

SIDEREAL TIMES

The Official Publication of the
Amateur Astronomers Association of Princeton

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Volume 38

May 2009

Number 5

From the Director

Well, here's a first, good reader: I'm writing this Sidereal Times FTD episode from a local Barnes & Noble. Overlooking the store from a Starbucks perch, to be precise. And the store is pretty devoid of customers on this comfortable Spring evening. I'm guessing they're assuming Swine Flu critters are crawling over every



book and magazine in the place. Let's see—how can I tie Starbucks, Swine Flu and astronomy into a coherent segue for this article? The “star” in Starbucks is certainly an auspicious beginning. “Swine” is next. Scanning the memory banks. Can't locate pig (in an astronomical sense). There's an affirmative for horse, camel, dragon, lion (big and little), bear (big and little), hare, crow, scorpion, to name a few in the celestial menagerie. No pig. I guess the ancients just didn't like these smart creatures.

Oinkus Major, where are you??

This particular B&N has, for years, had an impressive astronomy and astrophysics collection; far more extensive than the usual highway bookstore. Unfortunately, I've watched, with dismay, as this section has moved repeatedly around the store (moving progressively to the backwater), and simultaneously seeing title count diminish. Concurrently, flashy hard covers about Oprah's latest weight loss/gain and Jim Cramer's newest surefire get-rich this afternoon fill the shelves (sigh). Yet, there remain vestiges of good astro-reading. Some random sightings of excellent reads: *Backyard Astronomers Guide, 3rd Edition* (what a sensational compendium); *The Day We Found The Universe*, by Marcia Bartusiak; *You Are Here*—

The deadline for the June issue is:

Friday May 29, 2009

Send your submissions to:

editors@princetonastronomy.org

A Portable History of the Universe, by Christopher Potter and Spangenburg's new: *Carl Sagan, A Biography*. What's in your (astronomy) library?

Did you attend this year's NEAF? The annual event, held at Rockland Community College, Suffern, NY, is, I believe, (enough commas?) the largest amateur astronomer convention in the U.S. This year appeared to be another remarkable success.

NEAF organizers claimed 100 vendors in addition to a two-day astroimaging conference and the NEAF Solar Star Party. It seemed less crowded to this attendee, but others reported lots of crowded aisles at various times of the day. Our Program Chair, Ludy D'Angelo, took a step up from his ETX 125 by purchasing a 9.25" Celestron with GoTo GEM.

AAAP members promoted the club and astronomy at the Trenton State Museum annual Super Science Weekend, April 25th. Attending a white light-filtered 8" Dob and two H-alpha PSTs were, John Giles, Bill Murray, Ludy D'Angelo and yours truly. It was nonstop at the scopes as scores of youngsters and parents peered through the eyepieces (get me more Windex please). Although the skies were clear, Sol remains extraordinarily quiet. No sunspots and only one minor prominence early in the day.

Remember to mark your calendar (or check the one on the AAAP website) for each Friday evening's Simpson Observatory open house. We're two-for-two so far this season – not bad given NJ weather patterns (around observatories, at least). Astronomers and the public agree these gatherings are an awful lot of fun. If you haven't made a visit, you're really shortchanging yourself, friends and

family. Bring your neighbors. Sure, even bring your mother-in-law! It's well worth the short drive to Washington Crossing State Park. A quick check on the AAAP Twitter page will give you up-to-the-minute status, should the weather prove schizophrenic.

Well, I've finished my Starbucks double back flip extra mocha swirl chocolate non fat spiral cappuccino coffee. And they charged me \$4.25? For a cup of joe. Talk about pigs.

