

SIDEREAL TIMES

*The Official Publication of the
Amateur Astronomers Association of Princeton*

Director:
Rex Parker

Treasurer:
Brian VanLiew

Program Chairman:
Ken Kremer

Assistant Director:
John Miller

Secretary:
Ludy D'Angelo

Editor:
Victor Belanger

Volume 36

February 2007

Number 2

From the Director

AAAP Meeting Feb 13 (8:00 Peyton Hall). Our stimulating excursion through the many worlds of astronomy and astrophysics leads us next to the domain of **Dr Robert Vanderbei of Princeton University**. Bob is Professor and Chair of Operations Research and Financial Engineering, and an Associate Faculty Member of Astrophysics at Princeton. His research includes cutting-edge methods to enhance contrast at the limits of telescope resolution (exotic shaped-pupil masking techniques, for example) and other advanced approaches critical to the **Terrestrial Planet Finder** mission seeking to identify new classes of extra-solar planets. Bob is also an active member of the AAAP, and an expert astrophotographer using amateur-scale (but rather high-end!) equipment. He will present a talk entitled, **“Backyard Astrophotography: A How-To Story”**. His remarkable deep sky photography work using Questar, Takahashi, and OGS Ritchie-Chretien telescopes and CCD cameras is not to be missed. For more information see **Program Chair Ken Kremer’s** article in this issue-- and go the AAAP website.

Board of Trustees Meeting. A Board meeting is planned for **Thursday, March 1 at 7:30 PM** in Peyton Hall (conference room, basement level). All Board and committee members are asked to participate, and interested club members are welcome to attend this meeting. Board meetings focus on the future directions and activities of the AAAP. I welcome suggestions on agenda items— please forward via e-mail Feb 26.

Opportunities for AAAP Members. The vision for the future of AAAP includes enhancing the skills and opportunities of members to engage in hands-on astronomical observing and imaging. This can add an important dimension to the experience of astronomy, on top of our excellent and wonderful program series featuring top professional astronomers. Becoming a knowledgeable observer can also provide you with the ability to spark the interests of youth and the public by participating in public outreach and education. Of course, this requires commitment and development of the membership, and an effective club infrastructure to coordinate activities.

The **Organization Table** (See insert) outlines the club structure and the key people who spearhead these activities currently. There are several areas in which other members (new or long-standing) could get more involved, including: assist the Program Chair; help the Membership Committee improve new member orientation; enter a training program for Observatory Keyholder status and participate in public nights; assist the Sidereal Times editor/publisher. As an example, I’d like to thank **Larry Kane** for stepping up to volunteer for Observatory Keyholder coordinator (Larry is also our librarian/archivist). We are also going to need a few members to take on roles on the **Board of Trustees**, including the **Director** position. In upcoming months we will regenerate a slate of candidates for the Board for the next year (the election is in May). Please think about how you can “give back” to the AAAP and contribute to the larger goals of amateur astronomy. I and fellow Board members would welcome your input on these ideas.

Dark skies! -- Rex

Key Holders Wanted

If you are interested in learning how to run our observatory and join one of the public night’s teams, please contact me via email at:

brian@princetonastronomy.org

or at one of the monthly meetings. We will be making schedules for training sessions soon. All who respond will be contacted when we will meet at Washington Crossing Park. Most members find it necessary to attend multiple sessions to learn all the aspects of operating and interfacing with the public.

Brian

Simpson Observatory (609) 737-2575

Minutes of the
General Membership Meeting of AAAP

January 9, 2007

The meeting started at 8 PM. Rex Parker (Director) gave a welcome to the audience. He introduced the agenda items for the evening meeting and urged members to stay after the speaker talk for a discussion on club activities and planning. He noted that there was a new comet, Comet McNaught, he asked if anyone in the audience had seen it, many had, and they indicated it was ~ magnitude 1. The comet is viewable by eye and or binoculars within 30 minutes of sunset. The grounds improvement at Washington Crossing is waiting for approval from the state park administration.

