NOVAC

THE NEWSLETTER OF THE NORTHERN VIRGINIA ASTRONOMY CLUB

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Important NOVAC Numbers

NOVAC Information Hotline	703 803-3153
Crockett Park	540 788-4867
Savage Park (Paul McCray)	703 729-0596
Arlington Planetarium	703 358-6070

NOVAC's Web Page

http://astro.gmu.edu/~novac

President's Message

Tilly Smith

Boy, what an exciting and busy first month! January has sure not lacked for activity. Both the Annual Meeting on the 14th and the General Meeting on the 21st were well attended, and produced many new and exciting ideas and projects for 1998. The minutes of those meetings later in the newsletter will go into more detail, however, there are a couple of things I would like to address. By the way, what a nice night at Crockett on Saturday 31st. About twenty-four scopes were set up with some spectacular viewing for the whole night, but it was cold . . .

First, there are a few dates of special interest that you should add to your calendar:

- 25 March — 1 April Messier Marathon;
- 2 May Astronomy Day Star Party;
- 20 June NOVAC Picnic and Swap Meet with a special viewing session for new members;
- 26 September NOVA Star Party; and
- 17 November Leonid Meteor Shower public viewing night.

(Continued on page 2)

Inside This Issue

Oregon Star Trail Redux-OSP 97

Bill Jensen

Star Parties and sprinkles don't mix.

After I spent eight hours in a couple of planes and three airports, and three and a half hours driving from Portland Oregon, it started to rain ever so lightly about three miles away from the site of the Oregon Star Party (OSP) on Thursday, August 27, 1997. Great. I recalled disappointing stories of poor weather in 1997 for TSP and Stellafane from my fellow club members. I worried that I might have flown cross country to see clouds. Almost 600 other amateurs were joining me at Indian Trail Springs, in the midst of the Ochoco Mountains in central Oregon for a long Labor Day weekend. Would we need an H_2O filter, or virtual sky?

Luckily my faith in the dry weather that predominates this high desert country proved well founded. The clouds gave way gradually, and by sunset they had been vanquished. Then began the 10th anniversary of OSP, and my second trip to these dark western skies. Once again, the area, the people, and of course, the views captivated my soul and re-energized my fire for our hobby.

The first trip caused a jaw-dropping reaction to the inky black skies, and as a long term novice I was quite pleased to soak up in awe the joy of the Milky Way and brighter known objects. (I was fortunate to have had my recounting of that experience published in Amateur Astronomy.) The 1997 trip was quite different. No Bohemian wandering; as a slightly more experienced observer, I wanted to compare the views of brighter objects that I had come to know at home, and determined to discover more under the nearly light-pollution-free skies.

The Site

Indian Trail Springs in the Ochoco Mountains has been home for the Oregon Star Party the last few years. Sheltered from the stereotypical Northwest wet weather by the Cascade Mountain Range, central Oregon boasts low humidity and a high percentage of clear weather. Add the hour or so drive east from the closest town (Prineville, pop. approx. 5000) to an elevation of 5500' in the Ochoco National Forest, and you get negligible light pollution and

(Continued on page 2)

OSP 97

(Continued from page 1)
nearly ideal observing conditions. The site is governed by the National Forest Service, which leads to some frustration on the part of the organizers for fee inconsistencies, and reluctance to consider minimal site improvements at OSP's cost. The existing site could easily handle more people. Camping sites circle the main observing areas (one for general observing, and one marked for astrophotography). Its location draws amateurs and their families primarily from northern California, Washington, and, of course, Oregon. Oh, yes, they even welcome an occasional refugee from the bright East Coast too!

The People & the Events

It takes a lot more than a dark sky site to make a star party. OSP is conducted by a very generous crew of dedicated amateurs who orchestrate a mixture of daytime activities along with the nighttime wonders. It starts with the well-posted signs leading to the site (beginning 40 miles away!), and continues with the volunteers providing registration packets outlining the events, and suggested observing programs. The daily outgoing assistance symbolizes the best of the amateur community.

On-site mobile food ("star burgers" at midnight are highly recommended!) and a coffee/espresso cart (double mocha kept me going one night till 4:30 A.M.) add to the fun. Vendors managed to target our wallets, and the swap meet attracted almost as much attention as did the drawing for the extensive number of door prizes. Daytime talks included tips on easy to make telescopes by renowned author Richard Berry, how to record observations by Rose City Astronomer's Candace Pratt and Carole Cole, as well as presentations on CCD imaging, solar observing, binocular viewing, and more. Chuck and Judy Dethloff and the rest of the OSP committee are to be commended on overall selection of events, and the organization that again made the party seem effortless to attend. Candace, the president of the Rose City Astronomers told a story to the crowd of how a NOVAC member years ago helped her to get started in astronomy when she lived in this area.

Daytime browsing of the telescope fields was just as much fun: virtually a telescope warehouse filled with refractors, SCTs, Maks, and reflectors. The Dobs ranged up to 40 inches. The store could have been open just for me: upon arrival, I purchased a beautifully crafted 8-inch truss-tube Dob capable of being carried on a plane (the Dob was called the Frequent Flyer Telescope) made by Chuck Dethloff of Telescopes and More. I had tried the design at OSP 96, and was lucky to pick up one of his demo scopes at the party.

Show time

Down to our dark night's deeds. All these talks, people, scopes and daytime stuff were good, but what drew me back to OSP was the window to space. And it opened up in fine fashion two of the three scheduled observing nights. No planetarium or I-MAX film could capture the excitement I felt using a new scope and having clear, transparent skies on its first nights of ownership. Early, the treasures of Sagittarius glowed brightly in the unfiltered 22mm Panoptic. Framed nicely were the showpiece messier objects in that area: M22, M8, M20, M17 and more, almost obscured by the richness at the heart of our galaxy. I was able to enjoy extended viewing of M54, M69, and M70, three globulars that are often too low for viewing from my home. Turning from the Swan Nebula to the swan of Cygnus overhead, the Veil showed structure that was impressive in a modest 8-inch scope with an O-III filter. And so it went. My favorite Messier objects tumbled easily into view. Wandering observers enjoyed crisp high-power views of Jupiter and Saturn at the price of my dark adaptation. But their smiles made up for that.

I was able to probe planetary nebulae with several scopes. Howard Banich's and Mel Bartel's equatorially-driven large Dobs showed the central star of M57 at powers ranging from 1000x-2000x. Using 50 and 80-mm binoculars, I stopped every once and a while to scan the depth of the Milky Way glowing brightly like a ribbon still tied to the package of the universe. Globulars large and small were prey for the 24-inch scope nearby, and the famous secondary school teacher Bill Gates gratefully shared with those in line. Familiar galaxies like M81 and M82 joined together at low power in my scope, and led me to "find" new ones (NGC 2976 and 3077, I believe) in close proximity. M31 was an easy naked eye object, but that did not stop me from observing it and its companions with both binoculars and various telescopes. It truly showed me that the more you look, the more detail you observe. Drifting lower, M33 also was naked eye and calling for more power. The clusters of Cassiopeia offered wide-field satisfaction with owners of larger Dobs enjoying the Double Cluster's fit in my eyepiece. Thursday and Friday nights climaxed with shared views of the winter constellation of Orion. After propping my eyes open till 3:45 A.M., the first night, and 4:30 A.M. the second night (with only moonrise interfering), I was not overly disappointed Saturday night when clouds wiped out observing around 11 P.M. It gave me a chance for a hot cocoa and some needed sleep in my car, after chatting in the dark with my neighbors. Sunday, Chuck helped me pack up the scope in its trunk-like case and we unclipped the shiny wooden mirror box to stow as carry-on baggage for the plane ride home. As last year, the quiet joy of the amazing views had touched my soul, and that spirit was shared among friends old and new. Yet it seemed deeper in many ways.

Three peat?

So, on August 20, 1998 will I travel 12 hours one way to return to OSP? Absolutely! Going home might be the hard part. After the long flight, the trip there can include a scenic afternoon commute over the Cascade Mountain range. Returning along the winding roads to the airport may feature a sunset tour of the Columbia River Gorge in the growing shadows of Mount Hood. Yet, most of all, the scenes I want to revisit are my Oregonian friends gathered around the eyepiece filled with the deep sky delights offered by the panoramic high desert skies. My calendar is already circled.