Cheers—John Miller, Director

Membership Meeting Minutes April 14, 2009

The meeting was called to order by Director John Miller

1. John Giles announced the slate of Board members at the beginning of the meeting. John Miller advised that more names needed to be added to the slate, especially for the positions of Director and Program Chair. He suggested that the position of Program Chair be shared if no one person takes the position.
2. Star Quest: John Miller described the meeting he, Larry Smith and Brian Van Lieu had with Ron Russo, the Director, and the Assistant Director of UACNJ. John described the suggestion that Star Quest be held together with the UACNJ event. They wanted the AAAP to coordinate the ticket sales for both events. They will be holding symposia during the day at the times when our meals will be served. They will give a price break to people registered for Star Quest. It was suggested that it would be very difficult to keep track of people who might wait until Saturday to show up, based on the weather. Their symposia schedule will not impede our ability to visit our observatory. John Miller said he told them to get their schedule set up and decide what they will present and how. It was agreed that we will do Star Quest as we usually do. We have to figure out how to handle cars that might come down at night from Jenny Jump. The parking of cars on the road or the grounds around Star Quest will pose major problems. Ludy D'Angelo suggested that we have a contingency plan to close our event early if the weather is as bad as it was last year. John Church suggested that this discussion be held at our next board meeting.
3. Treasurer Michael Mitrano made a report that appears in another section of this month's Sidereal Times.
4. Larry Kane indicated that no one was borrowing materials from the club library. He reported the acquisition of some NASA documents that he received before the meeting.
5. Public Outreach Chair Jeff Bernardis stated that the only event on the schedule is Super Science Day. He had two definite volunteers and needed at least one more. Jeff mentioned that we will try to reschedule the Stewart School late in a day in May. John Miller mentioned that we now have Twitter and that members should learn to use it. He suggested that it will be a good way to update information on public events, and for observatory team leaders to let everyone know when the observatory will be open. The way we are using it, Twitter is a blog and can contain any kind of updated member information. Kane raised the question of the next Star Party to be held in downtown Princeton.

6. Observatory co-chair John Church gave a report on the quote he got for repair work on the observatory. Since he got the quote, he found rotted wood that was concealed by other wood. This must be taken care of before the other work can begin. Approval for the work must come from a vote of a quorum of the membership at the next meeting. Mike Mitrano stated that a quorum need only be established when a member asks for one at a meeting. Ron Mittelstaedt reported that the observatory bathroom is now open.
7. Articles for the next Sidereal Times are due to the editors by May 1.
8. John Miller asked for volunteers going to NEAF to buy prizes for Star Quest.

Larry Kane, Secretary

Community Outreach

We only had one event this past month—Super Science Day at the Trenton State Museum. John Miller, John Giles, Bill Murray and Ludy D'Angelo were present to show the public some views of the sun.

As of this writing, our events calendar is clear. There is potentially a date coming up for Stuart Country Day School, but I haven't heard yet from the teacher as to when they want to schedule.

If you are at all interested in helping out with Outreach, please contact me at jbernardis@comcast.net or 609-466-4238.

Jeff Bernardis, Outreach Coordinator

Treasurer's Report

There has been little financial activity during the last month. Our surplus since July 1, 2008, is about \$3,300 or \$1,000 higher than budget mainly because expenditures on the observatory so far have been modest. We are \$200 below budget in dues but StarQuest had better surplus than expected.

The AAAP's cumulative surplus is a bit over \$18,000.

Michael Mitrano, Treasurer

From the Program Chair



On May 12th, our guest speaker will be Carles Badenes. His talk is titled 'Supernova Remnants: The Persistence of Memory'.

Dr. Badenes is a Chandra Postdoctoral Fellow in the Department of Astrophysics at Princeton University. He received his Ph.D. in Astrophysics from the **Universitat Politècnica de Catalunya** in Barcelona, Spain in 2004.

His research interests are Type Ia Supernovae and Supernovae remnants: explosion physics, progeni-

tor systems, binary systems, stellar populations, role in the chemical evolution of galaxies. X-ray emission, shock physics, hydrodynamics, and X-ray spectral codes. He has given many talks on the subject, most recently to National Optical Astronomy Observatory, Tucson AZ, Arizona State University, Los Alamos National Laboratory, and the American Museum of Natural History. He also was the keynote speaker for our New Jersey Starquest in 2005.

Please join us in Peyton Hall on May 12th.

In June, it looks like the NJ State Planetarium will not be open. At this time the plan is to have the club picnic in June on the Saturday after our scheduled meeting. More details to follow, I am looking for volunteers to help put together our picnic in the park by our observatory. So please email me and let me know if you are willing to help.

As a closing note I would just like to say that I hope you enjoyed the programs I have offered to the club for the last 2 years. I enjoyed being Program Chair and am always willing to help any future Program Chair if needed.

