NOVAC

THE NEWSLETTER OF THE NORTHERN VIRGINIA ASTRONOMY CLUB

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President's Message

Tilly Smith

Spring is here and summer is not far away. That means it is time to start the first of our major NOVAC public events. I would like to ask each member to make note of two upcoming events: Astronomy Day Star Party on Saturday May 22 and the Annual NOVAC Picnic on Saturday June 12.

The Astronomy Day Star Party on May 22 will be similar to last year, hopefully without the rain, in that we plan to have public observing at Crockett Park that night. In addition, we plan to have a twilight slide show and a talk "Reduction of Light Pollution". Also, as a result of recent concerns over commercial development close to Crockett, we are considering a special invitation to the county planners to attend the evening's events. I ask that any member that would like to assist in the planning for this event please contact either myself, Jon Stewart-Taylor, or Jonathan Bein. We want to make a big splash on the light pollution issue and need your help.

The second event is the Annual NOVAC Picnic on June 12. This date is a bit earlier than last year, but is the only time in June when the moon is favorable for observing. As we did last year, NOVAC will provide the food shelter, (hot dogs and hamburgers), and soft drinks for the membership. This is our way of saying thanks for all the work the members put in during the year to support the club, and also to recognize our new members. In order to assist our new members, and others as well, to understand the night sky, we plan to have special observing sessions focused on what to do and how to do it. It was quite a festive event last year. Hope to see you there again this year. Please contact Kevin Brown (703-503-9523 or kevinb@cais.com) if you are able to help in the planning.

"Astronomy Day Star Party on May 22 . . Annual NOVAC Picnic on June 12"

// tilly

What's Up?

Al Schumann

The other day I was in the garage sprucing up my C-8 for the Mars opposition in late April. Mars is getting ever closer, and this year it will be a tad over 16 seconds in diameter. That is 2 arc seconds larger than the opposition of 1997 and the best since 1990. With the C-8, I expect to see the shrinking north polar ice-cap and Syrtis Major. With good seeing, perhaps a bit more. I recall how exciting it was to see surface features during the last close approach in the 80's. Back then I had made up a batch of filters in hopes of highlighting different Martian features. These weren't the famous (and expensive) Wratten filters. Instead, I wrote to a theatrical lighting supply house and ordered a sample packet of what they call gelatins. The samples were just about the size of microscope slides, so I bought a box of glass slides at a teachers' supply store and made a number of filter sandwiches. Gelatins on glass with Scotch tape...hold the mayo. I made a few reds, oranges, greens, blues, and several shades in between. The setup was nothing fancy; I just placed my filter sandwiches on the rubber eyecup and looked at different colored versions of Mars. One filter was kind of a salmon color, and that seemed to be the pick of

(Continued on page 2)

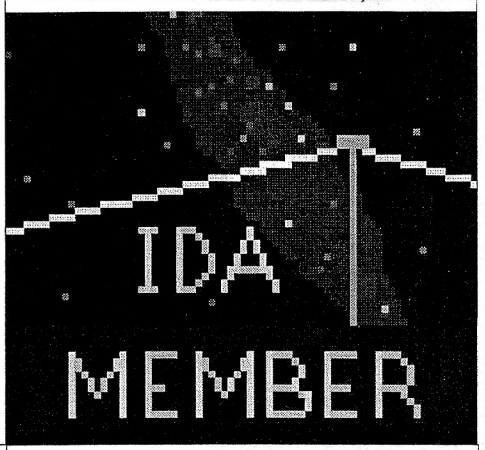
Public Outreach Events

Jonathan Bein

NOVAC public outreach events are an important way in which we fulfill our mission of "helping others to observe". If you love to share the sky with others then I urge you to sign up for one of the upcoming events. If you would like to help, or if you would like to schedule an event for a group please contact me at: jabeinji@aol.com, or 703 834 1084.

May 22 Astronomy Day Star Party at Crockett Park

June 12 NOVAC Picnic at Crockett park.



Inside This Issue

NOVAC Programs at the Arlington Planetarium

Pete Johnson

All meetings start at 7:30 P.M.

May 19, 1999

Dr. Bob Craddock, Smithsonian Center for Earth and Planetary Studies:: Presentation on MARS

June 16, 1999

Tom (Ironman) Dietz – Super Nova Hunting

What's Up?

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the litter for bringing out surface detail. The blues were supposed to bring out the clouds and atmospherics, but you couldn't prove it by me. I was too fascinated by seeing something on the GROUND. We won't get the best look until 2003, when Mars and Earth are closest to each other once again. However, I'm hoping for a good shot at the red planet this year. Check it out.

Anyhow, back to the C-8. After replacing the batteries in the Telrad, I removed the f/6.3 adapter, so the C-8 was an f/10 telescope again. I had just changed the 9 volt battery in the drive corrector when I heard a muffled voice somewhere behind me. "How come you never take me out any more?" Startled, I spun around and saw that no one was there. I searched all over...even under the MG, but I was alone. Back to work. I dug out a cardboard off-axis mask I had made years ago. The mask had a four-inch hole, which was offset from the secondary mirror of the C-8. It would help reduce the brightness of Mars, which was going to be about -1.6 magnitude by the end of April. The mask would increase the contrast, and, in essence, give me a four-inch f/20 telescope. Next, I dug out my 2X Barlow for cleaning. Barlows are great. They increase the power and still provide good eye relief. That's going to be important for using the filters over the eyepiece. Also, with the Barlow, the telescope will be at f/40. If Mars gets too dark, I'll ditch the mask. I was thinking about how Al Boldt taught me all this stuff 15 years ago when I heard it again...that same muffled voice. "I asked how come you never take me out any more."

This time I noted the voice was coming from inside the Edmund Astroscan tote bag. Simultaneously, I wondered if Medicare covered...ahem...mental health irregularities. I undid the drawstring and opened the bag. The red telescope lit into me straight away. "I've been sitting idly here on this table for a long time, and I demand some action." Actually, the little guy was right. Ever since I rigged up wheels for the 13-inch Dobsonian it had been getting most of the work. And now I was preparing the Schmidt-Cassegrain for a series of outings with Mars. Better mend some fences. "Hey, Eddie, cut me a little slack," I said. "Remember, you had some good work with the partial solar eclipse last year. And before that, you were the premier telescope for Comets Hyakutaki and Hale-Bopp." "Ancient history, Old Timer," Eddie said. "I need some heavy-duty exercise right now before I fossilize in this darn bag!" He was quite vehement, and the glare in his four-inch cyclopean eye made me realize I had better accede to his demands.

