NOVAC

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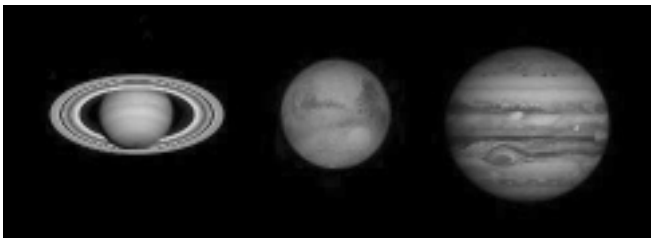
Get ready for Mars!

by Mike Mills

Every 26 months, Earth catches up to and passes Mars on its faster inside orbit around the sun. At these opposition events, Mars is close enough for observers on Earth to see a great deal of detail on the martian disk. The next Mars opposition will occur on August 28, and it will bring Earth and Mars closer than they have been for about 70,000 years. Modest amateur telescopes will provide a great view as Mars reaches its maximum apparent diameter in August. But don't wait until August to start watching—significant surface detail will be visible well before and after closest approach.

A perihelic opposition

Even though Earth and Mars are at opposition every 26 months, not every opposition provides such a great view of the red planet. We are fortunate this year because Earth will catch up to Mars just as Mars reaches perihelion (closest approach to the Sun), while Earth will only be about 2-1/2 months past aphelion



This figure compares the apparent sizes of Mars, Jupiter and Saturn. The Mars image is a simulation of how it will appear from Earth on August 28, while the Jupiter and Saturn images show how those planets looked on May 1.

(farthest excursion from the Sun). At closest approach the two planets will be separated by only about 34.4 million miles. At this close distance, the Martian disk will subtend 25.1 arcseconds. To get a sense of how big this is, compare the simulated image of Mars on August 28 in the picture above with the simulated images of Jupiter and Saturn on May 1. Mars will look bigger than the globe of Saturn and nearly as large as Jupiter!

Unfortunately, the ecliptic will be relatively low in the night sky in August. From our latitude, Mars will reach a maximum altitude of only 35.5 degrees at opposition. But this is still much better than its last appearance in June 2001, when it only rose 24.7 degrees above the horizon.

August 28 will not be the only good opportunity to observe Mars. It already

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MESSAGE FROM THE PRESIDENT

Try lunar observing

When the moon hits your eye like a big pizza pie you need a filter. There may be one or two people in the club that can navigate around the moon. The rest of us are lost, even us moon certificate types. We don't spend enough time on the moon to learn it. This is true even though one half of every month the sky is dominated by the big eye.

NOVAC President Ed Karch

Instead of crying about the fact that the only clear nights have moon glow, try some lunar observing. Can't get oriented? In binoculars what you see is what you get. In reflectors the moon is upside down. In scopes with an odd number of reflections it is left/right switched and upside down. *Sky and Telescope* prints maps appropriate for each type.

For a great piece of freeware called Virtual Moon try *www.astrosurf.com/avl/UK_index.html.* With this software you can print your own maps of the portion of the moon you need to navigate. Patrick Chevalley, of "Cartes du Ciel" fame, has reworked this gem so you can get the view you see in your scope. It has cross-references to all the major moon atlases, including Antonin Rukl's. Spend an evening or two with this program when cloudy skies prevent any observing and you will begin to navigate Luna. Most people are surprised at how much fun it is to cruise the moon, and fun is what observing is supposed to be. —Ed. ✶