President's Message

(Continued from page 1)
Secondly, there are several projects on which the club will be working during the year. I will have more details in a later issue, but there are two I would like to comment on here. Jeff Cook has agreed to head up the Star Party project which includes both the Astronomy Day Star Party(2 May) and the NOVA Star Party (26 Sept.). He has a lot of good ideas which should make this an interesting project and a good one on which new members could work. I am sure he could use all the help he can get. It is not too early to start planning for the 2 May event.

Another event that will be new this year, but I think has a lot of promise, is the new member observing session planned for the NOVAC Picnic (20 June). The plan is to dedicate that night's viewing session to any new members, and others as well, that would like help in setting up their scope, understanding the night sky or just being able to find the Constellations or particular objects when you what to. In short, this is your night. We will do whatever you want us to do to help you. Pete Johnson is heading up this project and can use your help and ideas as well.

This looks to be a very interesting and exciting year. There are many other events/projects in the works which I will discuss in later issues. Thanks to all the members who have volunteered to help. I know it is sometimes a lot of work, but it is fun.

// tilly

Address Change:

Editor Elliott Fein has a new e-mail address:

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A Portable 6-Inch Telescope

Barry Wolfe

In the summer of 1996, while perusing *Sky and Telescope*, I came across ads describing solar eclipse vacations to Aruba in February 1998. Having never viewed a total solar eclipse and considering the Caribbean a good place to be in February, I asked my wife if she wanted to do this for a vacation (No arm twisting there!). So, we sent in a deposit and are now anxiously waiting to depart in less than two months. Once the excitement of having made these plans settled down, I realized that, in addition to the novel experience of a total solar eclipse, this was by far the farthest south that I had ever been. Omega Centauri, etc. beckoned! My first thought was to take my 8x56 binoculars (and I probably will), but upon reflection I realized that this was a great opportunity to do something I had always wanted to do: Build a telescope!

As I am a member of the National Capital Astronomers, in addition to NOVAC, I was aware of the mirror grinding classes run by Jerry Schnall at American University (Fridays) and the Chevy Chase Community Center (Tuesdays). I went to the next Tuesday night session, the week before Thanksgiving (1996), bought a 6-inch mirror blank and tool, and with Jerry's expert direction, started grinding. My plan was to make a short-focus f/5 mirror and to build a two-truss telescope with a Dobsonian mount. Critical to the plan was the fact that the whole telescope (minus the optics) must come apart, pack in a suitcase, and transport unbroken, on an airplane. The optics (primary and secondary mirror) needed to end up in a small box to be carried on the plane as hand luggage. Three sources were of great additional technical help in this project: a web site called The ATM Page (www.tiac.com/users/atm), the book *Build Your Own Telescope* by Richard Berry, and Bob Bunge of NOVAC. I consulted each frequently. Jerry Schnall warned me that making a short-focus mirror was much more difficult than the normal "beginner's mirror" which is usually a 6-inch f/8. His warning proved to be entirely correct, as my mirror grinding went quite slowly compared to others in the class who started after I did, ground and figured their 6-inch f/8 mirrors, and went on their way. All the time, I would grind and measure, grind and measure, and grind and measure. This extra work was, of course, due to the fact that a short-focus mirror requires a much deeper "hole" to be ground out of the flat blank. When I finally got my mirror spherical, the first goal, it was late February and I had spent perhaps fifteen three-hour sessions grinding. Next came polishing and figuring, which I had seen my classmates do in 6-8 hours. However, once again, because I had a short-focus mirror, these processes were much more difficult and time-consuming. I kept polishing until the Ronchi test indicated a smooth mirror, and I kept figuring until the Foucault test indicated that my mirror was the required parabola to within 1/10 of a wavelength of light. These processes took me through the end of April, but it appeared by the bench tests, that Jerry had helped me make a good mirror which turned out to be an f/4.85, close to my original goal. Jerry aluminized it for $15.

At this point I faced the daunting (to me) challenge of building the telescope and mount. This appeared difficult to me as I had no wood-working experience or big power tools (such as a drill press and table saw). Jerry Schnall, however, came to the rescue once again. The workshop at the Chevy Chase Community Center has many wood-working tools and the workshop at American University has many metal-working tools. Using these tools, and with Jerry's expert help, I cut the wood for my mirror box (8"x8"x10", which can be carried on an airplane and stowed under the seat), rocker box, and tripod. With a few iterations, these each came out OK and assembled and disassembled in about 30 minutes. I then talked to Jerry about how to cut good circles of wood to use as altitude bearings. He introduced me to the lathe and we made two perfect 7-inch wooden circles whose edges I surfaced with Formica and attached to the mirror box with screws that allow detaching for transportation. The Formica surfaces of these altitude bearings ride on Teflon pads which I attached to the rocker box in the classical Dobsonian fashion. Similarly, the azimuth bearing was generated by surfacing the bottom of the rocker box with Formica which rides on Teflon pads attached to the top of a short (23") tripod. Although most Dobsonian telescopes do not have tripods, the 'tube' of my short-focus telescope was only going to be 30" long and to avoid having to be on my knees to observe, the tripod was added. Lastly, I had to consider the secondary mirror and focuser. In talking with Jerry, he convinced me it was not worth trying to make a secondary mirror, so I bought one from Orion. Jerry had made a single stalk support for such mirrors from brass, which I attached to a flat board along with an excellent 2" focuser I purchased from Astro Systems. I made two hardwood trusses that attach the focusing board to the mirror box. Using directions in Richard Berry's book, with modifications suggested by Jerry, I built a mirror cell and glued in the primary mirror. I bought some black rip-stop nylon, learned the rudiments of sewing, and made a shroud, supported by four threaded posts, that blocks stray light from entering the eyepiece. Finally, I was finished and it was the weekend after Thanksgiving (1997). One year of fun! But, did it really work? Using a laser collimator I have for my other telescope, I lined up the optics and with great trepidation I took it out into the cold November night and quickly found Saturn. All I could get was a blurry image! How could this be, after all the bench tests indicated I had a good mirror? Leaving the telescope outside, I went back into the house and thought about it. Having finally realized that the mirrors had just been taken from 76 degrees to 25 degrees, I decided to wait an hour for the mirrors to cool. Upon returning to the back yard and finding Saturn again, there now was a crisp image of the beautiful planet in the eyepiece. All those stories about letting your optics cool down are true! I wanted to see how this rich-field telescope would do on deep-sky objects, but since the limiting magnitude from my back yard is around 2, at best, I knew it was useless. Because we were planning a trip to my brother's for Christmas, and as he lives in the dark skies of the California desert near Palm Springs, I decided to do a road test of the whole scope and take it with us.

My wife, Jacki, our 12-year-old son, Andy, and the telescope, "Betsy", arrived safely in California on Christmas day. The next morning I assembled and collimated it, and at sunset took advantage of the proximity of Mars and Uranus (less than a degree apart and fitting easily into the 1degree field of the 9 mm Nagler at 82x) to show everyone five planets (including Venus, Jupiter, and Saturn). The real interest for me, however, came several hours later, when the sky got really dark, and the winter Milky Way could easily be seen from the backyard. Quite a contrast to my backyard! I was able to readily find several Messier objects, because the short focus of the mirror translated into an extremely wide field of view (1.8 degrees at 46x for the 16-mm Nagler). The great Orion Nebula was fantastic with or without a filter. The open clusters in Auriga (M36, 37, 38) were big and bright, as was M35 in Gemini and M41 in Canus Major. The double cluster in Perseus was fantastic, and it was the first time I had ever been able to get both clusters in the same eyepiece! I checked out the galaxies M81 and M82 in Ursa Major and they were easy, bright objects. Even the tiny globular cluster M79 in Lepus and the dim supernova remnant M1 in Taurus were easy objects that showed some detail.

All this made my year of work on this telescope a resounding success. My hopes of bagging many new southern objects from Aruba are high. The total solar eclipse almost seems secondary to me now, but I am sure that as the shadow approaches, it will be very exciting. I'll let you know.

