

# SIDEREAL TIMES

The Official Publication of the  
Amateur Astronomers Association of Princeton

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Midsummer

Number 7/8

## From the Director

I hope everybody's summer is progressing smoothly. After a rainy start in June the weather has been looking up a bit in July. As I write this I am vacationing on Cape Cod. The skies up here can be dark and clear (when it's not raining) and I have my 4" refractor with me to take advantage of any clear nights.

Our first meeting of the year will be on Tuesday, September 8<sup>th</sup>. As of now we are still working on finding a speaker for this meeting. As I said in the June issues of Sidereal Times we are still in need of a Program director for this year. Anybody interested in this position should contact me.

At the meeting in September we have some important business to contract. Hopefully, sometime this summer or early this fall the structural repairs to the observatory (under the direction of John Church) will be complete. At the picnic in June a majority of the board in conjunction with a unanimous vote of the members present agreed that these repairs should proceed as rapidly as possible. However, our constitution requires that a majority of 40% of our membership concur with this appropriation of funds. Below in this issue is an article giving a more detailed description of the work that needs to be done as well as a write-in ballot for the appropriation vote. I would like to hold this vote before the beginning of the meeting in September. If you can't attend the September meeting please send in your vote on the enclosed write-in ballot. It is important that we reach our 40% quorum in order to be able to decide this issue.

Here are some events and dates to keep in mind:

**Stellafane** As I said in the June issue of ST I will be attending this year's Stellafane Convention (Aug. 13-16) in Springfield VT. The keynote speaker at Stellafane this year will be Dr. Alan Bean, the lunar module pilot on the Apollo 12 mission and the 4<sup>th</sup> man to walk on the moon. Being a child of the Space Age who grew up in the 1960's I clearly remember this mission in the fall of 1969 (during the moon walk the astronauts accidentally pointed their TV camera at the Sun which destroyed it and the video coverage of the rest of the moon walk). My initial interest in astronomy was stimulated by

the Apollo program so this will be a special treat for me. If you're interested in going to Stellafane to hear Dr. Bean contact me and I will give you the info you need.

**Board Meeting** The next meeting of the board of directors of the AAAP will be on Thursday, August 20<sup>th</sup> at 7 PM. The meeting will be held in the upstairs conference room at Peyton Hall. All members are welcome to attend.

*Bill Murray, Director*

**The deadline for the September issue is:**

**Friday August 28, 2009**

**Send your submissions to:**

**[editors@princetonastronomy.org](mailto:editors@princetonastronomy.org)**

## Observatory Repairs (Vote September 8)

For more than a year now the club has been debating repairs to the lower roof (the roof over the computer room and bathroom) of the observatory. This is a problem of long standing. The flashing between the back roof and the main roof leaks, and has caused a variety of water related damage inside the observatory.

John Church has taken the lead on this issue for a while now. He has a contractor that he has worked with in the past and can vouch for, Bob Newcamp. This Spring John and Bob were out at the observatory attempting to get an estimate of the work to be done and the cost of the repairs. Their initial estimate of the work to be done includes a re-coat of the lower roof (8 x 13) with silver coating: Install 2 new louvered vents in gable end: Install 13 feet of 5-inch rubber weather stripping: Remove rotten soffit plywood and install new primed plywood with 2 coats of finish white. In addition, they agreed that Bob should construct a plywood "cricket" to extend out over the

current flashing, which need not be removed. The rubber weather stripping will be installed on the north end of the cricket and keep water from getting to the hump and over it and thereby into the building.

However, as they were surveying the work that needed to be done to the lower roof they noticed that the leaks had caused significant structural damage to the wood making up part of the back wall of the observatory. This is in addition to the work that already needed to be done.

The extent of the damage is unknown. In order to get a final estimate of the total cost of the repairs Bob will need to remove several of the rotted 2x8 beams that make up the back wall in order to inspect the damage. Since this will necessitate removing the chain and pulley system from the back wall the observatory will be inoperable for a period of time. The 2x8's will be replaced with pressure treated ones and the chain and pulley will be reinstalled (John will be working with Bob throughout the repairs). The repairs should be done then and there in order to minimize the down time for the observatory. John has estimated that the total time to complete the repairs should be no more than a few days.

In order to begin the work we need a stretch of clear weather that fits into Bob Newcamp's schedule. Give the extremely wet weather we have had this Spring and the risk of further damage it was decided at the June picnic, by a majority of the board in conjunction with a unanimous vote of the members present, to proceed with the repairs this summer if possible.

