

SIDEREAL TIMES

The Official Publication of the
Amateur Astronomers Association of Princeton

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September

Number 9

From the Director

The weather so far this summer has not been very conducive to astronomy. High humidity, clouds and thunderstorms (nothing unusual there) have hampered the viewing. However, at Stellafane on August 13-16, for the first time in memory (my memory anyway), we had three good nights of viewing. Thursday was clear but very dewy. Friday was clear until about midnight when some clouds rolled in (they cleared out later). Saturday was clear from dusk to dawn. And it didn't rain at all for the entire convention (another first). I had my new 15" f/4.2 Dobsonian with me. This is the biggest scope that I've ever owned and under the good dark skies at Stellafane it really performed. I saw some things that I've never seen before: Pickering's Triangular Whisp (the dim central part of the Veil Nebula), spiral structure in M51, The Trifid (M20) as a three lobed structure and extraordinary detail in the great globulars M13, M92, M5 and M3. In addition the main speaker at Stellafane this year was Capt. Alan Bean, the lunar module pilot on Apollo 12 and the fourth man to walk on the moon. He gave an inspired talk on the past, present and future of space exploration. All in all this weekend went a long way towards making up for the dismal weather we have had so far this year.

On Thursday August 20th we had our first meeting of the board of directors this year. Following are some of the topics that were discussed. Our first meeting of the year will be on Sept. 8th at 8 PM at Peyton Hall on the Princeton campus. The speaker will be the AAAP's own Dr. Ken Kremer. His talk is titled: "Eyewitness to LRO & LCROSS: America Returns to the Moon". We are still looking for speakers for the remainder of the fall. To this end we are still without a Program Chairperson. If anyone is interested in this important position contact me.

Annual Membership Dues (\$40) Are Payable Now—Please Mail or Bring Your Check to the September Meeting

By the time of the September meeting the repairs to the Simpson Observatory should be complete. We will be voting before the speaker presentation to appropriate the funds to cover this repair. Details about this repair were published in the mid-summer issue of the Sidereal Times along with an absentee ballot. It is important that we have a sufficient number of votes (40% of our membership) in order to be able to do this according to our by-laws. If you can't make the September meeting please get a copy of the absentee ballot at www.princetonastronomy.org and mail it in by Sept. 4th.

The deadline for the October issue is:

Friday October 2, 2009

Send your submissions to:

editors@princetonastronomy.org

In addition to the repairs to the Simpson observatory our observatory at the UACNJ complex at Jenny Jump is in need of repair as well. The door needs to be replaced and the observatory needs to be painted. Larry Smith has undertaken to get a new door (Thanks, Larry) and have it cut to size. At the meeting in September we will set a date for a work party to install the door and paint the observatory.

If you remember last year the NJ Park Service floated the idea of building a cabin for reservation camping at the bottom of Brickyard Rd. in Washington Crossing Park. This idea was shot down at an angry meeting of Hopewell township residents but unfortunately (article in Trenton Times August 20th) it has raised its ugly head again. Now the Park Service wants to build a cabin for 30 campers (the original cabin was for only 8 campers) in the current camp site used by scouts off the soccer fields inside the park. Potentially, this cabin could have a severe negative impact on our observatory. The board is in the process of writing a letter to the DEP to express our concerns. We are tracking this issue and will keep the membership informed as to developments.

The new flyer containing information and prices for Starquest 2009 has been completed and should be available, by the time you read this, on the AAAP website.

Here are some future events to keep in mind:

Stokes Star Party (Sept. 18th-20th) This is a no frills observing event at the Montclair University School of Conservation site in Branchville, NJ. Cost is \$25 (\$10 additional for indoor bunking). See the AAAP's Ron Mittelstaedt for more details.

Black Forest Star Party (Sept. 18th-20th) For years I have been trying to get out to Cherry Springs State Park in Coudersport, PA. This is supposedly the darkest site left in the northeastern US. (It has been designated an official dark sky sanctuary by the US Park Service.) I will finally get the chance at this premier star party run by the Central Pennsylvania Observers. See their website at www.bfsp.org/starparty for further details.