Ludovicio D'Angelo, Program Chair

Picture This—NGC 4565

Also known as the Needle Galaxy, NGC4565 is one of, if not the best example of an edge on galaxy. Located in the constellation Coma Berenices, it lies some 30 million light-years distant and is over 100,000 light-years in diameter. I went down to a dark site in south Jersey known as Coyle Field to take this. While shooting it I spent my time doing visual observing with another scope. This night was unusually warm and dew free which was a pleasure to deal with for a change. In the eyepiece NGC4565 is just a long thin gray ghostly line but after letting the camera do its thing the edge on dust lane starts to show more and more detail as the central bulge starts to glow yellow. This picture has one and a half hours total time consisting of 8 and 12 minute sub exposures. The camera was a Canon 350D with an IDAS LP filter, which was attached to an 8" F6.3 SCT OTA.



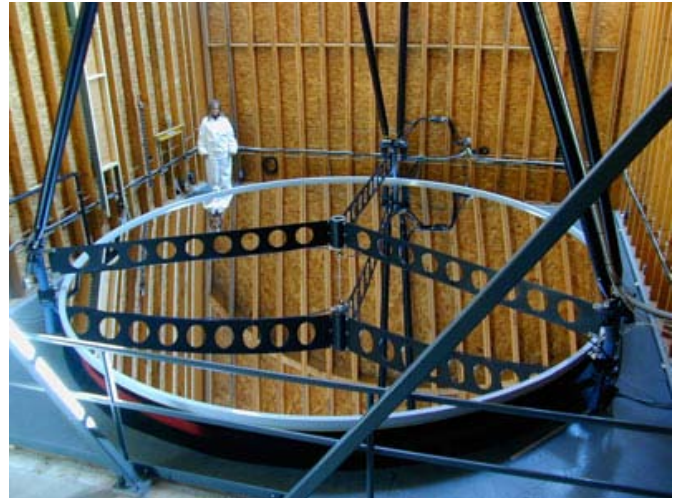
Brian Van Liew

Interested in keyholder training?

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

Other News...

Large Zenith Telescope You may have read of the Large Zenith Telescope operated by the University of British Columbia in Canada. With a diameter of 6 meters this may seem of little consequence since many larger scopes already exist. What is unique about it is that the mirror is a liquid. Isaac Newton knew that any liquid spun in a shallow container assumes a parabolic shape naturally. If the surface has the properties of a mirror, that is, it is reflective, you have the basis of a telescope.



NASA/Photo by Paul Hickson (University of British Columbia)

Ermanno F. Borra, physics professor at the Optics Laboratory of Laval University in Quebec, Canada has been studying liquid-mirror telescopes since 1992 and he together with Simon P. "Pete" Worden, now director of NASA Ames Research Center, are members of a team taking the idea for a spin, if you'll pardon the pun. The exiting aspect of this is the potential to build a very large telescope on the Moon. While it may not be able to be aimed as a normal scope would since the container must remain horizontal, nevertheless it could, over time, cover a significant portion of the cosmos. Typically, those built so far have used mercury, which reflects about 75 percent of incoming light. Unfortunately using mercury on the moon has major problems. It's heavy, and therefore expensive to get there, and would evaporate in the vacuum of space. Professor Borra and his colleagues have been experimenting with a class of organic compounds known as ionic liquids. "Ionic liquids are basically molten salts," Borra explains. "Their evaporation rate is almost zero, so they would not vaporize in the lunar vacuum. They can also remain liquid at very low temperatures." He and his colleagues are seeking to synthesize ionic liquids that remain molten even at liquid-nitrogen temperatures. Ionic liquids are only slightly more dense than water. Although not highly reflective themselves, a spinning mirror ionic liquid can be coated with an ultrathin layer of silver just as if it were a solid mirror. Weirdest of all, the silver layer is so thin—only 50 to 100 nanometers—that it actually solidifies. In the vacuum of space, a liquid mirror coated with a thin solid layer of silver would neither evaporate nor tarnish.

Submitted by Bryan Hubbard

20 Years Ago In Sidereal Times...

SIDEREAL TIMES

Newsletter of the Amateur Astronomers Association of Princeton, Inc.

Director: Jay Albert

MAY 1989

Editor: JWHS

AAAP Calendar

Tuesday 5/9/89: Meeting at Peyton Hall, at 8:00. Prof. Knapp of Princeton will be discussing galaxy formation and evolution. AAAP officers for '89-'90 will be voted on during the business portion of the meeting.

Saturday 5/20/89: Work Party will meet at the Observatory at noon sharp. Bill Murray needs volunteers to help install the new chain drive (AT LAST!) to open the roof. Yes---you heard it right---after all these years of PROBLEMS, ETC. we're finally going to put in the chain drive we've been DREAMING ABOUT! If you're handy and reasonably skilled with tools your help will be appreciated.

