# SIDEREAL TIMES

*The Official Publication of the*
*Amateur Astronomers Association of Princeton*

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Treasurer: Brian VanLiew

Program Chairman: Ken Kremer

Assistant Director: John Miller

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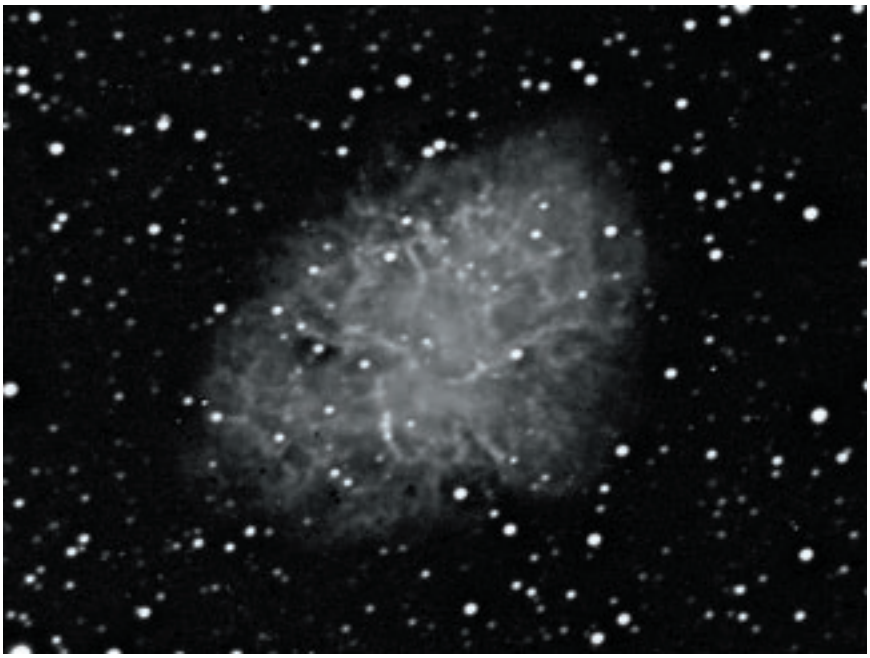
Volume 35 | December 2006 | Number 11


## From the Director



***M1, the Crab Nebula in Taurus*** *(astrophoto by Rex Parker)*

**Dec 12 AAAP Meeting (Peyton Hall, Princeton Campus, 8:00 PM).** Our astronomical excursion takes a turn within the solar system to visit the **Red Planet**, with a very-up-close and personal presentation by **Dr Jim Bell of Cornell University**. Dr Bell is Associate Professor of Astronomy at Cornell in Ithaca, and has become a leader in the Mars community the last few years through his role with the color camera imaging team on the current Mars Rover missions and the previous/ongoing Mars orbiter missions. His research background is on the geology, geochemistry, and mineralogy of planets, asteroids, and comets using data from telescopes and spacecraft missions. His talk at AAAP is: **"Postcards from Mars: Spirit and Opportunity Roam the Red Planet".** This not-to-be missed event at AAAP is your chance to understand the science of the Rover missions as described by a principal of the NASA science team, and to see with your own eyes the incredible photographs from the Martian surface. This meeting will also be an excellent one to **bring students (young or old!) or friends** with an interest in astronomy to see what the excitement at AAAP is all about. Please refer to **Program Chair Ken Kremer's** report in this issue for more on this presentation (also see the AAAP website for additional links).

**December Observing: Early Winter Jewels in Taurus (the Hyades and the Crab Nebula).**

Looking to the skies in early evening, the constellations of winter offer striking forms that we recognize at a glance to remind us of the oncoming solstice and holidays. One of my favorite constellations, Taurus, is well positioned now for observing in **small telescopes** and binoculars. At low power/ wide field, the Hyades open cluster forming the "V" near the red giant Aldebaran is a beautiful sight, and at approx. 140 light years is the closest star cluster to sol, with a scale of about 75 light years across (the more dense central group is about 10 light years in diameter). The Hyades in Greek mythology were the five daughters of Atlas and half-sisters to the Pleiades. Interestingly, based on the H-R diagram, the Hyades are much younger than our own sun at around 600 million years.