And so it came to pass, that on the next moonless night, I took the Astroscan out on the deck, and we made the rounds. It was really neat. I used three eyepieces: A 24mm for 18X, an 18mm for 24X, and a 10mm which gave 44X. Eddie and I looked at Saturn. We looked at Venus. We took in a whole raft of clusters ranging from the big ones like the Pleiades and the Beehive on through the open clusters in Gemini and Auriga, along with M-41 near Sirius. At 18X, most of these clusters are just smudges, but with the 10mm they come alive. Changing eyepieces is the one tough part about working with the Astroscan. It doesn't take much pressure to knock the telescope off target, and when you go to high power the field of view is much smaller. So it is easy to lose what you were looking at. Every so often I had to start over again with a low power eyepiece and work my way back up. I got pretty good at holding the telescope securely with one hand and making the eyepiece switch with the other. Just had to remember which eyepiece was in what pocket. We added a couple globular clusters and even picked off a few galaxies. The latter were not very prominent, but I did see M-65/66 in Leo and M-51 off the handle of the big dipper. I even saw the Crab Nebula in Taurus. Not bad for a four-inch. We finally had to call it quits at 2 a.m. when the dew became too heavy.

Back in the garage I put the little red ball in the tote bag and left the draw string open so the scope could dry out. As I started up the stairs I heard, "Nice run, Slick. That was a good workout. Have fun with Mars...but don't be a stranger." I turned out the light and tiptoed off to bed.

An Amateur Visual Survey of the Heavens

Myron E. Wasiuta

Introduction

In his classic work, *Celestial Objects for Common Telescopes*, T.W.Webb proposed a project to "study the whole visible heavens from what might be termed a picturesque point of view..." He envisioned a visual telescopic survey of the sky with the intention of recording any interesting sights, especially star groupings. He wrote, "Many parts of the sky, especially the crowded fields of the Galaxy, are full of the most interesting and beautiful groups and combinations, of which little or no mention can be found". Webb never got around to performing this survey, and as far as I know, this work has never been done in any organized effort.

To complete a survey of this type would be an arduous undertaking for one person. In today's world with hectic schedules and limited time for leisure, it might be impossible. However, a well-coordinated network of observers would make Webb's observing project a possibility. If properly coordinated and carefully conducted, the results would be of great interest to the observing community. As such, it might be an endeavor worthy of publication by the Webb Society itself!

Technique

The procedure for performing this survey is actually quite simple. An area of the sky is assigned to each participating observer. This could be an hour of Right Ascension wide, and 10-20 degrees high. I would recommend using a telescope with at least 4 inches in aperture, and having an eyepiece combination giving about 1-2 degrees of view. The observer would sweep out a pattern insuring complete coverage, and would record any interesting star fields, eye-catching doubles, multiple star systems, stars of unusual colors, etc. A description of the area of interest would be entered on the observing form along with the location in RA and DEC. Observing would be done in a dark sky with little or no moon in the sky, under good transparency conditions. Once every month or two, results would be sent to a recorder for compilation. Pertinent info like telescope type, magnification, sky conditions, field orientation and any sketches would be included. You might even try photographing your find with a telephoto using the piggyback method. I hope that we would have enough observers that we could cross-check our finds, write descriptions, and formally enter them in a database. To keep active observers up to date, I plan on publishing a quarterly newsletter with selected observations and progress reports.

If you are interested in participating, and would like a copy of an observing form, please contact me. Please include a SASE. Also, let me know if you want an area of sky assigned, or would like to pick your own. I look forward to hearing from you, and hope we can get this most interesting project off the ground!

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Editor's Note

Elliott Fein

Please keep those articles coming in!

The 10th of the month preceding publication is the cutoff. Material that I receive after the 10th will appear in a later newsletter. Copy (in ASCII, please), not previous published, for the July/August issue must be in my hands by June 10.

I probably should have told everyone who sends me copy for newsletter articles that when I receive copy for an article, I start to format and edit it. If later, I receive an updated copy of the full article, I need to either figure out what changed and update the article in progress, or throw away the work I've done and start anew with the second copy. It would be much better if authors would tell me what changes they want made to the first, or if the changes are too complex for that, send me the second one and tell me the paragraph or whatever that has been changed.

Results of the 1999 NOVAC User survey

Pete Johnson

Well, the results of the 1999 NOVAC member survey are in. In all, there were 75 responses. That's about a twenty-three percent response. As surveys go, that's a pretty good return. There are two numbers given with each answer. The first value is the actual number of responses. The second is that answer's percentage of the total responses. We are not offering any analysis of the results here. If you have any questions, you can reach me at pjohnson@dgsys.com, or (703) 830-7513 evenings.

1. How often do you attend the monthly NOVAC Membership meetings? (check one)

a. 39 52.0% Most months
b. 03 04.0% Only every other month
c. 20 26.6% A few times a year
d. 13 17.3% Never (go to #3)

2. What is the most valuable aspect of the monthly meeting to you? (check one)

a. 04 05.3% NOVAC business and upcoming events segment
b. 03 04.0% Observing report
c. 13 17.3% Sky Tour
d. 41 54.6% Main program
e. 07 09.3% Socializing

3. If you do not attend the meetings, what is the major reason? (check one)

a. 21 28.0% Too busy
b. 01 01.3% Topics do not interest you
c. 05 06.6% Wrong time or day
d. 01 01.3% Meetings too long
e. 01 01.3% Meeting room too crowded
f. 06 08.0% Too far to drive
g. 17 22.6% Other (most were logistical issues such as too far to travel etc.)

4. How would you rate the quality of the meeting room facilities? (check one)

a. 24 32.0% Excellent
b. 29 38.6% Good
c. 16 21.3% Fair
d. 01 01.3 Poor

5. If you think the meeting facilities are Fair or Poor, why are they unsatisfactory? (check one)

a. 15 20 Meeting room too small
b. __ __ Can not hear
c. 01 01.3% Parking
d. 03 04.0% Seats uncomfortable
e. 02 02.6% Other (specify)

6. If we find a new meeting facility that is larger and more comfortable, would you attend the General Membership meetings more regularly?

a. 07 09.3% Yes
b. 09 12.0% No
c. 56 74.6% Room not an issue

7. If we are able to get a new meeting facility in DC, would you attend the meetings?

a. 29 38.6% Yes
b. 45 60.0% No

Light Pollution Progress: The NOVAC Light Pollution Special Interest Group

Jon Stewart-Taylor

In keeping with NOVACs new emphasis on working to reduce light pollution, we have started a Light Pollution Special Interest Group (LiPoSIG). We selected four primary areas of focus for this first year. Our goals are:

1. To retrofit some or all of the lights affecting Mickey Gordon Park with full-cutoff shields
2. To mitigate the effects of development adjacent to Crockett Park, which threaten to ruin the area for deep-sky observing.
3. To develop and implement a long-term light-pollution mapping project, allowing us to track and document the changes in light pollution over a period of 5-10 years.
4. To encourage the introduction and passage of regulations to reduce light pollution and light trespass. We intend to start at the city and county level, since we perceive these governments are more sensitive to a request from a grass-roots organization like NOVAC.

We have made some progress. At Mickey Gordon, we received permission to retrofit one of the three lights, and are acquiring the shields now. I expect to see at least one shield installed by the next NOVAC meeting. As an informative sidebar, Virginia Power will probably shield and/or paint any streetlight you complain about at no charge to you (although not with a full-cutoff shield), so if you have a particularly annoying light near you, try calling them up.

On the mapping project, Bill Burton has established ties with a group using satellite imaging of the US at night. This group expressed interest in forming a partnership with NOVAC to do the type of project we want to carry out. I expect this will give very positive results, both for NOVAC and the astronomical community.