Jersey Starquest 2009 This year's Jersey Starquest will be held at the Hope Conference Center in Hope, NJ on Oct. 16-18. Bring your scope to enjoy a weekend under the stars in northern New Jersey. I'll have my 15" Dob with me for anyone who wants to take a look through it.

Bill Murray, Director

Minutes of AAAP Board of Directors Meeting August 20, 2009

The meeting was called to order by Director, Bill Murray.

John Church raised the issue of the State plan to build a thirty-bed "cabin" in Washington Crossing Park. Gene Ramsey reported that it is planned to be built next to Brick Yard Road. He spoke with Wayne, the park ranger who is our club's contact with the park. They discussed access to our observatory and the nature center for those using the cabin, as well as matters such as additional lighting, noise and security. Access to the cabin would be via Bear Tavern Road near the soccer field and would likely, require the construction of a new access road, around our inside gate. Mr. Donnelly, the Park Superintendent told Gene that ground breaking would be in three to four years. Ludy D'Angelo suggested that the AAAP write a letter to the State DEP expressing our concerns and raising these issues. Mike Mitrano pointed out that this new cabin is a settlement that the State offered to the residents of Titusville who objected to the original plan to build a cabin, and that our group may be alone in its objection. Gene pointed out that the original cabin was supposed to house eight people and the new one is supposed to house thirty. It was suggested by Larry Smith that the letter should go above the superintendent level to someone in a position to make a decision. Gene and John Church pointed out, that we have a good working relationship with the superintendent and our letter should go up the chain of command. Mike Mitrano suggested that there are planning committees within the State structure that make these capital outlay decisions and that we should address our concerns to them in a timely enough manner to have a positive effect. Larry Kane will write a letter to Donnelly and run the draft by the Board members. Larry Smith suggested that the planning group be copied. Ron Mittelstaedt said that cut-off lighting could be installed outside the cabin that would lessen the impact on our observing.

Treasurer's report. Mike Mitrano reported that there have not been a lot of expenditures lately. The treasurer's report is found in another section of this edition of the Sidereal Times.

Secretary Report: Kane reported three new membership applications and some bills that he passed on to the Treasurer.

Observatory repairs: John Church reported that most of the work has been completed. John has provided much assistance to the contractor in the repair work. The final bill should be presented by September 8.

It was noted that we need a Program Chair. The speaker for the September meeting will be member Ken Kremer. John Church offered to ask member Freeman Dyson to give a talk at one of our meetings. He also offered to do a presentation of a recorded transit that he made.

Observatory: We need more key-holders. John Church reported that it was the park workers that were leaving our gate unlocked. It was agreed that the combination will be changed and the old method of using a chain with a lock at each end will be re-instituted.

Star Quest: Bill Murray presented a flyer that was developed by UACNJ. John Miller thought that the UACNJ was usurping the Star Quest event. A question was raised about what the UACNJ was planning to present. Larry Smith thought that anything we will get from their promotion of a mutual event will be a benefit to us. Larry Smith said that he will re-send an email concerning the pricing of the UACNJ event. He stated that UACNJ offered to have a couple of their speakers come to our event. Bill Murray noted that originally, Star Quest was a members only event and that when it was first opened to the public, there was good response but it has dwindled, since then. Larry Smith said that the UACNJ event will be over by 9:00 pm on Saturday night. It was thought that the people would then leave, and drive down to our event, after dark, and flood the viewing field with white light. A discussion was held about establishing a cancellation policy for bad weather. A discussion was held about whether to continue with Star Quest and whether it actually raises money for the Club and whether that is what we should be doing. It was noted that the most important part of the event is the observing that we can do. John Miller suggested that last year's flyer is on our website and it should be downloaded and suggestions for revisions made to him. Larry Kane requested that the finalized flyer be brought to and distributed at our September meeting.

Jenny Jump Observatory: The door needs to be replaced. Larry Smith said he could buy one from Home Depot and a UACNJ member offered to make a door for us.

