

SIDEREAL TIMES

The Official Publication of the
Amateur Astronomers Association of Princeton

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From the Director

AAAP Regular Meeting Sept 14 (8:00 PM). The AAAP is entering its 34th season of providing great astronomy lectures and scientific presentations, once again being held at Peyton Hall on the Princeton campus. Appropriate for the season premier will be a presentation by one of Princeton's most esteemed physicists, **Dr. Edward Witten, Professor of Physics at the Institute for Advanced Study.** Dr. Witten will discuss the provocative and powerful story behind string theory, and will consider the current approaches to unify the multiple superstring theories. Working in the rarified atmosphere at the pinnacle of theoretical physics, Dr. Witten has been considered one of the great minds modern mathematical physics, evidenced by his authoring over 250 scientific papers. His creativity and contributions have been recognized by one of math's highest awards, the Fields Medal (1990), membership in the National Academy of Sciences, the Dirac Medal, and many other honors.

Board of Trustees meeting Sept. 9. The first quarterly AAAP Board meeting will meet Sept 9 at 7:30 at the Engineering Quad 4th floor on the Princeton campus (as per previous meetings). Plans for the upcoming year will be discussed, including the fall picnic, observatory events, programs, and light pollution activities. All interested members are welcome-- please call or e-mail me or other members of the board if you'd like to attend. Other Quarterly Board meetings are scheduled for Jan 6 and March 31, 2005.

Early Fall Observing and CCD Imaging. Now that summer is winding down, hopes rise for improved observing conditions. Among the great objects, which culminate in the fall, the Andromeda Galaxy M31 stands out as a beacon to observers regardless of instrument used. M31 is often more visually impressive in small telescopes with wide fields than in large light buckets. M31 is our close companion, though it lays 2.3 million light years distant, and at 130,000 light years across it is huge even by galactic standards! The magic of CCDs brings faint galaxies



M31, the Great Nebula (Galaxy) in Andromeda, with M32 at lower right.
Photo by RA Parker using Tak FS-128 refractor at f/6 and SBIG ST-10XME.

into the much more visible realm, yet M31 presents challenges due to its very large angular size coupled with low surface brightness and contrast. On a recent clear night I decided to attempt color CCD imaging of M31 from my home near WC Park. Even though the moon was just past full, a remarkable amount of detail and color was captured in this LRGB composite CCD image (below). As a visual challenge over the next month, see how much of the M31's features (for example, M32 at the lower right) you can see with your own scope, or better yet with the equipment at the AAAP's Washington Crossing Observatory.

Extrasolar planet by amateur-level telescope and CCD. As detailed in the Sept. Sky and Telescope (website), an extra-solar Jupiter-size planet has been discovered using optical and CCD equipment essentially amateur level. It is a startling and inspiring result to amateur astronomers, sort of like viewing the Venus Transit (as many of us did in June) only from another star! Of the course several PhD scientists were needed to develop the software and protocols to de-convolve the gigabytes of data, and the 4 inch telescope itself is on top of a mountain in the Canary islands. The

Simpson Observatory (609) 737-2575

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approach by team co-leader Timothy Brown (STARE project) was to precisely measure the brightness of thousands of stars in large patches of sky to look for subtle, periodic dips in brightness caused by transiting planets. The discovery involved an 11.8 magnitude star with variations of brightness of 0.023 during the transits. To find this, the team imaged a 36-square degree field containing 12,000 stars every two minutes all night for two months, and then analyzed the massive volume of data to detect 16 stars that showed evidence of transits. Of the approximately 140 known extrasolar planets, all previous ones were discovered with large telescopes and cutting-edge detectors.

Dark Skies! -- Rex

From the Editor

AAAP Member is Published If you subscribe to Astronomy magazine make sure you look on page 98 of the August issue. You will see a review by AAAP member Ken Levy of some newly released DVD's about the Apollo Program. You may also recall Ken's article about the "Commission on Moon Mars and Beyond" which appeared in our June issue of the Sidereal Times. Its great having members getting national publicity for our organization.

