur, and in the NOVAC library) contains lots of info about eyepieces in general, and some specific data and recommendations as well.

o A recently published book: *Star Ware* by Harrington contains practically everything you'd care to know about practically all types of astronomical hardware.

o Roger Clark's *Visual Astronomy of the Deep Sky* gives a distinctly non-traditional view of deep sky observing, based on his studies of human vision.□

What's Up

by Al & Lynn Schumann

Swing into Spring

"In spring a young man's fancy lightly turns to thoughts of love." That sentiment may well be true, but throw in clear skies and warmer temperatures, and it would really be a good deal for amateur astronomers of both sexes, young and old. Even though the winter just ending wasn't nearly as dreadful as the one last year, it still had a tendency to keep us close to the fire instead of trooping out to one of the observing sites. Winter also gives one time to think, read, plan, and spruce up the equipment for the coming year; kind of a regeneration time.

A New C8

We got working on the C-8 this winter. That grand telescope had been relegated to second class status since we built the 13 inch dobsonian. About the only time we would set up the C-8 was for eclipses and such. What kicked off the renewed interest was an ad we saw in *Astronomy* magazine. It was for a conversion kit which would upgrade our 11-year-old orange tube instrument to C-8+ status. With the kit installed, our telescope would operate on just a nine volt battery instead of requiring either house current or a separate inverter/drive corrector and 12 volt power pack. The trick is to replace the AC motors that came with the telescope with a DC motor. The little battery should provide from 30 to 40 hours of operation. Built into the control box is an On/Off switch, a battery low level warning light, and a speed control for one to track stars, planets, moon, or the sun. It will be nice to have the telescope truly portable and free of the other cords and stuff needed for use in the field. Now, our battery pack can be put to use with a dew zapper or our little 12 volt blow dryer. When dew is a factor, Schmidt-Cassegrain telescopes are the first to suffer. Also, over the winter we picked up one of those f/6.3 reducer correctors we wrote about in the last edition of the newsletter. When this sucker is all cleaned up we've got ourselves a new telescope! Can't wait to get it out in the wilds of Crockett Park and give it a try. If any other owners of old C-8's are interested, the company is ADDTEC CORP., P.O. Box 702, 84 Platt Road, Shelton, CT 06484.

Messier Marathon

This is an excellent time of year to give some thought to holding a Messier Marathon. Probably our best window of opportunity is 31 March/1 April. It is just past the equinox, it's the time of the new moon, and temperatures ought to be tolerable for a long night. If the thought of a full blown marathon sounds goofy, you might consider cheating a bit and breaking it up into thirds. Run through the list up to the Coma/Virgo clusters on the first night. Wait a month or two for the next segment, and then finish it off maybe in June. That way you can let the objects come to you in the shank of the evening (and still get a good night's sleep) rather than plugging away in one night until sunrise. We used this technique a few years ago and are convinced it is the only civilized way to go. When you get older you gotta work smarter.

Our Dad

We've missed a lot of meetings and observing sessions lately. Pop passed away towards the end of October, and it has kept us busy straightening out his affairs and trying to sell his old barn of a house. After countless trips back and forth to New Jersey the van seems to know which way to go. Whenever we crank it up, it automatically heads for I-95 North and the Jersey Turnpike to Weehawken. Dad was just a few weeks short of 83 when he died. Pneumonia was the official cause of death, but it was really Alzheimers that did him in. It's a terrible affliction, one we would not wish on anyone. During his last few months, he didn't know where he was, who we were or what was happening around him. For those of you who got to know him at the NOVAC meetings, we can only say, you should have seen him in his prime. He was really something.□

Annual Financial Statement

by Brenda Clements Jones, Treasurer

Northern Virginia Astronomy Club — Financial Statement for January 1, 1994 to December 31, 1994

INCOME		EXPENSES	
Dues, renewals	1,998.00	Newsletter Printing and Postage	1,104.58
Dues, new members	1,254.00	BBS	649.77
Donations to BBS from members	1,430.00	Astronomical League Dues	305.25
Hat Sales	150.00	Insurance	293.00
Interest: Savings Acct.	73.77	Activities	214.60
Checking Acct.	32.97	Crockett Park User Fee	200.00
Donations to NOVAC	27.28	Postage	98.25
Calendar Sales	26.65	Hotline (January thru June '94)	87.64
Astronomical League Book Sales	32.00	Fees to State Corp. Commission	35.00
		Misc. (locks)	25.66
TOTAL INCOME	5,024.67	Printing	18.60
		Supplies	10.04
		TOTAL EXPENSES	3,042.39

Income	5,024.67
Expenses	3,042.39
NET GAIN	1,982.28
Beginning Balance	3,734.21
Net Gain	1,982.28
ENDING BALANCE	5.716.49

Sky Calendar for March/April 1995

Compiled by Luke Ward

Times are EST/EDT. Sources include *Observer's Guide* and *1995 World Almanac*.

March

1	Mercury at 27° western elongation (morning)
2	Venus 1.5° N of Uranus (morning)
3/4	**Observing at Savage/Crockett**
5	Saturn in conjunction w/sun
	Observing at Savage
6	*"Stars Tonight"* show **
14	Moon 9° S of Mars
15	**NOVAC Meeting, 7:30 P.M.***
19	Moon near Spica
20	**Spring Equinox**
22	Moon 2° N of Jupiter
24	**Observing at Savage/Crockett**
25	Mercury 0.6° S of Saturn
	Observing at Savage/Crockett
26	**Observing at Savage**
28	Moon 6° N of Venus
29	Moon 6° N of Saturn
31	**Observing at Savage/Crockett**

CALL (703)-256-8359 to check nights!