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Jeff's Observing Report

Jeff Stetekluh

Jeff's astronomical calculations are made for the Northern Virginia area. See credits at the end of this article.

The Sun	rises	sets
May 19	5:53 AM	8:17 PM
Jun 16	5:42 AM	8:35 PM
Jul 21	6:00 AM	8:29 PM

The Moon

May 8	Last Quarter
May 15	New Moon
May 22	First Quarter
May 30	Full Moon
Jun 7	Last Quarter
Jun 13	New Moon
Jun 20	First Quarter
Jun 28	Full Moon
Jul 6	Last Quarter
Jul 12	New Moon
Jul 20	First Quarter
Jul 28	Full Moon

Events

May 1	Mercury is 1/3 degree south of Jupiter this morning, southwest of Jupiter tomorrow ††
May 6	eta-Aquarids ZHR=60, active Apr 19 to May 28 †††
May 13	Saturn .75 degrees southeast of Mercury and one-third as bright (from S&T)
May 25	Mercury at Superior Conjunction (†)
Jun 11	Venus at Greatest Elong: 45.4?E (†)
Jun 14	Earliest sunrise (from S&T)
Jun 18	Earliest morning twilight (from S&T)
Jun 21	Summer Solstice (from Espenak)
Jun 21	Summer begins at the solstice, 3:49 p.m. EDT (from S&T)
Jun 25	Latest twilight (from S&T)
Jun 28	Latest sunset (from S&T)
Jun 28	Mercury at Greatest Elong: 25.5?E (†)

(† from Espenak, †† from S&T, ††† from IMO)

The Planets

May 19	rises	transits	sets
Mercury	5:33 AM	12:36 PM	7:39 PM
Venus	8:40 AM	4:14 PM	11:49 PM
Mars	5:26 PM	10:56 PM	4:30 AM
Jupiter	4:19 AM	10:46 AM	5:13 PM
Saturn	5:09 AM	11:52 AM	6:36 PM

May 19	mag	diam	notes
Mercury	-1.5	5.1"	
Venus	-4.2	18.8"	W, 38*
Mars	-1.3	15.4"	SE, 29*
Jupiter	-2.1	34.4"	
Saturn	2.1	16.2"	

Jun 16	rises	transits	sets
Mercury	7:15 AM	2:45 PM	10:14 PM
Venus	9:14 AM	4:24 PM	11:33 PM
Mars	3:34 PM	9:02 PM	2:34 AM
Jupiter	2:43 AM	9:17 AM	3:50 PM
Saturn	3:28 AM	10:15 AM	5:02 PM

Jun 16	mag	diam	notes
Mercury	-0.2	6.5"	WNW, 17*
Venus	-4.3	25.1"	W, 33*
Mars	-0.7	12.7"	S, 40*
Jupiter	-2.2	36.3"	
Saturn	2.2	16.6"	

Jul 21	rises	transits	sets
Mercury	6:55 AM	1:43 PM	8:31 PM
Venus	9:04 AM	3:31 PM	9:58 PM
Mars	2:14 PM	7:26 PM	12:41 AM
Jupiter	12:39 AM	7:19 AM	1:58 PM
Saturn	1:20 AM	8:09 AM	2:59 PM

Jul 21	mag	diam	notes
Mercury	3.9	11.5"	
Venus	-4.5	41.8"	W, 17*
Mars	-0.1	9.9"	SSW, 34*
Jupiter	-2.5	40.0"	
Saturn	2.2	17.5"	

(* degrees elevation at sunset taking into account atmospheric refraction)
(mag = apparent magnitude, diam = apparent equatorial angular diameter)

References for Jeff Stetekluh's Corner

Sun and moon rise and set times, moon phases and Galilean moon events are calculated using my software that is based on algorithms from the book "Astronomical Algorithms" by Jean Meeus, 1991. This includes Bretagnons and Francou's VSOP87 (the 1987 version of Variations Seculaires des Orbites Planetaires) planetary theory, the Chapront ELP-2000/82 (ELP means Ephemerides Lunaires Parisiennes, although this work is not an ephemeris (a list of calculated positions), but rather an analytic theory (a series of periodic terms)) lunar theory and Lieske's theory E2 and E2x3 of Jupiter's satellites.

The Preliminary NOVAC Observing Reports are created using my software. Some of the algorithms are listed above and in the following as noted. from Espenak: Fred Espenak's Twelve Year Planetary Ephemeris: 1995 - 2006 (NASA Reference Publication 1349, available at http://www-lep.gsfc.nasa.gov/code693/TYPE/TYPE.html); from S&T: Sky & Telescope's Evening and Morning Highlights for Skygazers (available at http://www.skypub.com/whatsup/whatsup.shtml

New Members - February 10 through April 1

Kevin Brown

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The e-mail address for Bonner Davis at Crockett Park is now bdavis.cmcp@juno.com

Hunting for Bears

Marc DeFrancis

For Young Astronomers ages 8 and up

Before the Civil War, many southern slaves gained their freedom by escaping from their masters, hiding in the day and moving northward on moonless nights. They relied on their knowledge of the stars. A song still remembered today aided their memory: "Follow the Drinking Gourd." What is a drinking gourd? A dipper, made out of a dried gourd, for ladling water. These men and women were following the Big Dipper, which rotates slowly through the year around the north pole star and stays close to it.

Due to earth's rotation, most stars change their positions so much through the night that you cannot use them to find directions unless you know exactly what time it is. But the stars near the pole make only a small circle as they rotate, and that circle more or less stays put.

Because finding north is important to all people, no matter how or where they live, it's not surprising that almost every society has a name for this seven-star group that we call the Big Dipper, consisting of the four bright stars in the cup and the three in the handle. .

The ancient Greeks, long before they began to practice a more mathematical form of astronomy in their famous schools, even long before they began to write things down, also had their own legendary names for star groups. As in many societies, the names originated in stories. Sometimes we retell these stories, for entertainment, but we should remember that to our ancestors these were not just tall tales. If you pay attention to the details, you'll see that old star stories sometimes contain clues about navigation or knowing the seasons. They are often sacred stories, because they showed people how the gods ordered the world, or because they offered wisdom on how to live well.

Our Big Dipper is part of what the Greeks called the Great Bear. According to their ancestors, the God Zeus, who spent far too much time with girlfriends instead of with his wife, Hera, fell in love with a woman named Callisto. After Hera found out about Callisto, Zeus was afraid Hera would take revenge on her, so to disguise Callisto he turned her into a large bear. But Callisto's son, Arcas, was hunting soon afterwards and he was about to shoot her, not knowing she was his mother. To protect them both, friendly gods sent them into the sky as the Great and Little Bear constellations we know. (The Greek legends often showed Zeus making one mistake after another.)

The ancient Egyptians looked at the Big Dipper stars and saw the shape of a bull's leg. As it rotated around the pole star, Egyptian priest-astronomers kept watch and used it to track the hours of the night. So the Big Dipper might have been one of mankind's earliest clocks

The ancient Chinese described the same stars as a celestial palace. Meanwhile, the people who lived in northern Europe long ago saw a wagon or chariot--the dipper handle stars were three horses, and the cup was the body of the chariot. For some this was the Wagon of Thor (a chief god), but later it was known as Charlemagne's Wagon or King Arthur's Wagon.