Phenomenal House UACNJ recently held a picnic which Kaye and I attended. It was held at the home of Membership Chairman, Alan Midkiff a few miles North of Hope, NJ and at an elevation of over 700 ft. MSL. This 30-acre estate actually contains 3 residences and is nearly energy independent. Alan's high-tech dream home not only has an attic room with a roll-off roof, masonry pier anchored in the ground 20-feet below, and a 25-inch JMI computer controlled telescope, but provides for its own energy needs.

In a separate outbuilding there is huge computer controlled wood-fired boiler, which provides hot water through a network of insulated underground plumbing to all the buildings. Supplementing this are two geo-thermal heat pump systems taking ground water from one well at 50° F and returns it to another at 37°. Electricity is provided by a huge solar array, two 48-volt banks of batteries, redundant multi-kilowatt inverters, and the power grid. Excess power is sold back to the grid. Fully charged batteries can sustain the house for three days. This engineering marvel was designed and built by Alan acting as the General Contractor.

Winter Star Party As this edition goes to press, I have just received the flyer for the 2005 event. It is scheduled for February 7 through February 13, 2005 and sponsored by the Southern Cross Astronomical Society. The registration deadline is October 15, 2004. For information contact:

Fred & Lucille Heinrich
Winter Star Party Registrars
6165 Wiggins Rd.
Live Oak, FL 32060
Email heinrich1@alltel.net
Phone/Fax (386) 362-5995

This editor's prayers are with the Heinrichs and all the folks down in Florida as Frances is devastating their homeland.

I will most likely not be going to the event this year as family plans will have me in California after my son's scheduled return from

the Persian Gulf.

Vic

Letters to the Editor

Super Science Weekend I have been contacted by Tony Miskowski of the New Jersey State Museum about the 25th Super Science Weekend that will be held on May 21 and May 22, 2005. It will be called Super Science Silver: Festival of Family Fun.

The reason for moving the date from January to May is the museum will be receiving HVAC renovations and that the event has outgrown the indoor only facilities, weather permitting some exhibits can be located outdoors. The number of exhibitors has doubled in the last ten years. Holding the event indoors in January made for a cramped, chaotic condition, inconsistent with comfort and safety.

I can see the AAAP showing their sunspot and solar prominences outdoor in the cool May weather.

Ron Mittelstaedt

NEAF Experience the golden age of amateur solar astronomy. The Rockland Astronomy Club will be presenting the 2005 Second Annual NEAF Solar Star Party April 16 & 17, 2005. NEAF attendees are invited to observe the Sun with attitude, through a variety of Hydrogen-alpha and sunspot solar filters.

Join us, for two days of solar observing at NEAF 2005. No star party entrance fee or registration required.

Bring a piece of clear sky to share with vendors and fellow photon-deprived amateur astronomers.

SSP at SSP The 2005 Second Annual NEAF Solar Star Party will continue at the Rockland Astronomy Club Summer Star Party and Family Camping Vacation. The Summer Star Party is held from July 29 to August 7, 2005, at the private Shady Pines Campground, in Savoy, MA.

For further information check our web site www.rocklandastronomy.com, call 201-768-6575, or send email to SummerStarParty@RocklandAstronomy.com

Barlow Bob

3rd Annual Stargazers Picnic AAAP members and their families are invited to come out to the 3rd Annual Stargazers Picnic in October. Stay tuned to the website at <http://www.princetonastronomy.org/> or attend the September 14, meeting for further details.

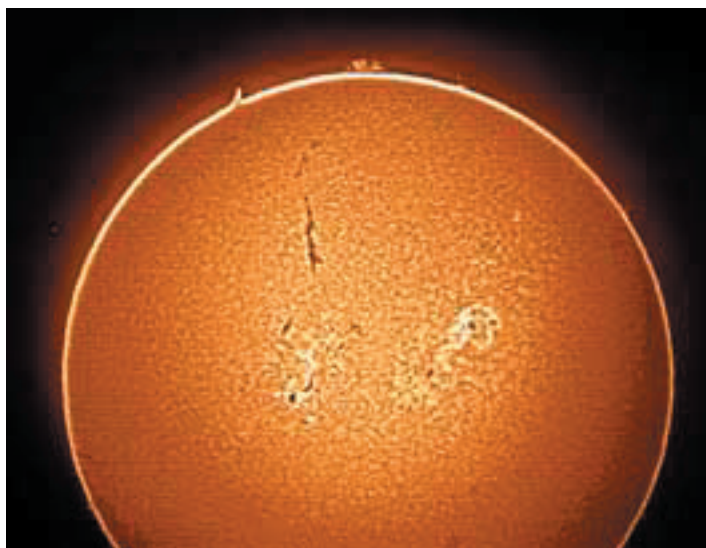
There will be a variety of foods including the standard picnic fare such as hamburgers, turkey burgers, hotdogs, salads, cold beverages, and desserts for all.