May

3	**Observing at Savage** for meteors
5	Eta Aquarid meteors (first quarter moon, good observing). Rate ~ 30 per hr.
6	**Astronomy Day-Crockett Park!**
11	Mercury at 22° eastern elongation (evening)
15	Moon 2° N of Jupiter (10 p.m.)
17	**NOVAC Meeting, 7:30 P.M.***
19/20	**Observing at Savage/Crockett**
21	**Observing at Savage**
22	Saturn's rings exactly edge-on (4 a.m.)
24	Mars 1° N of Regulus
26/27	**Observing at Savage/Crockett**
27	Moon 0.8° N of Venus (morning)
28	**Observing at Savage**

Stars and Constellations

April 1 at 9 P.M.

Western Sky: Orion lies on its side, along with Auriga and Canis Major. Bright Sirius will set by May 1, along with Betelgeuse and Rigel in Orion.

Twin stars Castor and Pollux remain visible into mid-May.

Southern Sky: The brightest star near Mars is Regulus, in Leo. Look between Regulus and Castor for the constellation Cancer, containing the Beehive cluster.

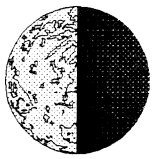
Eastern Sky: The bright stars rising this month are Arcturus and Spica, the brighter being Arcturus.

April

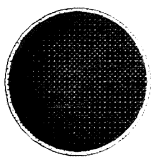
1	**Observing at Savage/Crockett**
2	Beginning of daylight time
3	*"Stars Tonight"* show **
10	Moon 8° S of Mars
13	Venus 0.6° N of Saturn (morning)
15	Moon occults Spica 12% lunar eclipse- not visible on east coast
18	Moon 3° N of Jupiter
19	**NOVAC Meeting, 7:30 P.M.***
21	**Observing at Savage/Crockett**
22	**Observing at Savage/Crockett**
23	**Observing at Savage**
25	Moon 6° N of Saturn
27	Moon 4° N of Venus
28/29	**Observing at Savage/Crockett**
29	Annular solar eclipse-South America
30	**Observing at Savage**

Lunar Phases

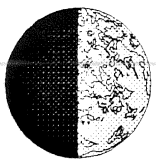
Last Quarter
March 23
April 21



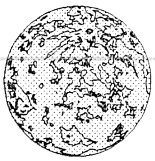
New Moon
March 1
March 30
April 29



First Quarter
March 9
April 8



Full Moon
March 16
April 15



Planet Positions

Mars- In Cancer, high in the night sky. Telescopic detail is still visible during March. It dims from mag. -1.4 to 0.1.

Jupiter- rises around midnight, at its highest at dawn. It will stay near the red star Antares until next fall.

Venus- morning star, will eventually return to the evening sky in coming months.

Saturn-conjunction on March 5. Visible in morning sky starting in April. It is in the fall region of the sky (Aquarius).

Mercury- observe it in the morning sky on March 1. It approaches Saturn in the morning sky on March 25. It is too near the sun in April. By May 11, it is at its highest in the evening sky.

*NOVAC Programs

March 15, 1995- "A Robotic Lunar Observatory", with Dr. Paul Lowman.

April 15, 1995- "Telescopes and Eyepieces", with Tom Parry.

May 17, 1995 - To be announced.

NOVAC meetings are held on the third Wednesday of every month at 7:30 in the Arlington Planetarium, 1426 N Quincy St., Arlington. For more information regarding club activities, call the NOVAC hotline at (703)256-8359.

**"STARS TONIGHT" At the Arlington Planetarium

MARCH 6 at 7:00 p.m.-Steve Smith will discuss constellations and planets visible during March. Admission is $2 for adults, $1 for children 12 and under and senior citizens. Seating is on a first-come, first-serve basis.

APRIL 3 at 7:30 p.m. (EDT)-Chuck Phillips will host the April "Stars Tonight".

Announcing a new feature in the Novac newsletter, a contest, namely, NAME THAT ASTERISM!

In this issue, and future ones, asterisms that are visible at the time of the newsletter will be portrayed without any identification. The first part of the contest will be to give the official name of the the asterism. The second part will be to suggest other names for the asterism, to give information about the asterism, e.g., where the stars are in relation to one another, poems about the asterism, etc. The first person to correctly identify the asterism will be the winner of the first part. Interesting entries in the second part will be published. See Page 11 for instructions on how to submit entries to the newsletter (same as for articles).. And now for

Asterism # 1

From: BRENT ARCHINAL

Pre-meeting meetings!

At the NOVAC Annual meeting on January 10, one of the issues raised was how to provide more opportunities for members to get together. One possibility suggested was to meet for dinner before the regular monthly meeting. With only an announcement at the regular meeting we tried this at the February meeting and it worked out quite well. Even with the weather uncertain, about 10 members managed to make it for an excellent dinner.