Ken Kremer (Program Chair) briefly talked about the remaining speaker schedule. Robert Vanderbei will be the February speaker on February 13th, Edger Choueiri on March 13th, and Fred Espinak for a special lecture on March 30th. Bob Vanderbei will talk on backyard astrophotography. The May speaker will be Toni Del Genio on the Cassini mission to Saturn. Ken displayed the first image from the STEREO spacecraft that our October speaker Therese Kucera, talked about. Ken then introduced tonight's speaker Jim Gunn, who gave us a talk on a 50-year perspective of Cosmology.

The meeting continued after the conclusion of the speaker's talk and a short break. AAAP official hats and shirts are for sale.

Rex Parker indicated that a lot of things we do in the club are very important to education of our own members becoming better observers, becoming more understanding of cosmology, the ability to observe through our own telescopes, and gaining a sense of astronomy through the observational approach. One of the things we do is to operate our observatories. Members are welcome to come to the observatory to learn how to use the equipment, become certified through training in using the equipment, and become a keyholder that enables a member to go to the observatories any time they want. We also reach out to the public with our outreach program, which is scheduled twice a month from April to October. This schedule has been difficult to communicate to the public. Rex felt that there was not enough frequency in order for the observing teams during the seasons for the teams to perform their functions effectively. Also, the teams don't get enough practice if there is a rain out. Currently there are six teams, which allows each with 2 sessions a season.

Rex proposed that we should change our public outreach nights to every Friday night April to October. This would allow a team to have 3 sessions during the season. This is subject to further discussions and opened to the floor for discussion.

Comments were made pro and con. There was a concern about keyholders wanting to go out of state for new moon weekends, or to attend other star parties. Another comment was made that there are a lot of keyholders that just don't show up for their duty nights. There was a concern that there would be trouble staffing the public nights. Rex's concern was that there should be some way to re-invigorate the public nights programs. More discussion followed about key holder training. Bill Nagle has resigned from the keyholder training responsibility, so someone else will need to take that responsibility. There will be more discussion on the topic with a decision made at the next board meeting in March. Some more suggestions were made how to announce through the web

site if the public night was on or off.

Ludy D'Angelo (Secretary) announced that the last meeting minutes were published in the Sidereal Times. And now there is audio available of the meetings (not the speakers) if anyone is interested. He also presented two new members to the club Louia and Casey Williams. And Asa Sallee who had joined about a month ago.

Membership stands at 100 even. Ludy presented income and expenditure numbers as we had done last year. The first chart showed amounts projected to August 31 2007.

AAAP Expenditures for 2006-07 (Sept. 2006-Aug. 2007)

As of 1/07/2007, Includes Starquest proposed through 8/31/07

Income: Dues	\$3,920	(98 mbrs.)
Miscellaneous	995	
Starquest 2006	1,340	
Total Income	\$6,255	

Usual Expenses:

Telephone	274	
Electric	53	
Insurance	1,447	
Sidereal Times	566	
Starquest Deposit	200	
UACNJ Dues	119	(\$20 + \$99) for 2007
Incorp. Renewal	25	
Picnic	170	
P.O. Box Rental	50	
Office Supplies	100	
Website	290	
Speaker dinners	265	

Total Usual Expenses \$3,559

Net after Usual Expenses \$2,696

Unusual/voted expenditures:

Paramount ME PC boards	\$1,000
Brush cutting	675

NET \$1,025

He indicated that Starquest was very important and that the only reason there was a good profit from June 2006, was the fact that Starquest was rained out and that there were a lot of participants who did not show up who had pre paid. Other income was from various donations made from our star parties at schools. Also the sale of the Schmidt Camera was an additional \$795. He indicated the usual expenses as experienced. The numbers do not include the expenses for the member meeting program speakers. We also voted on extraordinary expenses of \$1,675.

Another set of numbers was presented and shows how the club would be doing if Starquest was not included in the numbers.