Many of the native peoples of North America—speaking different languages and living from the cold tundra of Canada down to Arizona—all associate these stars in some way with a bear.

One group tells how the seven stars are sisters hiding in a great tree from a brother who turned into a bear. Another story tells how two grizzly bears (the two farthest stars in our dipper cup) were being chased in the sky by five wolves (the rest of the dipper stars), and a clever coyote enjoyed watching the scene so much he cut down the arrow-ladder that they'd climbed to the sky on, leaving them among the stars.

The following legend is from the Micmac Indians, a New England tribe. As you read the story, keep in mind that the Big Dipper stands on its handle in the winter, then floats above the pole star (with its handle horizontal) through the spring, and moves back downward in the summer. In the autumn it slides on its side so low that most of the handle stars disappear beneath the horizon for a while. The bear in this story is not seen in the stars at all--the stars are the seven hunters. After you read it, look at a seasonal star map, and see if you can follow the birds' movements.

"Late one spring day, a huge lazy bear awoke from her long winter nap and ambled down the hillside in search of something to eat. Little Chickadee spotted Bear and grew very hungry himself. Because he was too small to hunt Bear alone, he called six others to help. Robin, Chickadee, and Moose Bird flew in the lead, followed by Blue Jay and Pigeon. Two Owls were the slowest and brought up the rear.

"All spring and summer they tracked down Bear. By autumn, the slower and heavier hunters were so tired, they began to fly lower and lower. The two Owls, at the back, lost the trail first and disappeared. The next to fall behind were BlueJay and Pigeon.

"By mid-autumn, the only ones remaining in the chase were Robin, Chickadee, and Moose Bird. They eventually caught up with Bear, who, seeing she had no other choice, turned and reared up to fight. Taking careful aim, Robin killed Bear with a clean shot of her arrow.

"In his eagerness to start eating, Robin jumped on Bear and became covered with blood. "You will have a red breast as long as your name is Robin," shouted Chickadee. And so it is today. The blood that Robin scattered fell over the maple trees. That is why, every autumn, maple leaves turn the brightest red of all.

"Now Chickadee and Robin began cooking the bear meat in a pot. But Moose Bird had grown lazy; he had slowed down, knowing the other two would catch the bear and have time to cut it up and cook it. He arrived just in time for dinner. Moose Bird vowed never again to be first in a hunt. And so you see him today, following hunters and eating what they leave. (The Micmac say some men are lazy like Moose Bird and ought to be called by his name, He-who-Comes-In-at-the-Last-Moment.) As Chickadee stirred the pot, Robin and Moose Bird danced around the fire to thank the Great Spirit for their good fortune.

"All winter Bear's skeleton lay on its back while her spirit entered a sleeping bear. This same bear will amble forth in the spring and be chased and killed by the same seven hunters." And so the story continues, year after year.

Light Pollution SIG

(Continued from page 3)

The work at Crockett has suddenly become urgent. A developer has purchased land adjacent to the park, and the rumors are that up to 25 ball fields will be built there, at least some of them lighted. In addition, another parcel of land between Crockett and Rt. 28 may be developed for up to 150 home sites. The potential for harm to the night skies at Crockett is obvious. We need to ensure that minimum lighting is used on these parcels and that all the lighting is good lighting. I have collected a (large) list of contacts in the park service, county board, and even the developer, but we need lots of help. If you can take even an hour a week to contact one of these people, please get in touch with me (e-mail jcst@tripod.net,
H (703) 476-8949, or W (301) 614-3653).
Crockett is an irreplaceable resource under a severe threat.

The work on local light pollution regulation is the goal currently least addressed by our SIG. According to Bob Gent, several counties in our area are ripe for introduction of such regulations and the local IDA chapter is actively pursuing this goal. We need someone to coordinate with the local IDA chapter in this effort. Again, if you can put even one hour per week into this, please contact me.

We've made a good beginning in the first three months, but there's lots to do, especially in the effort to save Crockett as a dark site. Please join us. For more information, please contact me.

Observing Reports and other info from the Listserver at novac@his.com

Tom Dietz

[what follows is just a sample of the great observing reports NOVAC members are posting on the Internet. Ed.]

From: owner-novac@mclean1.his.com [mailto: owner-novac@mclean1.his.com]
On Behalf Of Tom Dietz
Sent: Monday, March 29, 1999 8:40 AM
To: novac@his.com

Subject: Sunday at Savage

Thanks to all who helped out at Savage yesterday. We made a good start on the improvements to the site. Before much more can be done, we need to make some additional arrangements, including:

1. Arrange for delivery of some fill dirt to be used to fill the "stone circle" and surrounding area adjacent to the pad. The area can then be leveled and seeded.

2. Get enough water up to the site to clean out the A-frame. At the very least we can sweep out the A-frame Saturday. We will need some members to bring push brooms and, eventually, mops, buckets, and cleaner.

3. Make a decision about whether to plant a hedge or build a fence to the east of the pad, purchase the shrubs or lumber, and get them delivered to the site. Pete and I made some initial measurements yesterday, but we need to decide what we're going to do here, and who's going to do it.

4. Lay out the positions of any additional small pads, build the forms, and arrange for the delivery of the concrete.

5. Contract with a porta-john provider and arrange for its delivery and set up.

If another Board member does this, he should tell the contractor to stake down the portajohn to prevent it from being vandalized.

Some of these decisions will have to be made at a Board level and money made available to bring about. Additionally, I do not have a vehicle suitable for carrying lumber, etc. up the site.

There is some additional clearing to be done, but the first phase is for the most part completed. It would be nice if someone with a power tiller could bring it up Saturday to enable us to prepare the soil for seeding in those areas that have been cleared of brush and vines. Other than that, we will have to make the arrangements listed above before we will have a need for a large working party again at the site. I will keep the membership posted.

Clear skies,

Tom Dietz

From: owner-novac@mclean1.his.com on behalf of Tom Dietz [tom.dietz@nasm.si.edu]

Sent: Monday, April 12, 1999 8:51 AM

To: novac@his.com

Subject: Observing reports

Savage Farm, Friday, April 9, 1999

Just as I had expected, the storm front reached the Blue Ridge just before 6:00 p.m., as I reached Round Hill. The rain stopped by 7:30 p.m. and I began to see the orange glow of sunset below the clouds to the west. Unfortunately, my gamble didn't pay off as the ceiling lowered around 8:00 p.m. to well below the level of the site. I never did set up and left at about 9:45 p.m., creeping along through the clouds at about 15 mph, breaking out less than 1/4 mile from Rt. 7. Talk about a descent on instruments!

Savage Farm, Saturday, April 10, 1999

I arrived at the site about 1:00 p.m. and proceeded to do a bit more yard work before sunset. The big tree that NVRP cut down and dragged to the southwest corner of the yard is now cut up. I also reseeded the areas that we finished clearing last weekend. It was a beautiful afternoon. But how long would it remain clear? I parked my car in the shade and snoozed for a couple of hours.

