

SIDEREAL TIMES

The Official Publication of the
Amateur Astronomers Association of Princeton

Director

Bill Murray

Treasurer

Michael Mitrano

Program Chairman

OPEN

Assistant Director

John Church

Secretary

Larry Kane

Editors

Bryan Hubbard and Ira Polans

Volume 39

May 2010

Number 5

From the Director

A year has gone very quickly and I will be ending my tenure as director after the May meeting. I would like to thank all the members of the board for the help that they have given me this year but specifically I would like to thank John Church to the extraordinary job that he has done. John took the lead on getting the observatory repaired last summer as well as doing double duty by filling in as program chair for the second half of the year. I have not had as much time to devote to the directorship as I would have liked. John, Mike and Larry made my job much easier than it would have otherwise been.

Our next meeting will be on Tuesday May 11th at 8 PM at Peyton Hall. The speaker will be Jeremy Kasdin of Princeton University. The title of his talk is "Are We Alone? Imaging Exoplanets".

Also at the May meeting we will have our annual elections for positions on the board of directors. The slate of officer candidates, announced at the last meeting in April by nominations chairperson Jeff Bernardis, is as follows:

Director	Ludy D'Angelo
Assistant Director	Jeff Bernardis
Program Chair	John Church
Treasurer	Michael Mitrano
Secretary	Larry Kane

Nominations remain open until the election, which will take place before the speaker's talk.

My thanks go out to the members who participated in the solar observing/outreach at Super Science Saturday on April 24th. The weather was nice and the turnout was large.

Hopefully this will be the beginning of a renaissance of the relationship between the AAAP and the NJ State Planetarium.

On Friday May 7th and again on Friday May 14th the NJ State Planetarium will be holding their annual Spring Star Watch program. This is a collaboration between the planetarium and the AAAP. I will be

doing a live star show, open to the public, at the planetarium starting at 7:30 PM. After the star show any participants who wish to will follow me up to the AAAP observatory at Washington Crossing for the Friday night public observing. In the past when we did this (we have not done it for several years due to the planetarium being closed) the crowds could be large. If any members are free these evenings and wish to bring a scope out to the observatory to help show the skies to the public I would appreciate it.

The next meeting of the board of directors will take place on Thursday, May 20th at 7 PM at Peyton Hall. The meeting will take place in the dome conference room on the second floor. All members of the AAAP are welcome to attend.

The AAAP monthly meeting in June (June 8th at 8 PM) will take place at the NJ State Planetarium at 205 W. State Street in Trenton. Directions to the planetarium can be found on the State Museum website at <http://www.nj.gov/state/museum/directions.htm>. This is the revival of an old tradition. For many years the AAAP ended its year with a star show at the planetarium. Up until last September the planetarium was closed for several years for renovations. In that time the planetarium has undergone a complete refurbishment. Due to a grant from the Prudential Foundation (of almost \$1 million) we have installed full-dome video and the planetarium is now fully digital. I look forward to showing the AAAP the new capabilities of the planetarium with a live star show and a viewing of our currently running science show "Extreme Planets"—How astronomers have begun to discover extra-solar planets and what they think those planets might be like.

Bill Murray, Director

The deadline for the June issue is:

Friday, May 21, 2010

Send your submissions to:

editors@princetonastronomy.org

Membership Meeting Minutes April 13, 2010

The meeting was called to order by Director Bill Murray

1. Director's Report: Bill discussed the Board meeting that was held on April 8. Minutes from that meeting are in this issue of Sidereal Times.
2. Assistant Director John Church did not have a report, but as the "Program Chair Pro Tem," he discussed the next speaker for our May meeting.
3. Treasurer's Report: Treasurer, Michael Mitrano gave his report which appears in another section of this edition of Sidereal Times.
4. Secretary Report: Larry Kane reported that he completed the revisions for the membership roster and sent them to the Treasurer for confirmation of dues status.
5. Observatory Report: Co-Chair, Gene Ramsey announced that the rope for the flap broke and he had to repair it. Also, the heavy rain warped the side plywood. With the aid of a borrowed rasp, Gene effected the repairs. Our first public night was a success. In addition to team one, three members brought their own telescopes for the public to view. Gene suggested that due to staining on the inside walls that resulted from the rains, Gene asked that a work crew be put together to paint the interior. He will pick up the paint and materials. Someone backed into the gate at the observatory and damaged it. Gene will repair it. Gene also said that he would buy new locks for the gates. One is missing, and the park rangers use the other combination lock on the main gate. We may have to mow the grass around our building by ourselves.
6. Outreach Report: The AAAP will be part of the Hopewell Earth Day events on 4/22, and Super Science Saturday on 4/24. Four people have volunteered for this event.
7. Website: The observatory open house dates are posted. The website has a twitter connection that has open-house status updated at the last minute. Interested persons should be directed to the twitter site if they ask about the observatory being open.
8. Sidereal Times: The deadline for the next edition is Friday, April 30.
9. Old Business: Nomination Chair, Jeff Bernardis presented the slate of officers for the next season. Treasurer Michael Mitrano and Secretary Larry Kane agreed to stay on in their positions. John Church has agreed to take the position of Program Chair. Jeff Bernardis has agreed to be the Assistant Director. Ludy D'Angelo has agreed to be the next Director. A meeting of the Board will be held on May 20.
10. New Business: We will try to fill the position of Publicity Chair. Bill Murray asked for interested persons to contact him. The Outreach Chair will also need to be filled.

The Director adjourned the meeting.

Larry Kane, Secretary

Board of Directors Minutes April 8, 2010

In attendance were Director Bill Murray, Assistant Director John Church, Treasurer Michael Mitrano and Outreach Chairman Jeff Bernardis.

Ken Kremer had requested publicity for the April monthly meeting with Steve Gorevan of Honeybee Robotics as speaker. John reported that he had sent the information to the Princeton Packet website. A discussion followed on the need for a person to handle publicity for these events for the club. Bill said he would make an announcement at the April Meeting to see if some one would be willing to volunteer for the position of Publicity chairperson.

Nominations Chairman Jeff Bernardis reported that the slate of officer candidates for the May elections would be:

Director	Ludy D'Angelo
Assistant Director	Jeff Bernardis
Program Chair	John Church
Treasurer	Michael Mitrano
Secretary	Larry Kane

The next board meeting is scheduled for Thursday May 20th at 7 PM at Peyton Hall. At this meeting the officers for 2010-11 will do planning for Starguest and fall programs before our summer break. The first board meeting for next year will be on Thursday Sept. 9th at 7 PM at Peyton Hall.

Bill said that he would e-mail Charlotte Zanidakis the dates of the monthly meetings and board meetings for 2010-11 so that we could reserve the auditorium and conference room at Peyton Hall.

A discussion about pre-planning for Starquest 2010 followed. Mike wanted to know what the details of the pre-payment to the Hope Center were. Bill could not remember but promised to e-mail him the contract. Mike stated that it may be necessary to move the registration process forward so that we had money in hand before September and have a registration cut off date in September. Bill said that he would contact Don Monticello about getting the local publicity out this Spring and that he would put a notice on the Astronomy and S&T websites about Starquest within the next few weeks. Starquest is scheduled for the weekend of Oct. 8th-10th.

Mike reported that we have three new members and that this brings our total membership to 83. There is approximately \$18,000 in our bank account. Mike and John Miller are working to resolve discrepancies in the information in the membership roster. When these have been resolved a new roster will be published on the website.

John inquired of Mike if it would be necessary to have a budget for the upcoming year. Mike replied that it probably would not be necessary unless there is a big capital outlay (none is currently planned). Mike said that he would look into what the number of people we would have to attend Starquest to break even. This is the only thing that we might need a budget for.

Jeff reported that when he takes over as assistant director he intends to relinquish the position as outreach chair. Bill said that he would announce this vacancy at upcoming meetings to see if we can get someone to fill it.