AAAP Expenditures for 2006-07 (Sept. 2006-Aug. 2007)

As of 1/07/2007, does **not** include Starquest, proposed through

(Minutes, continued on page 3)

(Minutes, continued from page 2)

8/31/07

Income: dues	\$3,920	(98 mbrs.)
Miscellaneous	995	

Total Income	\$4,915	
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Usual Expenses:		
Telephone	274	
Electric	53	
Insurance	1,447	
Sidereal Times	566	
Starquest Deposit	200	
UACNJ Dues	119	(\$20 + \$99) for 2007
Incorp. Renewal	25	
Picnic	170	
P.O. Box Rental	50	
Office Supplies	100	
Website	290	
Speaker dinners	265	

Total Usual Expenses	\$3,559	
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Net after Usual Expenses	\$1,356	
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Unusual/voted expenditures:		
Paramount ME PC boards	\$1,000	
Brush cutting	675	
NET Loss	(\$319)	

These numbers, again, do not include expenses for the speakers and other capital improvement expenses for the observatory.

Brian VanLiew (treasurer) reports that there is \$13,824.71 in the treasury.

UACNJ member renewal form was received and will be sent.

Observatory: Ron Mittelstaedt reports that the new boards were installed in the Paramount ME, and that we are waiting for John Miller to install the upgrade to The Sky astronomy software. There should be a training session scheduled to overview the software.

Gene Ramsey wanted to thank Manick Rajendran for donating a new flat screen computer monitor for the observatory. Gene is also looking to fix the thermostat for the computer box. He also announced that Bill Nagle has resigned as observatory co-chair. That he still wants to participate in club activities.

Ludy D'Angelo has picked up another donated scope. An 8" Coulter Dobsonian. Anyone who wants to use one of the 2 donated scopes should contact Ludy. One will be moved to the observatory.

Public Outreach: Jeff Bernardis (Public Outreach Co-coordinator) reports that Lawrenceville Elementary will have their annual science night on January 26th. We will have telescopes there as usual. Gene Ramsey and Vic Belanger are doing a solar
(Minutes, continued to the right)



A Horse of a Different Color

After last months issue with the black and white H-alpha image of the horsehead nebula I decided to try my luck at a color version but framing it slightly different. This time I wanted to bring in to the picture three DSOs for the price of one. In this scenario I wanted to capture the Horsehead on the right, with the Flame Nebula to the left and in doing so having NGC2023 toward the middle. I spent many sessions working with the individual images until I felt I got the most I could out of each of the objects. I hope you take the time to go online if you get the paper version of the Sidereal to get the feel for the amount of color there is in this region. If you want the full effect, let me know and I will send the full resolution shot to you. As for what scope was used to capture this image? . . . a mere 80mm refractor (Orion ED80).

Brian

From the Treasurer

At the time of this report the current AAAP balance stands at \$12803.96.

Income for the month \$184 and expenses at \$1204.75.

Brian Van Liew

(Minutes, continued)

presentation at the Washington Crossing Nature Center on January 13th.

Sidereal Times deadline will be the January 26th.

Audio of the membership meeting (not the lecture) is available from the Secretary.

The meeting ended at 10:20 PM

Submitted by,
Ludovico D'Angelo, Secretary

Deadline for the March '07

Issue of Sidereal Times

March 2, 2007

Science Outreach

Trenton Central High School: Trenton, NJ, Dec 12, 9 AM. "NASA lands at Trenton Central High School" (TCHS) was the headline on the school website following my interactive Mars Rover talk to a packed crowd of about 70 enthusiastic inner city kids. I was invited there by high school teacher Dave Cippolini and PULSE outreach coordinator Mike Perl. The kids gave a wonderful reception and asked many excellent questions. Many are involved in the FIRST Robotics national competition. The teacher sent a very gracious note of thanks for giving meaning to education thru science and technology and motivating the students. Personally for me it was a lot of fun and rewarding to help these kids, coincidentally the same day I hosted Jim Bell's evening AAAP talk



Science and Engineering Academy students at Trenton Central High School enjoy the interactive Mars in 3-D experience from AAAP Program Chair Ken Kremer.