Editor's Note

Elliott Fein

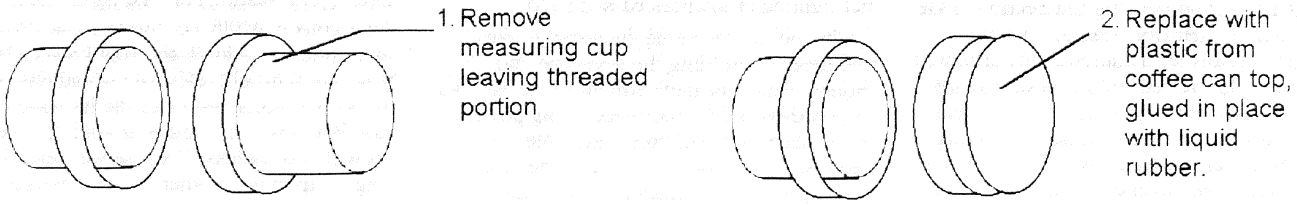
Please keep those articles coming in!

And a reminder, the 10th of the month preceding publication is the cut-off: Material that I receive after the 10th will appear in a later newsletter. Copy (in ASCII, please) for the May/June issue must be in my hands by April 10. Copy received on April 11 or later will not make it into the May/June issue.

Extra Eyepiece Storage from Detergent Caps

Ralph Kantrowitz

The current generation of detergent jugs comes with two kinds of caps, those with internal threads and those with external threads. I found by chance that these threads match, so the caps can be used to store odd eyepieces (or even filters) in individual cases (see diagram below). For filters, cut the measuring cups off both caps and replace with flat plastic; for long eyepieces, use both caps full length - no cutting or glue required! So far, I've tried caps from Cheer, Fab and Dynamo; other brands probably also work.



For Young Astronomers ages 8 and up

Adults: Please note that in the following article the *young astronomer* is instructed "with an adult nearby, light a candle."

The Colors of Orion

Marc DeFrancis

IMAGINE that you are a farmer, not just any farmer, but one of the world's first, growing grain along the Nile river in ancient Egypt. The pyramids have not been built yet, nor has anyone invented writing, and that means no calendars, either. But you need to be ready for that special week every year when the river floods and covers your dry, sandy fields with dark, wet muck. If you don't plant your seeds just after flood time, they won't grow. So, how can you know when to be ready? Can you find a calendar in the sky?

Here in North America, 6,000 years later, every winter brings the sky's brightest star, Sirius, into view. In ancient Egypt, this same star rose just before dawn at the exact time when the Nile was ready to flood, so those farmers kept a sharp eye out for it. Maybe, like me, those Egyptian farmers spotted Sirius by looking first for Orion, a constellation shaped like an hourglass and famous for its belt of three stars.

Many years after the Egyptians, the Greeks named the constellation "Orion" in order to honor a legendary hunter so huge he crossed the sea not by boat, but by wading. The two bright stars at the top of the hourglass are Orion's shoulders, and the two bright ones on the bottom are his knees. On a clear night you can see three dim stars above his right shoulder; that is the curve of his bow. (The stars of his head are even dimmer — can you spot them?).

Try this: draw your finger across the three belt stars from right to left, then keep going in a straight line until you hit a terrifically bright star. This is Sirius, and it's the brightest star in the sky all year long. The Greeks (and we) considered Sirius to be the collar (a diamond collar?) of Orion's hunting dog. If you check on Orion once every hour or so, you'll see how he moves westward through the night.
Question: is this hunter following his dog, or is his dog following him?

Star Science

Most people don't look at the night sky carefully enough to notice that the stars are not all the same color. Take a good look at Orion's four brightest stars. One of them (I won't tell you which) shines with a pink or orange tint. Why do you suppose that is?

Try this: with an adult nearby, light a candle and look closely at the flame. Most of the flame is yellow, but the color changes where it is hottest, in the spot closest to the wick. What color do you see there? Now blow out the flame.

If you're lucky, the wick will glow at the tip for just a moment. The glowing wick, of course, is much cooler than the flame. By now you should have seen three different colors: the cooling wick was o _ _ _ _ _; the medium flame was y _ _ _ _ _; and the hottest flame was b_ _ _. And it's not only candle flames that show color changes.

Try this: find a lamp or ceiling light that is turned on with a dimmer switch. Darken the room first, then turn the dimmer light on at its brightest. Now, watch the bulb as you slowly turn the dimmer all the way down. Just before the light goes out completely, the color changes. When there is only a little electricity in the bulb, what color does it glow?

So you see that not only flames, but any kind of energy produces light of different colors, depending on how strong the energy is. Since all stars, like our sun, are burning balls of gas, you can figure out whether that orange star in Orion (have you spotted it yet?) is hotter or cooler than the others around it.

By the way, orange stars are very old, and bluish-white ones are babies, full of young star energy. For a great example of young blue stars, use binoculars to check out the Pleiades cluster, just above the constellation Taurus, looking upwards from Orion's right shoulder.

If the stars burn like flames, you might still wonder, how come their colors all seem so nearly white to our eyes, unlike the bright blues and yellows of candle flames. Well . . .

Try this: after dark, close your bedroom door with the lights on and pay attention to the colors in your clothes, curtains, and so on. Now turn off all the lights, except a nightlight, and look again. You can still see where things are but, what happened to their colors?

It is not your curtains and clothes that changed, but your eye's ability to see colors in very dim light. Like your darkened room, starlight in our night sky is many millions of times weaker than daylight. Our eyes just can't recognize the many star colors, even though the colors are beaming right at us in nearly every hue of the rainbow.

* * *

Parents note: For more ideas and experiments along the same lines, check out David Levy's excellent new book, *Sharing the Sky* (Plenum, 1996) and Heather Couper and Nigel Henbest's *How the Universe Works* (Reader's Digest, 1994).

Light Pollution Workshop

Brent A. Archinal

[Ed. note: These are excerpts from a report that appeared on the NOVAC (Internet) list server]

This is a report on the Virginia Section of the IDA (International Dark-Sky Association) meeting held at the Arlington Planetarium on November 1. This is a subject of critical interest.

Thanks to Bob Bunge, who made useful comments on a draft of this message.

The meeting had a wide range of attendees, including amateur and professional astronomers, lighting engineers, architects, Arlington County, and Arlington County School Board planners, an Arlington County police officer, planners and police officers from Henrico County (Richmond, VA), and a number of private citizens interested in street lighting. It was good to see so many public officials at such a meeting, but it was odd that those with an astronomical interest were actually in the minority. It was also disappointing that except for Arlington County, there were apparently no representatives from other local jurisdictions (Fairfax County, Maryland, or the District).

Phil Ianna, a University of Virginia Professor of Astronomy ran the meeting.

Kim Vann, an environmental planner from the police department of Henrico County, described the planning work that she did, making studies and recommendations regarding environmental changes that home owners and businesses could make to improve safety and security. Using well placed, properly shielded lighting was one aspect of this. She said that she was still learning a lot about light pollution issues, and welcomed the information being provided by the IDA. She also said that a committee now exists in Richmond that is writing an outdoor lighting ordinance. It was made very clear that without such local ordinances, little can be done to prevent poor lighting practices.

Mark Schuyler, a lighting engineer, provided information on how outdoor lighting is (and it should be) designed and installed. It was pointed out that such work can be quite complicated, but lighting is often an item where corners are cut and the resulting installation is done poorly.

George Eslinger, the director of street lighting for Los Angeles, was unable to attend. However, a new video he has produced was shown in his absence. This video is well done and presents much general information on astronomy and Mt. Wilson Observatory, as well as describing good street lighting and the efforts of Los Angeles to improve lighting there. Of some quarter million street lights, around 85,000 have been switched over to proper full-cutoff fixtures. I think this is quit heartening, since if the largest city in the U.S. can do this much to improve street lighting, at least there is hope for us locally. The IDA is working on making copies of this video generally available, and I'd certainly recommend that NOVAC obtain a copy to show as the main program at a meeting.

Chris Luginbuhl of the U.S. Naval Observatory in Flagstaff, AZ, was also unable to attend. However, Phil gave an overview of some of the work that Chris has done, getting strict lighting ordinances passed in Northern Arizona, mostly based on the unusual criteria of limiting the amount of light per acre. This was primarily to provide protection for USNO and Lowell Observatory installations, but provides benefits all over northern Arizona in terms of better quality lighting, lower electricity costs, less glare and therefore improved safety.