Bylaws Revisions. Mike Mitrano recommended changes that will make it easier to pay for needed expenses. Other structural and procedural changes were suggested. It was noted that we have a separate constitution and by-laws. John Church said that this was done so we could revise the by-laws without having to revise the constitution. Mike Mitrano will write up all the suggestions made at this meeting and will send it to the Board for its consideration. The revisions will be raised at the September meeting.

Observatory Teams: Ludy made a recommendation that observatory team two be disbanded. A discussion was held about key-holders letting their team know if they cannot make an assigned night.

The meeting was adjourned by the Director.

Larry Kane, Secretary

Treasurer's Report

Our fiscal year began on July 1, and there has been little activity over the summer. Dues payments from nine members have been received (thanks!) along with \$150 from outreach and equipment sales. With few expenses, our surplus since July 1 is \$357.

Because the Observatory repairs have not yet been completed, those expenses are not finalized or reflected here.

The AAAP's cumulative surplus is about \$18,500.

Michael Mitrano, Treasurer

September's Speaker

Eyewitness to LRO & LCROSS: America Returns to the Moon"
by Dr. Ken Kremer, NASA Ambassador and The Planetary Society.

NASA re-ignited the US 'Return to the Moon' in June 2009 with the launch of two new science spacecraft, the Lunar Reconnaissance Orbiter (LRO) and the Lunar Crater Observation and Sensing Satellite (LCROSS). Take an up close and personal tour of the robotic duo with Dr. Kremer inside the "Clean Room" for the last look before blast-off with top NASA scientists and learn about the science goals. Journey inside the Air Force rocket base at Cape Canaveral to see the Atlas V rocket at Launch Complex 41 which propelled the probes to space and set LCROSS on course for a cosmic smack-up into the moons South Pole on 9 October 2009 in search of water.

Dr. Kremer is a research scientist and science journalist whose articles and space exploration images have appeared in magazines, books and on websites, including *Astronomy Picture of the Day*, *ABC News*, *Spaceflight Now*, *New Scientist*, *International Year of Astronomy*, *The Planetary Society*, *Universe Today* and the covers of *Aviation Week & Space Technology*, *Spaceflight* and the *Explorers Club* magazines. His numerous presentations at educational institutions, civic & religious organizations, museums and astronomy clubs aim to educate and excite kids and adults about science and space exploration.

For complete details on LRO and LCROSS, please read Ken's published reports which can be found online at *The Planetary Society* and which include pictures of the spacecraft and rocket.

The speaker can be reached at kremerken@yahoo.com. Or at the Website <http://www.rittenhouseastronomicalsociety.org/Dr.Kremer/K.htm>

Picture This—The Trifid Nebula

Also known as M20 this colorful nebula is a mere gray patch visually in NJ. Located in Sagittarius, this gaseous cloud sits just above the Lagoon Nebula and below the Swan and Eagle Nebula. From a dark sight this can easily be seen in a simple 8x50 finder scope. This Nebula consists of a reflection nebula which is the blue portion which is lit up from a nearby star shining through the gas cloud, while the red portion is emitting H-alpha light. Located in front of the nebula you can make out dust as dark areas. The Trifid is some

3000 ly away and spans 50 ly across. This picture was taken by me from Coyle Field in southern NJ this past month.



We are all around; you just have to look for us

My family and I went to Gettysburg this summer as one of our getaways. We took our camper down to stay in a local campground for a few days. After getting things set up and venturing around to check out the campground I noticed the license plate on the car at the site next to us. It read Piedmont Amateur Astronomers. Well what do you know. I kept an eye out for our neighbor to venture back to their sight and introduced my self to him. He and his wife were from North Carolina and go to several of the larger star parties around the country. We talked from scopes to eyepieces to public outreach and such. It turns out he is his clubs editor for their monthly publication too. After coming back to NJ I sent him the same M20 image I submitted for this months Sidereal and said if he could use it in his paper to please do. It just goes to show you, you never know who is around you unless you advertise a bit.

Brian Van Liew

Interested in keyholder training?