Photo Credit: Mike Perl

Lawrenceville Intermediate School: Lawrenceville, NJ, Dec 13, 2 PM. These kids were fired up to learn about astronomy and space exploration and enthusiastically signed the "Pluto is a Planet" petition. And they loved seeing the solar system in 3-D. Afterwards, we did a rapid fire Q&A on many astronomy topics ranging from the Big Bang, the formation of our solar system, the hunt for extra solar planets, Saturn, Comets, the origin of life and more.



5th Graders at Lawrence Intermediate School on Dec 13. All the kids sent handwritten thank you notes. One wrote "Thank you for teaching us about countless things in the Universe, especially ourselves. Now I want to know everything about it".

My upcoming astronomy talks include the following schools and community groups:

Lawrence Elementary School: Lawrenceville, NJ, Fri Jan 26, 2007, 630 PM, "Science and Discovery Night".

Knollwood Middle School: Fair Haven, NJ, Jan 29

Rittenhouse Astronomical Society (RAS) in the Franklin Institute: Philadelphia, PA, Wed Feb 14, 8 PM. "Mars, Saturn,

Comets and Beyond in 3-D". Website: <http://www.rittenhouseastronomicalsociety.org/>

Mohawk Valley Astronomical Society (MVAS): Clinton, NY, Sat Mar 10, Annual dinner banquet invited speaker. Website: <http://mvas-ny.org/>

Howell Memorial Middle School: Freehold, NJ, Mar 16.

Raritan Valley Community College Planetarium: Somerville, NJ, Tue Mar 27, 7:30 PM. "Our New Solar System". Website: <http://www.raritanval.edu/planetarium/>

The Explorers Club: NY, NY, Mon Apr 23, 7 PM.

For science outreach presentations please contact me at Email:

ken@princetonastronomy.org

Ken Kremer

AAAP Program/Lecture Chairman

From the Program Chair

Upcoming 2006-2007 AAAP Lecture Season

Feb 13: Professor Robert Vanderbei, Chairman of the Operations Research and Financial Engineering Department of Princeton University, is the keynote speaker. His talk is titled "Backyard Astrophotography: A How-To Story". In the first part of this talk, Bob will lead the audience through a night of celestial imaging. He'll discuss the equipment needed and the set up involved to acquire good image data. He will then describe how one takes the collected image data and assembles it into a nice picture. Bob will emphasize the important issues that are critical to obtaining a high-quality final result. He will show how the equipment, software, and his own technique have all improved dramatically over the last few years.

Bob's astrophotography was featured in an on campus Art Exhibit at the Engineering School Cafe in February 2006 and he is an active AAAP member. His research is focused on NASA's Terrestrial Planet Finder space telescope mission to search for earth-like extra solar planets. Prof. Vanderbei is also an associated faculty member of the Astrophysics Department and he has numerous scientific publications.

March 13: Professor Edgar Choueiri from Princeton University on "Plasma Propulsion and the Exploration of Space".

March 30 (Friday at Peyton, 8 PM): Fred Espenak, world renowned Eclipse expert from NASA Goddard Spaceflight Center will present a **Special Science Lecture** on "Predicting and Chasing Solar Eclipses". Attendees will receive a special eclipse handout.

(Program, continued on page 5)

(Program, continued from page 4)

April 10: Professor David Spergel from Princeton University on “*Taking the Universe’s Baby Picture*”.

May 8: Dr. Tony Del Genio from NASA Goddard Institute for Space Studies will present “*The Cassini Mission to Saturn*”. Tony is a member of the imaging team and will also discuss the **newly discovered methane lakes on Titan !**

Prof Jim Gunn, the Eugene Higgins Professor of Astronomy at Princeton University was welcomed by another great crowd at the **Jan 9 AAAP** monthly meeting for his absolutely superb talk on “*Cosmology--a 50-year Perspective and Some Prospects for the Future*”. Prof Gunn has received numerous national and international awards for his outstanding contributions to astronomy theory, observation and instrumentation including the Hubble Space Telescope and the Sloan Digital Sky Survey. Jim said he really enjoyed giving the talk was quite pleased with its excellent reception and the extremely good questions.