Friday 6/2/89: Session 3 of John Simpson's observatory course will take place at the Observatory, starting at 8:00PM. Cloud/rain date is 6/3/89.

6/9/89-6/11/89: Beemerville Weekend Star Party. The skies up there in New Jersey's northwest corner are GREAT and there's datetime fun too. The entire weekend, including food and lodging, is only about \$40.00. Get your reservation in to Dave Brown before the end of May!

Tuesday 6/13/89: Meeting at 8:00PM in the New Jersey State Museum Planetarium in Trenton. Dick Perry will host a special Planetarium show on the new Projection equipment.

NOTE: Pre-meeting dinners are held at the Tiger's Tale Restaurant on Route 206 just north of the 518 intersection.

FROM THE DIRECTOR

This is my last message to you as Director of the AAAP. My third term in this office runs out at the May meeting, which I regret I cannot attend, due to another business trip. It has been a particularly hectic year for me, workwise, and I apologize for not putting in as much time and effort as the job requires and as I would have liked. Since my workload will not ease during the balance of this year, and my wife has THREATENED MY LIFE if I run for a fourth term, I will be passing on the reins to Dave Brown. I have the utmost confidence that under Dave's demonstrated leadership, the AAAP will become a more dynamic organization than it has ever has been. I feel gratified as well to see a number of new members becoming more active in the organization. This trend needs to continue and accelerate to assure our long-term viability.

I would like to take this opportunity to report to you on our last meeting, during which we held a members' night. It's a shame that only two dozen of our members showed up, because the meeting provided a good demonstration that our members are active and capable on their own. I hope my announced talk on the basics of observing and sketching didn't put too many of you off because of its entry-level nature.

Joe Eschuck brought in his homebuilt astrophotography setup. I can assure you it was amazing. Mounted on the "barn door" camera platform was a homemade 4" reflector (Joe even ground the mirror!) which used an electronic light detector in place of the usual secondary mirror. The light detector could be replaced with a secondary for normal visual use. Joe used a curved screw for better drive accuracy and a cheap, surplus stepping motor. There were a number of electronic ad-ons, including a counter for the variable drive rate. Joe even has the ability to interface the system

with a computer for remote control!

In addition to Joe and I, Dennis Hicks presented a fascinating and very well illustrated talk on Stonehenge (Dennis is a native of England). He showed not only the stages in which it was built, but its various astronomical uses and capabilities. For example, one of the uses was to track the 18 year Saros cycle. This enabled the Priests who operated Stonehenge over 3,000 years ago to predict both lunar and solar eclipses! Bill Murray, our Observator Chairman and one of John Simpson's astrophotography students, showed us his first photo taken through the 12.5" Simpson (DON'T YOU LOVE THAT?-editorial comment) reflector. They were of M13 and M35 and they were GOOD! Those of us who may have been thinking about coming out to one of Simpson's classes but haven't should certainly give it a shot if these results are an indication of how quickly one can progress.

One last note. A special treat at the members meeting was Blake Genzlinger's brownies. Even if none of the presentations would have interested you, the brownies were well worth coming for!

NEWS BITS

The Nominating Committee, chaired by Don Monticello, presented its new slate of officers at the April meeting. They are: Director---Dave Brown; Assistant Director---Larry Smith; Treasurer---Ron Mittelstaedt; Secretary---Dick Sivel; Program Director---Don Monticello. Additional nominations will be accepted from the floor at the May meeting.

We have a new Editor of the SIDEREAL TIMES, starting with this issue. John Simpson has agreed to take on this vital task while Chip Yuill---WHO'SE DONE A D-MN GOOD JOB THIS LAST YEAR---heads back to school. Our thanks to Chip for turning out such beautiful editions of the TIMES and for John for stepping in. Other members continue in non-elective posts, including Bill Murray---Observator Chairman; Blake Genzleinger---Membership Chairperson, and Louisa Lockette---Publicity Chairperson.

Tuthill Tapes: you may recall that Roger Tuthill loaned the AAAP two of his video tapes, one on basic amateur astronomy and telescope use, and the second on astrophotography. The tapes are still in and currently with Bill Murray. If you're interested, contact Bill.