"The North Polar Cap was clearly visible, as was Syrtis Major. I increased the magnification as high as 635X and 817X"

The sky was still clear at sunset. Alex Lim, Bob Gent, Steven Blake, John Turner, and Bill Seabreeze all showed up with scopes of various sizes. This was the first night that we've had a reasonable number of club members at the site since the removal of trees. Having a bit more observing area meant that all had a good view. Parking is still a potential problem, so I urge anyone using the Savage site to relocate his/her car after setting up, if necessary to preserve a lane down to the pad area. There were no problems in this regard on Saturday.

Although the winds were light and variable, the temperature at the site dropped quickly after sunset as a result of radiation cooling. Until a few high thin clouds moved in after 11:00 p.m., the seeing was excellent, much better than on the previous balmy Wednesday. I relocated Comet M5 (Linear), still a magnitude 10.2 fuzz ball in Ursa Major. After viewing a number of NGC galaxies in Sextans, I turned to a couple of challenging galaxy clusters in Leo. First was Copeland's Septet, of which I was only able to see three members. The galaxies in the cluster Abell 1367 were easier, but still very faint. Just being able to resolve these objects in a 14.5-inch scope gives some indication of the good transparency Saturday night.

As the first bands of high clouds began to move in, Mars was getting high enough to warrant some observing. The seeing was quite steady, allowing some views at higher magnifications. The North Polar Cap was clearly visible, as was Syrtis Major. I increased the magnification as high as 635X and 817X, but naturally the best views were obtained at 300X or less. I was amazed, however, at how well the image held up at these excessive magnifications and tiny (0.5mm) exit pupils.

Most of the group was beginning to leave when I called it quits after midnight. While I was packing up, the clouds cleared out again, but I was feeling the effects of working out in the sun all afternoon and decided to head home rather than continue much later. All in all a very rewarding, if somewhat chilly evening.

Clear skies,

Tom Dietz

From: owner-novac@mclean1.his.com on behalf of Tom Dietz [tom.dietz@nasm.si.edu]

Sent: Tuesday, April 13, 1999 8:58 AM

To: novac@his.com

Subject: Savage tonight

Savage Farm, Tuesday, April 13, 1999

After fighting through the usual Washington traffic, I arrived on site at about 6:00 p.m. under beautifully clear skies. The wind was still blowing at 15 - 25 mph with occasionally higher gusts. Not exactly the most comfortable conditions, but at least it wasn't too cold.

I was joined by John Nussbaum with his 20-inch f/4 Dob and Alan Figgatt with his 9 ¼-inch SCT, around sunset. We all set up behind the tarp I had put up along the old fence. It really does make a difference in helping to preserve dark adaptation. The view to the east is increasingly reminding me of some of those photos I've seen taken from the hills above the Los Angeles basin. Unfortunately the wind pretty much shredded the tarp's grommets by the end of the evening.

Transparency was quite good. I estimate it was about a 9, with a limiting magnitude of 6 or better near zenith. Seeing was better than expected. Quite surprising really, given the winds.

(Continued on page 7)

Observing and Reports and other info from the Listserver at novac@his.com, continued

Tom Dietz

(Continued from page 6)
John and I compared views of some of the faint galaxy clusters I had observed last Saturday in Leo, including Copeland's Septet and Abell 1367. The galaxies were slightly better resolved in John's scope, but still exceeding faint. One really needs a darker site in addition to more aperture for these objects. John reported being able to see six of the seven members of the Septet, however.

We also observed the usual showpieces and icons, including M104, M64, M3, M53, NGC 4565, NGC 4725 and others. M3, in particular was absolutely stunning at 175X. I spent some time observing some fainter galaxies, including the NGC 4302-4298 pair in Coma Berenices, NGC 3003 and 3245 in Leo Minor, and the brighter members of the Coma Cluster around NGC 4889 and 4874.

By 11:30, Mars was well up. The seeing wasn't as steady as it had been on Saturday, but I was still able to get some good views at 330X. We experimented with filters, and found that a 56 green helped reduce glare and heighten the contrast of the albedo features, including Syrtis Major, a bit. Mars is currently about 15.5 arcseconds in apparent diameter, almost as large as it will get during this opposition.

We packed up about 12:30 a.m., having had a very satisfying weeknight observing session.

Clear skies,

Tom Dietz

From: owner-novac@mclean1.his.com [mailto: owner-novac@mclean1.his.com]
On Behalf Of Tom Dietz
Sent: Monday, April 19, 1999 9:55 AM
To: novac@his.com
Subject: Delmarva Star Party report (long)

Star Gaze V, Tuckahoe State Park, Maryland
April 16 and 17, 1999

Because of an uncertain weather forecast, I put off making a decision on going to the Delmarva Stargazers' star party until Friday morning. The weather wasn't too bad, so I decided to give it a shot and arrived at the park about 1:00 p.m. It turned out to be a very nice weekend and a great event. I'm glad I attended.

Bob Bunge, who arrived later, described the site as being "a lot like Crockett used to be." I found that it was generally a nice site indeed, with a limiting magnitude of about 6. A combination of trees and skyglow limited the view to the west, however. Because the field is laid out on an east-west axis and is longer than it is wide, the best area to set up is along the field's northern edge. Tall trees limit the view a bit to the south in much the same way that the trees at Savage limit the western horizon there.

I set up on the north side of the field and hoped for the best, as far as the weather was concerned. With so much time before sunset, I had ample time to wander around, socialize, and check out folks' telescopes, which for me is an aspect of attending events such as this one and is nearly as enjoyable as observing.

Don Surles, the event organizer, had already arrived. Don ground a 6-inch mirror the next day for a Dob that was raffled off. In addition to a 17.5-inch Dob, Don also has a 4-inch Nikon refractor. One doesn't see too many of these. Kent Blackwell arrived from the Tidewater Virginia area with what was the star party's big telescope - a 25-inch f/5 Dob that he had recently purchased from its builder in Las Vegas. Kent's trailer also served as a mobile work area after the telescope had been wheeled out and set up. The primary mirror was a Pegasus, so I knew it would be good, and it was.

After a slight sprinkle late in the afternoon, the clouds began to thin out towards sunset. By this time the field had filled up. I didn't get a count on attendance, but it was probably on the order of one hundred or so. Some folks were undoubtedly put off by the weather forecast. In any case, I was glad to have gotten there early enough to stake out a good spot.

Venus glowed brilliantly in the west after sunset as we began the night's observing session. I've found that it's usually difficult to do much really serious observing at star parties until late, so I spent most of the early evening looking at familiar spring Messier objects and other showpieces, including NGC 4565 and NGC 4725 in Coma Bernices as well as the NGC 3190 group and the M105/NGC 3384/NGC 3389 trio in Leo. Later, I spent some time on the Virgo galaxy fields, observing the usual Messiers and also NGC 4567-68, 4845, and 4866.

I couldn't resist the temptation to have a look through Kent Blackwell's big Dob and hoped he'd have it on a showpiece object when I walked over. Sure enough, people were lined up to climb the ladder for a view of M51, which looked like a photograph. Can you say "aperture fever"?

