

SIDEREAL TIMES

The Official Publication of the
Amateur Astronomers Association of Princeton

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Treasurer

Michael Mitrano

Program Chairman

Ludy D'Angelo

Assistant Director

John Church

Secretary

Ron Mittelstaedt

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Number 6

From the Director

Is it June already? Perhaps this is what Einstein was referring to when addressing relativity: as one ages, time accelerates. Wonder if there is a series of equations to illustrate that universal phenomenon? Well, I hope you agree we had a terrific set of guest speakers for the season. Why not send a quick email to our Program Chair, Ludy D'Angelo, with thoughts of this season and people you'd like to see visit our club next year?



The AAAP had a busy booth at this year's Super Science Weekend, hosted by the New Jersey State Museum in Trenton. Contrary to weather predictions (generally as accurate as financial analysts'), the sky was clear, the main astronomical event shone brightly and the temperature was Floridian. Bill Murray and Ludy D'Angelo brought their Coronado PST

portable H-alpha scopes, Ron Mittelstaedt carried in his Televue 102 with accompanying H-alpha filter, Jeff Bernardis and Brian Van Liew set up their scopes with white-light filters. AAAP astronomers received a steady stream of curious "customers" who looked at our nearest star, and were wowed by photos, magazines and other astronomy information on the table.

I very much like using analogies to paint astronomical pictures for the general public. A few days ago, I ran across a description of a galactic model using the contents of a box (well, more like a

cylinder) of standard table salt to represent individual stars. If memory serves, the note claimed there are about a million crystals of salt in a standard sized box of table salt. If used to represent stars in our portion of the Milky Way, one would spread the salt, separating each grain with an average of seven miles. An intriguing model for a class (of course you'd have to explain to parents why their kids were running miles away carefully grasping a single crystal of NaCl in their fingers). However, I'm curious if indeed there actually *are* an average of a million salt crystals in a standard grocery store box (and at the escalating rate of inflation, are the crystals getting bigger)? Who volunteers to call Morton? And, at this scale, is a seven mile separation (representing, say a 200 x 200 parsec area) in the ballpark? To get you in the contemplative mood, I've added one of Bill Murray's first astro images produced at his new home observatory. Bill used his 10" f/10 SCT coupled with an SBIG ST-9E for this image of NGC 4565 in Coma Berenices (yeah, it's a favorite of ours too Bill). This Sb type galaxy lies at an estimated distance of 31 million light years. It has an apparent magnitude of about 9.6.

Please note that our June meeting is being held as a member and guest only picnic and star party at our Simpson Observatory at Washington Crossing State Park, Saturday, June 14th. We hope you come and meet your fellow AAAP members. Bring a scope or binoculars, if you wish, to set up adjacent to the observatory. Saturn will be visible in the west, M13 nicely positioned high in the east, and NGC 4565 on the meridian at 10:00. Ludy has additional details in this issue—and email reminders will be sent.



Bill Murray is spearheading a Jenny Jump party. This will be another members-only gathering at the United Astronomy Clubs of New Jersey site, Jenny Jump State Park, near Hope, NJ. The AAAP maintains a 12.5" Newtonian reflector there – a champ of an optical performer in this writer's humble opinion. Not many of our current members have had the opportunity to use this magnificent

machine. So here's your chance to have your cake and eat it too (literally), and there'll be hot dogs, burgers and coleslaw, besides cake, I'm sure. Details about this trip will be coming to your via email shortly.

The deadline for the Midsummer issue is:

July 13, 2008

Send your submissions to:

editors@princetonastronomy.org

Cheers—John Miller, Director

Membership Meeting Minutes May 13, 2008

Elections: The following members were elected to the following positions:

Director: John Miller

Assistant Director: John Church

Program Chairman: Ludy D'Angelo,

Secretary: Larry Kane

Treasurer: Michael Mitrano

Thanks was given to the nominating committee of Robert and Georgette North for a job well done

Jenny Jump: A Starparty is being planned for AAAP at the site of the United Astronomy Club of New Jersey. Bill Murray will contact UACNJ President, Ron Rosso, to make the arrangements. It was agreed to have the event scheduled on a Friday night. The next new moon Friday is June 6th which is too soon to plan. The next new moon Friday after that date is July 4th. More discussion will continue at the next membership meeting.