John Thomson, an amateur astronomer from Front Royal, VA, described his successful effort to have a lighting ordinance passed in Warren County. The ordinance was passed only two weeks before the meeting, and assures, among other things, that new installations will be full cutoff fixtures. This is great news; we can now point to this ordinance as one that should be adopted by local governments in northern Virginia. Further, it provides at least some protection for our observing sites. Some of you may recall that when I presented photographs of Comet Hale-Bopp from Skyline Drive earlier this year, I pointed out that Front Royal, with its old style street lighting, had the potential to be the major source of light pollution in the Shenandoah valley. Now, the situation in Front Royal may not get worse, and may get better. (Winchester and Harrisonburg are still major and increasing sources of light pollution in the valley; Winchester directly affects our Savage observing site).

Bob Gent brought us up to date on current IDA activities. Bob, the IDA Public Relations Officer, recently took over the day-to-day operations of the IDA, as a volunteer working in the IDA office in Tucson. Bob is an amateur astronomer and retired Air Force officer. He mentioned the increasing work that IDA is doing to support requests for information. Priority has been given to requests for information on lighting ordinances, and to requests from the media for information; the fulfillment of these requests has been quite fruitful. There are a number of recently passed municipal and statewide (e.g., New Jersey) light pollution ordinances across the country, and there has been a lot of recent media coverage (NPR and ABC news) of light pollution. On the down side, he reported that a mailing sent out to Astronomical Society of the Pacific members had an only 2% return rate! One would think that the importance of the IDA work to astronomers would be so important that all would be members, but this sort of apathy unfortunately seems quite common. Bob once again pointed out that IDA only has about 2200 members, but with more members a full-time staff could be supported and IDA's actions to fight light pollution would really blossom. We can only hope that more of the 300,000 active amateur astronomers across the country start to support the IDA.

Thinking back over the meeting, I've come up with the following items:

- An increasing number of service stations just south of the Crockett Park observing site are putting in very bright "under-canopy: lighting. Some of this lighting is at the level of 80-120 foot-candles. The recommended value for parking lot lighting is a maximum of 2 fc. Although the recommended values for gas stations may be higher, these stations are probably over-lit by a factor of about 40 or

(Continued on page 6)

The 1998 NOVAC Messier Marathon

Jon Stewart-Taylor

In France during the 1700's, Charles Messier was hunting for comets. He kept finding fuzzy things which weren't comets, so he made a list of them to avoid wasting his time on them again. The list grew to about 110 objects, and includes most of the finest star clusters, galaxies, and nebulae visible from the northern hemisphere. It turns out that the objects on Messier's list are distributed in the sky so that in early spring it is possible to observe all of them in a single night-long observing session: a Messier Marathon.

Why would you want to do that? Different people have different reasons. Some like the sense of accomplishment. You have to know the objects and their locations very well to do it. In addition, the objects represent a wide sample of the objects in the sky. One can compare objects of the various types to each other, and gain a better understanding of how the universe is put together. There's also a kind of comaradarie which builds up between observers who are lunatic enough to stay up all night collecting faint fuzzies. Finally, everyone who participates gets a certificate, and is recognized in the NOVAC Newsletter and web pages.

The 1998 NOVAC Messier Marathon is scheduled for March 27/28/29 at C. M. Crockett Park. These dates are regular observing sessions, and you are welcome to try the marathon at any of the other NOVAC viewing sites. However, Crockett is the best site for the marathon due to its dark skies and wide horizons (both of our 1997 champions, Bruce Miller and Craig Tupper, were observing at Crockett when they bagged 105 Messier objects last year). If you have web access, you can get more info and the checklists at:

http://astro.gmu.edu/~novac/mm.html

There will also be checklists available at the March meeting.

Please come join us at Crockett! Even if you don't have the best scope in the world, you don't have a lot of experience, or if you can't stay up all night long, you can try a mini-marathon of 25 or 50 objects. If you do participate, please send your results to Jon Stewart-Taylor via e-mail at jcst@tripod.net, or phone at (703) 724-2460, so we can get you your certificate at the April meeting.

Starting Right in Astronomy

(based on the slides from my talk)

Jon.C.Stewart-Taylor

Unaided-Eye Observing is the place to start. Every clear night is a chance to observe. The sky changes slowly with the seasons in a year-long cycle: observing once per week allows learning the entire sky. Start by learning the brighter stars and constellations.

How to find things in the sky? First, get oriented (figure out where north/south/east/west are). Then, find a landmark: a bright star, the Moon, or a planet. Use angles and distances to measure from your landmark to your destination: about 1° for a finger tip, 10° for a fist, 20° for a hand span. Planets can be confusing because they move around. Colors can be important clues to identifying stars and planets.

The Moon is an ideal object to start observing. It's easy to find. You can see more detail on the Moon with unaided eye than you can see on any planet with any amateur telescope. You can watch its motion through sky, and observe its phases. Conjunctions between the moon and bright planets or stars are very beautiful. Eclipses of the Moon are always worth watching.

The planets are also good subjects for unaided-eye observing. You can follow their locations and movement among the stars. Their colors are important clues in identifying them, and also make them very pretty. The book *Seeing the Sky* has many lunar and planetary observing projects using just your eyes.

Meteors are especially good for beginners because something actually happens. There are about five sporadic meteors per hour every night. There are also meteor showers, which peak on certain dates each year, and yield many more meteors (see the NOVAC observing calendar). Meteors appear to originate from a particular place in the sky (the radiant), and are best under dark skies. Dress warmly, with layers you can add or subtract, and use a sleeping bag or lawn chair rather than stand.

Beyond Unaided-Eye Observing

Binoculars are a good next step. They take you about half way between unaided eyes and a telescope, and are very quick and easy to use. They help you to learn the sky, and teach important skills to be used with finders or Telrads. 10x50 may be best for beginners under suburban conditions (opinions vary), but just about any binoculars you already have will probably give tolerable results. To get the most out of binoculars you need good charts. The main drawbacks are low magnification, and it's hard to share a view with other people unless you put the binoculars on a tripod.

Telescopes

If you MUST get a telescope without trying unaided-eye or binocular observing first, or if you HAVE to get one at the same time, please remember: the best telescope is the one used most often. To help ensure your scope is usable at all, DONT BUY A TELESCOPE AT A DEPARTMENT STORE (or through a deep-discounter catalog, either). Think about where you want to use it, where you're going to store it, how far you have to carry it, and what you want to observe, so you can get one that's not too big, not too small. Do lots of research: buy or borrow Harrington's *Starware* (it'll be less than 10% of your total investment, and will really help you choose the best scope). Go to star parties or observing sessions so you can try before you buy!

Recommended First Telescope

If your budget is less than $200, binoculars and a tripod. If it's $200-$400, wait until you can spend $400-$500. If you really can't wait, get a high-quality 60mm refractor (make sure its got 1.25" eyepieces and a finder which can be aligned with the main scope). If your budget is $400 and up, get a Dobsonian reflector 6"-8" aperture, f/5-f/8 focal ratio. Save about 1/3 of your money for eyepieces, finders, charts, etc. And I strongly recommend a Telrad unit-power finder.

Summary

Observe often, to help learn the sky. Binoculars are a good first instrument. Everybody's different, so my recommendations may not be the best for you. Try lots of telescopes before you buy anything. Above all else, enjoy! Amateur astronomy is about enjoying the beauty of the heavens. I've tried to share what I've found works for me, but whatever works for you is the right way.

(Continued from page 5)

more! This is becoming a common practice all over the U.S. as ordinances limit signs, but not poor lighting. If NOVAC wants to continue to use Crockett Park, members must begin working for local and statewide ordinances to protect against this sort of light pollution.

- There is some amazing news from General Electric. Over half of the outdoor lighting they now sell in the U.S. is full cutoff lighting.

- The wonderful news from Front Royal (see above) is a fine local example of what can be done about light pollution, in this case apparently, by essentially one person.