Contact:
kane@princetonastronomy.org or
by
cell phone (609-273-1456)

Other News...

The Lunar Globe and Apollo VIII

If you happen to be lucky enough or if the stars are aligned properly in your favor, you might land a job, that if you could do it forever, you would run to it each day, and resign yourself to going home each night. In 1968, assigned to the Special Events Unit at CBS News, I found myself among some of the most talented people in the business. It wasn't a plumb job because it was easy. It was a plumb because it was hard and mentally challenging. The hours were, on occasion, very long and some of the deadlines very short.

Before I became part of the unit, CBS covered all of the important NASA missions, not only for their scientific value, but also because of the political nature of the program. The space race was at full throttle. It was a time of full mission coverage. From preparation to launch and return, we were on the air for long hours. In December of 1969 Apollo VIII was about to go to the far side of the moon. It was a gift to America on Christmas Eve. On board were Frank Borman, James A. Lovell, and Bill Anders.

Following launch, the rocket would be beyond the capabilities of television cameras. This was all before onboard cameras. Even with powerful telephoto lenses, the main engine plume was all that was visible at times. To overcome this limitation, CBS invested in animations that simulated real time events with the live voices of astronauts reporting in to mission control. The animation was in exact synchronization with the actual event. Everyone in our control room was ecstatic. It was damn exciting.

My small part in all of this was to find a relief globe of the moon, which we used to illustrate the astronaut's lunar approach. The globe had to be in high relief with close attention to detail. Hmm, where to begin?

I began by calling every important scientific institution, worldwide, asking for information concerning a lunar globe. Everyone was helpful, but to no avail.

Knowing that the Russians were the first to photograph the far side of the moon, I called Moscow. Someone might have a lunar globe. One shouldn't expect much from your country's archenemy I got a very succinct reply, "Nyet!" Oh well, I tried.

I then started to call locally. My first call was to the Hayden Planetarium. Had I started there, CBS would have had a much smaller telephone bill. Someone forwarded me to Dr. Thomas Nicholson, an astronomer and director of the planetarium. What a break. After a very cordial and interesting conversation, Dr. Nicholson remembered hearing about some guys in the Bronx who were working on a lunar globe. THE BRONX? I called Moscow, for-crying-out-loud.

It was true. A very accurate lunar globe existed in THE BRONX. What a coup!

CBS invited Dr. Nicholson to our studio, and along with our very talented lighting director, lit the one and only lunar globe exactly as the Apollo VIII astronauts would see the moon from the window of the command vehicle.

From that prototype globe, the company, Educational Frontiers produced versions of the lunar globe for libraries and schools and right on the base of its pedestal it says, "Bronx". A small version of the moon is sitting on my desk right now; a time machine that takes me back forty years.



4 — January 19, 1969 THE SUNDAY RECORD CALL

David Kaplan

Wake up and smell the coffee—on the Moon! Have you ever wondered how you'd make your morning cup of java if you lived on another planet, or perhaps the moon? That steaming beverage would be a must on a cold lunar morning. But with rare sunlight, no coal or wood to burn, and no flowing water for hydro-electrical power, how would you make that cup of coffee, much less cook breakfast, heat your abode, and power the life support equipment and tools you needed to live and work up there?

NASA, planning for a future lunar outpost, has been asking those same questions lately.



There's more than one way to generate power on the moon. Fission Surface Power is one of the options NASA is considering. If this method is chosen, an engine invented in the early 1800s by Scottish brothers Robert and James Stirling could help make it work.

[**Editor's note:** If you have questions about this technology, please contact Marshall Space Flight Center Public Affairs at 256 544 0034.]

The Stirlings were so proud of their creation that they made it their namesake—and with good reason. Over the years the Stirling engine—the reliable, efficient "little engine that could"—has earned a sterling reputation here on Earth, and it may one day prove its worth on the moon.

"Inhabitants of a lunar outpost will need a safe and effective way to generate light and heat and electricity," says Mike Houts of NASA's Marshall Space Flight Center. "The tried and true Stirling engine fits the bill. It's not only reliable and efficient, but also versatile and clean."