If you missed last year's picnic, you don't want to miss this chance to get to know your fellow AAAP members, and have a heck of a good time while we eat and observe the many interesting celestial objects of the fall sky!! (Eating and observing—what we astronomers do best!)

Members interested in attending are asked to RSVP to philenium020202@yahoo.com so that we can get an estimate on the quantity of food that will need to be purchased. Also, volunteers would be appreciated for a variety of picnic tasks. Please contact

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Jersey StarQuest 2004



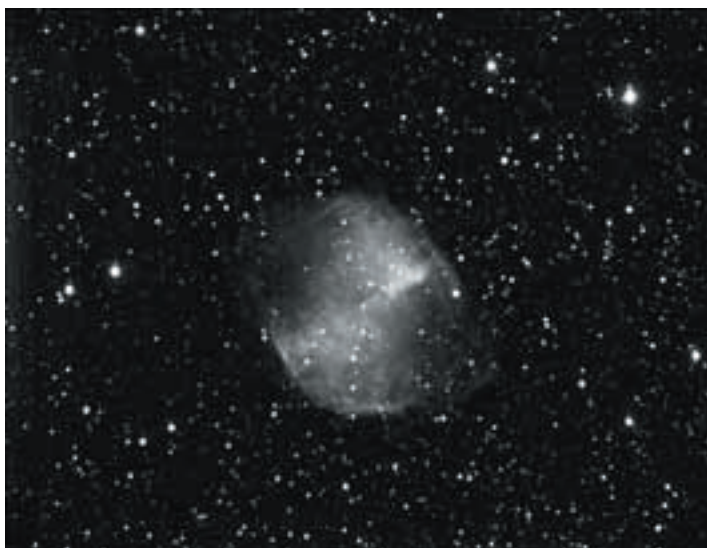
M-16

For those of you who couldn't attend this year's Jersey StarQuest, you missed one fine weekend. It started off a little rainy Friday afternoon but as darkness fell it turned out surprisingly good. The later it got the better it became. Sure there was a few clouds rolling in and out but for the most part it was a descent night for NJ.

The next day the solar scopes came out in both H-alpha and white light filters. I was glad to see Barlow Bob and his Bob-O-Scope were able to make out to the event again this year. I got a chance to snap off a few shots with my digital camera and tried some image processing mentioned in July's issue of Sky and Telescope.

Saturday night was about the best you could have asked for. The Milky Way could be seen across the sky and not just at zenith. I stayed up most of this night (after midnight) imaging (M16 and M27) and visiting those who also took advantage of the superb conditions. As soon as the eastern tree line started to show signs of twilight it was time to turn in for a couple of hours of rest. I hope SQ 2005 is as good as 2004 was for us.

Brian VanLieu



M-27

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Michele at the email above if you would be willing to help out. Reimbursements will be provided by AAAP. Please keep your receipts for our treasurer's records.

We look forward to seeing you there!

Michele Novatski

From the Treasurer:

The treasury balance is \$xxxx.xx after an expense of \$504.66 for a new computer at the Simpson Observatory. There are 126 paid members.

Note: Please do not contact Sky and Telescope for subscriptions for a club discount. This arrangement will start in October 2004. Each month a current membership roster will be emailed to Sky and Tel. This way you will be able to contact Sky and Tel to renew your subscription at the club discount rate. Please wait until October before contacting them.