So, it looks like we'll try it again, and continue this (at least until further notice). If you're interested, the get-together before the March 15th and April 19th NOVAC meetings will again be at the *Santa Fe Cafe,* 1500 Wilson Blvd., in Rosslyn, at 5:45-6 PM. This restaurant is easily found, just west of "downtown Rosslyn", on the southwest corner of Wilson Blvd. and N. Oak Street, where Wilson becomes one-way west. On street parking should be available and it is also close to the Rosslyn metro station. Prices are very reasonable, but note that credit cards are not accepted by the restaurant.

Reservations are probably not necessary. However it might be nice to have some idea how many people are coming, so if you plan to come, need a ride to the meeting and back to the metro, or for more information you are welcome to give me a call (evenings) at 703-448-7466 or e-mail me at baa@casa.usno.navy.mil.

See you at dinner!

Brent Archinal

The following was received from Dennis D. McCarthy, Head, Earth Orientation Department, U.S. Naval Observatory, 3450 Massachusetts Avenue, NW, Washington, DC 20392-5420:

Telephone: (202) 653-0066

Fax: (202) 653-0587

E-mail: eop@usno01.usno.navy.mil

Photographic Zenith Tube (PZT) 7 - The largest telescope of its kind was built in the 1970s. The objective, a 4-element, 65cm clear aperture apochromatic lens, was constructed by the Perkin-Elmer Corporation; the housing by the Boller & Chivens Corporation. The U.S. Naval Observatory (USNO) began using the PZT-7 in 1980 to obtain very precise measurements of the Earth's rotation and the wobble of the Earth's axis. After several years of very productive use, an increasing emphasis on other techniques resulted in the retirement of the PZT-7 in December of 1991.

This very special piece of astrometric equipment has reached the end of its service to the Naval Observatory. It is our hope however, that the PZT's value can be sustained by its donation to an educational or amateur astronomical organization. The USO will accept proposals from interested parties concerning future use of the entire telescope. Secondarily, we will consider proposals submitted for the separate use of the telescope or objective lens. These proposals must take into account that the recipient will be responsible for all aspects of removal. Further information can be obtained by writing to the address below. Proposals will be accepted until 30 April 95 and should be sent to:

U.S. Naval Observatory

Code EO

3450 Massachusetts Avenue, N.W.

Washington, DC 20392-5420

Highlights of the Annual Membership Meeting

by Marta Krause, Secretary

NOVAC Annual Meeting Minutes for January 10, 1995

The meeting was called to order by Bob L'Hommedieu at 7:30 PM. There were nine trustees and members present at Brenda Jones' home in Arlington.

Unfinished Business from 1994

1. Club Events: 1995 dates for annual club events were discussed and determined. NOVAC's annual picnic will be combined with a club swap meet and a public observing session on Saturday, May 6. The 13th annual telescope meet will be held on Saturday, September 30.

2. NOVAC Hotline: To facilitate more timely updates of the NOVAC hotline, a new answering machine with remote access but no monitor function will be purchased to replace the existing answering machine at Blaine Korcel's home.

3. Tax Status: Fairfax County has advised NOVAC that while it is exempt from business license taxes, it is liable for personal property taxes. Accordingly, NOVAC has been asked by Fairfax County to file property tax returns for the past three years. Such returns will be filed as soon as inventories of NOVAC's personal property are complete. In addition, a 1993 federal law regarding charitable contributions was discussed for its potential impact on NOVAC and its contributors. Such contributions do not include membership dues, and at this time the law requires no action by NOVAC.

Goals for 1995

Goals for NOVAC's 1995 activities and programs were discussed. These include:

1. Make meetings responsive to the results of 1994 NOVAC Member Survey and more useful to novice astronomers by:

a. Expanding the monthly observing report, possibly by increasing the time spent on the report, expanding the report to include additional celestial objects, and using the planetarium projector. Projector training will be discussed with the planetarium staff, and the Education Committee may be able to provide assistance to the observing reporter.

b. Using survey results to plan programs. Ron Ferris, Vice President and Program Chairman, has drafted a sign-up sheet covering topics suggested by the survey for NOVAC members to present. This sheet will be circulated at the January meeting.

c. Encouraging socializing between long-time club members and new members and guests. Name tags will continue to be used at meetings. Questions will be solicited from members and guests during an "open question" period, and individuals who have expertise in a particular area will be identified to answer those questions. A pre-meeting dinner at a local restaurant will also be coordinated.

2. Increase public education activities by:

a. Offering club activities, such as public observing sessions, whenever there is a celestial event such as meteor showers or comets that draw public interest.

b. Holding regular public star parties at local parks, asking members to be available to help at these sessions. NOVAC will explore opportunities for observing sessions with local park systems.

3. Continue efforts to make improvements to NOVAC's current observing sites:

a. Crockett Park: Efforts to improve conditions at Crockett Park will continue. NOVAC officers will speak with Crockett Park authorities about toilet facilities; Keith Ward will write to the owner of adjacent property offering to purchase and install a shield for the security light on the property.

b. Savage Farm: Encourage use of the Savage site, and continue to make improvements as the budget allows and if justified by member use.

Keith Ward offered to draft maps to each site, including Parsells Field, to facilitate their use by NOVAC members.