- There is also good news from Maryland: the state has begun to install high-quality full cutoff lighting along the I-270 corridor, and on Rt. 50 just east of Annapolis. Now if we could only get Virginia to discover full cutoff lighting.

- Along those lines, Phil Ianna reported that his delegate to the VA House of Representatives will co-sponsor state-wide legislation on light pollution. This would require all state agencies to use quality lighting such as full cutoff fixtures. HOWEVER, she says she is not going to do so unless there is state-wide support for it. In other words, NOVAC members need to contact their own state representatives and senators to encourage them to support or sponsor such legislation. With strong support from the

(Continued on page 8)

Hot Winter Night!

Bill Jensen

After months of waiting for a clear night during our scheduled observing times at Crockett, January 31 proved to be one hot night for the club. As Ralph Marple estimated, approximately 40 people spread out over the upper observing area and the lower cul-de-sac to have a rare treat. Compared to my native Wisconsin, the lack of snow has not made for easier observing, with all the clouds and rain that new-moon weekends seem to attract. But the ark departed for a while, taking the cloudbursts with it, and an El Niño-less night was a real breath of fresh air. Make that c-c-cold air. And even colder ground. Three layers, a hat, hood, pants and sweatpants, and two pairs of socks. Still not enough for my toes, it seemed. I had plenty of company in the cold toe category. But heck, after a while you don't feel them at all, and what's more important, a few toes or looking at messier objects? Besides, the warm breezes of late January in 20 degree temps are sooooooo refreshing.

Crockett does not mean just darker skies than Fairfax County. It's a gathering point of the patient more experienced observers walking the rest of us through some of the best of the sky. Much friendlier than a computer, folks like Brent Archinal put up with interruptions from guys like me to be pointed to M78 in Orion (which is easy to find once Brent told me to go 1/2 way from M42 and Betelgeuse.) or to a faint comet like Hartley 2 (Hartley-Good?). Other objects just needed a little while for me re-acquire, since it takes me a little while to figure out the sky at Crockett, especially after a few months. I promised myself I would not try to check off objects that I have not seen. Instead, I was going to spend lots of time on old friends like M31 and its companions M32 and NGC 205. Of course, while the moon was still up, Saturn and Jupiter were good targets. I enjoy the open clusters of winter, including M37, 36, and 38 in Auriga, but the Double Cluster is still my favorite, and it did not disappoint. Moving around to Ursa Major, M81 and M82 fit inside the 22 panoptic field of view nicely. But I also was able to revisit nearby galaxies NGC 3077 and 2976. The nice thing for me about the Messier objects is that many are close to other targets that I can (later on) identify from a star map. Spending more time on them, I am able to see more detail on these fainter galaxies clustered nearby.

Staying in Ursa Major: the dark skies made the difference in finding the Owl, M97, for the first time. Using a UHC with a 9mm Nagler was impressive. I cannot see this object from the velvety dark skies of Springfield. I also moved the 22-mm eyepiece a nudge and fit both M108 and the Owl inside. Nothing like these double Messier treasures in Ursa Major.I did not stay long enough for the views of M101 or M51 to be anything but dim, but they were still visible.

(Continued on page 7)

Observing in Montgomery County Maryland

David Bonnell

Following up on the newsletter article reporting a group of NOVAC'ers (and others) working on a dark-sky site in suburban Maryland, within easy (one-half hour or so) drive for those in or near the I-270 corridor, this article is a report on the first sessions at Little Bennett Regional Park (LBRP). It is starting to happen!

After a false start Saturday, January 24 (partly cloudy predictions turned into snow!), the Maryland group e-mail hummed, and a crowd showed up the next day at dusk at the "horse lot" at the top of Little Bennett Region Park. Due to mud on the exit road, the first arrival (Jim Ross, I think), went to the back, upper part of the field. With snow on the ground and the cold, horses and byproducts were not an issue.

Before the first star showed, there were six cars in two rows, and an impressive array of hardware being unpacked. The attendees:

- Jim Ross, with an 8" LX200 and laptop control,
- Len Lipton, with an 8" Dob, handmade, and the talk of the evening - really nice optics,
- Mike Hubbard, with an 80 mm refractor - a good choice given the sky,
- Bill Bryson, with a 15" Obsession Dob,
- Barry Wolfe, with a 15" Obsession Dob + computer; and
- David Bonnell, with a 10" LX50.

The sky was not very cooperative, as expected, but that was not the most important issue in this inaugural event. At deep twilight, about one-half of the sky was clouds, and high haze (as predicted) was reducing visibility in the clear areas by more than 1 to 1-1/2 magnitudes. We estimated that 4th magnitude was visible, 4-1/2 not. One of the early targets, as the sky closed down even more, was Saturn. The seeing was extremely steady, supporting magnifications of over 40D easily, and almost no visible "boiling." Unfortunately, the haze made things difficult. There were comments indicating that Cassini's division was difficult, but the ring shadow and a rather dark band in the northern hemisphere were easy. The lack of any heated structures near by, the tree line confining circulation, and the uniformity of the grassy fields all around really make steady air only dependent on the atmosphere, not the surroundings. We all felt that the air stillness (good seeing) exceeded expectations. In over a year, I have only once or twice seen skies so quiet. Here, it should be common.

The sky really clouded over, then, but the camaraderie was up to it, we chatted, compared notes, and waited. In another half hour, large open areas of the sky reappeared, and even with the haze, M37, 36 & 38 were easy popular targets. It was a delight to go from scope to scope to compare views. Each had its advantages. There was time for some individual work — I heard mention of success with M81/82, and I was able to hunt down the dim little cluster in Cass; M103. M42 and the trapezium stars were a nice sight, as well, among other objects. The northwestern sky was dark enough that Deneb was still above the sky glow. If there hadn't been so much water in the air, one could have worked both winter and fall skies easily.

As the night moved on, the cold became a problem for some, especially our feet. (The wind was very light, but we were walking around in snow! And the air temperature was in the mid 20's (F). Those with industrial strength boots toughed it out until the cloud cover got too bad, about 9:30. The most common comment, in spite of the troublesome sky was - "it was definitely worth it" (especially as home was only one-half hour away for most!) Given the rather distinct lack of clear sky with no moon for the last couple of months, everyone wanted some opportunity.

The really important result was how easily the e-mail communication scheme worked. By about 3:15 p.m. Sunday, there was little doubt what the sky would be like, and who was coming, anyway. I think it safe to say that a good time was had by all, even though the cloud and haze made the sky only marginal.

The next weekend offered much more ideal conditions. Predictions indicated some water vapor in the air, but that the sky would just continue to improve as night fell on Saturday, January 31. And it did. Jim Ross, Steve Blake, Dale Kiesewetter, Ralph Kantrowitz, and Mike Hubbard gathered at the LBRP horse trailer parking lot Saturday night for an evening of cold-toes stargazing. Glenn Cumings, the Park Naturalist from Black Hills Regional Park also joined us. We finally got a chance to see how good the site is, and it is very good. The sky was clear, but initially, not perfectly steady. We could see a bit of the Milky Way and several Messier objects naked eye. It's not quite as dark as Crockett, but it doesn't have an annoying airport beacon and it's not a two-hour drive from Rockville either. Mike Hubbard estimates that it is as good and probably much better than Parsell's field on a good night.

The evening, "'Twas lovely." The waxing crescent moon didn't bother us much, and the transparency and seeing were excellent. A reasonable bunch came out. Again we set up at the far end of the field, although we may want to change this when the horses are more active <grin>. As usual we oohed and ahh-ed over each others' scopes, pointing out various interesting objects to the group. The usual range of equipment was there, too, including Ralph's 5" APO refractor, Mike's ShortTube 80 refractor, Steve's 8" Celestron Starhopper Dob, and Jim's 8" LX200, plus Glenn's C90 spotting scope (actually he spent most of the time lying on his back enjoying the scenery). Planetary nebulae seemed to be favorites that night; following Steve's lead, we all zeroed in on the Eskimo/Clown Face (NGC 2392) and others. The old favorite open clusters M36-38 got their share of viewers, too. So, as they say, a good time was had by all. Glenn, by the way, tells us that seeing will be pretty good from the campground side of LBRP, too, but camping doesn't start until April. For now, the horse trailer area seems to be quite adequate.