Bob's visual inspection of the damage he can see lead him to give an initial estimate for the cost of the repairs of \$1855. However, the possible cost of interior damage, that can not be seen until the beams are removed, could raise this estimate by several hundred dollars.

At the meeting in September I would like to have a vote to approve funds for this repair. If we allocate \$2500 that should cover the cost of the initial estimate (\$1850) and allow for additional unseen damage. I propose that the club allocate this amount to pay for the repairs. For an expenditure of this amount our constitution requires a majority of 40% of our membership vote to approve it. I request that all members attend the September meeting in order to vote on this expenditure. If it is not possible for you to attend the meeting in September please mail in the absentee ballot provided below to register your vote.

If you have any questions regarding this issue you can e-mail me at [redacted] and I will be happy to answer them.

*Bill Murray, Director*

**Vote to authorize the expenditure of up to \$2500 to repair the roof, flashing and rear wall woodwork of the JWHS Observatory. Please print your name and check APPROVE or DISAPPROVE.**

Name \_\_\_\_\_  
Approve \_\_\_\_\_  
Disapprove \_\_\_\_\_  
Mail to:

Amateur Astronomers Association of Princeton  
c/o Larry Kane, Secretary  
P.O. Box 2017  
Princeton, NJ 08543

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## Treasurer's Report

The AAAP's fiscal year ends on June 30. On the top of the next page is an income statement covering the year just ended and a balance sheet showing our financial condition at that time.

To sum up, the association's financial condition is strong. Our surplus for the year of about \$3,200 brought our cumulative reserves ("equity" in the report) to over \$18,000. We had a good year because dues levels and StarQuest's impact remained strong, and because we had no major observatory expenses during the year. This should change in the fall when we repair the roof.

The AAAP's financial statements are broken down into the lecture program, observatory expenses, StarQuest, and everything else (referred to as General Operations and including Outreach). For this year we developed a budget, so you will see results reported against that budget.

Dues increased slightly (by four members) from FY 2008. Despite that, our annual surplus grew by \$715 from the previous year due to the lower observatory expenses. Even though StarQuest revenues were down by 27% from the previous year, the events surplus remained on budget because we were able to keep expenses under control.

Interest income is down 40% from last year because of low interest rates but still represents the equivalent of four members' dues. We had no investment in subprime mortgages (just a joke.)

Please feel free to contact me if you have any question about the Association's finances.

*Michael Mitrano, Treasurer*

### Interested in keyholder training?

Contact: \_\_\_\_\_ or by  
cell phone \_\_\_\_\_

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## Other News...

**Up Close with NASA's LRO & LCROSS in the "Clean Room" and at the Launch Pad** While I was reporting from the Kennedy Space Center press site on the mission of Shuttle Atlantis to upgrade the Hubble Space Telescope, there were also firsthand opportunities to check out hardware and facilities associated with other current aspects of space exploration such as NASA's newest lunar missions: the Lunar Reconnaissance Orbiter (LRO) and the Lunar Crater Observation and Sensing Satellite (LCROSS)

I had an exceptional chance to inspect up close the integrated LRO and LCROSS combination spacecraft stack inside the "Clean Room". I participated in a NASA sponsored media tour of the two spacecraft for the very last pre-launch photo opportunity and briefing with science team members at the Astrotech Space Operations Facility in Titusville, FL, located a few miles away from the Kennedy Space Center (KSC). Access to the spacecraft is strictly regulated by NASA and Astrotech and only possible with my press credentials from *The Planetary Society* and *Spaceflight* magazine. Astrotech is an aerospace company that processes and manufactures space hardware for Earth orbiting and deep space applications for the government and private firms. (Continued on next page)