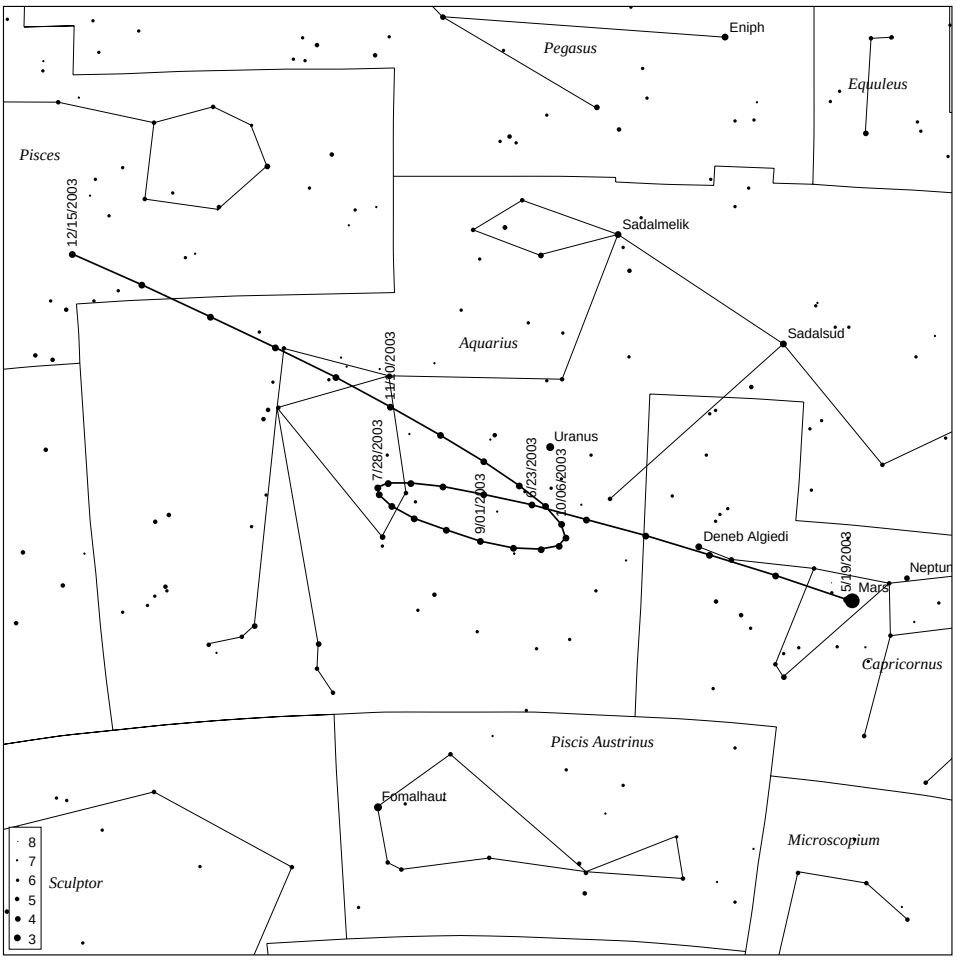
Mars returns in 2003, from page 1

rises well before dawn and is large enough to see some surface detail in small telescopes. After opposition, as the ecliptic climbs and Mars rises in the evening, it will transit at a higher altitude, possibly providing steadier views. To help you plan your observations, the accompanying table lists rise, transit, and set times for Washington, DC for every Saturday between May 3 and December 27, 2003. Also, the sky chart below shows Mars's motion against the background stars for about the same period.

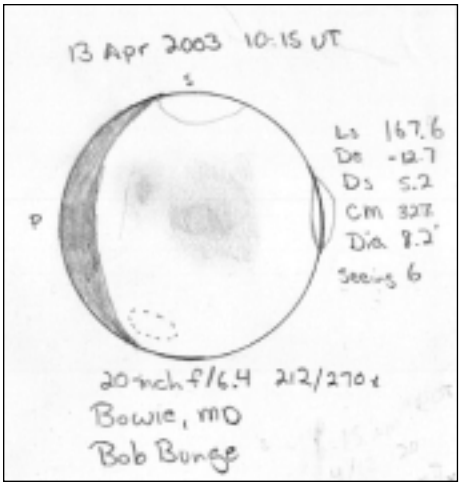
Tips for observing Mars

Here are several important observing techniques that will help you get the most out of watching Mars:

- **Learn about your target.** Mars has myriad interesting surface features, and there are several maps available that will help you identify what you are seeing (see the references).
- **Optimize your local "seeing" conditions.** By letting your scope reach thermal equilibrium with the environment and by avoiding observing locations near large areas of stone or pavement. Also avoid observing over nearby houses, if possible.
- **Keep your scope collimated.** Even slight misalignment of the optical system can have a dramatic effect on image quality.
- **Make a sketch.** Sketching helps train the eye and gives you a scientific record of the observation. NOVAC member Bob Bunge has made hundreds of detailed Mars sketches (see figure on page 3). See the Dobbins, et al., or Beish and Capen books referenced below for advice on making accurate sketches.
- **Use color filters.** Certain color filters can make surface features easier to see. For Mars, a few of the most useful filters are:
  • Red (Wratten 23A,25) enhances all surface details;



Mars will trace a path through Capricorn, Aquarius, and Pisces between May and December, 2003



Bob Bunge made this sketch, his first for Mars's 2003 apparition, on the morning of April 13, 2003.

- Light Green (W56) enhance the polar ice caps;
- Blue (W80A,82A) enhance polar caps and light colored clouds.

- **Try digital imaging.** Inexpensive web-cams and digital point-and-shoot cameras work very well for eyepiece projection and allow image processing to tease out surface detail.
- **Contribute to science.** The Association of Lunar and Planetary Observers (ALPO) conducts the International Mars Watch to collect amateur sketches and images of Mars in the attempt to build a collection of daily Mars images.

Mars resources

There are several books and web sites available that cover planetary observing techniques, provide ephemeris software, and facilitate communications between observers. Some of these are:

Books

- Dobbins, Thomas, et al., *Observing and Photographing the Solar System* (Richmond, VA: Willmann-Bell, Inc., 1992)
- Jeffrey D. Beish and Charles F. Capen, *Mars Observer's Handbook* (Washington, DC: The Astronomical League)

Web sites

- The Astronomical League *(www.astroleague.org/marswatch)* offers observing guides and on-line resources
- The Association of Lunar and Planetary Observers-Mars Section *(www.lpl.arizona.edu/~rhill/alpo/mars.html)* has many Mars resources
- The ALPO Mars Section also has a list serve on Yahoo!Groups at *groups.yahoo.com/group/Mars-ALPO/.*
- Simulated Mars images can be generated by the JPL Solar System Simulator at *space.jpl.nasa.gov.*
- "Mars Previewer 2" is free software for MS Windows that will display a simulated image of Mars and identify important albedo features. It can be downloaded from *www.astronomysight.com/as/start/books.html.* ✶

Mars emphemeris

This table gives the rise, transit, and set times (local to Washington, DC) for Mars for every Saturday until the end of 2003. It also shows the Earth-Mars distance, Mars's apparent diameter, and its transit altitude.