Viewing of deep-sky objects that night included great views of M1 (you could see the irregular outline instead of just a faint smudge), the Eskimo Nebula NGC2392, the Auriga open clusters M36-38; and with his 5" APO at about 200X, Ralph started to see faint stars in NGC2158, and Mike got his first view of Saturn's Cassini division through Ralph's APO. M1 was found easily in Mike Hubbard's ShortTube 80 and we managed to find M79 in Lepus with this little scope. The sky to the northeast was only fair, probably due to Frederick lights, but the rest of the sky was great that night. M44 and the Double Cluster were naked eye objects and all the stars in the Little Dipper were visible.

In general, it appears that the Little Bennett Regional Park site is a promising alternative to Parsells for those in suburban Maryland, particularly toward the zenith. Hopefully, other club members in the area will consider this alternative.

Contributors to this report: Steve Blake, David Bonnell, Mike Hubbard, Ralph Kantrowitz, Jim Ross, and all those who are supporting the effort to establish observing sites in suburban Maryland.

Hot Winter Night!

(Continued from page 6)

Yes, there is still more on my list that I noted, but notes don't capture the fascination of M42/M43. I gave myself the gift of spending almost an hour with and without the UHC at different magnifications, going as far as 160x. The night revealed color to me, plus tendrils of gas over several eyepiece fields. M43 was so much larger in the darker site.

One thermos of coffee, ten temporarily missing toes, and midnight come and gone, the cold won out over my observing fun. A few hardier souls (and perhaps soles?) remained. But as I drove home rediscovering my feet, the views of a hot January night lingered on into February.

Minutes of the January Annual Meeting

Ronald W. Cook

1998 Jan 14 Combined monthly Board Meeting and Annual Meeting at the Arlington Planetarium.

7:30 P.M. Tilly Smith, newly elected President of NOVAC, introduced everyone to the condiments brought for this public board meeting. Grazing by members was in earnest for about 15 minutes when Tilly, having passed out the agenda, brought the meeting to order. About 20 members gathered to discuss NOVAC and future plans for the club.

The new board officers introduced themselves:
President Walter T. "Tilly" Smith
Vice-president "Pete" Johnson
Secretary Ron Cook
Treasurer Pedro Martinez
and the trustees then introduced themselves:
Nicole Mastej
Craig Tupper
John Avellone
Jeff Stetekluh

Tilly discussed the agenda as a plan to be mulled over for several board meetings and the entire meeting progressed step by step through the agenda.

NOVAC Meeting Agenda
1. Introduction
2. Announcements
3 Officers Reports
Vice President
Secretary
Treasurer
4. Business Meeting
Old Business
New Business
5. Observing Report
6. Sky Tour
7. Program
8. Adjourn

Public programs were discussed.

This year the club will emphasize everyone helping new members to get started.

Project coordinators are being sought to handle events like Astronomy Day, NOVAC's picnic, the NOVA Star Party, and to handle sites like Crockett and Parsell. Savage already has such a person in Ted Roach.

Tilly mentioned the excellent job Elliott Fein is doing with the newsletter, and Jon Stewart-Taylor with the Web Site. There was discussion about getting greater distribution of the newsletter, maybe putting it on-line. Jon mentioned potential copyright problems.

Bill Jensen suggested we not overburden Elliott.

The newsletter was recommended to be mailed to school science departments to get kids more involved. Special editions to that end were also suggested.

Pete Johnson mentioned the web site as a passive medium for advertising, whereas Tilly said the newsletter is more active and can be mailed to schools, distributed at public functions. Prizes could be offered for school papers.

Marc DeFrancis suggested an article reviewing books for inclusion in the newsletter.

Ron Cook recommended that the membership directory should, because of accelerated club growth, be published semi-annually. Also, that a "NOVAC Network" list of people to contact for various club-related topics should be republished.

Observing reports should be in the newsletter whenever members go observing. That is the purpose of the club and encourages others to do likewise.

Tilly brought up the proposed budget for 1998. Pedro Martinez made some comments and Tilly remarked on the fact the budget was considered conservative. Also, that incoming funds would be spent on the budget without affecting previous club balances. The (pie chart) summary of what members get for their $18 membership fee was noted.

Tilly said the club would purchase an IDA (International Dark Sky Association) membership.

Jon Stewart-Taylor pointed out the AL membership is a real bargain through the club at $3.50, whereas an at-large membership is $20.

Tilly mentioned communications with the AL needed to improve.

Brent Archinal and Tilly Smith discussed IDA functionality.

Discussion of NOVAC's Calendar of Events involved ironing out what events were on what dates and a schedule that would soon be generated. Jon recommended a full week reservation for the Messier marathon. Ron brought up a somewhat diversionary topic of writing dates in the ISO manner YY-MM-DD and Tilly steered the discussion back to the calendar.

A new name was sought for the NVTM (Northern Virginia Telescope Meet.), as well as new features, e.g., a public booth and perhaps a small astronomical side show for the public might be part of future public meets. An increase in the number of star parties is desired, but energetic project coordinators are required who can be given a small budget.

Pete mentioned the next two speakers have switched schedules, namely he will be January's speaker and Al Boldt, February's.

Ron mentioned that we needed to continue looking for new sites, and Pete Johnson and John Avellone, who had both gone to the potential new observing site at Richardville, VA, gave their opinions of its potential. The abandoned Nike site was discussed for pursuit as an observing site.

Having a telescope at the monthly meeting was mentioned as a good idea.

People are needed to do the "Sky Tour." Jon offered to do the next, after Bill Burton?

Nicole Mastej wanted to do the light-pollution survey on a biannual basis and suggested methods to accomplish same via computer.

Tom Deitz's offer of conditional equipment to be shared by the Smithsonian as well as potential use of the Einstein Planetarium for larger than normal NOVAC needs was discussed. Tilly wanted to attach some priority to bring to fruition a permanent NOVAC site to house the 14" scope that was offered.

Ron recommended the acquisition and use of solar pictures from Kitt Peak, weekly, as an addition to local TV weather reports with a "sponsored by the Northern Virginia Astronomy Club and Kitt Peak." Paul Monte-Bovi indicated he might be able to help.

I apologize if I missed anybody's input or suggestion.

The meeting adjourned about 9:30 P.M. with Tilly specifying that the next board meeting would be at his house 1998 Feb. 12, 19:00.

Submitted by Ron Cook,
Secretary

(Continued from page 6)

Northern VA legislators from our area, such legislation has a good chance of passing. But it's up to us to do something to get the ball rolling.

I was quite surprised that so few NOVAC members attended this meeting. I understand that perhaps the details of the light pollution problem are not of interest to all, that it was a Saturday and some people work or have plans with their family. Still it seemed surprising that only 7 or 8 out of 250 or more NOVAC members were able to attend, even at the very place where NOVAC normally meets! This was just after a flurry of messages on the NOVAC e-mail list regarding various light pollution problems. I really don't know what the reasons are for such a lack of interest, but I hope there is more real interest than that in NOVAC in fighting light pollution and poor lighting and protecting the night skies of Virginia.

So where do we go from here? If you aren't an IDA member, then please JOIN THE IDA! Let me know (evenings at 703-237-0201 or e-mail at baa@casa.usno.navy.mil) and I'll mail you an IDA membership application. Or check out the IDA web page at http://www.darksky.com or write the IDA (Bob Gent) at SaveOurSky@aol.com. Beyond that, if you know a local politician, whether on a town or county council or in the Virginia legislature, please ask him/her to enact ordinances and laws to ensure quality lighting in Virginia. IDA has plenty of examples of ordinances and laws available if needed. If you don't know a local politician, perhaps it's time to meet one!

We can do something about light pollution to protect our security, safety, environment, and night sky. Let's do it!

Dinner Before the Meetings

Brent A. Archinal

At our February dinner get-together we celebrated our third year of dinner before the meetings. The *Santa Fe Cafe* even provided us with free appetizers, so this was definitely the dinner to make! By the way, I did have it wrong it my column in the January-February newsletter this indeed was our third anniversary, not our second (one of these days I'll learn to count past one...).