Revenue and Expenses

Balance Sheet

	Revenue and Expenses												Balance Sheet			
	General Operations			Lectures			Observatories			StarQuest			TOTAL			6/30/09
	Actual	Budget	Act > Bud	Actual	Budget	Act > Bud	Actual	Budget	Act > Bud	Actual	Budget	Act > Bud	Actual	Budget	Act > Bud	
Ordinary Income/Expense																
Income																
Contribution Income	158			0			0			0			158	0	158	
Member Dues	4,147	4,300	-153	0			0			0			4,147	4,300	-153	
Outreach Contributions	250	400	-150	0			0			0			250	400	-150	
Sale of Equipment	125			0			0			0			125	0	125	
Sales of AAAP & Astro Items	303			0			0			220			523	0	523	
StarQuest Attendance	0			0			0			1,710	2,700	-990	1,710	2,700	-990	
Total Income	4,983	4,700	283	0			0			1,930	2,700	-770	6,913	7,400	-487	
Expense																
Speaker Honorarium	0			197			0			0			197	0	197	
Astronomy Calendars	159			0			0			0			159	0	159	
Books and Publications	0			0			0			34			34	0	34	
Business License & Fees	25	25	0	0			0			0			25	25	0	
Contribution Expense	0	100	-100	0			0			0			0	100	-100	
Dues and Subscriptions	123	100	23	0			0			0			123	100	23	
Electricity	0			0			41	50	-9	0			41	50	-9	
Equipment	0			0			89	100	-11	0			89	100	-11	
Food	0	100	-100	56			0			435	650	-215	491	750	-259	
Improvement, Maint & Repair	0			0			37	1,000	-963	0			37	1,000	-963	
Insurance	0			0			1,023	1,000	23	0			1,023	1,000	23	
Location Rental	0			0			0			520	1,000	-480	520	1,000	-480	
Meeting expenses	0			0			0			81			81	0	81	
Miscellaneous	15	200	-185	44			0			51			110	200	-90	
Post Office Box	58	56	2	0			0			0			58	56	2	
Postage and Delivery	49	50	-1	0			0			71			120	50	70	
Printing, Reproduction, Folding	10			0			0			78	100	-22	88	100	-12	
Prizes	0			0			0			0	300	-300	0	300	-300	
Rent	0			0			2			0			2	0	2	
Speaker Transp & Meal Expenses	0			80	300	-220	0			0			80	300	-220	
Telephone	0			0			316	300	16	0			316	300	16	
Telescope & Equipment Upgrade	0			0			164			0			164	0	164	
Web Site Expenses	155			0			0			0			155	0	155	
Total Expense	594	631	-37	377	300	77	1,672	2,450	-778	1,270	2,050	-780	3,913	5,431	-1,518	
Net Ordinary Income	4,389	4,069	320	-377	-300	-77	-1,672	-2,450	778	660	650	10	3,000	1,969	1,031	
Other Income/Expense																
Other Income																
Dividend income	224	300	-76	0			0			0			224	300	-76	
Interest Income	25	20	5	0			0			0			25	20	5	
Total Other Income	249	320	-71	0			0			0			249	320	-71	
Net Other Income	249	320	-71	0	0	0	0	0	0	0	0	0	249	320	-71	
Net Income	4,638	4,389	249	-377	-300	-77	-1,672	-2,450	778	660	650	10	3,249	2,289	960	

ASSETS		6/30/09
Current Assets		
Checking/Savings		
Third Federal Checking	698	
Vanguard Money Market	17,338	
Total Checking/Savings	18,036	
Other Current Assets		
Facility Deposit	200	
Prepaid expenses	159	
Total Other Current Assets	359	
Total Current Assets	18,395	
TOTAL ASSETS	18,395	
LIABILITIES & EQUITY		
Liabilities		
Current Liabilities		
Other Current Liabilities		
Deferred Dues Revenue	200	
Total Other Current Liabilities	200	
Total Current Liabilities	200	
Total Liabilities	200	
Equity		
Retained Surplus	14,943	
Net Income	3,252	
Total Equity	18,195	
TOTAL LIABILITIES & EQUITY	18,395	

(Continued from previous page) We entered the garment change room and were furnished with the full complement of clean room attire, otherwise known as "bunny suits," which includes full body personal protective equipment (PPE) suits, face masks, gloves and static dissipating shoe covers all of which must be worn. Everybodys camera equipment was required to be wiped clean by contamination-control specialists. Our shoes were mechanically brushed with a rotary brush shoe cleaner.

As a research scientist, I wear this type attire to protect myself when handling certain toxic chemicals. In this case of role reversal, the purpose is to protect the spacecraft from contamination by us humans.

After passing through secure access doors, an air shower and an airlock we finally entered the High bay/Encapsulation clean room area. We observed the LRO/LCROSS spacecraft stack sitting adjacent to and sandwiched between the twin halves of the decade 4 meter wide Atlas V payload fairing and nose cone, barely a few hours prior to their encapsulation. The two fairing sections were joined together later that same day.

I was in absolute awe of the two oddly shaped ships with numerous apparati jutting out in all directions. And not just to me. Even mission team members were awe-struck because many had never seen the two spacecraft together. It's even more amazing when I consider that these 2 ships I saw and was close enough to touch have now arrived at and swung past the moon. A few days later, I traveled onto the Air Force Base and went directly inside launch Complex 41 and stood right next to the Atlas V rocket with 1 million pounds of liftoff thrust.