Programs: Our annual Picnic has been scheduled for the June membership meeting on Saturday June 14th. Wayne at the Interpretive Center will be contacted to reserve the picnic area for us and have the restrooms available. The meeting/picnic will occur if the weather is clear or cloudy. Only rain will cancel this event. An e-mail will be sent to all members containing further information.

Public Outreach: Super Science Weekend was discussed. About seven members would be present to Saturday duty, only a couple for Sunday. As of this writing, Super Science Weekend was a success on Saturday. The sky was clear for most of the day with many attendees treated to a fine view of the sun in white light and hydrogen-alpha. The volunteers who represented the AAAP at this event are on our clubs web page.

Simpson Observatory: The NJ Division of Parks has graded and applied gravel to the road leading to the entrance gate from Bear Tavern Road. The only thing is that they stopped applying gravel about 25 feet from the entrance gate. In addition the gate is sagging terrible. There was a suggestion made that the AAAP donate the gravel to complete the road and repair the gate. There was mixed feelings on this action. Only estimates would be obtained at this time.

Meeting adjourned at 10:20pm.

Ron Mittelstaedt, Secretary

Treasurer's Report

Our number of members continues to creep up, with the total now 109 and dues for the fiscal year at \$4,310. This includes some pro-rated payments. Since our fiscal year ends soon—on June 30—and the lecture program for the 2007-8 year is complete, any full payments received between now and June 30 will be applied toward next year's dues.

The current fiscal year's surplus is \$2,600 and our cumulative surplus is \$15,031.

Michael Mitrano, Treasurer

From the Program Chair

Greetings to all! We hope that for the last 9 months your knowledge of the universe has been expanded, and even more by all the invited guest speakers we have had. To finish off the season, David Hogg of New York University gave an enthusiastic lecture on one of his current projects: Astrometry.net. I'm sure that some of you have posted your astro pictures to his site to see if the stars could be identified.

As always, we are on constant lookout for future speakers, so any suggestions and/or comments are welcome and appreciated. Have a certain subject you'd like covered? Know someone who is doing really interesting work in the field of astronomy? Let me know and we will try to provide. During the summer, we will start to invite speakers for our next season starting in September.

Now that the season is wrapped up, its time for a party! This year's annual AAAP picnic will be at our observatory in Washington Crossing State Park on June 14th at 4 PM. We will meet under the pavilion at the Nature Center next to the observatory. The club will provide basic food and drinks. We encourage everyone to bring a salad or desert and your family and friends. After the picnic, and if it is clear, we will continue by opening the observatory for an evening of relaxing observation. We will need volunteers to bring a grill or two, cook, and help set up and clean up. Please RSVP to me if you will be attending.

See you there!

Ludovico D'Angelo, Program Chair

Picture This—NGC5272

Also known as M3, located in the constellation Canes Venatici, this is a spectacular Globular Cluster that is both a great visual and photographic target. At a mere 33.9 thousand light years distant, it is still easily seen in binoculars or a small scope as it is listed at 6.2 mag. The larger the aperture instrument used the more of the half a million stars that make up the globular will be able to be resolved. Spanning an estimated 180 light years M3 is rich in various colored stars that jump out when imaged.

If learning to star hop, M3 is one of the best targets out there this time of year to practice on.

The image was taken from my home using an 8" F6.3 SCT OTA, Canon DSLR camera with a 0.8x FR/FF and IDAS LP filter. Total exposure was 115x60 seconds subs.



Brian Van Liew

Interested in keyholder training?

Contact: _____ or by
cell phone _____

Community Outreach

We only had one event on our outreach calendar, but it was one of our staples: the Super Science Weekend at the Trenton State Museum. This was a two day event on Saturday May 17th and Sunday May 18th. Sunday was a washout with heavy rains, but Saturday was a very successful day. In attendance for the club were myself, Ron Mittelstaedt, Bill Murray, Brian Van Liew, John Miller, and Ludy D'Angelo (see the photograph of the team on our web site); we had as many as 5 telescopes set up at any one time. Countless people came by quite intrigued by the ability to look at the sun through a telescope.

As far as upcoming events, we only have 1 event on our calendar:

- Hightstown is planning several community nights over the summer complete with concerts and other events. They have asked if we could have a telescope at any one of them. The nights they have scheduled are June 25, July 16, August 6 (all Wednesdays) and August 23 (a Saturday). We currently have Michael Wright signed up for this (no date decided upon yet) but I don't want to see him have to do this alone. If you'd like to help, let me know which dates work for you and I can coordinate.