And of course we're still continuing to get together before the regular NOVAC monthly meetings. This is your chance to meet fellow members at somewhere other than in the dark at Crockett Park or at a busy meeting. The upcoming dinner and meeting dates are Wednesdays, March 18 and April 15. Come and tell us about your eclipse trip - although the March 18 meeting itself will also be dedicated to that subject.

The place to meet continues to be the *Santa Fe Cafe* in Rosslyn. You should plan to arrive at about 5:45 P.M., in order to have time to make it to the regular meeting at the Arlington Planetarium at 7:30 P.M. This is particularly true as we've been having larger and larger groups of members attending lately. The *Santa Fe Cafe* is a nice Mexican restaurant with good food, usually some worthwhile specials (crab cake quesadillas!), and reasonable prices, although credit cards are not accepted. Smoking is allowed in one part of this (large) one-room restaurant, but so far NOVAC members have not been smoking and the few others dining at that time have rarely smoked. If you do arrive first, we would appreciate it if you'd try to sit in the front in the non-smoking section.

Directions: The *Santa Fe Cafe* is located at 1500 Wilson Blvd, in Rosslyn, with entrances off of both Wilson Blvd. and Clarendon Blvd. This restaurant is easily found, just west of "downtown Rosslyn", on the southwest corner of Wilson Blvd. and N. Oak Street, where Wilson splits becoming Wilson one-way west and Clarendon one-way east. From I-66 east, take the Rosslyn exit to Lee Highway, and turn right at the second light onto Fort Myer Drive. Go two blocks and turn right onto Wilson, and the restaurant will be one block ahead on your left (on the corner across Oak/Clarendon from a big outdoor sculpture). On-street parking is usually available in front of the restaurant, on the other side of the street up the hill, or around the long block (make two left turns) on Clarendon just before it ends by the restaurant. However be sure to feed any parking meter if you arrive before 6 P.M. This location is also quite close to the Rosslyn Metrorail station.

Reservations are not necessary, although it helps a lot to know who's coming so we'll know how big a table to get. We've sometimes been filling a pretty large table lately so this information does prove useful. Also should it be necessary to cancel, I can let you know. That's never been the case yet, but who knows what the weather will bring. So if you know you're coming or if you need a ride to the meeting and back to the Metro, or just for more information or directions, please give me a call (evenings) at 703-237-0201.

You can also e-mail me at baa@casa.usno.navy.mil.

See you at dinner!

Minutes of the January General Meeting

Ronald W. Cook

1998 Jan 21 NOVAC General Meeting at the Arlington Planetarium

5:30 P.M. About twelve members gathered at the Santa Fe for pre-meeting social activities, including dinner and discussion.

7:30 P.M. Tilly Smith, newly elected President of NOVAC, called the meeting to order, mentioned the previous week's board meeting, and began discussing the club's "Schedule of Events" which are on the web page and in the newsletter.

Observing dates were decided at the Board Meeting and will be published in the newsletter and web page.

Steve Blake recommended a Messier Marathon book.

Jon Stewart-Taylor recommended two books: *My Place in Space,* a children's book, and *The Stars* by H. A. Rey

Bill Jensen offered a leftover Astronomical Calendar and mentioned the upcoming NE Astronomy Forum near Ithaca, NY.

Bill Burton brought up the list-discussed NOVAC passes. Their availability from Pedro Martinez, Treasurer was noted.

Jim Fitzgerald, ALCOR, mentioned an AL program for young astronomers, and the AL Convention, Frenchlick, Indiana July 21-25. Officer's positions in the AL are open. The AL has been advised of NOVAC membership for distribution of the AL Reflector. Jim brought various AL materials and distributed same.

Bill Burton mentioned that the Fairfax Co. Science Fair was in need of judges and he was not able to attend.

Officers reports:

Pete Johnson mentioned plans for the solar eclipse at Aruba.

Ron Cook mentioned that he used a recorder to help with the minutes.

Pedro Martinez mentioned the $8,861 balance and that he was still looking for an auditor.

Tilly Smith and (recent President of NOVAC) Brenda Jones, discussed NOVAC's nonprofit status with regard to taxes.

Ron Cook showed the downloadable models of the Galileo & Casinni spacecraft that are available on the web.

John Avellone told of the potential new site west of Fredericksburg for which organization he is now responsible.

Other Business

Tom Dietz, NASM curator and member of the club, mentioned potential joint equipment usage and sites, in particular, the use of Sky Meadows as an observatory site for the C-14 that NASM will conditionally make available to NOVAC. Potential use of the Einstein Planetarium for some joint programs having larger attendance was mentioned.

Bill Burton told of the new Louden Co. Park, out in Round Hill, on Rt. 7, which has plans for either an astronomy-viewing platform or an actual observatory. Development is by the Oliver Carr Corp., Joe Donovan, manager. The observatory would be built on an old silo. Bill showed some site plans of the 200-acre dairy farm and discussed design considerations.

The NOVA Star Party will be managed by Jeff Cook this year. Jeff told of a sign-up sheet for those wanting to help, and solicited ideas. Advertising needs a four-month lead. More daytime activities are planned: a demonstration telescope, possibly assigning a member to manage sub-group activities, concessions, possibly some radio astronomy, a CCD demonstration, and lastly, a light saber to point out sky attractions such as Andromeda and other constellations, etc.

David Bonnell talked about some "tiny little pockets" of suitable observing he has found for the Montgomery Co., MD vicinity. Black Hills Regional Park was mentioned. They are mainly interested in close-in, rapid-access sites for those clear nights that occur at inopportune times, i.e., during the week. Sugarloaf was checked out, but the tree line is objectionable. Sites like Parsell are sought for their area.

Jeff Stetekluh gave the Observing Report, mentioning nights reserved at the various observing sites. The eastern-seaboard Space Shuttle/Mir restocking mission was mentioned, with additional information provided by Brent Archinal. The NEAR interplanetary spacecraft glint on its way to the asteroid Eros was discussed. Observations of both events were expected to be prevented by poor weather conditions. The Observing Report is now available as a handout.

The Sky Tour by Bill Burton was a preview of what we will see in the sky this year. Bill also gave a short presentation, with drawings, of our position in and perspective of space and what to expect to see at different times of the year.

It was 9:15 P.M. and Tilly inquired about continuing. The meeting was adjourned.

Attendance: 54

Submitted by Ron Cook,

Secretary

NOVAC Notices and Benefits

Discounts on *Sky & Telescope* and *Astronomy*.

As a member of NOVAC, you can get astronomy magazine subscriptions at a discount. To obtain *Sky & Telescope* for $27.00 (instead of the standard $36.00), make your check out to "Sky Publishing Co." You can subscribe to *Astronomy Magazine* for $24.00 (one year). Make your check payable to "Kalmbach Publishing Company". In each case, note on the check: "new subscription" or "renewal." If a renewal, include your customer number. Send your check to Treasurer Pedro Martinez, Jr., 6319 Anneliese Dr., Falls Church VA 22044.

The treasurer will send the checks in to Sky Publishing and Kalmbach once a month, on the first of each month. To have your renewal included, be sure to have it in his hands by the last day of the preceding month.

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.

There are no special 10% discounts offered on publications from Kalmbach Publishing, but read what follows.

Discount on Books

NOVAC is participating in the discount book sales program offered by Kalmbach Publishing. They will sell our members any astronomy-related book in their catalog for 25% off the list price when we send in a group order. Nicole Mastej is coordinating the sales. If you are interested, please see her at a meeting, or call her at home (703) 435-8724 to place an order. Make your check payable to "NOVAC" for the price of the book minus the discount, when you place the order. We anticipate doing this 3 - 4 times a year if demand warrants.

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.

One telescope is a Celestron model SP-C6 on a Super Polaris German equatorial mount and wood tripod. It will readily fit disassembled in any car, is easily transported, and can be set up quickly at remote observing sites. The telescope comes with Orion Ultrascopic 10mm and Meade MA 25mm eyepieces with 1.25-inch barrel sizes.

The other telescope is a homemade 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 a telescope you will need to show your NOVAC observing pass and leave a $500 (for the Celestron) or $250.00 (for the Dobson) security deposit. To borrow the Celestron, contact Doug Mistler at (703) 437-0513; for the Dobson, contact Bob L'Hommedieu at (703) 978-0946. 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 telescope 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 borrow books, see NOVAC Librarians Pedro Martinez or Craig Tupper 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 1997

Observing at Savage Farm, C.M. Crockett Park, and Nichlason site: see the back cover of this newsletter.