Date	Apparent size (arcsec)	Mars-Earth distance (AU)	Rise time	Transit time	Set time	Transit altitude (degrees)
5/3/2003	9.6	0.9734	2:12	7:06	12:00	30.85
5/10/2003	10.2	0.9175	1:59	6:55	11:52	31.68
5/17/2003	10.8	0.8633	1:44	6:44	11:44	32.53
5/24/2003	11.5	0.8108	1:29	6:32	11:35	33.42
5/31/2003	12.3	0.76	1:13	6:19	11:26	34.28
6/7/2003	13.2	0.7112	0:56	6:06	11:15	35.12
6/14/2003	14.1	0.6645	0:39	5:51	11:03	35.88
6/21/2003	15.1	0.62	0:21	5:35	10:50	36.58
6/28/2003	16.2	0.5779	0:02	5:18	10:35	37.15
7/5/2003	17.4	0.5384	23:39	5:00	10:18	37.58
7/12/2003	18.6	0.502	23:18	4:39	9:58	37.83
7/19/2003	20	0.469	22:55	4:17	9:36	37.90
7/26/2003	21.3	0.4398	22:31	3:52	9:11	37.75
8/2/2003	22.6	0.415	22:05	3:25	8:42	37.40
8/9/2003	23.7	0.3954	21:37	2:56	8:11	36.88
8/16/2003	24.5	0.3815	21:07	2:24	7:37	36.25
8/23/2003	25	0.374	20:35	1:50	7:01	35.58
8/30/2003	25.1	0.3732	20:02	1:15	6:24	35.02
9/6/2003	24.7	0.3795	19:29	0:40	5:48	34.62
9/13/2003	23.9	0.3924	18:56	0:07	5:13	34.45
9/20/2003	22.7	0.4116	18:24	23:31	4:42	34.62
9/27/2003	21.4	0.4367	17:53	23:01	4:14	35.03
10/4/2003	20	0.4668	17:24	22:35	3:49	35.68
10/11/2003	18.7	0.5015	16:56	22:10	3:27	36.57
10/18/2003	17.3	0.5401	16:30	21:48	3:09	37.62
10/25/2003	16.1	0.5822	16:06	21:28	2:52	38.82
11/1/2003	14.8	0.6342	14:42	20:09	1:38	40.15
11/8/2003	13.7	0.6825	14:20	19:51	1:25	41.58
11/15/2003	12.8	0.7333	13:58	19:35	1:14	43.13
11/22/2003	11.9	0.7863	13:38	19:20	1:04	44.75
11/29/2003	11.1	0.8413	13:18	19:05	0:54	46.43
12/6/2003	10.4	0.8981	12:58	18:51	0:46	48.17
12/13/2003	9.8	0.9564	12:39	18:38	0:38	49.95
12/20/2003	9.2	1.0162	12:20	18:25	0:31	51.75
12/27/2003	8.7	1.0773	12:01	18:12	0:24	53.57

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Upcoming NOVAC meeting programs

May 18, 2003 (note new meeting date)

Get ready for Mars! • Mike Mills
The 2003 apparition of Mars promises to give observers a once-in-a-lifetime opportunity to view the red planet. Throughout the summer, as Mars gradually comes closer to Earth than it has been in some 70,000 years, amateur astronomers will have a great opportunity to contribute to planetary science by photographing or sketching the Martian disk. This presentation will cover how to prepare to observe Mars, how to record what you see, and what to do with the images that you get.

June 8, 2003

Gamma ray burst detection • Steve Robinson
Gamma ray burst (GRB) transient detection is a cutting edge science support program that can be furthered by the efforts of amateur astronomers having a suitable telescope, CCD camera, and knowledge. Steve Robinson of NOVAC and the American Association of Variable Star Observers (AAVSO) will present the latest understanding of the GRB phenomenon, and will discuss what it takes to participate in this NASA and AAVSO supported program. Additional information relating to this upcoming talk can be found at *www.highenergyastro.homestead.com.*

July 13, 2003

Space rocks • Greg Redfern
Greg is a NASA JPL Solar System Ambassador who will lead us on a tour of rocks in space. He will present the science and status of NASA's Stardust mission to return a sample of comet dust to Earth, and will also discuss meteorites and the Chesapeake Bay Crater. NOVAC members who own pieces of meteorites are invited to bring them in for display and discussion.

August 10, 2003

Astronomical software • Phil Cioni
Phil will lead a demonstration of some of the many pieces of astronomical software available.

September 14, 2003

The sunny side of stargazing—understanding H-α solar filters • Greg Piepol
Hydrogen-alpha solar filters have exploded onto the amateur astronomy scene offering exciting views of the active and ever changing sun. Join NOVAC member Greg Piepol as he explains how to observe the solar chromosphere with these interesting filters. Topics include the operation, types, and costs of filters as well as the details you see with them. There will be two different types Hydrogen-alpha filters on hand.

NOVAC meetings are held at 7:00 pm on the second Sunday of each month in Room 80 of the Enterprise Hall at George Mason University in Fairfax, Virginia. See *www.novac.com/GMU.htm* for a map and directions. **Please note:** The schedule of speakers is subject to change. Please check at *www.novac.com/craig/speakers.htm* for the latest info prior to the meeting.

What's YOUR interest? Let *ctupper@erols.com* know. Come share and learn about your favorite topic!

Return to Oz with a barn-door mount

by Barry Wolfe

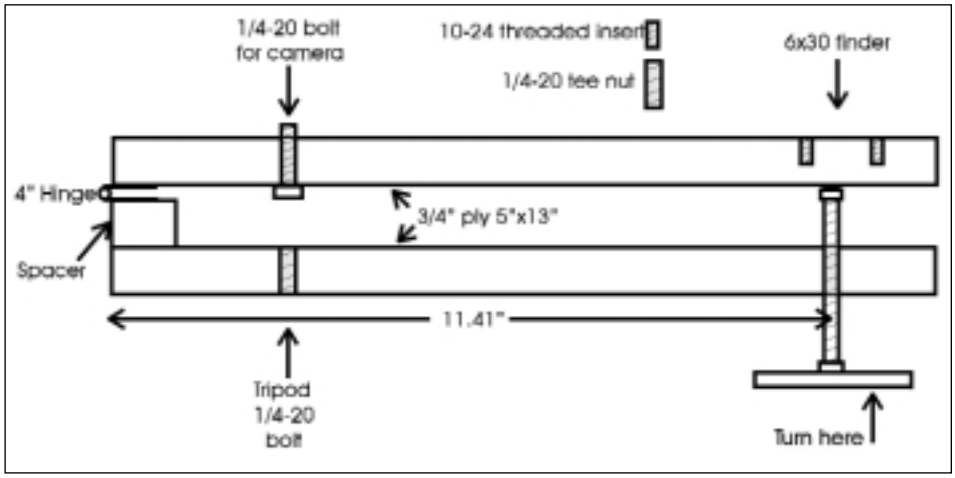
Last fall I made a return trip to Australia with my 12.5" portable Dobsonian telescope so as to spend more time under the unique and beautiful southern skies during the Austral spring (Oct/Nov). Using the internet I had researched a number of bed and breakfast spots and found three promising ones to make reservations at: one in the wine country about 4 hours northwest of Sydney; one in the Warrumbungle mountains near the Anglo-Australian Observatory which was about 3 hours further yet and where I attended the Astrofest 2002 star party; and finally, one in the outback which was another 3 hours drive but the dark skies were worth it.