The meeting was adjourned at 8: 20 PM

Bill Murray, Director

Community Outreach

This past month, we had two outreach events:

- First was the “Hopewell Valley Come Outside...” day in conjunction with Earth Day organized by Rex Parker. Rex has written about this event elsewhere in this issue.
- Then on Saturday April 24, we had Super Science Saturday on the quad at Trenton State Museum. Representing the club were John Miller, Larry Kane, Dave Letcher, Ludy D’Angelo, and Ira Polans. Bill Murray was also inside running the planetarium. By all accounts it was a successful day; the weather certainly cooperated. Both Dave and John took photographs, some of which you can find here.

Right now our upcoming calendar is clear. Things do tend to slow down this time of year. However, that does not mean that requests can’t come in, and I am always looking for volunteers. If you would like to receive notifications (via email) of upcoming events, just contact me. I can be reached at



Jeff Bernardis, Outreach Coordinator

Interested in keyholder training?

or

Treasurer’s Report

Member renewal for our fiscal year that ends on June 30 is still continuing. We now have 89 members. Expenses remain moderate and we now have a \$371 surplus for the fiscal year, after taking into account the observatory repair last summer.

The Association’s cumulative surplus is \$18,645.

Michael Mitrano, Treasurer

May’s Program

Our speaker for the May 11 meeting of the AAAP will be Dr. Jeremy Kasdin, Director of Graduate Studies in the School of Engineering and Applied Science, Mechanical and Aerospace Engineering, at Princeton University (<http://www.princeton.edu/mae/people/faculty/kasdin/>). Professor Kasdin's principal research interests are in space systems design, orbital mechanics, guidance and control of space vehicles, optimal estimation, and stochastic process modeling. He is currently the Principal Investigator for the Princeton Terrestrial Planet Finder (TPF) group, which is an interdepartmental group of faculty, staff, and graduate students from MAE, Astrophysics, the Institute for Advanced Study, and other departments that is working with Ball Aerospace on design studies for NASA's TPF mission. TPF will be a large space-based observatory to detect and characterize earthlike planets in the habitable zone of nearby stars.

The title of Dr. Kasdin's talk will be “Are We Alone? Imaging Exoplanets.” Although over 200 exoplanets have been detected to date, only a few have been directly imaged, and all of these are Jupiter-sized. Direct imaging is necessary for characterization of exoplanets and possible detection of any biomarkers that may be present. Dr. Kasdin will be discussing advances in these techniques to help us address these questions.

Dr. Kasdin will be our guest at a pre-meeting dinner at a local restaurant, starting at 6 pm. *Please contact Assistant Director John Church by no later than Monday, May 10 for a reservation and further details.*

Other News...

Astronomy Outdoors with Telescopes!

Can amateur astronomy help channel the lives of internet-connected/iPOD-directed kids to a healthy and meaningful relationship with the physical universe? As recent studies have shown (and we all witness) kids spend an inordinate amount of time experienc-

ing life *in silico* (as much as 30 hours per week on-line according to one study). With this in mind, the goals of the recent Hopewell Township and Borough's-wide event "Come Outside and Play!," organized by the Hopewell Valley Municipal Alliance and held on Earth Day April 22, were to encourage and provide real opportunities for kids and adults to experience the great outdoors.

It struck me that this goal aligns nicely with one of AAAP's core activities, public outreach for astronomy. And so, "Astronomy Outdoors with Telescopes!" was born as part of the activities of the Come Outside event on Earth Day. The following blurb is the pitch we made in the event brochure.

Description of activity: Get outside under the stars and observe our night sky with high tech telescopes while learning some astronomy in the process. Participants will come to the AAAP (Amateur Astronomers Assoc of Princeton) Observatory in Washington Crossing St Pk early in evening while it is still light. Expert astronomers from AAAP will demonstrate how telescopes work, then as night falls (sky conditions permitting) observe the first quarter moon, planets, stars, and some deep sky celestial objects while helping kids learn more about astronomy and physics. This is a "hands-on" outdoor experience.