Patchy clouds continued to move over the observing area, but caused few problems early in the evening. By midnight, Mars was well up, but the seeing was only fair. At about 2:00 a.m. the wind died and a heavy ground fog enveloped the field. Everything became soaked with dew and by 3:30, many had called it quits for the night, myself included. Before turning in, I found Bob Bunge getting some reasonably good views of Mars through his 20-inch f/6 Dob. I guess that long focal length allowed him to get the eyepiece above the level of the fog. ;-) I later learned that the fog blew out a little after 4 a.m., leaving the sky clear until sunrise. Oh well, I was getting rather tired by that time anyway.

Saturday dawned stone clear. The forecast called for some clouds later, but no rain. In any event, except for a couple of sprinkles late in the afternoon, the conditions remained better than the previous day. I didn't attend the programs on amateur astronomy in Canada (Take off!) and astrophotography, but I did buy a raffle ticket for the 6-inch Dob that was built onsite Saturday. The drawings for the door prizes and the Dob were held after a meatball sub/ pizza dinner. The telescope was won by a young guy who will undoubtedly get some good use out of it. With twilight approaching, I prepared for a second night of observing.

Drier air moved in late in the afternoon, preventing the formation of as much dew as Friday night. The seeing was fair for Mars, but adequate for other observing. Transparency was very good to excellent with only a few high thin clouds all night. I returned to many of the objects I had viewed the night before, getting excellent views of M3 and M104. The view of M3 through the 14.5-inch StarMaster was particularly impressive. This object is a good example of a bright object that looks better through a medium aperture instrument that can provide better contrast at lower magnifications, than a telescope in the 20-inch and larger class.

The planetary seeing was even worse than Friday night, so I turned to the late spring and early summer constellations that were getting ever higher in the eastern sky after midnight. I spent a considerable amount of time trying to resolve the tight Seyfert's Sextet galaxy cluster in Serpens Caput. I had no trouble seeing NGC 6027A and 6027E at magnitudes 13.9 and 13.4 respectively, but the others proved more difficult. I was still able to see four of the six, though. After taking a few quick peeks at such summer showpieces as M57, M27, and the globulars of Ophiuchus and Scorpius, I called it quits at about 4 a.m.

Many thanks to the Delmarva Star Gazers for putting on a most excellent event. I plan to return for their next star party in September and hope more NOVACers can make it then.

Clear skies,

Tom Dietz

Monday, April 19, 1999 3:16 PM
To: novac@his.com
Subject: Portajohn for Savage

Hi all,

A portajohn will be delivered to the Savage site on Friday, May 7th. I will meet the delivery crew there to select a site for it.

Clear skies,

Tom Dietz

Northern Virginia Astronomy Club
Statement of Cash Received and Disbursed
For the period January 1, 1998 through December 31, 1998

CASH RECEIVED:			
Membership Dues:			
Regular and Additional:			
Renewals	$4,062.00		
New Members	2,352.00	$6,414.00	
Interest Income		251.56	
Calendar Sales		335.90	
Hat Sales		30.00	
Astronomical League Book Sales		46.00	
Donation		88.00	
Kalmbach Book Discount		1.26	
Total Cash Received			$7,166.72
CASH DISBURSED:			
Newsletter:			
Printing & Assembly	1,186.23		
Postage	744.64	1,930.87	
Astronomical League			
Astronomical League Dues		868.00	
Library:			
Library Books	101.22		
Binoculars	90.00	191.22	
Observing Site Expenses:			
NOVAC Picnic:			
Picnic Permit-1998	35.00		
Picnic Permit-1999	120.00		
BBQ Food & Supplies	151.57		
Invitation-Printing & Postage	72.37	378.94	
NOVA Star Party:			
Red Tape & Tickets	18.09		
Publicity	21.95		
Printing	34.43		
Signage Materials & Easel	147.84		
Power Strips & Electrical Cords	129.32		
Light Sticks/Necklaces	241.84	593.47	
Slide Show Project:			
Slides Set	208.75		
White Tripod Screen	141.08	349.83	
Arlington Planetarium:			
Reception Food	394.06		
Printing	130.83	524.89	
Calendars (For Sale to NOVAC Members)		505.25	
International Dark-Sky Association (IDA)		100.00	
Science Fair		40.70	
ETX Drawing Tickets		20.00	
Astronomy Day Publicity-Printing		19.86	
Administrative:			
Printing - Membership Applications	60.62		
Liability Insurance	367.00		
Printing - Administrative	11.49		
Postage	275.91		
Supplies	156.09		
State Registration Fee	25.00		
Personal Property Tax	13.53	909.64	
Total Cash Disbursed			6,432.67
EXCESS OF CASH RECEIVED OVER CASH DISBURSED			734.05
Cash at beginning of period:			8,861.76
CASH AT END OF PERIOD			9,595.81
Cash at End of Period			
Checking Account		1,116.42	
Savings Account		2,847.81	
Certificate of Deposit Due 1/8/99		2,596.06	
Certificate of Deposit Due 11/2/99		1,535.52	
Certificate of Deposit Due 5/2/99		1,500.00	9,595.81

Respectfully submitted,

/s/

Pedro Martinez,
Treasurer

ASTRONOMY DAY

STAR PARTY

MAY 22, 1999

SUNSET

SPONSORED BY THE NORTHERN VIRGINIA ASTRONOMY CLUB

Come out and see the heavens!
Stars, Planets, Galaxies, Star Clusters,
Nebulae and Meteors will be seen!

❖ TELESCOPES ON DISPLAY ❖

TWILIGHT SLIDE SHOW

LIGHT POLLUTION TALK

WHERE: CROCKETT PARK, FAUQUIER COUNTY

DIRECTIONS: FROM WASHINGTON, go west on I-66 to exit 43A (Gainesville) onto Rt. 29 South toward Warrenton. About 11.8 miles on Rt. 29, stay left (toward Culpeper), to bypass Warrenton. 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 on your right, and turn right into the Park Entrance Road.

THERE MAY BE A PARK ENTRANCE FEE.

NO CAMPING OR CONCESSIONS.

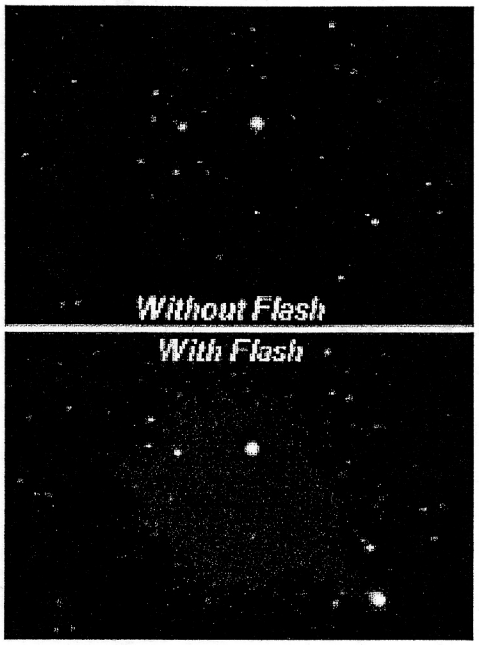
FOR MORE INFORMATION, CALL (703) 803-3153

NOVAC

TO OBSERVE AND TO HELP OTHERS OBSERVE

From: ALTERNATE UNIVERSE
Journal of the Astrological Society of New South Wales Unco.