In addition to my telescope, I brought along a newly constructed barn-door mount with which to do some simple astrophotography. For anyone interested in these Australian bed and breakfasts and/or the southern objects that I was able to observe during the eight gloriously clear nights that I experienced, see *www.angelfire.com/stars2/bwolfe* and click on the 12.5".

The barn-door camera mount

Here, however, I will focus on how well the barn-door mount worked and what its limitations seem to be. This device can be built with a hand saw, a drill, and a screwdriver. The so-called barn-door mount is named because its basic function is to open like a door. There are many versions and the one described here is the simplest possible. This type consists of two 3/4" thick plywood rectangles (approximately 5"x13") joined at one end with a 4" piano hinge. To give a bit of space between the two pieces of wood, a spacer of 3/4" plywood is glued to the bottom board at the end on which the hinge attaches as seen in the side-view shown below. Approximately 3 inches from the hinge, 1/4-20 tee nuts are placed so that the camera can be attached (to the top board) and the barn-door tracker can be attached to a tripod (on the bottom board).

Through the bottom board, exactly 11.41 inches from the center of the hinge, is placed a 1/4-20 tee nut. Through this tee nut is threaded a 2.5" long 1/4-20 bolt which has a small rectangle (3/4"x2.5") of 1/4"-thick plywood attached to the bottom of the bolt,



Schematic diagram of a simple barn-door mount.

The barn-door mount attaches to a simple camera tripod. The setup is angled (with the help of the finder) such that the hinge points at the pole. The hinge here is on the left for the northern hemisphere. From Australia, you have to turn around the finder and place the hinge on the right. The wooden knob on the bottom is turned at 1 rpm. The rectangular pieces of plywood are tapered from 5" at the hinge end to 3" at the finder end, to reduce weight.

held tightly in place with a nut, to act as a handle with which to turn the bolt. At the top of the bolt is a lock nut, hand tightened so it won't go on any further. The rounded end of the lock nut pushes against the top board when the bolt is turned causing the top board to rise and rotate around the piano hinge at the other end.

If the hinge is pointing at a celestial pole, turning the bolt at one revolution per minute tracks the stars fairly accurately for about 10 minutes. The longer focal length of lens used on the camera, the more inaccurate the system becomes. I found that the best results were obtained with lenses of 50 mm in focal length or less.

The alignment of the hinge with the celestial pole is aided by putting a finder on the top board. This is especially true in the southern hemisphere where there is no pole star. Note that if you are in the northern hemisphere the hinge is on the left, while in the southern hemisphere hinge is on the right.

The Large Magellanic Cloud, in particular, is so rich with objects that you could spend weeks on it alone

You gain a great deal of flexibility if you mount a camera ball-joint between the top board and the camera. This allows you to point the camera anywhere. Camera ball-joints are available from lots of places (e.g. Etronics at *www.etronics.com)*. If you want to build a really accurate, motor driven, barn-door mount, here is a good website: *www.astronomyboy.com/barndoor/index.html.*

The Large Magellanic Cloud. This is a 10 minute exposure at f/1.4 with ASA800 film.

The LMC (on the left) and SMC (5 minutes, 28 mm lens, f/2.8, ASA800). The bright star in the upper right is Achenar, the head of the river (Eridanis).

Results

So, what can you photograph with a 50 mm lens in 10 minutes? Two great objects are the Large Magellanic Cloud (LMC) and Small Magellanic Cloud (SMC). The LMC and the SMC are smallish galaxies in orbit around the Milky Way. They are nearby (less than 200,000 light years) so the nebulae and clusters contained in them are easy visual objects in a backyard telescope. The LMC, in particular, is so rich with objects that you could spend weeks on it alone.

The LMC is about 7 degrees long and 3 degrees wide and just chock full of visual goodies, including the Tarantula nebula. It photographed well with a 50 mm lens attached to my 70s vintage Pentax Spotmatic camera (see photo at top). When I tried this same shot with a 100 mm lens, the stars became unacceptably blobby.

What about using a wide-angle lens? I found that my 28 mm lens gave sharp pictures at either 5 or 10 minutes exposure. I was able to capture both the LMC and SMC in a single frame using a 5-minute exposure (see photo above). ✶

Meeting highlights

Board of Trustees Meeting
Tuesday, March 4, 2003
Arlington Planetarium

✶ **Joe Pierson,** Membership Director, provided updated **membership statistics.** Total active membership stands at 539 households consisting of 694 actual members. He read comments from renewal forms, which praised the Monthly Observing Sessions, the Remote Observatory Project, the Amateur Telescope Making Special Interest Group, the clubs observing sites, e-mail list server and friendly members, and dark-sky efforts. Suggestions included a different time for general meetings, more outside speakers and better presentations at those meetings and a return of the CCD program.