4. Increase NOVAC's revenues through:

a. Consideration of a dues increase, pending results of NOVAC's 1994 financial results (not available at meeting time). NOVAC's current level of revenues cover existing annual operating expenses and do not provide for additional projects or activities. Any dues increase would need to be identified as necessary for specific purposes. Current reserves are primarily for use on long-term or capital projects (such as observing site acquisition), not for recurring operating expenses.

b. Expanding sales of astronomy books, NOVAC hats, tee shirts and other merchandise. Other ideas proposed included raffles and a junior astronomy club.

5. Help the Arlington Outdoor Lab (AOL) as a public service project by:

a. Cleaning and collimating several of their telescopes

b. Training the AOL staff to use and maintain the telescopes and other equipment

c. Helping the AOL host star parties.

Because the Lab is used every week by schools and other groups, it is important to get the telescopes working as soon as possible. Sandy Sanders, who is coordinating the project with the AOL, will determine a mutually convenient weekend in January or February for NOVAC members to do initial work and assess additional tasks that may need to be done. A sign-up list for NOVAC members who wish to participate in this project will be circulated at the January membership meeting. In addition, donations of equipment or money for the AOL will be accepted.

6. Implement NOVAC's new committees, which are:

a. Finance, which will be involved in the development of new sources of revenues for the club

b. Publicity, which will be encouraged to develop a list of contacts at Northern Virginia's suburban newspapers who might be interested in doing stories about astronomy and NOVAC activities.

c. Education, which will develop a list of members who are willing to do public events

d. Observing, which will continue discussions with Crockett about toilet facilities, and will pursue a list a improvements needed at Savage Farm. □

Highlights of January General Membership Meeting

by Marta Krause, Secretary

NOVAC General Meeting Minutes for January 18, 1995

The meeting was called to order at 7:30 PM by Bob L'Hommedieu. At least 43 members and guests were present at Arlington Planetarium.

Announcements

1. Dates for 1995 NOVAC events have been set. The club picnic and a swap meet will be held on Astronomy Day, May 6, at Crockett Park. A public observing session will also be held that evening. All NOVAC members are encouraged to come with their families and to bring picnic dinners and their telescopes. Also, the 13th annual Northern Virginia Telescope Meet will be held on Saturday, September 30 at Crockett Park. Mark your calendars!

2. Brent Archinal is coordinating a trial "dinner before the meeting" get-together at 6 PM at the Santa Fe Cafe, 1500 Wilson Boulevard, in Rosslyn. This is an opportunity for new and long-time members to get to know each other better. If you plan to come or need more information, call Brent at (703) 448-7466 (evenings).

3. Brent Archinal announced that the US Naval Observatory has a photographic zenith tube with a 28 meter focal length and an excellent 26" four element apochromatic lens that will be free to anyone who can haul this equipment away. The telescope is one of the largest telescopes of its kind and the 10th largest refractor made. If you are interested in this equipment and have a proposal for its use, contact Brent for more information.

4. Sandy Sanders passed around a sign-up list for those members interested in helping on the Arlington Outdoor Lab public service project. NOVAC members are needed to clean and collimate telescopes at the Lab and to teach Lab staff to operate and maintain the equipment. Because the Lab is in constant use by schools and other groups, the work needs to be done as soon as possible. Anyone interested in helping with this important project should contact Sandy Sanders.

Bob L'Hommedieu encouraged NOVAC members to participate in the Arlington Outdoor Lab renovation project. This important project offers NOVAC the opportunity to provide a public service and to support Arlington Planetarium, which provides NOVAC with a meeting place every month.

5. Jon Stewart-Taylor asked that members with E-mail addresses please provide them to Jon so he may send information and updates. Also, Jon asked that anyone interested in group observing at Big Meadow along Skyline Drive contact him. There are 30" and 40" telescopes at Fan Mountain, a nice drive about 20 miles south of Charlottesville. Finally, Jon is looking for members who can commit to being at the Parcells Field and Savage Farm sites on observing nights to ensure that new members and non-members that are new to observing have some support. If you can commit to being at an observing site on a particular night, please give Jon a call.

6. Bill Burton has drafted and received acceptance of a proposal for a project studying local light pollution for the Horizons section of *The Washington Post*. The project focuses on the constellation Orion and asks *Post* readers to identify the number of stars in the constellation that are visible from their homes on the first clear night during a specified period. With the data, a map will be constructed to show how much skyglow there is in different spots in the Metropolitan Washington DC area. Bill read a draft of the project's instructions and sought comments from members. NOVAC members are encouraged to look for the project write-up in the February 8 edition of Horizon, and to participate by sending in their observations to the *Post*.

Officers' Reports:

Ron Ferris reported that the program for the February 15 meeting is "Choosing and Using Binoculars," to be presented by Bob L'Hommedieu and Brenda Jones. Also, Ron distributed sign-up sheets for those interested in sharing their knowledge and expertise about astronomy-related topics with the club.

Marta Krause reported that *The Young Astronomers Newsletter* for 8 to 18 year olds is available from Argo Publishing, P. O. Box 12691, Winston-Salem, NC 27117-2691. The monthly six-page newsletter, which includes space and astronomy news and informative articles, is $11.50 per year.

Brenda Jones reported that NOVAC member Ron Bashian is selling an Astroscan telescope. For more information, contact Ron at (703) 556-9637. Also, member Neal Blackwell is looking for someone at a recent observing session who was using an Odyssey I. Please contact Neal at (703) 968-8852. Finally, Greg Dillon want to buy an O-III 2" filter for about $100. Anyone interested in selling such a filter should contact Greg at (804) 978-1651.