Prof Gunn answers queries at the Jan 9 AAAP monthly meeting



Prof Gunn describes the Sloan Digital Sky Survey

Astronomy **Professor Jim Bell** of Cornell University gave a fantastic talk on **Dec 12** to a record breaking AAAP lecture crowd of over 160 when he spoke from the vantage point of “inside mission operations” in a talk titled “*Postcards from Mars: Spirit*

and Opportunity Roam the Red Planet”. Jim is the top scientist responsible for the rovers' color imaging system called Pancam and is a leading Mars researcher. Peyton Hall was SRO and overflowing with many gladly sitting on the steps including myself.



Record Breaking Crowd for Jim Bell at AAAP Dec 12 Lecture.

Photo Credit: Stuart Warmink

Jim presented his favorite images from both rovers, frequently with animations of the full wide panoramic vistas from the surface of the red planet while simultaneously highlighting the breakthrough scientific achievements. Both rovers have found strong evidence for past alteration of martian rocks by liquid water, which has vast implications in the search for life. This is the first planetary mission where the scientists occasionally have the luxury to think like photographers while planning the rover’s camera sequences. And this is primarily due to the incredible longevity of the rovers’, which at >11 times design lifetime is “way beyond the wildest expectations of even the people who built the twin sisters”. The ongoing 3 year mission was initially planned to last just 90 days. Jim said that “to say the rovers have surpassed expectations is an understatement”. The team plans “to drive ‘em till the wheels fall off”!



Mars Scientist Prof Jim Bell is applauded by the AAAP crowd on Dec 12 and relates the breakthrough science results from Spirit and Opportunity as they find water altered rocks.

Photo Credit: Mike Perl

(Program, continued on page 6)

(Program, continued from page 5)

Jim included the latest images from Opportunity as she treks around the giant ½ mile wide Victoria Crater at Bottomless Bay and Cape St Mary and from Spirit with the most detailed panorama of the entire mission from McMurdo at Winter Haven. He said that both rovers' have survived the grueling martian winter intact and are now at the start of a whole new mission. The initial goal for Spirit is to return back to the nearby Home Plate feature which the recent HiRISE images from orbit (via MRO) show has many more scientifically interesting targets than earlier realized. Spirit's future driving abilities are not clearly known, except that forward progress is likely to be much slower due to the balky right front wheel. Opportunity will continue clockwise around Victoria for now, taking images to create a 3-D model which will aid the search for a safe path in and out. He said "they definately want to try and drive into the crater, especially since this is likely to be her final resting place with the next nearest target of interest ca. 10-15 km distant".

Following his talk, Jim answered numerous audience questions. Then we had to take a break and he autographed many copies of his glossy new book "*Postcards from Mars: The First Photographer*

on the Red Planet", an art book about Mars. Please contact me directly if you wish to purchase one of the few remaining "autographed" copies.

The **Trenton Times** published a great article on Christmas Day about Jim Bell's talk, titled "*Mars talk is out of this world*" very prominently at the top of p. 3 and which continues onto the top of p. 5. The AAAP is listed as the host in paragraph 3. The article is also posted online and please read it at this link:

<http://www.nj.com/news/times/index.ssf?/base/news-2/116702321579070.xml&coll=5>

My gratitude to all for the record turnout and great reception and enthusiasm from the audience. Many thanks also to Ms. Susan Perl from the Cornell Alumni Association at Princeton for providing refreshments.

Please send me photos from any of the past or current exciting lecture evenings which you may have. And please attend the future AAAP lectures!

Prof Jim Bell in silhouette against a backdrop of the two Mars Rover landing sites at Gusev Crater and Meridiani Planum.
Photo Credit: Stuart Warmink

Please send me your suggestions for speakers, with contact/topic information.