NASA is partnering with the Department of Energy to develop Fission Surface Power technology to produce heat and feed it into a Stirling engine, which, in turn, would convert heat energy into electricity for use by moon explorers.

It's not certain that this kind of power system will be adopted by NASA, but it does have some very appealing qualities. Houts explains: "A key advantage to this power system is that it wouldn't need sunlight to operate. An FSP system could be used to provide power any time, any place, on the surface of moon or Mars. It could be used at the poles and away from the poles, it could weather a cold lunar night, and it would do well in places like deep craters that are always shaded. Not even a swirling, sunlight obscuring, Martian dust storm could stop it."

Submitted by Bryan Hubbard

JERSEY STARQUEST

Hope Conference & Renewal Center: <http://www.camphope.org/> 908-459-4435

Directions to Hope Conference & Renewal Center

Hope Center is about 3 hours from Philadelphia, 2 hours from NYC & Reading, and hour or less from Lehigh Valley. 1.5 Hours from New Brunswick

From the South & Southeast (Trenton NJ)

Take State Road 31 North from I-95 on the north side of Trenton. Follow to its end at US 46 its Butzville, NJ. Turn left (west) on US 46 and at the end of the next light go right (north) onto State Route 519 to the flashing light in Hope. FOLLOW "From Downtown Hope" below

From the Southwest (Phillipsburg, NJ)

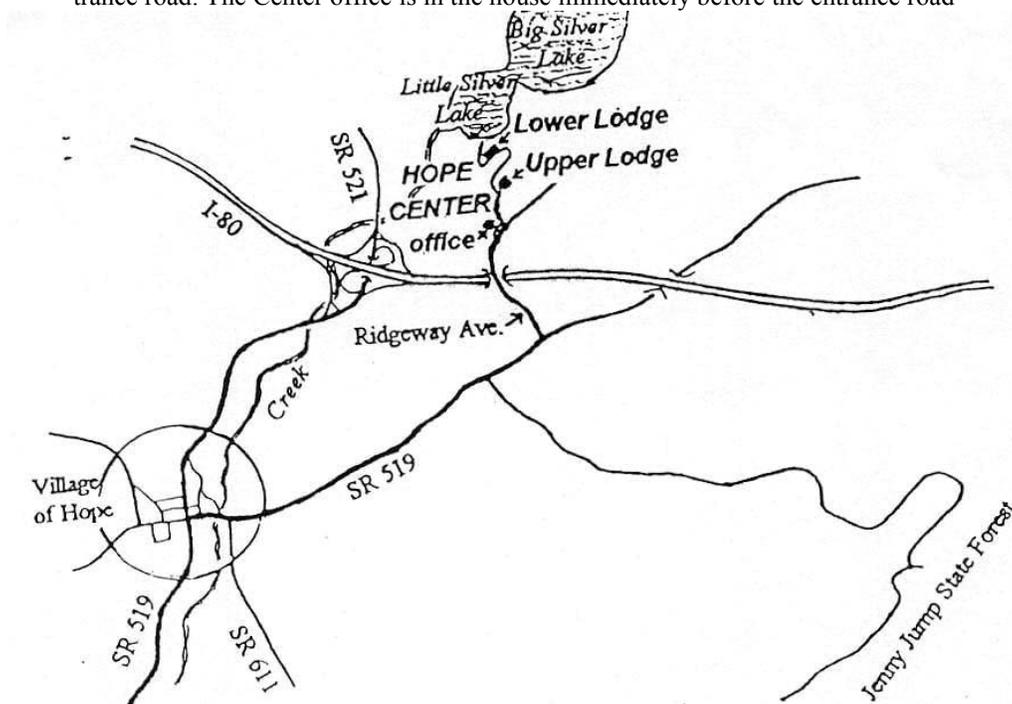
Take State Route 519 North, off of US 57 on the east side of Phillipsburg. Follow 519 North, across US 46 (near Belvidere & Butzville, NJ) to "downtown" Hope NJ marked by a flashing red light. Turn right at this light, continuing on 519 North. FOLLOW "From Downtown Hope" below