7. Fred Holmes was presented with a certificate recognizing his service in 1994 as a NOVAC trustee. NOVAC thanks Fred for his time and energy spent on NOVAC's behalf.

Member Presentations

Russ Duke recommended "A Perfect Machine," a book written about the development of the 20" Hale telescope, which saw first light in 1949. In addition, the book describes the state of astronomy in the 1920s and 1930s. Russ recommends "A Perfect Machine" as a fascinating account of early 20th century astronomical history.

Bob Bunge recommends the use of plastic cups with 3" rims to protect secondary mirrors and finder scopes. The cups, which can be found at any grocery store, are an economical solution to condensation problems.

Gary Joaquin publishes *Star Walks*, a quarterly newsletter. Anyone interested in a copy is encouraged to contact Gary at (703) 750-1636.

Jeff Stetekluh gave the observing report for the month ahead.

Ron Ferris introduced the program for the evening. Sandy Sanders presented slides, newspapers, tee shirts and information about his recent trip to Asuncion, Paraguay to see a solar eclipse. Sandy's guest James Arritt also presented some snapshots taken on the trip.

The meeting was adjourned at 9:05 PM.

Public Observing Opportunity

NOVAC members with solar-viewing equipment are needed at Earth Science Day 1995, which will be held at the U.S. Geological Survey in Reston, VA on April 29, 1995, from 10 AM to 6 PM. Over 10,000 people are expected to attend, and this would be an excellent opportunity to practice our commitment to public education and helping others observe. So if you have a telescope or binoculars with solar filters and would like to show people the sun and its features, call Jon Stewart-Taylor at 703-476-8949, or reach him via E-mail at jstewart@telenet.com

See Asterism #2 on Page 11!

Editor's Note

by Elliott Fein

Article submissions may be posted to the NOVAC Computer Bulletin Board (BBS) to Elliott Fein or to edfein@cpcug.org on the Internet. Diskettes (3.5" or 5") or typewritten copy may be sent to Elliott's residence at 5 Carter Court, Rockville, MD 20852 1005.

Deadline for submissions for the May/June Newsletter is April 10.

A big Thank You to those who sent me get well wishes when I was in the hospital with bacterial pneumonia. The people in this club are among the nicest I have ever met!□

Astronomy Day is May 6, 1995. Come join your friends in NOVAC at Crockett Park. The fun begins at 4 P.M. There will be picnicking (we have reserved a picnic shelter, just in case.), a swap meet, and observing. This is a great place to bring the family; Crockett Park has fishing, paddle boats, and more!

Notices Notices Notices **NOVAC** *Notices Notices Notices*

NOVAC Notices and Benefits

Discounts on *Sky & Telescope*

As a member of NOVAC you can get a subscription to Sky & Telescope for $20.00 instead of the regular $27.00 rate. To start a new subscription or renew an established subscription, make your check out to SKY & TELESCOPE for $20. Note on the check if this is a new subscription or a renewal. Send your check to Brenda Jones, 883 N. Kentucky St., Arlington, Va. 22205.

You can also order any publication directly from Sky Publishing at a 10% discount. Just mention the Club Discount Plan and that you are a member of NOVAC.

Discounts on *Astronomy*

Your NOVAC membership entitles you to subscribe to Astronomy Magazine at the annual rate of $18.00 (note increase from $16.00). This is a significant discount over the usual $24.00 rate. A two-year subscription costs $36.00. To start a new subscription or renew an established subscription, make your check payable to Kalmbach Publishing Company for $18.00 (one-year subscription) or $36.00 (two-year subscription). Note on the check if this is a new subscription or a renewal. Send your check to Brenda Jones, 883 N. Kentucky St., Arlington, VA 22205. NOTE: There are no special 10% discounts offered on publications through Kalmbach Publishing.

Club Telescopes Available for Use

NOVAC makes available two six-inch (*f*/5) Newtonian reflectors for club members to check out free of charge and use for a limited time.

The first scope is a Celestron model SP-C6 on a Super Polaris German equatorial mount and wood tripod. It will readily fit disassembled in any car and is easily transported and can be set up quickly at remote observing sites. The scope comes with an Orion Ultrascopic 10mm and Meade MA 25mm eyepieces with 1.25-inch barrel sizes. To borrow this scope you will need to show your NOVAC observing pass and leave a $500.00 security deposit.

The second scope is a home-made six-inch reflector on a dobsonian mount and comes with a 25mm Kellner eyepiece. It is easy to transport to dark sky sites and easy to use. To borrow this scope you will need to show your NOVAC observing pass and leave a $250.00 security deposit. If you are interested in borrowing either of these scopes, contact Bob L'Hommedieu, NOVAC President, at (703) 978-0946. He will schedule a time for you to pick the scope up at his home. Bob resides at 4415 Eastwood, Fairfax, VA 22032.

NOTE: Checks must be made payable to NOVAC. Checks used as security deposits on telescopes, are not deposited and will be returned to the originator when the scope is returned in the same condition it was checked out. The scopes may be checked out for two to four weeks at a time depending on demand.