Note! Starting on October 1st, dues will be \$40 per year. This is a one time annual dues due on each October 1st. There will be information in the next Sidereal Times to where your membership dues can be sent.

Ron Mittelstaedt

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meeting. I look forward to seeing you there!

Michele

Deadline for the
October Issue of
The Sidereal Times
October 1, 2004

From the Observatory Chairman

We have had a troublesome summer at the observatory. It seems as we can't establish a link to the Paramount with the computer. When I first came across this I thought we had a damaged communication cable but I had cut and spliced out what looked like a bad section of the cable and still can't link to the mount. I believe there might have been a lightning strike in the area which has caused our current situation since we have had numerous severe thunderstorms this July. The mount can still be swung around by the joystick so it is not totally out of commission. You will need to brush up on your star hopping until we can get this resolved if you go to use the C14. The Bisque brothers will be contacted to see what we need to do to get this fixed. As I see it now if we need to send the mount back for repair, it won't be until after the observatory closes for the winter.

The good news if you will, is the computer has recently been replaced with a new Dell system which was approved many moons back in a business meeting. But even with the new computer we still can't talk to the mount.

Key-holder Training is Back This fall I will be starting up the training sessions for those who are interested in getting trained on using the Simpson Observatory. To join in this experience, you need to be an active AAAP member for at least six months. This includes attending work parties at the observatory, helping out with public events both at the observatory and/or at other locals. If interested contact me and I'll put you on the trainee list.

I also will need experienced key-holders to run these sessions. If interested contact me.

I have no schedules yet but things should start to happen this fall. AAAP Jackets Since the nights will be getting cooler and your old jacket may not be in the best shape why not get a new AAAP jacket. They come in various sizes and colors (the logo is always the same just the color of the jacket is your choice). Several members ordered theirs in the spring and loved them. If you are interested in getting a jacket see me for color selection. Last year the cost for one was \$65. I believe they will still be the same price but I will check with the shop where I get these through.

Brian

Observations

Last year the Trenton Psychiatric Hospital, whose property borders my back lot, changed their outside lights on their buildings to a higher intensity. This was apparent last Spring when the shades were open to allow the windows to open in our upper rear bedroom. The light source on the buildings are two hundred yards away.

My neighbors who were also affected by the lights and I decided to write a letters to our local government representatives and the NJ Division of Family Services. In the letters I had copies of alternative lighting methods courtesy of the International Dark sky Society.

Within a week we had the assistant administrator from the Trenton Psychiatric Hospital visiting us at night to see the nuisance lighting for himself. The first action was to turn off the pole lights in the parking lot that is closest to our property. Than full cut off shields were installed on the building mounted lights and pole lights. This resulted in a great reduction of the offensive lighting.

I'm not a true crusader of stopping light pollution for astronomy

purposes. I figured light pollution was the cost of progress. We see it everywhere, Jenny Jump, Summer Star Party, etc. My neighbors and my situation were different. The light was an invasion of privacy.

I just wrote this to show that industry can be educated on the subject of correct lighting. I showed that the lights on the buildings were directed toward my property instead of where it was more useful, their walkways and parking lots.

Ron Mittelstaedt

From the Program Director

AAAP Fall Lecture Schedule Greetings! As new program director for the club, I hold myself responsible to carry out the fine tradition established by my predecessors in selecting lecturers who are leaders in the astronomical and cosmological fields. With the reconstitution of the program committee, whose objective will be to bring speakers that address the diverse interests of club members, the 2004-05 AAAP lecture schedule is sure to be one you won't want to miss. To participate on the program committee or suggest a speaker, members may email me at michelle@princetonastronomy.org. The program committee is open to all members, but it is a wonderful opportunity for those who recently joined to meet others, contribute in the spirit of volunteering, and help ensure the future of our club.

Lectures are as follows:

September 14 The fall lecture series opens with Dr. Edward Witten, Professor of Physics at the Institute for Advanced Study in New Jersey, and considered by many physicists to be Einstein's true successor. A mathematical physicist, Witten has been awarded everything from a MacArthur "genius grant" to the Fields Medal, the highest honor in the world of mathematics. His contributions to string theory have been myriad, including the time in 1995 when he gave the then somewhat moribund field a much-needed boost by showing how the five different variations of the theory then competing with one another actually all belonged under one umbrella. Don't miss this rare opportunity to hear Dr. Witten present a thought-provoking talk on string theory.