Heading out to the Observatory around 6PM on Earth Day April 22, I was more than a little worried about the rain showers and broken clouds that had persisted all day. But just as the first kids and parents showed up, the clouds dissipated and the sky turned totally clear, albeit with a first-quarter moon, but overall very good observing conditions! We provided an impromptu lecture/Q &A on astronomy and its equipment, and proceeded to observe for a few hours. Several galaxies (M51, M82) globulars, and Saturn and Mars brought of discussion, and of course kids still love the moon's craters. Attendance was 16 or so, with ~10 children ranging from smart first grader to middle school and a college student. Maybe a bit more publicity next year could bolster the numbers. Thanks to Ron M., Ludy D., and Michael M. for helping.



Rex Parker

Long Lost Reflector on the Moon Finally Located

A team of physicists led by a professor at UC San Diego has pinpointed the location of a long lost light reflector left on the lunar

surface by the Soviet Union nearly 40 years ago that many scientists had unsuccessfully searched for and never expected would be found.

The French-built laser reflector was sent aboard the unmanned Luna 17 mission, which landed on the moon November 17, 1970, releasing a robotic rover that roamed the lunar surface and carried the missing laser reflector. The Soviet lander and its rover, called Lunokhod 1, were last heard from on September 14, 1971.

"No one had seen the reflector since 1971," said Tom Murphy, an associate professor of physics at UCSD. He heads a team of scientists engaged in a long-term effort to look for deviations of Einstein's theory of general relativity by measuring the shape of the lunar orbit to within an accuracy of one millimeter, or about the thickness of a paperclip. This is accomplished by timing the reflections of pulses of laser light from reflectors left on the moon by Apollo astronauts and turning the timing measurement into a distance.

Extract from Science Daily News. The full article, detailing the use and method of discovery, can be found on the following site. <http://www.sciencedaily.com/releases/2010/04/100426203545.htm>

European Space Agency StarTiger Secures Way to eclipse Sun in space

Last September a team of researchers assembled in southern France. Their six month assignment: develop a new type of space mission, targeting a mysterious segment of the Sun normally hidden in plain sight.

Today the results of their race against the clock have been unveiled. The Laboratoire Astrophysique d'Marseille (LAM) served as host to ESA's latest StarTiger project, with the team building a scale-model prototype in a LAM clean room. The project's formal closedown took place today at ESA's ESTEC centre in the Netherlands.

The prototype demonstrates a way to produce a perpetual eclipse in space: fly two satellites in tight formation so that one casts a continuous shadow across the other.

Considering each satellite would be moving at multiple kilometres per second, the idea presents substantial problems in navigation and control terms. But success opens up the prospect of sustained access to inner zones of the Sun's corona, currently glimpsed from the ground only for a few minutes per year during total solar eclipses.

"The main objective was achieved together with several secondary objectives," said team leader Sebastien Vives of LAM, who oversaw seven core researchers, supported by a 20-strong support group. "The idea was to perform relative positioning between the two satellites and absolute positioning with respect to the Sun. "Working face-to-face in the same room was our key to success, considering the schedule we faced. We combined our various competences to solve the many problems that arose along the way."

Extract from European Space Agency News. The full article, detailing the use and method of discovery, can be found on the following site. http://www.esa.int/esaCP/SEMYGYF098G_index_0.html

Submitted by Bryan Hubbard

20 Years Ago In Sidereal Times...

SIDEREAL TIMES

Newsletter of the Amateur Astronomers Association of Princeton, Inc.

DIRECTOR: Larry Smith MAY 1990 EDITOR: JWHS

The May meeting of the AAAP will take place at Peyton Hall on Tuesday May 8 at 8:00 P.M. The speaker will be Lou Lanzerotti of AT&T Bell Laboratories. The title of his talk is "Our Amazing Solar System: The Voyager Expedition".

[IF YOU CAN ONLY MAKE ONE MEETING THIS YEAR, MAKE THIS ONE. IT WILL BE GREAT!]

The premeeting dinner with Lou will be at 5:45 P.M. at The Tiger's Tale at the NW corner of Route 518 and US 206. All members are welcome to join us at this dinner.

-Don Monticello

AAAP FIELD TRIP

As was announced at the AAAP meeting on April 10th, our field trip to the NASA Goddard Space Flight Center was cancelled due to the Space Shuttle launch, even though "launch" isn't exactly what they did. NASA closed the Goddard facility to the public because the Space Telescope is operated from there. AAAP members who had signed up for this field trip and weren't at the meeting were notified of the cancellation by telephone.