Also in Taurus is one most amazing sights one can see in amateur telescopes, **M1- the Crab Nebula (NGC 1952)**. The annals of Chinese and Arab history have revealed notations, corresponding to 1054 AD, of a reddish-white "new star" shining as bright as Venus in the daytime sky for weeks. The explosion resulting in M1 must have been impressive to see. Early observations of M1 as a radio source showed that the intensity of the emitted radiation increased with increasing wavelength, that is, "non-thermal radiation". The mechanism for this effect remained for many years one of the deep mysteries of astrophysics, and eventually was understood (in the late 1950's) as an example of the synchrotron mechanism. The synchrotron process at the core of M1 is now known to be based on a binary pulsar at it's center, which was the subject of the **1993 Nobel Prize in Physics won by Princeton University's Russell Hulse and Joesph Taylor**. The Princeton team drew heavily on

*(Director, continued on page 3)*

## Science Outreach

**Samsel Upper Elementary School:** Parlin, NJ, Nov 1 at 7 PM. About 400 attended this extremely well organized "Astronomy Night". The teacher's goal was to excite the community about astronomy and prepare the students for science testing by the State in the spring. There were 8 separate astronomy stations featuring a Starlab, the constellations, eclipses, a landing on the moon and more. I gave 5 presentations about the Mars Rovers to rotating groups of kids and family members at 20 minute intervals. Over 150 signed the "Pluto is a Planet" petition and I provided the weblink for the Planet Web Quest station for those interested to place their name on a microchip destined for launch to the Asteroids Ceres and Vesta. Keith Woznica helped out with telescope viewing.

*The large crowd begins their Astronomy Night journey to the Moon, Mars and beyond at Samsel Elementary with Starlab station at rear.*

*Hundreds sign up via a roomful of laptops to "Send Your Name to the Asteroid Belt" on board the DAWN asteroid spacecraft.*

**Howell Memorial Middle School:** Freehold, NJ, Nov 15. 8th grade students at the Howell school worked on a project to design the *"First Human Colony on Mars"* under the guidance of the lead science teacher, Kate Hope. Ms. Hope kindly invited me to participate as one of the judges for this competition among 4 teams of students. Each team gave a super effort which included a powerpoint presentation and model of their proposed martian settlement. Following the student presentations I gave a talk about the current NASA Exploration of the Red Planet. Several hundred students eagerly signed the "Pluto is a Planet" petition.

*8th graders participating in the NASA JPL sponsored "Imagine Mars" competition organized by Howell Middle School science teacher Kate Hope (center, back row).*

My upcoming astronomy talks include the following schools and community groups:

**Riverside Elementary School:** Princeton, NJ, Dec 1, 7 PM, Rain date Dec 8. Includes AAAP telescope viewing.

**Trenton Central High School:** Trenton, NJ, Dec 12.

**Lawrenceville Intermediate School:** Lawrenceville, NJ, Dec 13.

**Howell Memorial Middle School:** Freehold, NJ, Mar 16.

**Rittenhouse Astronomical Society (RAS) in the Franklin Institute:** Philadelphia, PA, Feb 14, 2007, 8 PM. Website: http://www.rittenhouseastronomicalsociety.org/

**Raritan Valley Community College Planetarium:** Somerville, NJ, Mar 27, 7:30 PM. Website: http://www.raritanval.edu/planetarium/

**The Explorers Club**: NY, NY, Apr 23, 7 PM.

For science outreach presentations please contact me at Email**:**

Ken Kremer
AAAP Program/Lecture Chairman

## From the Program Chair

Upcoming 2006-2007 AAAP Lecture Season

**Dec 12:** Astronomy **Professor Jim Bell** of Cornell University is the keynote speaker and will give a first hand account of the exciting "behind the scenes" story of the ongoing Mars Rover mission. His talk is titled *"Postcards from Mars: Spirit and Opportunity Roam the Red Planet"*. Jim is the lead scientist responsible for the rovers' color imaging system called Pancam.

NASA successfully landed twin rovers, Spirit and Opportunity, on Mars in January 2004, in the most ambitious mission of robotic exploration ever attempted. Each rover is outfitted as a robot field geologist with an impressive array of scientific instruments--cameras, spectrometers, other sensors--designed to investigate

*(Program, continued on page 3)*

*(Program, continued from page 2)*

the composition and geologic history of two distinctly-different landing sites. The sites were chosen because of their potential to reveal clues about the past history of water and climate and that the planet may once have been an abode for life. In this presentation, Prof. Bell will share his favorite Mars photos and stories from "inside" mission operations, and describe the major scientific findings made by each rover at each site during their nearly three Earth year (so far) adventures.

Jim has numerous scientific publications and is a frequent contributor to popular astronomy magazines and radio shows.