Email: ken@princetonastronomy.org

Ken Kremer

AAAP Program/Lecture Chairman

For Sale

Starlight Xpress MX716 Monochrome Camera A few years back I bought this camera to learn the art of astrophotography and have been very happy with it's capability. Rescently I have upgraded to another camera with a bigger chip and so I 'm putting this up for sale. It is in good shape and works fine. Downloads via USB1.1. It comes with star2000 which means this camera can guide itself if you have an ST4 guider port on your mount. No need for another camera or guide scope. It also comes with a Maxfield 3.3FR which will allow you to shoot through an F10 SCT at F3! And last I have an adapter which allows any M42 threaded screw on telephoto lenses (not included) to attach to the camera for widefield shots.

If interested please let me know and we can talk. I will be more than happy to you show you what can be done with this camera.

Brian VanLiew

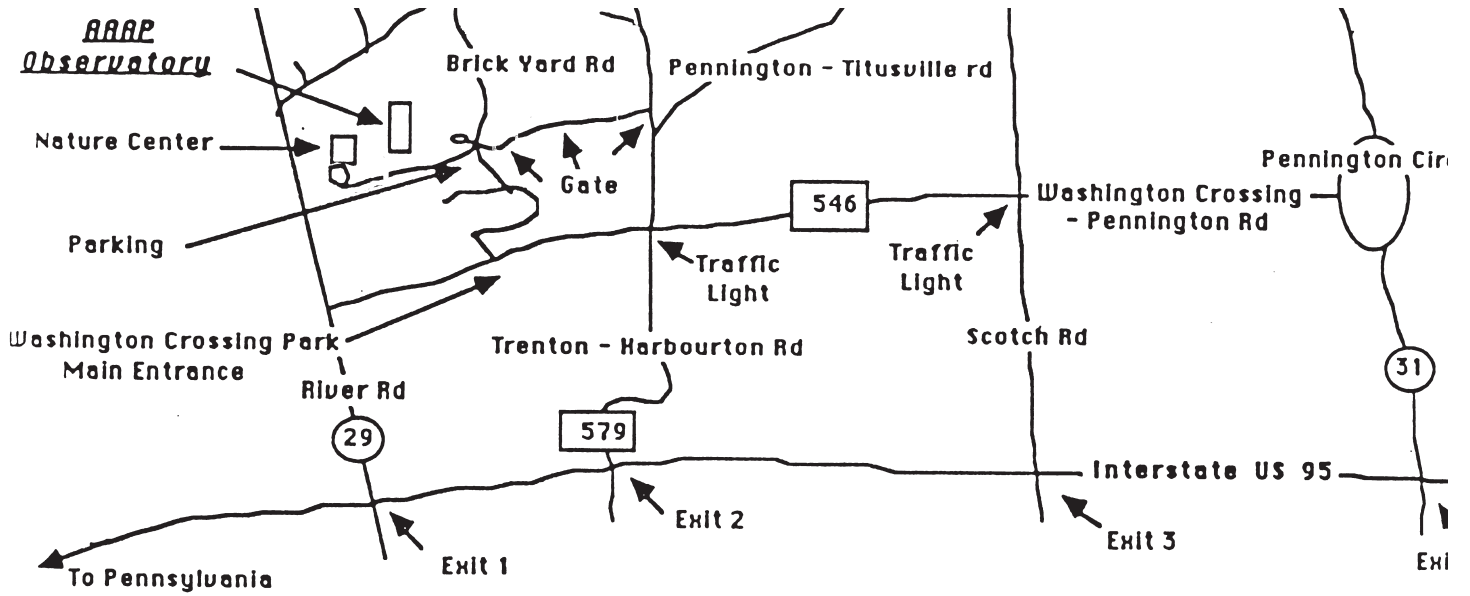


Comet Crane Jan. 21, after it set. You can still see the faint extensions of the tail (somewhat verticle rays) in the southwest about an hour after sunset. The photo was taken at the Custer Observatory (near the east end of Long Island) by Phil Harrington.