✶ It was noted that the NOVAC **Articles of Incorporation and the Bylaws** were now available on the website.

✶ **Donna Blosser** indicated that there are several requests for club presentations. Hope was expressed that more people would fill out the **outreach survey form,** which was available on line and in the March/April issue of the newsletter.

✶ The **Board** sought to resolve a dispute over who had—or should have—**voting rights** at Board meetings. One the one hand, several felt that the elected trustees were chosen to make the decisions for the club and were responsible for those decisions, similar to the situation for boards of other organizations. On the other hand, it was felt that those taking the time to attend Board meetings and especially those volunteering to implement a particular club project should have some input beyond just being heard at a meeting. The Articles of Incorporation and Bylaws were reviewed, providing arguments for "restricted" and "inclusive" points of view.

✶ **Ed Karch** expressed concern that the recent *Washington Post* coverage of local amateur astronomy included dates for public nights at **Crockett Park** that are not MOS's or other significant club events. Some argued that this was Crockett's responsibility to advertise, not the club's and that it was inadvisable to advertise for nights when there was no club commitment to be present other than a given night's volunteer coordinator, especially while the status of the well-known **Sky Meadows** events remained questionable. Others noted that the notice to the *Washington Post* was coordinated with the Board, felt no harm was done, and argued that the promotion of additional public activity was a good thing for the club. It was recommended that Crockett coordinators be informed of the *Post* coverage and be prepared for greater than usual public attendance.

✶ Discussion subsequent to the board meeting clarified that the **Crockett Public Nights** listed in the *Washington Post* were also MOS nights at that park. In accordance with earlier comments, Crockett Public Nights, which were not also MOS nights at that park, were excluded from the notice. Given club attendance at **MOS events,** a larger-than-usual public turnout should be manageable. Care should be taken, however, to ensure that the club coordinators at Crockett do not find themselves without support in the event of larger public attendance, and that the club not find itself subject to criticism for not having sufficient member participation at any advertised public observing nights. The Board agreed that it would be useful to add this clarifying note to the minutes of the meeting prior to their approval.

General Membership Meeting
Sunday, March 9, 2002
George Mason University

✶ The March 8 **Monthly Observing Session** at Crockett was considered a success, despite less than clear sky at the start. There were 32 cars on the field (members)and 17 in the parking lot (public), leading to an estimated turnout of over 60 people. **Ed Seward** deserves credit for its organization.

✶ **Alan Figgatt** devoted the meeting's sky tour to the **Messier Marathon,** pointing out that there are no strict rules, nor a need for a big telescope to have fun with this observing challenge. Glaxies M74 and M77 were the difficult objects for the start, but Globular Cluster M30 is the last and most difficult of all, thwarting marathoners at our latitudes and higher.

✶ Alan played videotape of the **CBS Sunday Morning** program's coverage of the **Winter Star Party,** which was considered quite good.

✶ The guest presentation for the evening was by club member **Bob Bunge,** who works at the National Weather Service and is helping the service develop very **localized digital weather forecasts** that will prove useful to amateur astronomers. The advent and development of the Internet, computer models and satellite imagery have made "checking the weather" so much more than it was 20 years ago. In addition to information on fronts and systems which cover large areas, astronomers will be interested in the ability to account for local effects like mountains and water bodies, for example, on observing conditions. Not only cloud cover, but dew, wind and fog are weather phenomena of interest to an observer, and what a meteorologist considers a clear sky is not necessarily what an astronomer considers a clear sky. Adding the concerns of aviators regarding conditions at various elevations in the atmosphere should assist astronomers wanting to know what "seeing" conditions might be like for them. Bob discussed and provided examples of NWS efforts to provide **digital forecasts for 5-square-kilometer grids,** updated every 3 hours. He expressed hope that even more finely tuned forecasts might be

available in the future, cautioning, however, that meteorology might be a science but forecasting remains an art.

Board of Trustees Meeting Tuesday, April 1, 2003

✶ Treasurer **Pedro Martinez** provided **financial data** for the first quarter of 2003. In aggregate, the club received $3,718.27 in cash and disbursed $2,653.88, for a net gain of $1,064.39. All spending has so far been well within budget.

✶ **Joe Pierson,** Membership Director, provided updated **membership statistics**: total active membership stands at 535 households consisting of 679 actual members.

✶ **John Deriso** reported that the new additions to the **library** have been added to the website list and will be advertised at the General Meeting as well. He reported that the library continued not to be used. It was suggested that he bring a box of books to the General Meeting to see if it might encourage usage.

✶ **Alan Figgatt** reported on his inquiries regarding the various telescopes. He suggested that there be an **inventory of club eyepieces** and that perhaps some additional eyepieces could be donated. **Ed Boyer** recently donated a 10-inch Dobsonian to the club.

✶ **Craig Tupper** indicated that the **Roboscope** project is going well, although preparations for the structure may be lagging a bit. Details will be presented at the General Meeting. There are enough supplies to begin work on the **Powers Mirror,** according to **Mike Mills;** it's mostly a matter of finding time. It was suggested that perhaps a special Special Interest Group could be formed for this project.

✶ President **Ed Karch** reported that the **Gatewood Campground** has been reserved again for this year, but an issue arose when a new reservation system doubled the cost. Volunteers, fortunately, covered that extra cost and that excess contributions should be considered earmarked and kept for next year. It was agreed that those non-NOVAC members giving contributions should be given membership so that they would not be charged for using Gatewood on NOVAC nights.