If you are at all interested in helping out with this, or other future events, please let me know as soon as possible at

As other events are scheduled, you can find out about them here, or on the calendar that is on our web site.

Jeff Bernardis

Other News...

Jenny Jump Update

The following is an update on the construction of the new equipment facilities for the UACNJ/NJIT project at Jenny Jump recently forwarded to me.

Subject: [UACNJ] Magnetometer footing poured, getting ready for solar radio telescope

Greetings,

Bob Mellville (NJIT), Nor Schramm, and I mixed up the concrete and poured the footing for the magnetometer Saturday afternoon. One of the complexities was that no ferrous materials can be used near the magnetometer; so the mounting and reinforcing materials are aluminum, brass, and stainless steel. Once the forms are removed, the instrument and its housing can be mounted.

In the end, we will run the wires in underground conduit from the cliff-edge to the display area in the house. To start, we will run the cable over the surface. Once everything tests AOK, we'll trench the backyard and bury it.

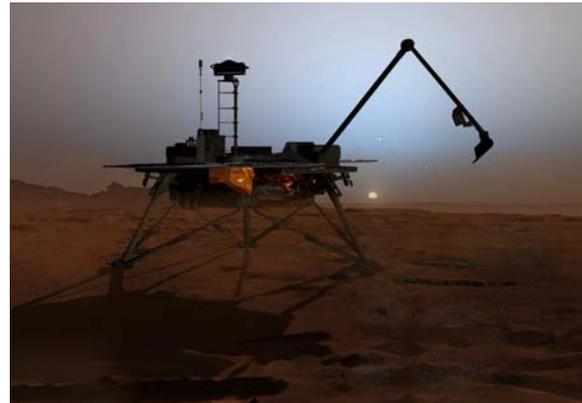
We have also tentatively decided to pour the solar radio telescope footing at the same time we pour the ITEK telescope footings. Originally, we were going to hand mix, but we'll need significantly more concrete for the radio scope than we used for the magnetometer, and the truck gives us a consistent mix all in one shot. We'll get to work on drilling the rock for anchors and building the steel concrete reinforcing and the form shortly. - Gil

Submitted by Larry Smith

NASA Science Outreach and Update

Phoenix Lands Safely on May 25

Phoenix is NASA's newest Mars science mission and landed gently on the Martian north polar icy soil on May 25, above Mars Arctic Circle. Using a powerful scoop located at the end of the robotic arm, Phoenix will dig about 2 feet down into the hard as cement and ice-rich soil and analyze samples to study the history of water, search for organic molecules and evidence of climate cycles, monitor weather at the polar region and investigate whether the subsurface Martian polar environment has been favorable for microbial life.



Phoenix Mars Lander scoops into icy soil. Download image here:

http://phoenix.lpl.arizona.edu/images/gallery/sm_139.jpg

Phoenix Website: <http://phoenix.lpl.arizona.edu/index.php>

Send Your Name to the Moon and Space

LRO: NASA invites people of all ages to join the lunar exploration journey with an opportunity to send their names to the moon aboard the Lunar Reconnaissance Orbiter, or LRO, spacecraft. LRO is being built at the NASA Goddard Spaceflight Center in Maryland. The Send Your Name to the Moon Web site enables everyone to participate in the lunar adventure and place their names in orbit around the moon for years to come. Participants can submit their information, print a certificate and have their name entered into a database. The database will be placed on a microchip that will be integrated onto the spacecraft. The deadline for submitting names is June 27, 2008. Website: http://www.nasa.gov/mission_pages/LRO/main/index.html

Kepler: NASA has announced an opportunity for anyone to submit their name to be included on a DVD and rocketed into space as part of

NASA's Kepler Mission, scheduled to launch in February 2009 from NASA's Kennedy Space Center, Fla. The goal of this mission is to discover the first known Earth-like planets beyond our solar system. Name in Space is an international activity associated with the International Year of Astronomy 2009 in recognition of the 400th anniversary of Johannes Kepler's publication of his first two laws of planetary motion. The deadline for submissions is Nov. 1, 2008. Website: <http://kepler.nasa.gov>

Astronomy Outreach

Gloucester County College (GCC): Sewell, NJ, April 23.