NOVAC Library

NOVAC has established a library at the Arlington Planetarium for use by NOVAC members. Books may be checked out and returned only at the monthly meetings. Members may check out books for one month at a time. To check out books, see NOVAC librarian Linda Thomas at the monthly meeting. The NOVAC library seeks book donations to the library. If you have any astronomy books or materials you are thinking of discarding, please consider a donation to the NOVAC library. A complete list of all library holdings is available upon request.

NOVAC Observing Schedule for 1995

Observing at C. M. Crockett Park and Savage Farm

March 3, 4, 24 ,25, 31.
April 1, 21, 22, 28, 29.
May 26, 27.
June 2, 3, 23, 24, 30.
July 1, 21, 22, 28, 29.
August 18, 19, 25, 26.
September 15, 16, 22, 23.
October 20, 21, 27, 28.
November 17, 18, 24, 25.
December 15, 16, 22, 23.

Observing at Parsells Field

March 10, 24.
April 7, 21.
May 3, 5, 19.
June 9, 16.
July 7, 21.
August 4, 13.
September 1, 15, 29.
October 13, 27.
November 17.
December 1, 15, 29.

General Membership Meetings

General Membership Meetings are held at the Arlington Planetarium on the third Wednesday of every month. Meetings will be held March 18 and April 15 at 7:30 P.M. The Arlington Planetarium is located at 1426 N. Quincy Street, Arlington. Trustee Meetings are held the Tuesday before the week of the General Membership Meeting. Non-Trustees interested in attending should contact a Club Officer or Board Member for further information.

NOVAC Observing Site Rules

C. M. Crockett Park: NOVAC members may use Crockett Park for observing on nights other than those scheduled for club observing; However, YOU MUST HAVE PRIOR APPROVAL FROM PARK MANAGER GARY KWOLEK. Call (703)-788-4867 early in the day on which you wish to observe. If you reach the answering machine, leave a message saying that you are a NOVAC member and you wish to observe that night. Also, leave a telephone number where someone can reach you. If you do not receive a return call, you MAY NOT use the park. THERE ARE NO EXCEPTIONS! Use of the park is limited to NOVAC members only. Park management locks the entrance gate at sunset and you may use the combination shown on your Observing Pass to gain access. Do not reveal it to anyone. You must lock the gate behind you after entering and please remember to lock it after you leave. During EDT, you must set up on the large field to the left. During EST, you must set up on the paved cul-de-sac 200 yds. past the gate. No loud radios, alcoholic beverages or loose pets. Do not leave trash or debris behind. We are

Highlights of the February General Membership Meeting

by Marta Krause, Secretary

NOVAC General Meeting Minutes for February 15, 1995

The meeting was called to order at 7:30 PM by Bob L'Hommedieu. At least 38 members and guests were present at Arlington Planetarium.

Announcements

1. NOVAC member Ron Bashian is selling an Astroscan telescope with accessories for $250. Anyone interested in this equipment should contact Ron at (703) 556-9637.

2. Elliott Fein, NOVAC's new newsletter editor has been very ill recently. Elliott is now home from the hospital and will be working on the March/April issue of the newsletter.

3. February 18 is the date set for work on the Arlington Outdoor Lab. NOVAC will initially be working to clean and collimate the telescopes so they are usable for Lab and school programs. Anyone interested in this project is encouraged to call Sandy Sanders.

4. Astronomy Day is May 6, and NOVAC will be hosting a public observing session at Crockett Park. A club picnic and swap meet will precede the observing session, and NOVAC members are encouraged to bring their families, picnic dinners, and observing equipment. Crockett Park offers lots of activities, including fishing, hiking and boat rental. The picnic and swap meet will begin about 4 PM.

5. Bill Burton asked members to make two sets of observations for Project Orion, which appeared in *The Washington Post* on February 8. Bill asked members to 1) submit their observations to the *Post* and 2) submit duplicate observations for every night to him. Club members are asked to make as many observations as possible to offer a baseline of information from experienced observers to compare with the generally inexperienced observations received by the *Post*. Bill emphasized that this is NOVAC's one opportunity to gather this important information about the area's light pollution.

Officers' Reports:

On behalf of Ron Ferris, Bob L'Hommedieu reported that the March program, "A Robotic Lunar Observatory" will be presented by Dr. Paul Lowman of the Geophysics Branch of NASA/Goddard SFC. In April, NOVAC member Tom Parry will speak about telescopes and eyepieces.

Bob L'Hommedieu reported that two new additions have been made to the NOVAC library: "A Clementine Collection: Moonglow" was sent by Col. Pete Worden and Dr. Mitch Nikolich, formerly of the Ballistic Missile Defense Organization, who spoke to NOVAC in December 1993. Also, "A Guide to Astromicroscopy" presents the use of microscopes to analyze astrophotographs.

Brent Archinal reported that the first pre-meeting dinner at the Santa Fe Cafe in Rosslyn was a success. A pre-meeting dinner is planned for 6 PM on March 15, the date of the March meeting. Anyone interested should contact Brent.

Jeff Stetekluh gave the observing report for the remainder of February and the first two weeks of March.

Member Presentations

1. Fred Matthies reported on a National Science Foundation speech given by Sydney Wolfe of the National Optical Observatory about the development of two large telescopes, one in Hawaii and one in Chile, with adaptive optics. The equipment is used for looking at dust and gas clouds for new star formation and also holds the possibility of seeing protoplanets. Anyone interested in learning more about this interesting speech should contact Fred.