✶ **Ed Karch** reported that a new member accidentally wandered into **Mickie Gordon** rather than **Mercer Park** a few nights ago and was caught by the Loudon County Sheriff. Given the increased regional security during a time of war, consideration was given to notifying police departments of our presence. The conclusion reached, however, was to see if this was an isolated event that occurred because the NOVAC member was not at a club site. A NOVAC sign will also be placed at the Mercer Park entrance.

✶ **Ed Karch** reported that **Bill Burton** and **Harold Geller** were judges at a **school science fair.** The three winners will get a one-year's club membership and will be asked to present their displays at a NOVAC General Meeting. The club should also get two books for the winners.

Submitted by Bob Hand, NOVAC Secretary

General Membership Meeting Sunday, April 13, 2003
George Mason University

✶ **Ed Karch** opened the meeting at 7:05.

✶ **John Deriso** asked for a volunteer to act as custodian for the club's **newest loaner scope: a 10" f/6 Dob** that was donated by **Ed Boyer.** This is a heavy, homemade Dob, built after the plans in Richard Berry's *Build Your Own Telescope.* It requires at least a minivan to transport.

✶ John also announced that the club is in need of a **new editor for the newsletter,** as Mike Mills is retiring. Contact Mike for information.

✶ **Rob McKinney** described the mentor program and **Monthly Observing Sessions (MOS).** The next MOS is May 10 at **Crockett Park.** This date coincides with **Astronomy Day.**

✶ **John Avellone** gave the **Astronomical League report.** No awards were presented.

✶ **Robert Stewart** reported on the **video and digital imaging (VOID) special interest group.** The next demonstration will be at the May 10 MOS. Stew also announced the "NOVAC 45" observing list, which is a list of 37 Messier objects and 8 bonus objects that can be observed during the summer.

✶ **Bob Traube** gave a report on **public outreach.** Very few outreach surveys have been returned, and many more are need to make outreach programs feasible.

✶ **Alan Figgatt** gave the sky tour. There will be a **total lunar eclipse** visible from DC on May 15. Asteroid Vesta is now at magnitude 6 and well positioned for viewing in Virgo. Spring is the best season for galaxy observing, so Alan presented a number of tips for observing them.

✶ The main program was given by four members of NOVAC's robotic observatory team: **Craig Tupper, Bob Neff, Pete Johnson,** and **John Deriso.** They presented design goals and described how they are working to meet them. The current projection for operation is late summer 2003. The estimated costs are $5,000–$6,000 up front, plus about $1,000 per year. The cost to date has been $2,300, with $489 coming from individual donations.

Submitted by Mike Mills

Fairfax County Outdoor Lighting Ordinance progress

by Bob Parks, Virginia Lighting Taskforce

After more than three years of pushing and prodding, Fairfax County has finished the final draft of the proposed Outdoor Lighting Ordinance. It has been sent to the Fairfax County Board of Supervisors and public hearings have been scheduled.

The first hearing will be the May 1st Planning Commission meeting at 8:15 pm. Meetings are held in the Board Auditorium of the Fairfax County Government Center, 12000 Government Center Parkway, Fairfax, VA. Anybody interested in speaking in support of the ordinance should plan to attend. It is suggested that you register in advance to assure that you will be heard. Please call the Planning Commission Office at 703-324-2865 to register or visit their website: *www.co.fairfax.va.us/gov/planning/speaker.htm*

The second public hearing will be at the June 16th Board of Supervisors meeting at 3:30 PM. Board meetings are also held in the Board Auditorium of the Fairfax County Government Center, 12000 Government Center Parkway, Fairfax, VA. To speak at a public hearing before the Board, you are encouraged to register in advance with the Office of the Clerk to the Board at 703-324-3151 or visit their website at: *www.co.fairfax.va.us/gov/bos/speaker_bos.htm.*

The Board of Supervisors is scheduled to vote on the ordinance at this meeting, so your help is needed immediately. Everyone who lives in Fairfax County should visit the VOLT website *(www.volt.org)* to get details on how to send an email to their Supervisor expressing their support. I know that we're all busy people, but this will only take a couple minutes. We have provided a sample letter and links to your Supervisor. Please take the time to ensure that Fairfax County will have better outdoor lighting in the future. Do it for your children and grandchildren.

If you are a member of a homeowners group or civic association please talk to the leaders of the group and ask that they come to speak for the ordinance or send a letter to the Board of Supervisors. If they can't attend, ask if you can speak as the representative for the group.

Time is of the essence; the majority of the Board of Supervisors must be convinced that the ordinance is important to the citizens of Fairfax County for this to pass. It is too easy for Supervisors to take no action, if they feel there is no public support. You can be sure the service station and fast food operators will take the time to let them know that they like being able to install bright, unshielded lights that produce glare, light trespass and sky glow. It's cheap advertising for them. Make sure that your voice is also heard.

Please help. Now.

Drop me a note at *bparks@volt.org* to let me know that you have sent an email and a copy of the response that you get to it. ✶

Events in May and June

May	1 NEW	9 FIRST	15 FULL	22 LAST	31 NEW
2–4|23–25|30–31	Prime observing weekends				
10	Monthly observing & Astronomy Day Star Party (Crockett)				
18	General meeting (special date)				
1–11|23–31	Crockett open				

June	7 FIRST	14 FULL	21 LAST	29 NEW
6–8|20–22|27–29	Prime observing weekends			
8	General meeting			
21	Monthly observing & NOVAC Picnic (Crockett)			
1–8|20–30	Crockett open			

NASM/Einstein Planetarium Public Oberving

Join Sean O'Brien, staff astronomer of the Albert Einstein Planetarium, and other local amateur astronomers, for public telescopic observing under dark, star-filled skies, away from city lights. The evening begins with a short night sky orientation at dusk, followed by telescopic observing of various astronomical objects, ending at 11 pm.