From the North, Northwest & East (I-80)

Take I-80 to Exit 12 in NJ. Exit onto State Road 521 south to Hope. In about two minutes arrive in downtown Hope, marked by a flashing red light. Turn left at this light onto St Route 519 north. FOLLOW "From Downtown Hope" below

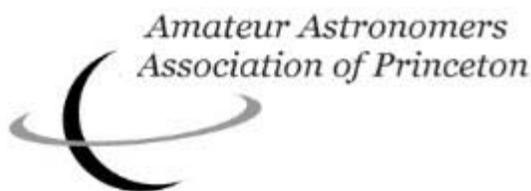
From Downtown Hope

Take State Route 519 North for 1.3 miles from the flashing red light (if you go under I-80, you've gone too far). Turn left onto Ridgeway Ave (you can only turn left) and go .5 mile, passing over I-80. Turn left at the "HOPE CENTER" sign onto the entrance road. The Center office is in the house immediately before the entrance road



PLEASE NOTE: NO WHITE LIGHTS AFTER DUSK. IF YOU ARRIVE AFTER DUSK, PLEASE MAKE PROVISIONS TO EXTINGUISH YOUR HEADLIGHTS.

PLEASE NOTE: NO GREEN LASER POINTERS



PRESENTS THE 20TH ANNUAL JERSEY STARQUEST

Held at the Hope Conference and Renewal Center, Hope, NJ
Beginning at 5 PM Friday, **Oct. 16th**, 2009 and running through 12 PM Sunday, **Oct. 18th**
Please note: This event will take place regardless of the weather conditions!

Featuring

Stargazing at a star-filled, dark sky location
DOZENS OF ASTRONOMICAL TELESCOPES IN OPERATION
AAAP-sponsored "Deep Sky Observing" contest
Free space available for astronomical swap meet
Heated cabin accommodations (most with private bath; first come, first served)
Ample space for camping & RV's, hot showers for all
Saturday full meals
Spectacular Raffle & Door prizes

Other Planned Activities Include

Solar Observing (H-alpha)
Astrophotography Presentations, Tutorials, and CCD Demo's
Field Trip to AAAP Observatory Facility at Jenny Jump State Park
Workshop: Learning to Use Your New Telescope

Plus

Fishing, Volleyball, Basketball, Hiking, Game room
Kayaking/canoeing (bring your own) on two lakes and nearby Pequest and Paulins Kill Rivers

Registration Fees

Camping and RV -- \$35.00 per person (\$45 after October 2), children (6-12yrs.) \$25
Bunkhouse -- \$45.00 per person (\$55 after October 2), children (6-12yrs.) \$35
Children under 6 years of age -- Free

Meals

Scrumptious Food Catered by AAAP Chefs, for Saturday ONLY
Volunteers needed to help the Chefs
Saturday brunch, and dinner: Adult -- 30.00 per person
Child (ages 6 -- 12) -- \$20.00 per person ; Children under 6 years of age -- Free

Please send registration form and your check or money order (payable to AAAP) to:

**Amateur Astronomers Association of Princeton
Jersey Star Quest 2009 Registration
P.O. Box 2017
Princeton, NJ 08543**

JERSEY STARQUEST REGISTRATION FORM

NAME _____

ADDRESS _____

EMAIL _____

TELEPHONE _____

CLUB _____

TOTAL NUMBER OF ADULTS IN YOUR PARTY? _____

TOTAL NUMBER OF CHILDREN (Ages 6 – 12)? _____

TOTAL NUMBER OF CHILDREN UNDER 6 YEARS OLD? _____

ACCOMMODATION PREFERENCE(S):

Note: indoor accommodations are single sex (males in one set of cabins, female in another set of cabins).

There are a few accommodations for families that do not want to be split up. This is on a first come, first serve basis.