GCC "On Mars" in 3-D: At the kind invitation of GCC student Dan McCormick (and fellow member of the Rittenhouse Astronomical Society in Philadelphia), I was privileged to present a lecture titled "*Exploring Mars (and Asteroids), the Search for Life, and a Journey in 3-D*" to an enthusiastic crowd as the first speaker at the GCC Astronomy club. Photo: Dan McCormick



GCC Astronomy Club Officers and Ken Kremer after the Mars Lecture: Newspaper announcements appeared in the Philadelphia Inquirer and Gloucester County Times which broadened the audience to members of the general public and fellow amateur astronomers from the south jersey area. Thanks to Dan (holding the RAT science drill) and the GCC staff!

Details here: http://www.gccnj.edu/general_information/ken_kremer.cfm

Washington Crossing Nature Center: Titusville, NJ, April 12



The crowd, including AAAP members Georgette and Bob North and Ira Polans, enjoys the Solar System in 3-D via projected images and giant 3-D display posters at my talk on "*Mars, Saturn, Asteroids and Beyond*". Learn more and hear a Phoenix update at my UACNJ talk on Sat, Jun 28 (details below).

Please contact me for more info or science outreach presentations by email at

My upcoming Astronomy talks include:

Amateur Astronomer's Inc (AAI) at Union County College: Cranford, NJ, Fri, Jun 20, 8:30 PM. "*Phoenix Joins 5 Robots at Mars*". Website: <http://www.asterism.org>

United Astronomy Clubs of New Jersey (UACNJ) at Jenny Jump Observatory/Park: Hope, NJ, Jun 28, Sat, 8 PM. "*Twin Robots Exploring Mars (in 3-D)*". Website: <http://www.uacnj.org/>

Stella Della Valley Starparty and BucksMont Astronomical Association (BMAA): Ottsville, PA, Oct 25, Sat. "*Launching DAWN to Asteroids: From Behind the Scenes at Kennedy Space Center*".

Submitted by Ken Kremer

NASA News

It's Marvelous

NASA recently funded a project called MARVELS (Multi-object Apache Point Observatory Radial Velocity Exoplanet Large-area Survey). As you know over 250 planets have already been identified and the number seems to grow every week.

This search for planets in other star systems will begin in the Fall of 2008 when astronomers will concentrate on observing 11,000 stars over a period of six years. It is anticipated that perhaps as many as 150 new planets may be found. Based on the speed with which those already known were located this may be an underestimation. Typically, gas giants are more easily identified, and many have been found in close proximity to their Sun, but the conclusion is that where there is one, there potentially are many. As with other discoveries one method is the use of Doppler shift which causes giant planets to tug on their Sun, and present frequency shifts in the starlight. The telescope to be used for MARVELS is, as the name implies, the Apache Point Observatory in the Sacramento Mountains of New Mexico. This observatory has a 2.5 meter primary mirror and a field of view that covers 7 square degrees, a huge chunk of sky.

Star Trek and the ISS

A new instrument in use on the International Space Station bears a resemblance to the "tricorder" used in the TV series Star Trek. As you may remember that instrument could detect virtually anything from alien life forms to specific diseases. As real life items frequently follow designs used in science fiction, the LOCAD-PTS (Lab-On-a-Chip Application Development Portable Test System) is similar to the "tricorder", but in form only. The fictional abilities are not quite as sophisticated, at least not yet. It is a portable unit for rapid detection of biochemical molecules. It was specifically designed to detect and identify microbes on surfaces inside the space station. As you will know microbes and humans have a symbiotic relationship, each of us harboring thousands if not millions, but usually in a harmless harmony. A swab is used to take samples off the targeted surface. This is then flushed with sterile water and a few drops of the resulting liquid are put into the LOCAD. The system provides an answer in less than 15 minutes. As new cartridges are developed they are sent to ISS for real life testing. So far E. coli, salmonella and some forms of fungi can be identified.

Submitted by Bryan Hubbard

20 Years Ago In Sidereal Times...

SIDEREAL TIMES

Newsletter of the Amateur Astronomers Association of Princeton, Inc.
(Address: P.O. Box 2017, Princeton, N.J. 08540)

Editor: Chas. Yuill

Director: Jay Albert

JUNE, 1988

AAAP CALENDAR

July 16---Space Day at the New Jersey State Museum starting about 10:00 am. Volunteers will man the AAAP booth and we'll have one or two telescopes with solar filters on hand for viewing the sun. In addition to special exhibits and shows in the new planetarium, astronaut Bob Cenker will be on hand to talk about the NASA Mars Probe. Stop by and visit us.