Sky Meadows State Park is west of Washington, D.C. on US Route 17 North, 1 mile south of US Route 50, or 7 miles north of Interstate 66, Exit 23. The park contact phone number is 540-592-3556. There is a $4 parking fee per car. Dress warmly. In case of clouds or rain, an amateur astronomer will lead a short alternate program.

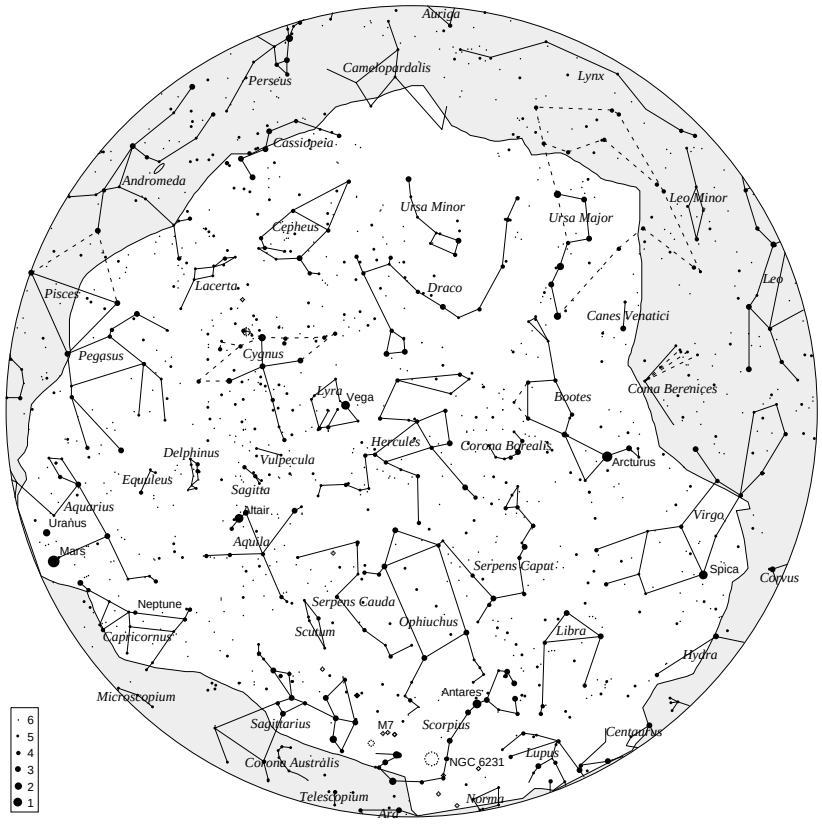
2003 Schedule—Sky Meadows State Park, Paris, VA

May 3	2 days after New Moon. Astronomy Day; NOVAC MOS is May 10
June 21	Last Quarter Moon. Summer Solstice. Same day as NOVAC picnic
July 19	2 days before Last Quarter Moon
August 10	4 days after Last Quarter Moon. Same night as NOVAC MOS
September 13	3 days after Full Moon. NOVAC Stargaze September 20
October 18	Last Quarter Moon. Same night as NOVAC MOS
November 8	Full Moon—Total Lunar Eclipse!

Editor's note: This is a fun program for NOVAC members to help out with. Sky Meadows park has great skies, and the public is always very receptive. Plus, NOVAC members who bring their telescopes to share may stay until 1 am.

May skies from Savage Farm

June skies from Savage Farm



Jeff's observing report

Jeff Stetekluh

Jeff's astronomical calculations are made for the Northern Virginia area. See *www.novac.com/jeff/jrefs.html* for calculation references and further details.

Jupiter eclipse events on Friday and Saturday nights

May 9	8:38 pm	Europa Eclipse end
May 16	11:15 pm	Europa Eclipse end
Jun 8	9:09 pm	Callisto Eclipse start
Jun 8	9:09 pm	Callisto Eclipse start
Jul 5	9:30 pm	Io Eclipse end

The Sun

May 11	rises at 6:00 am	sets at 8:10 pm
Jun 8	rises at 5:43 am	sets at 8:32 pm
Jun 8	rises at 5:43 am	sets at 8:32 pm
Jul 13	rises at 5:54 am	sets at 8:34 pm

The Moon

May 1	New Moon
May 9	First Quarter
May 15	Full Moon
May 22	Last Quarter
May 31	New Moon
Jun 7	First Quarter
Jun 14	Full Moon
Jun 21	Last Quarter
Jun 29	New Moon
Jul 6	First Quarter
Jul 13	Full Moon

Events

May 6	The eta-Aquarid meteor shower peaks (active Apr 19 to May 28)
May 7	Mercury at Inferior Conjunction
May 15	Total Lunar Eclipse; mag=1.129
May 31	Non-Central Annular Solar Eclipse; mag=0.937
Jun 3	Mercury at Greatest Elong: 24.4°W
Jun 21	Summer Solstice
Jun 24	Saturn-Sun Conjunction
Jul 5	Mercury at Superior Conjunction

The Planets

May 11	Rises	Transits	Sets
Mercury	05:47	12:38	19:29
Venus	04:56	11:24	17:53
Mars	01:53	06:51	11:49
Jupiter	11:38	18:43	01:51
Saturn	08:19	15:39	23:00

June 8	Rises	Transits	Sets
Mercury	04:36	11:32	18:28
Venus	04:40	11:47	18:54
Mars	00:50	06:00	11:11
Jupiter	10:07	17:08	00:12
Saturn	06:44	14:04	21:25

Each map depicts the sky at 0 hours for the 15th day of the respective month. The shaded area approximates the local horizon obstruction at the site.