"ASTROPHOTOGRAPHY: WHEN TO USE A FLASH" - Joe Rosscollis



Professional astronomers appreciate that photos taken in low light situations are invariably enhanced by the judicious use of a flashgun.

> Why has this simple photographic aid taken so long to catch the attention of astro-photographers?

For example, the distances of the Moon and Solar System objects are now known with great precision, and a simple computer program can be used to calculate the appropriate delay - e.g.,: 3 seconds for the Moon, 17 minutes for the Sun, etc.

Don't try this method for Deep sky objects, as the distances are not known with sufficient accuracy, the time delay can be inconvenient, and the Earth may be facing the wrong direction when the light returns. This often results in a photo similar in exposure to one taken without using a flash at all!

Remember to use the X-plug for the flash for optimal results. The F-plug tends to give varying results on most objects.

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The Astronomical Society of NSW Inc.
GPO Box 1123, Sydney NSW 1043.
Email: asnsw@ozemail.com.au
http://www.ozemail.com.au/~asnsw/
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The article was written by Tony Buckley and Lachlan MacDonald. Thank you, Brent Archinal, for providing the URL to this publication.

The CCD Project

Craig Tupper

Now that spring is here, I have changed the way I am running the CCD project. I am now scheduling sessions primarily for NOVAC members only, one or two members per session. This should allow for some real "quality time" experience. I'm still committed to having a session at least once a month, preferably around new moon and (of course) weather permitting, but I may schedule sessions more frequently if necessary. The primary location is still Crockett; I may be flexible if you have another place that has AC power. If you would like to reserve a session, send me an e-mail or call me. My number is on the front of the newsletter.

More information on the CCD project is at http://www.erols.com/ctupper/NOVAC/ccdproject.html , or click on "CCD" from the NOVAC home page.

Robot Telescopes Converse

Excerpts from The American Institute of Physics Bulletin of Physics News;Number 423 April 13, 1999 by Phillip F. Schewe and Ben Stein

The science of gamma ray bursters has now advanced to the point where a robot optical telescope, responding to signals from orbiting gamma-ray and x-ray telescopes, can within seconds swivel to a spot on the sky and photograph the visible component of the burst. Thus the object GRB990123 was glimpsed at optical wavelengths on January 23, 1999 at the crucial early stage of its eruption. This was the first time a GRB was detected optically while still emitting gammas. Judging by its gamma emissions it was either the most energetic GRB yet observed or the observations constitute the first evidence for a beaming effect in GRB's. These prompt measurements are important for understanding the burster's engine, which operates at full throttle for only about 100 seconds.

Amateur Beats Distance Record

Excerpts from the Sky & Telescope's News Bulletin of April 9, 1999

Deepest Amateur Image

The work of a Canadian amateur has proven that backyard observers can look deeper than professionals can. Yale University astronomer Bradley E. Schaefer had challenged amateur observers to take their deepest views of the universe, last year in *Sky & Telescope*.

Schaefer's target area was a small field in the constellation Serpens, a field where he hoped to identify the host galaxy for a gamma-ray burst that occurred in January 1996. The winner of the Deep-Field Challenge -- and reigning King of the Deep Sky -- is Paul Boltwood of Ottawa, Canada. His picture, taken with a CCD camera on his 16-inch f/4.78 Newtonian reflector, reveals stars as faint as magnitude 24.1. This surpasses the photographic limit of the 200-inch telescope atop Palomar Mountain.

Highlights of NOVAC Board Meetings and General Meetings

Kevin Brown

February 10 Board Meeting

19:30 President Tilly Smith called the board meeting to order.

Tilly Smith led a discussion of a new meeting site for the general membership meetings, since the current site can accommodate only about 20% of the membership. The major issues for a new site are cost and commitment of the site for 12 months.

Tilly Smith, Pete Johnson, and Tom Dietz discussed observing site improvements at Crockett Park, Mickie Gordon Park, and Savage Farm.

Jon Stewart-Taylor presented updates on the light pollution project and the status of the Great Falls Nike site.

Jonathan Bein reviewed the upcoming public outreach events.

Craig Tupper presented an update on the book sales.

Pete Johnson reviewed the upcoming general meeting programs.

Submitted by
Kevin Brown, Secretary

February 17 General Meeting

19:34 President Tilly Smith called the meeting to order. The prospective and new members introduced themselves.

Tilly Smith spoke about the possibility of a new meeting site for the general membership meetings.

Brent Archinal spoke about a potential NOVAC light pollution initiative with Fairfax County.

Bill Burton gave a status report on the Franklin Park observatory.

Jonathan Bein reviewed upcoming public outreach events.

Officers' Reports:
Pete Johnson gave the Vice President's report on upcoming general meeting programs.

Pedro Martinez gave the Treasurer's report.

Kevin Brown gave the Secretary's report.

Following the Officers' Reports, Jeff Stetekluh gave the observing report and Craig Tupper gave the sky tour.

For the main program, Dr. Peter Chen, a contractor at NASA Goddard, gave a presentation on the work he has been doing with lightweight graphite composite mirrors.

There were 61 in attendance, 4 of whom were not members.

Submitted by
Kevin Brown, Secretary

March 10 Board Meeting

19:30 President Tilly Smith called the board meeting to order.

Tilly Smith updated the board members on the newsletter costs.

Tilly Smith and Pete Johnson led a discussion on the search for a new site for the general membership meetings.

Tilly Smith, Pete Johnson, and Tom Dietz presented updates on observing site improvements at Crockett Park, Mickie Gordon Park, and Savage Farm.

Jon Stewart-Taylor gave the status of the light pollution project.

Jonathan Bein reviewed the upcoming public outreach events.

Craig Tupper presented an update on the book sales.

Pete Johnson reviewed the upcoming general meeting programs.

Submitted by
Kevin Brown, Secretary

March 17 General Meeting

19:34 President Tilly Smith called the meeting to order. The prospective and new members introduced themselves.

Tilly Smith spoke about the member survey and the status of the search for a new meeting site.

Brent Archinal and Bob Gent discussed the recent Fairfax County hearing on lighting that they attended.

Bill Burton told of a project to update the D.C. area light pollution map.

Jonathan Bein reviewed upcoming public outreach events.

Officers' Reports:
Pete Johnson gave the Vice President's report on upcoming general meeting programs.

Jonathan Bein reported on the upcoming public events.

Jon Stewart-Taylor updated the membership on the activities of the Light Pollution SIG.

Following the Officers' Reports, Jeff Stetekluh gave the observing report.

Jon Stewart-Taylor gave the sky tour.

For the main program, Dr. David Atkinson of NASA gave a presentation on the Galileo and Cassini missions.

There were 55 in attendance, 5 of whom were not members.