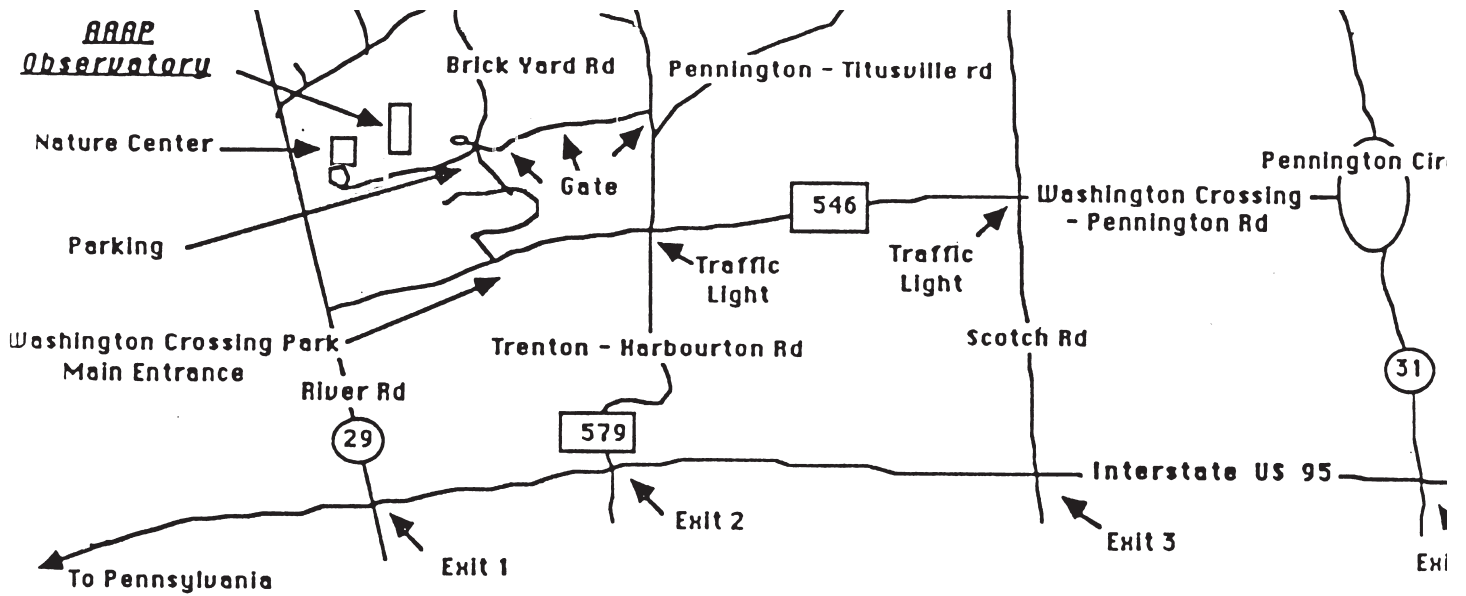
October 12 Mr. George Bunk, former NASA and current Lockheed Martin engineer will present a talk entitled "From the Ground Up: Working on the Space Shuttle and Space Station, a Space Workers Perspective."

November 9 Dr. Michael Strauss, Faculty at Princeton University will present "The Teenage Universe: The Most Distant Quasars Known."

December 14 Mr. Michael Carr, Engineer and Senior Professional Staff Member at Princeton University, will speak on "CCD Imaging Camera Hardware."

As a reminder, club meetings are always preceded by a dinner at the Annex Restaurant in Princeton. The dinners are open to all members, and begin at 6:00 pm. I want to particularly encourage those who recently joined to come out and take advantage of the chance to meet and discuss cutting edge research with our renowned speakers—this is certainly one of AAAP's greatest membership benefits. To reserve a dinner seat, please contact me via the email address above no later than the morning of the

(Program, continued on page 3)



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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