A new date for the field trip has been set for Saturday, October 13, 1990, so mark your calendars now. Reminder notices will appear in the September and October issues of the Sidereal Times and sign-up sheets will again be circulated at the September and October meetings. The local astronomy club will have a star party that evening for those who wish to stay after the tour. Let's hope we have better luck next time!

-Jay Albert

MINUTES OF THE APRIL 19, 1990 MEETING

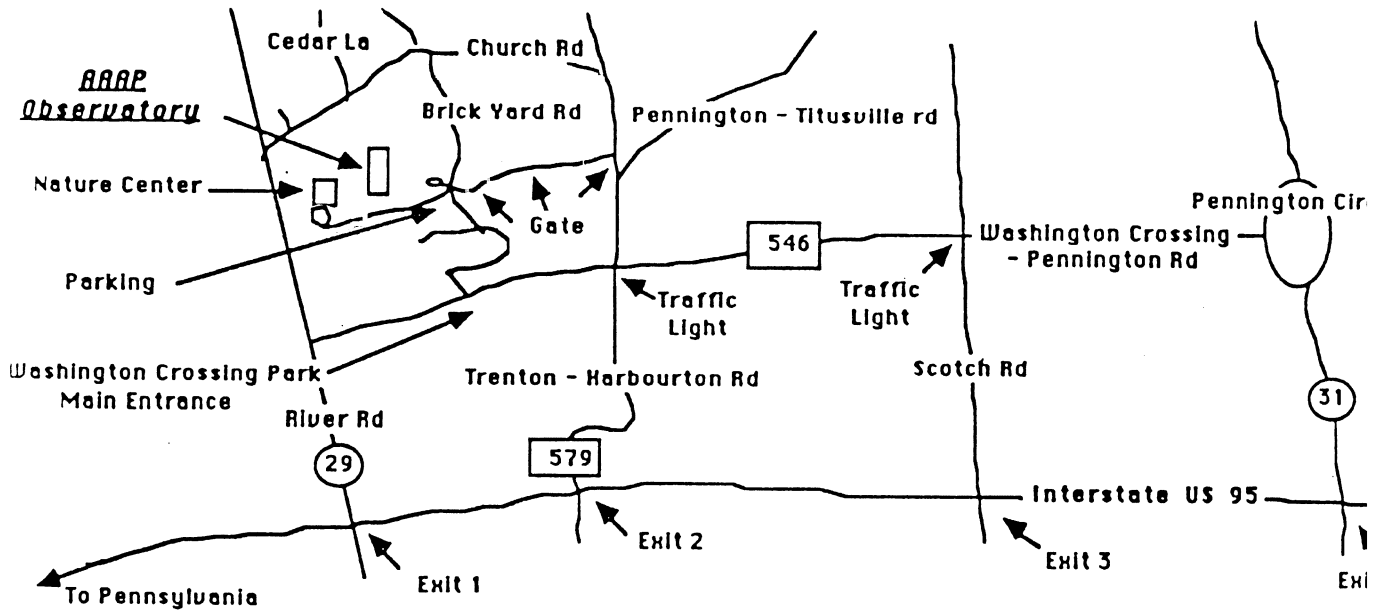
Twenty-five members and guests present. The program for the evening introduced by Don Monticello was members' night. Principally, John Simpson spoke on using the 12 1/2" Simpson Reflector as a mount for piggyback photography. He was assisted by Bill Murray and Chip Yull.

Director Larry Smith in the chair. The meeting was called to order at 9:00 P.M. EDT. The treasury balance was \$1,451.38.

I would like to hold a work party at the Observatory on Saturday, May 19. I will discuss what needs to be done at the meeting on May 8. Basically it is just clean-up work, with a few other odds and ends.

I am still investigating the different brands of digital setting circles and catalogs for the 12 1/2" reflector. To this end, John Simpson photographed the 12 1/2" mount from several angles so that we can give the manufacturers information for the encoder interface. (Thanks, John!)

-Bill Murray



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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