INDOOR _____ TENT _____ RV _____

Would you like to enter into a “Deep Sky Observing” contest? _____

Will you need space to set up an astronomical swap table? _____

FEES:

(No charge for children under 6 years of age)

\$35.00 _____	PER ADULT (camping or RV)
\$45.00 _____	PER ADULT (bunkhouse)
\$25.00 _____	PER CHILD 6-12 (camping or RV)
\$35.00 _____	PER CHILD 6-12 (bunkhouse)
\$10.00 _____	(add late fee after October 2)

Meals (Saturday; brunch, and dinner)

Meals (Adult) \$30.00 _____

Meals (Child, ages 6 – 12) \$20.00 _____

TOTAL ENCLOSED _____

Please send completed registration form and your check or money order (payable to AAAP) to:

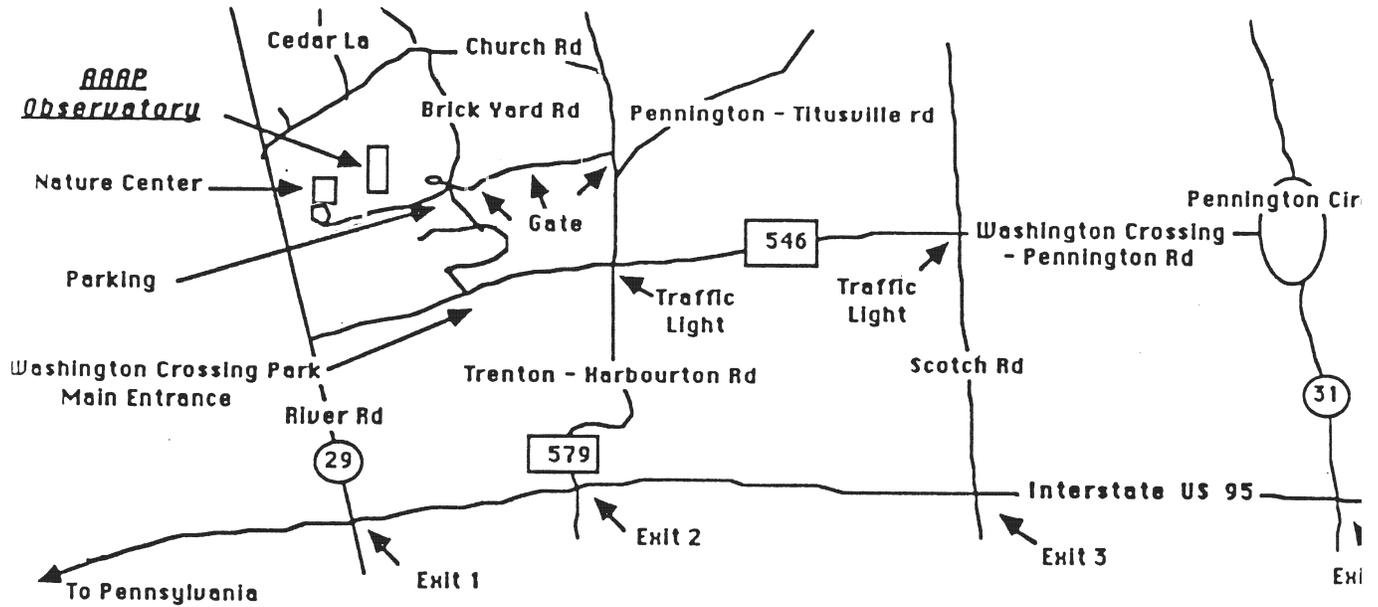
Amateur Astronomers Association of Princeton
Jersey Star Quest 2009 Registration
P.O. Box 2017
Princeton, NJ 08543

IMPORTANT – We may not be able to accommodate meal requests for registrations received after October 9.

Please Note – Pets are not permitted at the site.

This event will be held regardless of the weather conditions.

Sorry -- No Refund for Cancellations received after October 2.



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. The Simpson (AAAP) Observatory's phone number is (609) 737-2575.

See us on the Web: www.princetonastronomy.org

Amateur Astronomers
 Association of Princeton
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