Announcements

2003 Year-Long Star Party at Spruce Knob

by John Nusbaum

The official 2003 dates for the Year-Long Star Party at Spruce Knob have been set. They are:

2003 Schedule—Spruce Knob, WV

May 29–June 1	Thursday–Sunday nights
June 26 –29	Thursday–Sunday nights
July 31–August 3	Thursday–Sunday nights
August 28–31	Thursday–Sunday nights
September 25–28	Thursday–Sunday nights
October 23–26	Thursday–Sunday nights

The cost of reserving the facilities for this event was more than double the cost of last year. This event was made possible this year through the financial and organizational support of the NOVAC board and its members and through over $1,000 in additional pledges of support by both NOVAC and non-NOVAC members.

For complete information about the Year-Long Star Party (YLSP), go to the YLSP website at *www.novac.com/spruce/*.

Newsletter editor needed

Our current newsletter editor is stepping down after the May/June issue, so NOVAC is looking for a replacement.

The editor's duties include:

- Encouraging members to contribute articles
- Assembling necessary club information such as meeting highlights, new members, upcoming speaker information
- Checking for errors in content and style (grammar, spelling, etc.)
- Coordinating the graphical layout, printing, and shipping.

If you would like to volunteer, send an e-mail to club president Ed Karch at *ekarch@karch.com.* For more information about the position and its responsibilities, contact Mike Mills at *mjmills@fpcc.net.*

Loaner scope update

NOVAC has several telescopes and binoculars for club members to borrow for one month at a time. A few of these scopes have moved to the care of new custodians since the last Member's Handbook was mailed. To arrange pick up, contact the instrument's custodian at the phone number or e-mail address given below.

At the time of checkout, you must show your observing pass and leave a $100 security deposit in the form of a check payable to Northern Virginia Astronomy Club. Deposit checks are held by the custodian until the scope is returned. Don't be shy about borrowing! Some of the scopes go unused for several months in a row.

Instrument	Custodian
Celestron SP-C6 6" Newtonian (Equatorial)	Mike Mills 703-333-5075 *mjmills@fpcc.net*
6" f/5 Newtonian (Dobsonian)	Alex Hazzouri 703-264-5875 *Alex@balloonyideas.com*
Meade 6" f/8 Newtonian (Dob.)	Rob McKinney 703-924-5883 *RobCMcKinney@aol.com*
Discovery 10" f/6 Newtonian (Dob.)	Alex Lim 703-222-0419 *alexander.lim@wcom.com*
8" Celestron SCT	John Deriso 703-476-3543 *seaotter@bellatlantic.net*
SolarMax H-α filter w/ 70 mm refractor	Wolfgang Schubert 703-321-9617
Binoculars (10x50, 12x50, or 8x40) (no deposit)	John Deriso 703-476-3543 *seaotter@bellatlantic.net*
Laser collimator (no deposit)	Pete Johnson 703-830-7513 *pjohnson19@cox.net*

"To observe, and to help others observe"

NOVAC is a non-profit, all-volunteer organization chartered to advance amateur astronomy in Northern Virginia. Members benefit from:

Access to dark sky observing sites:
NOVAC maintains agreements that provide club members with year-round access to observing sites away from city lights

Monthly meetings
Monthly meetings are held at 7 p.m. on the second Sunday of each month in Room 80 of the Enterprise Building on the campus of George Mason University. Each meeting features a lecture on an interesting topic by a local expert. See the web page or future newsletters for a schedule of speakers.

Bimonthly newsletter
The NOVAC newsletter provides information specifically for NOVAC members, as well as general interest articles on such topics as observing reports, equipment reviews, upcoming events, ATM projects, and more.

High-quality telescopes to borrow
NOVAC members may borrow one of the clubs several "loaner" telescopes at no charge. Members may choose from among three 6" reflectors, two 10" f/6 reflectors, an 8" SCT, and a hydrogen-alpha solar scope. Binoculars are also available for loan.

Club website
Up to date information about club events and activities is maintained on the club website at *www.novac.com.*

Large club library
NOVAC maintains a well stocked library that members may borrow from by contacting John Deriso *(seaotter@bellatlantic.net).* A full list of titles is available from the club website.

Private e-mail list-serve
Members keep up with current club information by subscribing to the NOVAC e-mail list, without fear of flame wars or spam e-mails.

Public outreach opportunities
Several times each year, volunteers from NOVAC present astronomy programs to schools, churches, Scout troops, and other public groups.

Membership in the Astronomical League
Through NOVAC's membership in the Astronomical League, NOVAC members gain access to the AL's newsletter, services, and observing programs.

Discounts on astronomy magazines and books
Subscriptions to *Sky & Telescope* and *Astronomy* magazines are offered to club members at a considerable discount. Also, astronomy books purchased through the club are eligible for a 10–25% discount.

See your *Membership Guide* for more details.

The *NOVAC Newsletter* is the official publication of the *Northern Virginia Astronomy Club* and is published six times per year. The NOVAC Newsletter is sent to members of NOVAC as a regular membership benefit.

Membership
Membership in the Northern Virginia Astronomy Club is $25.00 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 $5.00 per person. Contact:

Joe Pierson, NOVAC
PO Box 207
McLean, VA 22101
703-328-5260
jpierson71@yahoo.com

Change of address
All notices of change of address should be sent to Joe Pierson. Please include both old and new addresses.

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

Submissions to the newsletter
NOVAC members are invited to submit articles for publication in the *NOVAC Newsletter.* The editor reserves the right to edit all materials submitted. Send article submissions to the Editor, Michael Mills, at *mjmills@fpcc.net.* **The deadline for submissions is two weeks in advance of publication: June 13 for the July/August 2003 newsletter.**

In this issue...

NOVAC

THE NORTHERN VIRGINIA ASTRONOMY CLUB

c/o Joe Pierson, Membership Director
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