NASA's long awaited 'Return to the Moon' was at last re-ignited on June 18, 2009 as LRO and LCROSS roared off launch pad 41 at 5:32 PM EDT aboard an Altas V/Centaur rocket at Cape Canaveral Air Force Station (CCAFS), FL.

LRO will map the moon from polar orbit and study the lunar chemical composition and environment. LCROSS will touch the moon directly by deliberately crashing inside a dark lunar crater near the south polar region on 9 October 2009, hunting for frozen water ice and thereby provide ground level composition data.

Submitted by Ken Kremer

**Space Station Room With a View:** The crew of the International Space Station (ISS) is about to get a new "eye-pod." The Tranquility node headed for the space station early in 2010 will feature a viewing dome unlike any other window ever flown in space. The dome, called the Cupola, is, literally, studded with windows for observing Earth, space, and the marvelous expanse of the ISS itself.

The Cupola, named after the raised observation deck on a railroad caboose, is designed as an observation platform for operations outside the station—e.g., robotics, spacewalks, and docking spacecraft. Computer workstations inside the dome will give astronauts full control over the space station's robotic arm and dexterous manipulator, while the windows offer unparalleled views of these devices in action. It's also a place where astronauts can unwind.

Until now, space station astronauts have been confined to looking out small portholes or at best the 20-inch window in the US Destiny Laboratory. The Cupola will dramatically expand their view.

"The Cupola's 80-cm diameter circular top window is the largest window ever built for space," says Robinson. "Rather than peering through a little porthole, the Cupola will allow a stunning look at the cosmos and unprecedented panoramic views of Earth. Astronauts will share these views with the world through photographs taken through the windows and [posted online](#)." The full article may be viewed at [http://science.nasa.gov/headlines/y2009/26jun\\_cupola.htm](http://science.nasa.gov/headlines/y2009/26jun_cupola.htm)

## 20 Years Ago In Sidereal Times...

# SIDEREAL TIMES

Newsletter of the Amateur Astronomers Association of Princeton, Inc.

ASSISTANT DIRECTOR: Larry Smith

EDITOR: JWHS

AUGUST 1989

FROM THE DIRECTOR [Dave Brown]

The last Sidereal Times did not include some of the information below, so this "quickie" issue was required:

The 16 August lunar eclips party will give us a chance to bring our 'scopes out to the Park for some fun that evening. The group from the N.J. State Museum and Planetarium will be arriving at Washington Crossing State Park at about 9:00 P.M.; so AAAP members should be setting up around 8:00 P.M. or so. Note that Dick Peery needs our PRIVATE 'SCOPES there because a large turnout is expected. The more the merrier! I'd like to suggest to our telescope makers that the public should see some of your great homebuilt stuff!

I have been out to see the observatory, to inspect the new observatory chain drive. WOW! What a feeling to be able to roll the roof off single-handed with no muss, no fuss! And it's there folks, IT'S REALLY THERE! No more engineering, no more waiting for parts, no more ANYTHING! And THANKS to the people who contributed to the final installation efforts this July: Vic Belanger, John Church, Don Monticello, and George Walker all should get MEDALS!

The mirrors are back in the 12½" 'Simpson' [AAAAHHHH!] reflector, and it's been recollimated. Now on to aligning on the pole. Under the leadership of observatory chairman Bill Murray, the logistics and "dirty work" were accomplished. And now that recollimation is completed and the enhanced aluminum mirrors in place, realize that AAAP has a "world-class" observatory in hand!

As some of you know, I have been keeping my fingers crossed relative to obtaining a job on the Hubble Space Telescope at the Jet Propulsion Laboratory. It came through and so I'm off to Pasadena in early August. I feel that AAAP is in good hands with Larry Smith as its Assistant Director. Offhand I will be interested to find out how the Director/Assistant Director offices are shuffled.

I have been a member of AAAP for the past 15 years and have never failed to be amazed at the interests and abilities of our members; the AAAP is very rich in that way. We have people who have published in Sky & Telescope and Deep Sky magazines; some of our members are very good at telescope building; an others are interested in the history of astronomy, astrophotography, or astronomical computing. And there are a few world-class physicists among us, you know!