2. Mike Lucas has been working with a company called Siber Optics Telescopes that imports telescopes and night-vision intensifying equipment manufactured in Russia. The company has offices in Washington DC, where the telescopes are available to see. Currently, the company has 2 1/2", 4 1/2" , and 6" reflectors available. The larger scopes are f/8, and come with equatorial mounts with setting circles etched in. The tubes are aluminum and are solidly built. The 2 1/2" scope comes with a wooden case. Motor drives are available for the larger two models. Mike has purchased the smallest scope for his sons, and has found it to be much better made than many starter telescopes. For information about these telescopes, contact Mike at (703) 878-6634.

Bob L'Hommedieu began the evening's program, "Choosing and Using Binoculars," by explaining binocular features and criteria for selecting binoculars that will meet individual preferences. Brenda Jones offered many tips for observing with binoculars, including the use of tripod mounts, and identified some of her favorite celestial objects that binocular observers might enjoying finding.

The meeting adjourned at 9:30 PM.□

Southern Star Conference

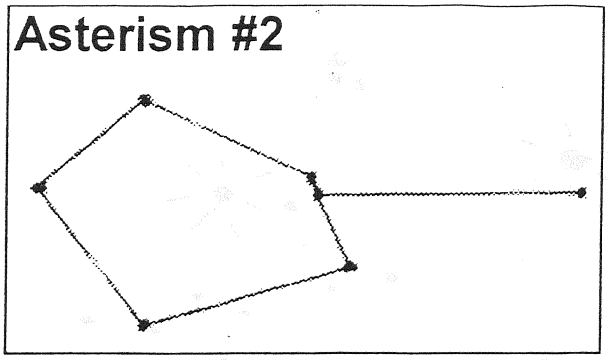
The Charlotte Amateur Astronomers Club (CAAC) will host the 9th Annual Southern Star Astronomical Convention in the Blue Ridge Mountains on April 28-30, 1995.

Speakers will include Dr. Fred Hess from New York's Hayden Planetarium, James Mullaney, former asst. editor at *Sky & Telescope* and astronomer at the University of Pittsburgh's Allegany Observatory, and Dr. Tom Statler from UNC-Chapel Hill. There will be equipment and astrophotography contests, a swap table, and star parties both Friday and Saturday nights, weather permitting. The convention will be held at Wildacres Retreat, near Little Switzerland, NC. For more information about the program and lodging, contact Bob and Anna Francis, 5742 Wedgewood Drive, Charlotte, NC 28210. Last year's convention was a sell-out, so do not delay!

Win back the night sky!

Join the International Dark-Sky Association.

International Dark-Sky Association
3545 B, Stewart
Tucson AZ 85716



guests of the park and park management may revoke our observing privileges at any time due to the carelessness of one person.

Parsells Field: NOVAC members may use Parsells Field in Loudoun County as an alternative observing site ONLY ON THE NIGHTS DESIGNATED for general observing and meteor showers. Currently there are no provisions for unscheduled observation nights. You must park and set up ONLY IN THE PARKING AREA and not go onto the field itself. Please park to the left near the entrance and set up to the right away from the entrance. No loud radios, alcoholic beverages or loose pets. Do not leave trash or debris behind. We are guests of the Dulles Little League and they reserve the right to revoke our observing privileges any time due to the carelessness of one person.

Savage Farm Site: The Savage Farm site is reserved for NOVAC use on the same nights as Crockett Park plus all the major meteor showers. For non-scheduled observing sessions, call the park manager, Paul McCray, at (703) 729-0596 at least 24 hours in advance and leave a message with a number where you can be reached. You MAY use the site for that session UNLESS you receive a call from Mr. McCray stating otherwise. No loud radios, alcoholic beverages or loose pets. Pick up after yourself and do not leave any trash behind. In addition, please make sure the gate is locked whenever you are in the park, and especially when you leave. We are guests of the NVRP and could have our access to this site revoked at any time if it is abused.

Directions to NOVAC Observing Sites

C. M. Crockett Park: From the Washington DC/Northern Virginia area, go west on I-66 to the 47-a exit. This is 234 South to Manassas. Continue on 234 for 2.8 miles then turn right on Godwin Drive at what was previously the "Po Folks" restaurant. Follow Godwin Dr. for 1.8 miles to where it merges with Rt. 28 West. Once on Route 28, continue driving for another 13.7 miles through the towns of Nokesville, Catlett and Calverton until you turn right on Rt. 643 toward Warrenton. There is a small country store (Mayhugh's) on the corner of the intersection. Go on about a mile up Rt. 643 to the Park Entrance road. Look for a small sign for C.M. Crockett Park on your right directing you to turn left. Once on the park entrance road, go one-half mile to the park gate.

Parsells Field: From the Northern Virginia area go west on the Dulles Access (Toll) Road until you reach Route 28 (last exit before Dulles Airport). Proceed north on Route 28 until you come to Route 625 (Waxpool Rd.). You may also take Route 7 (Leesburg Pike) to Route 28 and go south on 28 until you reach Route 625. Go west on Waxpool Road passing through the town of Ryan and Route 641 (Ashburn Rd.). Continuing on Route Rt. 625, Parsells Field will be on your left a short distance beyond Ryan. If you make it to Route 659 (Belmont Rd.), you've gone too far.