Prof. Bell will also be signing copies of his new, highly praised book *"Postcards from Mars: The First Photographer on the Red Planet"*. The book will be available for sale. The discounted price including tax is $44. Payment please by **cash or check only** (Sorry, NO credit cards). For details and advance purchase reservation please contact me directly at email:

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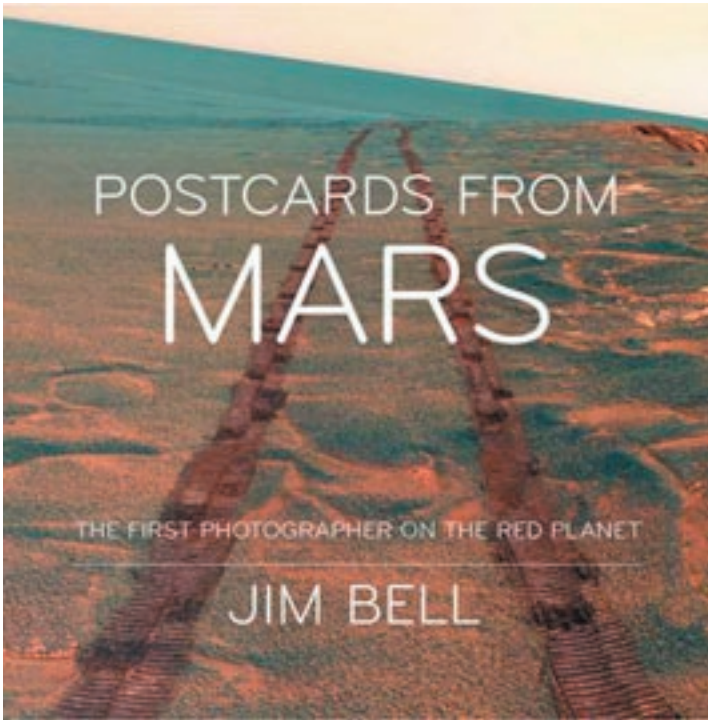


***Jim Bell is featured on the cover of the August 2006 issue of Sky and Telescope. Please read his full length article on p. 40 titled "Backyard Astronomy from Mars" for insights prior to his upcoming AAAP lecture. Jim's thoughts on "The New Age of Exploration" of the Solar System are beautifully illustrated with recent images in the new 2007 edition of "Beautiful Universe" on p. 10.***

**Jan 9: Prof. Jim Gunn** is the Eugene Higgins Professor of Astronomy at Princeton University. Prof. Gunn was selected by an international panel of experts to receive the 2005 Cosmology Prize of the Peter Gruber Foundation for his work in the 3 main areas of astronomy research: theory, observation and instrumentation. His talk is titled "Cosmology--a 50-year Perspective and Some Prospects for the Future". This lecture will trace where we are now and offer a few guesses about where we may be heading.

**Al Nagler,** the founder and CEO of Tele Vue Optics gave an exciting and well received talk on **Nov 14** titled *"Giant Eyepieces that Swallow Spacecraft"*. Al presented his personal perspective on how his amateur astronomy background helped in designing the flight simulators used to land American astronauts on the Moon and which led to the development of wide field eyepieces for which he is renowned.

*AAAP members examining the latest observing innovations from Tele Vue with CEO Al Nagler (center)*

Please send me your suggestions for speakers, with contact/topic information.
Email:

Ken Kremer
AAAP Program/Lecture Chairman

*(Director, continued from page 1)*

observations of M1 in their research in the 1970's, leading to the theory of binary pulsars and subsequent tests of General Relativity. This was the topic of a memorable AAAP talk back in the 1990's by Russell Hulse (a longstanding AAAP member).

The image on page 1 (taken with my C-9.25 and ST-10XME CCD camera) shows the eerily glowing filamentous detail in M1, which covers an area of about 6 x 4 arc-min. To **see M1 visually**, larger telescopes have the advantage, and waiting for culmination on a clear moonless night plus using a deep-sky filter will help (I can see it visually in my C-9.25 and C-11, but not easily with my 5 inch refractor). Better yet, observing M1 through the AAAP observatory's C-14 is probably the best way for you to see this remarkable object with your own eyes!

***Dark skies! -- Rex***

**Happy Holiday Season to AAAP members as we spin on towards Winter Solstice!**

Deadline for the January '07
Issue of the Sidereal Times
December 29, 2006

# Minutes of the AAAP Board of Directors October 19, 2006

Director Rex Parker called meeting to order at 7:00 PM in Room 33 of Peyton Hall.