2007 EVENTS CALENDAR

By Barlow Bob

- Feb 12 - 18 Winter Star Party**
Florida Keys, FL
<http://www.scas.org/wsp.htm>
- Apr 12 - 15 Zombie Party**
Atlanta, GA
<http://www.atlantaastronomy.org/Zombie/>
- Apr 13 - 17 Delmarva Star Gaze Star Party**
Tuckahoe State Park, MD
<http://www.delmarvastargazers.org>
- Apr 13 - 15 South Jersey Spring Star Party**
Belleplain State Forest, NJ
<http://hometown.aol.com/sjastroc/spring.html>
- Apr 26 - 27 NEAIC**
Northeast Astronomical Imaging Conference
Suffern, NY
<http://www.rocklandastronomy.com/neaf.htm>
- Apr 28 - 29 NEAF**
NEAF Solar Star Party
Suffern, NY
<http://www.rocklandastronomy.com/neaf.htm>
- May 17 - 20 Cherry Springs Star Party**
Cherry Springs Park, PA
<http://www.astrohbg.org/s4/index.php>
- Aug 10 - 19 Rockland Summer Star Party**
Savoy, MA
<http://www.rocklandastronomy.com/special-events.htm>
- Oct 12 - 14 Jersey Starquest Star Party**
Hope, NJ
<http://www.princetonastronomy.org>
- Starconn**
Wesleyan University, Middletown, CT
<http://www.asgh.org/>
- Jul 11 - 15 Mason Dixon Star Party**
Shreveport Airport / Footlight Ranch
York County, PA
<http://www.masondixonstarparty.org/>
- Jul 4 - 7 Green Bank Star Quest**
Green Bank, WV
<http://www.greenbankstarquest.org/>
- Rochester Fest**
Rochester, NY
<http://www.rocheasterastronomy.com>
- Aug 10 - 19 Rockland Summer Star Party**
Savoy, MA
<http://www.rocklandastronomy.com/>
- Aug 10 - 11 Stellafane**
Springfield, VT
<http://www.stellafane.com>
- Jul 13 - 15 The Conjunction**
Northfield, MA
<http://www.philharrington.net/astroconjunction/>
- Apr 20 - 22 Stokes Fall Star Party**
Branchville, NJ
<http://www.csam.montclair.edu/njsoc/directions.htm>
- Sep 7 - 9 Arunah Hill Days**
Cummington, MA
<http://www.arunah.org/calendar.htm>
- Sep 14 - 16 Black Forest Star Party**
Cherry Springs State Park, PA
<http://www.bfsp.org/starparty/index.cfm>
- Sep 14 - 16 Connecticut Star Party**
Marlborough, CT
<http://www.asnh.org/>
- Delmarva No-Frills Star Party**
Tuckahoe State Park, MD
<http://www.delmarvastargazers.org/archive/nofrills2005/index.html>
- Novac Star Gaze**
Manassas, VA
<http://www.novac.com/gaze/>
- Astro Assembly**
Skyscrapers, Inc
Amateur Astronomical Society Of Rhode Island
<http://www.theskyscrapers.org/>
- Mid Atlantic Star Party**
Robbins, NC
<http://www.masp.org/>



The best way to get to the observatory is to take Interstate 95 South towards Pennsylvania. Then take Scotch road at Exit 3 and proceed north (this amounts to right). Then, at the third traffic light take a left onto the Washington Crossing-Pennington road (County Route 546). Take this road to the first traffic light and take a right onto Trenton-Harbourton road (County Route 579). Take this road to the first driveway on the left, this is the Phillips Farm/Soccer Field entrance to the park. There is a series of three gates with club combination locks. If the gates are not open, you will need the lock combination to open the gate or be accompanied by a Keyholder member.

See us on the Web: www.princetonastronomy.org

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February 2007