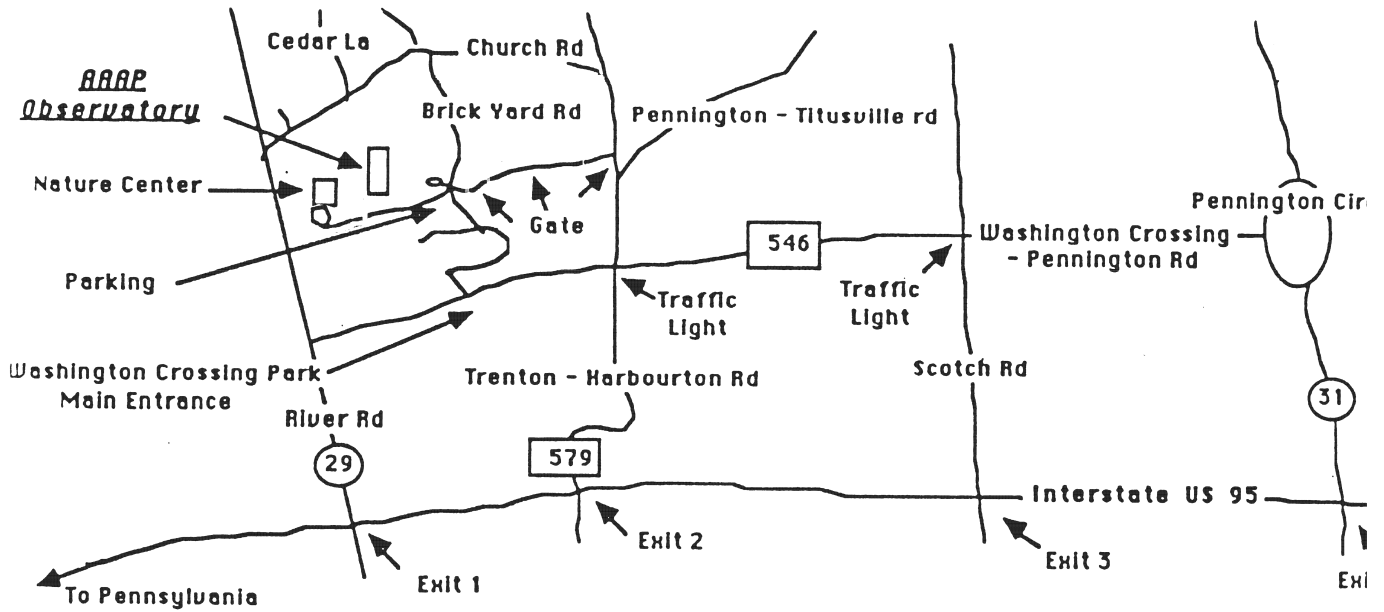
One thing bothers me though. Some of us don't share their interests and abilities with the rest (I'm talking about wonderfully talented but VERY QUIET people). That's cheating. Hiding what you've got to give does no one any good. And the group will wither without constantly renewing itself through the shared interests and activities of all of us. If you've shied away from club participation, think again. You're not only cheating the AAAP, but yourself as well. As a going-away present for me, come out to a Friday night observing session and get to know your fellow members better. Or go to Beemerville next time. There are big and little ways each of us can add to the bonhomie and culture of the AAAP

My understanding in astronomy and telescope making has given me a great deal aside from the study intself. I have had the great pleasure of coming to know quite a few of you. We've shared good times at the Mars opposition at Swarthmore and Washington, D.C. We've played football at Beemerville. We've had a couple of beers over our pre-meeting dinners. And we've marveled at the beauty of the sky at Washington's Crossing and Stellafane. In short, it's been a GAS! But, if you think you're getting rif of me, forget it! After I settle in at JPL, I'll send a note to the Times periodically as to the goings-on there. And maybe some of you will be on the West coast and want a tour around the JPL. My address will appear in the roster; so---STAY IN TOUCH!

#### FROM THE TREASURER

First of all, please let me know if there are any mistakes with names, addresses, and so on in the membership roster sent out with the last Sidereal Times. I hope everyone recieved their July issue. Thanks John for the midsummer surprise. On the subject of mailing labels: because of label space there will be only one member's name per household on the label. The same will hold true on the membership roster in the future.

The last column of the roster has the month you joined the AAAP. DO NOT use this number as the month to send in your dues. For example: if your month is 6 or June you probably received a reminder from S&T to renew your membership in the month of February or March. PLEASE DO IT AT THIS TIME. S&T has advised me that with the May issue, which comes out in mid-April, you will be dropped from their mailing list if paymen is not recieved by then. When you pay your dues in June, there will be



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](http://www.princetonastronomy.org)

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