Lunar Eclipse Program---August 16th---will provide us with the first total lunar eclipse we've had in this area since 1982. To celebrate, we will run a program for members and the general public in cooperation with Dick Perry of the Trenton Planetarium. Events will be held both at the Planetarium, then at the AAAP Observatory. The umbra's first contact will be about 9:20PM and totality will begin at 10:20. Weather permitting, it will be fun and a great "photographic opportunity". We'll have more details in a subsequent issue of SIDEREAL TIMES.

FINALLY: 1. Please contact me if you're the person who left his/her umbrella in my car. It's still there---MILDEWING?
2. I STRONGLY SUGGEST that if you intend to go west and observe the '91 solar eclipse, MAKE RESERVATIONS NOW! I understand that there are well over 1,000 reservations; so NOW IS THE TIME to make arrangements.
and 3. "Space Day" is on Saturday July 22. As in the past, attendees and volunteers are welcome.

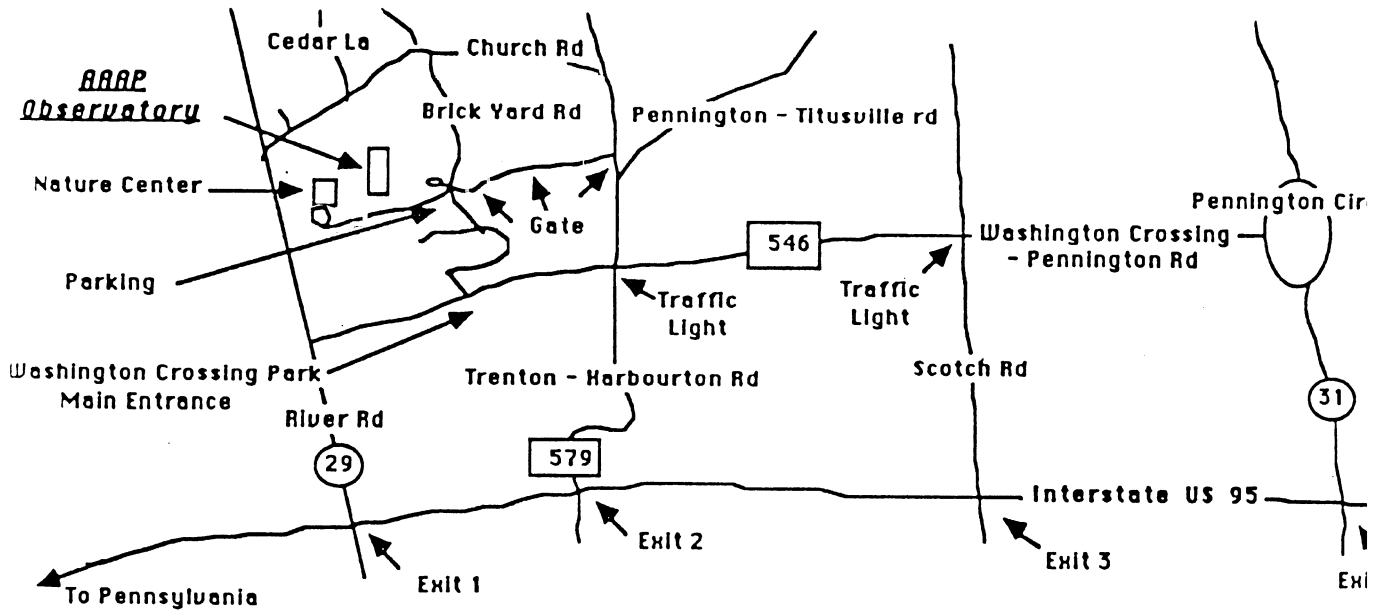
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Observatory News/Duty Roster:

Session 2 of the Simpson astrophotography course will be held on May 5. GOOD WEATHER IS NOT CRITICAL, so be sure to come if you are interested. Session 2 is really the most important, as all the steps in the actual taking of an astrophotograph will be covered. In fact, if the weather is bad, we'll still do a "mock shot"---go through all the various procedures necessary to end up "pushing the button". As all of you who attended Session 1 know, PREPARATION is 95% of the game. So be sure to come if you'd like to become proficient.

Duty Roster---May

5/5---H. Marrotte, K. Goepfert
5/12---D. Sivel, L. Smith
5/19---D. Wurzler, D. Perry
5/26---R. Mittelstaedt, E. Perry



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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