Observing at Parsells Field: any evening.

General Membership Meetings

General Membership Meetings are held at the Arlington Planetarium, 1426 N. Quincy Street, Arlington, VA, on the third Wednesday of every month. To reach the Planetarium, take Interstate 66 to exit 71 West, North Fairfax Dr. (Rt. 237). Go east on Rt. 237 to the 5th stoplight, N. Quincy Street (about 0.8 miles). Turn left onto N. Quincy Street (at the funeral home). Go 6 blocks (about 0.5 miles). The planetarium is the low white domed building on the left.

Trustee Meetings are held the Wednesday 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 On-line

NOVAC maintains an e-mail mailing list. Messages sent to the list include reminders about scheduled observing sessions, announcements for unscheduled sessions, requests for quick observing session summaries, MIR observability predictions, etc.

For more information, send a message to Chewning Toulmin, pct@his.com.

NOVAC Observing Site Rules

C. M. Crockett Park: Any night that NOVAC observes at Crockett Park, the observing session will be open to the public. The gate will be locked and will not be unlocked unless a NOVAC member enters the park, at which time the gate should remain unlocked until 10 o'clock (or some other prearranged time), when the Assistant Park Manager will come out and ask members of the public to leave. The gate will then be locked, and should remain locked through the rest of the evening. NOVAC members may remain until they are finished with their observing session. There is now a 2-week lead time requirement for permission to observe at Crockett Park on nights other than those listed on our schedule at the back of this newsletter. Gary Kwolek recommends that anyone interested in observing in that area on unscheduled nights drive out to the Crockett Park gatehouse, turn left and drive down to the cul-de-sac, where you can set up your telescope on the public road.

If any NOVAC member out observing at Crockett Park notices any member of the public violating park policy, he or she is requested to notify the Assistant Park Manager, who lives in the house adjacent to the end of the parking lot.

During EDT, set up on the large field to the left. During EST, 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 guests of the park; park management may revoke our observing privileges at any time due to the carelessness of one person.

Parsells Field: In addition to scheduled nights, NOVAC members may observe at Parsells field ANY evening, with no prior notice. See directions to Parsells Field, next page, for parking instructions. The usual NOVAC observing site rules apply: no loud noise,

(Continued on page 11)

(Continued from page 10)
alcohol, or loose dogs, and pick up after yourself. We are guests of the Dulles Little League, and could have our access to this site revoked at any time if it is abused.

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 your phone number. 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. Make sure the gate is locked whenever you are in the park, and 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.

Nichlason Site: The same rules apply as for the Savage Farm Site except that in seeking permission to use the site for non-scheduled observing, call Smokey Jacobs (Northern Virginia Regional Park Authority) at 703 250-9124 and follow the same procedure as with the Savage Farm site.

Directions to NOVAC Observing Sites

C. M. Crockett Park: From the Washington, D.C./Northern Virginia area, go west on I-66 21.7 miles from I-495 to Exit 43A in Gainesville onto Rt. 29 South toward Warrenton. After 11.8 miles on Rt. 29, stay left (toward Culpeper), to bypass Warrenton (but still on Rt. 29 S.) Go about 1 mile to the Rt. 643 exit, Meetze Road. At top of ramp, turn left to go East on Rt. 643. Go 7.5 miles on Rt. 643. Watch for the C.M.Crockett Park sign on your right, and turn right into the Park Entrance Road. Once on the park entrance road, go one-half mile to the park gate.

Parsells Field: (Steve Blake/Ron Cook) From the Northern Virginia area go West on the Dulles Toll Road until you reach Route 28. Go North on Rt. 28 for 2.8 miles to Route 625, Waxpool Road. (You may also take Route 7 West to 28, then go South to Waxpool.) Turn left (West) onto Waxpool Road (Route 28), and go 1.8 miles to the Waxpool/Farmwell intersection. (The intersection has a small sign on the right pointing the way to the Broadlands development on the left.) Turn left onto Route 625, Waxpool Road (!), heading towards the Broadlands and go 1.6 miles to the Waxpool/Ryan/Shelhorne intersection. Continue straight on Waxpool, through the more developed part of the Broadlands on the right, for about 1.4 miles watching for a left turn on to Waxpool Road (!!) which is a gravel road. Once on gravel go only about 200 yards straight ahead. You will pass a sign showing kids on a seesaw. Parsells field is right where the road turns right. As you round the turn, go into the gravel parking area instead of completing the turn. Note: there are no signs marking the field at this time.

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 on the left 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 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 FEMA 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. 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 from the outside. 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.

Nichlason Site: I-66 to Rt. 7100 (Fairfax County Parkway) south to Ox Road (Rt. 123) south to second right on Chapel Road to immediate left onto Wolf Run Shoals Road (Rt. 610). Continue on Wolf Run Shoals Road (watch signs carefully at twists and turns in the road) for 3.9 miles to the site. It is immediately after a yellow house with a white picket fence on the right. The Nichlason Site is on the left marked by "Wildlife Sanctuary" signs on utility poles. After the third "Wildlife", sign there is a dirt/gravel lane into the site.

From the Springfield/Burke area: go north on the Fairfax County Parkway (Rt. 7100) to left onto Burke Lake Road. Burke Lake Road becomes Clifton Road just after the intersection with Rt. 123. Continuing on Clifton Road, turn left at the Citgo station onto Wolf Run Shoals Road. Follow Wolf Run Shoals Road as above to the site.

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, 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. Additional memberships at the same address without additional copies of the newsletter are $6.00 per person. Contact Treasurer Pedro Martinez, Jr., 6319 Anneliese Dr., Falls Church VA 22044, 703 534-2604.

All notices of change of address should be sent to Pedro Martinez, Jr. Please include both old and new addresses.

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

NOVAC members are invited to submit articles for publication in the *NOVAC Newsletter.* The editor reserves the right to edit all materials submitted.

Article submissions, in ASCII please, may be sent to Elliott Fein at elliott.fein@erols.com, or to Elliott's address in Rockville, given above. Questions? Call 301 762-6261, or send e-mail.

Deadline for submissions is three weeks in advance of publication, e.g., April 7 for the May/June newsletter

1998 NOVAC Observing Schedule

C. M. Crockett Park

March 20, 21, 27, 28, 25 through April 1 (Messier Observing)
April 1, 17, 18, 21 (Lyrid meteor shower), 24, 25
May 2 (Astronomy Day), 5 (Eta-Aquarids meteor shower), 22, 23, 29, 30
June 19, 20 (Picnic), 26, 27
July 17, 18, 24, 25
August 12 (Perseids meteor shower), 14, 15, 21, 22
September 11,12,18,19,25,26 (NOVA Star Party)
October 16, 17, 21 (Orionid meteor shower), 23, 24
November 13, 14, 17 (Leonid meteor shower), 20, 21
December 11, 12, 13 (Geminid meteor shower), 18, 19, 22 (Ursid meteor shower)

Savage Farm & Nichlason Site

March 1, 20, 21, 22, 27, 28, 29, 25 through April 1 (Messier Observing)
April 1, 17, 18, 19, 21 (Lyrid meteor shower), 24, 25, 26
May 5 (Eta-Aquarids meteor shower), 22, 23, 24, 29, 30, 31
June 19, 20, 21, 26, 27, 28
July 17, 18, 19, 24, 25, 26
August 12 (Perseids meteor shower), 14, 15, 16, 21, 22, 23
September 11, 12, 13, 18, 19, 20, 25, 26, 27
October. 16, 17, 18, 21 (Orionid meteor shower), 23, 24, 25
November 13, 14, 15, 17 (Leonid meteor shower), 20, 21, 22
December 11, 12, 13 (Geminid meteor shower), 18, 19, 20, 22 (Ursid meteor shower)

NOVAC

The Northern Virginia Astronomy Club
c/o Nicole Mastej
1359 Garden Wall Circle
Reston, Virginia 20194

Inside:
·For Young Astronomers
·Hot Winter Nights
·Light Pollution Workhop
and much, much more!

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