Officers present were Rex Parker (Director), John Miller (Assistant Director), Brian VanLiew (Treasurer), Ludovico D'Angelo (Secretary), and Ken Kremer (Program Chair).

Other members present were: Ron Mittlestaedt, John Church, Don Monticello, Jeff Bernardis, Ray Shapp, Larry Kane, and Bill Murray.

**Starquest:** The discussion was opened concerning changing the date of Starquest to October 2007. Member Bill Murray presented arguments for the change. Other factors were discussed for and against changing the date.

Secretary Ludovico D'Angelo made the following motion:

**That the AAAP Starquest be moved from the new moon weekend in June to the new moon weekend in October 2007.**

Seconded by John Miller. The vote of the Board was 5 for and 0 against. Starquest is therefore moved to October 2007. Ludy will contact Larry Smith to verify the dates with the Hope Center.

***Observatory equipment and grounds:*** Ron Mittlestaedt reported the dew shield on the C-14 has never worked since it was installed because it needed a power supply. Ron will buy a power supply with an estimated cost of $25-$35.

John Church and Gene Ramsey installed a finder scope on the refractor. The scope needs a more permanent balancing mechanism in order for it to work properly. Discussion followed on getting a brass counter weight/sliding bar. This will be looked into and an estimate of cost will be determined and the weight will be purchased.

Brain VanLiew got a quote of $195 to rent a wood chipper for the eventual clearing of the east side of the Simpson Observatory lot. Rex Parker would like to see more quotes on having the whole job done, cutting and removal. There was a concern for liability if we were to do the work. It was the consensus that it needs to be done, probably in a work party with at least 4 workers. More planning will be done on this issue. Brian drew a rough sketch of the property outline and where the cutting would happen.

The back roof of the observatory still needs to be replaced. Also, some rotting wood on the top sill needs to be replaced.

***Outdoors sign for Public nights:*** Rex Parker brought up the idea of having an announcement sign on the corner of Bear Tavern and Washington Crossing-Pennington roads. The concept is to inform the public about the dates and directions to the observatory on public nights. A volunteer would be needed to design and implement this idea.

***Outreach:*** Open nights during October so far have been well attended. Jeff Bernardis (Outreach coordinator) reports that there are at least 3 schools that have asked for star parties. He will solicit the membership for volunteers to help provide the scopes. All will be during weekday nights at the schools. Millstone River School, Riverside Elementary School, and a school in East Brunswick have asked. Jeff would like to add varied programs in addition to scopes. Training would be needed to have a presentation of what would be seen in the scopes prior to viewing. Jeff would ask for volunteers through the next meeting and the Sidereal Times. Most schools like to have programs in the fall and spring.

The subject of the NASA Night Sky Network came up. The club had once had the materials to join it, but there was little interest in it. Jeff will look into this again to see if it is viable.

***Field Trips:*** Rex brought up the idea of considering more field trips for the club to participate in. Some ideas were discussed. Larry Kane suggested that the club have several trips in order to build membership. More planning/proposals will be considered in the future.

***Programs:*** Ken Kremer reports that there are a couple open slots left in the program schedule and that he is waiting on responses from the proposed speakers. A lengthy discussion ensued about expenditures and guidelines for the program speakers. Also clarified were the procedures by which paper trails of expenditures were to be made.

Meeting was adjourned at 10:30 PM.

Submitted by
Ludovico D'Angelo, Secretary

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## Telescope Donation


*Ludy D'Angelo with the 8" dobsonian telescope donated by David Kinsey of Princeton, NJ.*

What do you do with a telescope you don't know what to do with? Donate it to the AAAP of course. David Kinsey of Princeton, NJ did just that after seeking us out on the internet. He wanted to find a home for the telescope he was getting rid of. ;He was very happy to find that AAAP was interested in using the scope for possible outreach or for member use. The scope is an 8" Orion Deep Space Explorer circa 1993. It had been sitting in his basement for years and he did not know its condition. It had been submerged under water at one time and taken some water damage to the base and tube. After picking it up, it was obvious all the optics needed cleaning and that it needed to be collimated. So the mirror and secondary were cleaned on one night, and collimated the next day. Only thing left to do was to wait for a clear sky. On November 24, I took the scope out and gave it a try with excellent results. I think anyone who looks in the scope will be pleased by its performance.

Ludy D'Angelo

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.

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See us on the Web: www.princetonastronomy.org

December 2006

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