Savage Site: Use some combination of Routes 7, 267 (Dulles toll road), and 28 to get to the Route 7 Leesburg bypass. Go around Leesburg on the bypass until you reach "regular" Route 7 again. From the intersection of the bypass and "regular" route 7, continue on route 7 west 18.5 miles to route 601, at the top of Snicker's Gap. Turn left onto route 601 south and go 2.4 miles to the park entrance. The park entrance is past the driveway whose gatepost reads *Ben Lomand.* The park entrance is the next driveway on your left. There will be a sign on a tree saying *Wildlife Sanctuary.* If you come to gateposts on the left that say *Belle Allee* and *Ball Alley 1875,* you have gone too far. You may also take I-66 west to Route 17 North. Stay on Route 17 North until it intersects with Route 50 at Ashby Gap. Turn left onto Route 50 and go one (1.0) mile and turn right on Route 601. Continue on Route 601 (Blue Ridge Mountain Road) and go two miles past the main gate of the FEME installation. Turn right at the park entrance, after passing the gateposts with *Belle Allee* and *Ball Alley 1875* on your right.

The park entrance on Route 601 is marked by a small brown and white NOVAC sign. Note that the neighbors periodically pull up the sign, so it may not be there. As you turn into the park, go straight ahead until you reach the gate, which is secured by both a keyed padlock and a combination lock. These locks are located to your left behind the gate, as you face it. The combination is on your NOVAC observing pass. ALWAYS lock the gate behind you. The NOVAC lock MUST be locked to the keyed lock, not to the chain, to allow emergency access by the fire department. Drive to the observing area (the stone patio next to the house). There is very limited parking at the observing area itself, so please park in the parking area on the right (as you face the patio).□

The **NOVAC Newsletter** is the official publication of the ***Northern Virginia Astronomy Club*** and is published six times per year at 5 Carter Court, Rockville, MD 20852-1005, telephone (301) 762-6261, Elliott D. Fein, Editor and Publisher. The NOVAC Newsletter is sent to members of NOVAC as a regular membership benefit.

Membership in the Northern Virginia Astronomy Club is $18.00 per year and is open to anyone interested in astronomy or the sciences. Contact Brenda Jones, Treasurer, 883 North Kentucky Street, Arlington, Virginia 22205, telephone (703) 527-7963. All notices of change of address should be sent to Brenda Jones. Please include both old and new addresses.

NOVAC does not knowingly accept advertising for products of inferior quality nor does it accept the responsibility for the quality of advertised products.

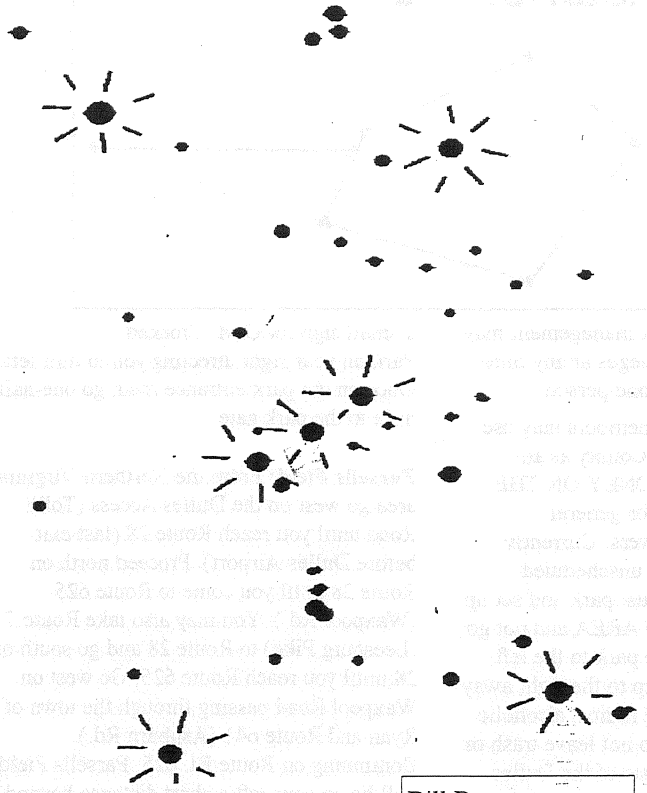
NOVAC members are invited to contribute materials of interest for publication consideration in the NOVAC Newsletter. The editor reserves the right to edit all materials submitted.

Article submissions may be posted to the NOVAC Computer Bulletin Board (BBS) to Elliott Fein or to edfein@cpcug.org on the Internet. Diskettes (3.5" or 5") or typewritten copies may be sent to Elliott's residence at 5 Carter Court, Rockville, MD 20852 10005 (Home phone 301-762-6261).

Deadline for submissions is three weeks in advance of publication, e.g., April 10 for the May/June Newsletter

Did you see this in the Washington Post?

See Item 6 on Page 8 of this newsletter.



Bill Burton

NOVAC

The Northern Virginia Astronomy Club
c/o Brenda Clements Jones
883 North Kentucky Street
Arlington, Virginia 22205

NO VA MSC 220 PM MAR 7 1995

Old Glory USA G For U.S. addresses only

Put it on your calendar now!

May 6

Astronomy Day and Family Picnic at Crockett Park!

12/95 - $0.(

L. Warrow & Bill Burton
2034 Golf Course Drive
Reston, Virginia 22091