Submitted by
Kevin Brown, Secretary

DINNER BEFORE THE MEETINGS

Brent Archinal

So that members may get together socially other than at a crowded meeting or while observing in the dark, NOVAC has a planned dinner before all of our regular meetings on the third Wednesday of each month. The place is the **Santa Fe Cafe in Rosslyn, at 5:45 P.M.** This is a nice Mexican restaurant with good food and reasonable prices, although credit cards are not accepted. Smoking is allowed in one part of this (large) one room restaurant, but NOVAC members have not been smoking and few others usually are. If you arrive first, please sit in the front in the non-smoking section.

The restaurant is located at 1500 Wilson Blvd., in Rosslyn, with entrances off of both Wilson Blvd. and Clarendon Blvd. It is just west of "downtown Rosslyn", on the southwest corner of Wilson Blvd. and N. Oak St., where Wilson splits becoming Wilson one-way west and Clarendon one-way east. On street parking is often available in front of the restaurant, around the long block (make two left turns) on Clarendon just before it ends by the restaurant, or one block north. Be sure to feed any parking meter if you arrive before 6 P.M. This location is quite close to the Rosslyn Metrorail station. So we'll know about how many are coming, or for more information, or in case of cancellation due to weather, please contact Brent Archinal, at baa@casa.usno.navy.mil, or (evenings) at 703-237-0201.

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 $29.95 (instead of the standard $37.95), make your check out to "Sky Publishing Co." You can subscribe to *Astronomy Magazine* for $29.00 for one year (Note price increase from $24.00, effective November 1). 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.

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.

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. Kevin Brown is coordinating the sales. If you are interested, please see him at a meeting, or call him at home (703) 503-9523 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 and Binoculars

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. 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". The club also has a pair of 10x50 binoculars available for members to borrow. They are kept in the club library in the back of the planetarium, and can be checked out after the regular monthly meeting, for a period of one month. Please show your observing pass.

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.

General Membership Meetings

General Membership Meetings are held at the Arlington Planetarium, 1426 North Quincy Street, Arlington, Virginia, on the third Wednesday of every month. To reach the Planetarium, take Interstate 66 to Exit 71 West, North Fairfax Drive (Route 237). Go east on Route 237 to the fifth stoplight, North Quincy Street (about 0.8 miles). Turn left onto North Quincy Street (at the funeral home). Go six 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. Members who are not trustees but are 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: We have permission from Crockett Park to unscrew the light bulbs on the light sensor fixture on the side of the gate guard building facing the observing field (south side).

Please leave the lights on the far side (north side) active so people can see the gate.

Weekends (Fri./Sat. only), NOVAC has unlimited access to the park for all weekends. The weekends will also be open to the public. The gate will be locked and will not be unlocked unless a NOVAC member enters the park; after which time the gate will stay open to approximately 10:00 p.m., when the Assistant Park Manager will ask 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 sessions.

Weekdays (M-Th & Sun.), NOVAC members need to notify Assistant Park Manager Bonner Davis by e-mail (crocketcow.aol.com) or phone (540-788-4867) by 2:00 p.m. on the day they plan to observe. Assume approval unless the park notifies you in the negative. The weekdays are not open to the public. The gate should remain locked after you enter the park and throughout your observing session.

If any NOVAC member notices any member of the public violating park policy, he or she is to notify the Assistant Park Manager, who lives in the house

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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 permitted. Please 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 carelessness of one person.

Savage Farm Site: The Savage Farm site is reserved for NOVAC use on nights listed in our schedule at the back of this newsletter. For unscheduled observing sessions, contact the park manager, Paul McCray, at (703) 729-0596 or <wodtrail@erols.com> at least 24 hours in advance, and leave a message with your phone number or e-mail address. You may use the site for that session ***unless*** you hear 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.

Mickey Gordon Regional Park:
There is a light pole on the road entering the park and it is a problem towards the entrance of the park. We recommend you set up further back in the park or on a lower field behind the baseball diamond to escape the light.

The park is available without notice to all members seven days a week. As sports season begins we will post the schedule when the lighted baseball facility will be in use.

Directions to NOVAC Observing Sites

C. M. Crockett Park
From the Washington, D.C./Northern Virginia area, go west on I-66 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. Turn left (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.

Alternate directions to Crockett
From Washington, D.C./Northern Virginia, go West on I-66 to exit 44. (234 bypass around Manassas). Take 234 bypass to Rt. 28 West. Stay on Rt. 28W for about 13.7 miles, through Nokesville, Catlett and Calverton. Turn right at Rt. 643 (store on corner). Go 1 mile to Crockett Park entrance road on left.

Savage Site:
From D.C. 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.

Mickey Gordon Regional Park
The park is located fifteen miles west on Rt. 50 from the intersection of Rt. 28 and Rt. 50. It is only a 20-minute drive from the Centreville area and should be a convenient site for most members in western Northern Virginia. Directions to the park: take Rt. 66 west to Rt. 28 north. Take Rt. 28 to Rt. 50 West. Go 15 miles until you see the brown Mickey Gordon Regional Park sign. Make a right on Rt. 627, Carters Farm La. Go a few hundred yards to the park entrance on the left. The park has a gate but should never be locked.

Site Locations
Here are the locations of four observing sites as provided by NOVAC members:

- Savage: 39 ° 04.7' N; 77 ° 51.7' W
- Crockett: 38° 37' N; 77° 43' W
- Big Meadows: 38°32' N, 78°26' W
- Little Bennett Regional Park: 39°17.0' N, 77°17.5' W

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.
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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 Secretary Kevin N. Brown, 5755 Walnut Wood Ln., Burke, VA 22015, 703-503-9523.
All notices of change of address should be sent to Kevin N. Brown. 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., June 10 for the July/August newsletter.

1999 NOVAC Observing Schedule

C. M. Crockett Park

All weekend nights (Friday/Saturday)
Astronomy Day - Saturday, May 22
NOVAC Picnic - Saturday, June 12
NOVA Star Party - October 16

Savage Farm

May 7, 8, 9, 14, 15, 16
June 11, 12, 13, 18, 19, 20
July 9, 10, 11, 16, 17, 18
August 6, 7, 8, 13, 14, 15
September 3, 4, 5, 10, 11, 12, 17, 18, 19
October 1, 2, 3, 8, 9, 10, 15, 16, 17
November 5, 6, 7, 12, 13, 14
December 3, 4, 5, 10, 11, 12, 31
January 1, 2, 2000

Meteor Shower Dates for C. M. Crockett, Mickey Gordon, and Savage

May 6 Eta-Aquarids meteor shower
August 12 Perseids meteor shower
October 21 Orionid meteor shower
November 17 Leonid meteor shower
December 14 Geminid meteor shower
December 22 Ursid meteor shower

NOVAC

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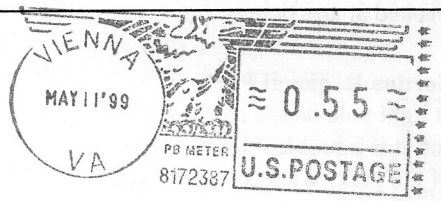
Burke, Va. 22015-2710



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And much, much more . . .