Fri., August 5 (cloud date, Aug. 6)... A MIDSUMMER NIGHT'S STAR PARTY at the AAAP Observatory in Washingtons Crossing State Park. Don't miss this one! See flyer in this issue for details.

August 13---Stellafane convention at Breezy Hill near Springfield, Vermont. There will be a delegation from the AAAP.

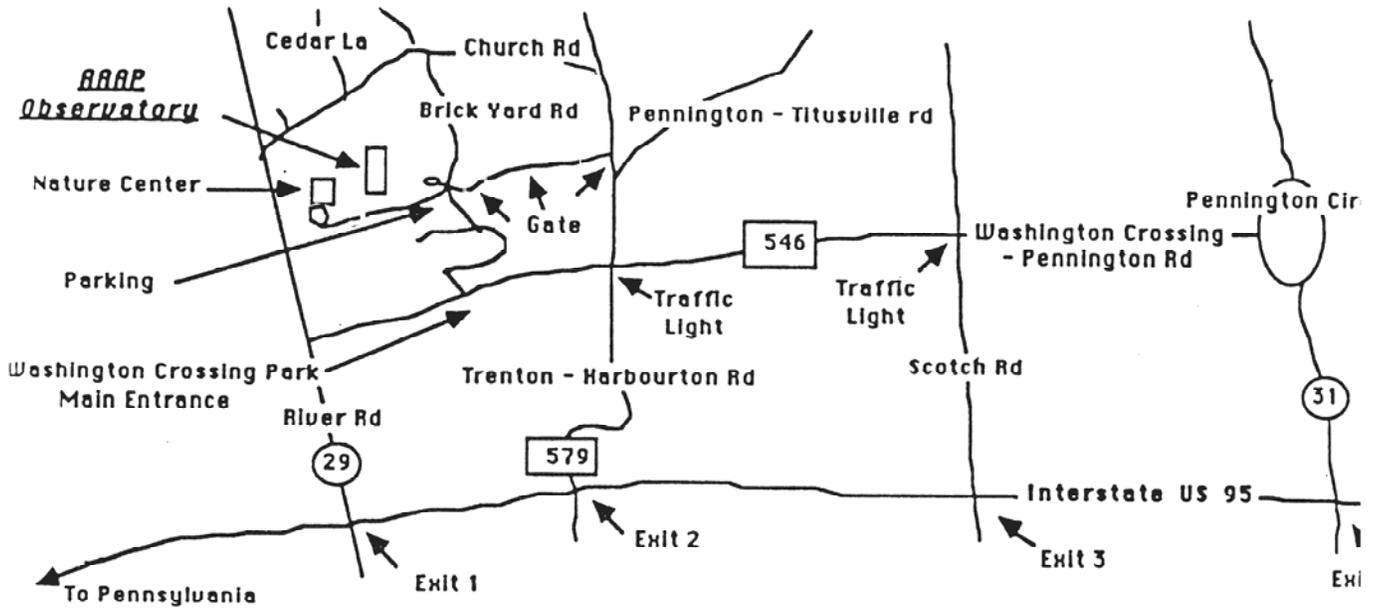
August 19 & 20---AAAP Beemerville trip and Star Party. The weekend costs only \$40 and the observing site is beautiful. Call Dave Brown at 924-8085 for details. Dave needs to hear from you THIS WEEK or we'll lose our slot indeterminately.

September 16---Tuesday meetings resume at 8:00 pm in Peyton Hall.

NOTE: pre-regular meeting dinners will be held at the TIGER'S TALE Resturant located on Rt. 206 just north of the Rt. 518 intersection.

FROM THE DIRECTOR

We had a nice turnout at Dave Brown's on June 21st for the first Board meeting of the new administration. We spent considerable time discussing how we can get our new members more involved in order to expand the size of the AAAP's nucleus of most active members. We decided that the best way was to provide more opportunities to have fun. Probably the best way to do this is to provide more trips and star parties. We have two trips already scheduled (besides Beemerville) that will let us make the most of this autumn's close opposition of Mars - the best for the next 17 years! The first is our weekend at the Naval Observatory in Washington, D.C. September 24th & 25th and the second is our day trip to Sproul Observatory in Swathmore Saturday, Oct. 1st.



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

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