



# The Pegasus

*Summer 2007*

*Volume 33, Issue 3*

Welcome to the Summer  
edition of The Pegasus!

Due to timing and content constraints, the format for The Pegasus has been changed to a seasonal run. The Summer edition hopes to find you enjoying fun in the sun and out under the stars while get a chance to view some different constellations in our night sky.

Join us July 21st (raindate July 28th) at Blue Marsh for an informative program by Ron Kunkel and great observing at the Dry Brooks Day Use Area.

Don't forget to come out August 11th for the annual Member's Picnic at Dave Brown's farm—who could pass up all that great sweet corn?

Have a great Summer and I'll see you soon!  
~Melody~

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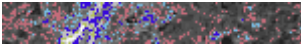
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## **Chew on This**

### A NASA Space Place Article

The Mars robotic rovers, Spirit and Opportunity, are equipped with RATs, or Rock Abrasion Tools. Their purpose is to abrade the surface patina off the Mars rocks so that the alpha x-ray spectrometer can analyze the minerals inside the rocks, rather than just on the surface.

But future robotic missions to Mars will be asked to go even further below the surface. Scrapers and corers will gather rock samples of substantial size, that, in order to be analyzed by a spectrometer, will need to be crushed into a fine powder.

Crushing rocks on Mars? Now there's a problem that brings to mind a multitude of possible approaches: Whack them with a large hammer? Squeeze them until they explode? How about just chewing them up? It was with this latter metaphor that the planetary instrument engineers struck pay dirt—so to speak.

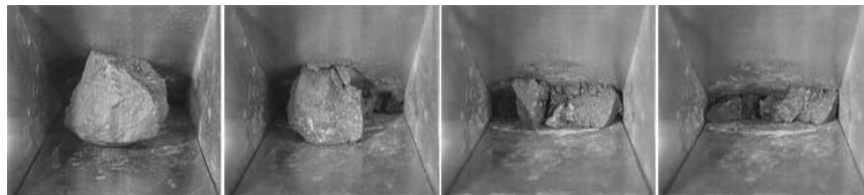
Thanks to NASA's Planetary Instrument Definition and Development Program, a small group of NASA engineers came up with the Mars Rock Crusher. Only six inches tall, it can chew the hardest rocks into a powder.

The Mars Rock Crusher has two metal plates that work sort of like our jaws. One plate stays still, while the other plate moves. Rocks are dropped into the jaw between the two plates. As one plate moves in and out (like a lower jaw), rocks are crushed between the two plates. The jaw opening is larger toward the top and smaller towards the bottom. So when larger rocks are crushed near the top, the pieces fall down into the narrower part of the jaw, where they are crushed again. This process repeats until the rock particles are small enough to fall through a slit where the two plates are closest.

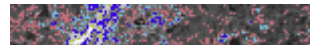
Engineers have tested the Mars Rock Crusher with Earth rocks similar to those expected to be found on Mars. One kind of rock is hematite. The rusted iron in hematite and other rocks help give Mars its nickname "The Red Planet." Another kind of rock is magnetite, so-called because it is magnetic. Rocks made by volcanoes are called basalts. Some of the volcanoes on Mars may have produced basalts with a lot of a mineral called olivine. We call those olivine basalts, and the Rock Crusher chews them up nicely too.

Visit [www.jpl.nasa.gov/technology](http://www.jpl.nasa.gov/technology) to read the latest about other NASA technologies for exploring other planets and improving life on this one.

*This article was written by Diane K. Fisher and provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.*



**Looking down on the jaws of the Mars Rock Crusher, we see a magnetite rock get crushed into smaller and smaller particles.**



## Mythology of the Night Sky—Antinous

Once upon a mythological time, the oracle prophesied great doom for the emperor. The only thing that would save the emperor was the death of the thing he most loved. Upon hearing this prophecy, the emperor's young servant, whom the emperor loved dearly, drowned himself in the Nile to save his master. His reward for such self-sacrifice was for his soul to be placed in the night sky, not as a constellation, but as an asterism! A very small, obscure asterism named Antinous. Where in the universe is Antinous? It's directly south of the star Altair. On some ancient star atlases, it is referred to as Ganymede. Two of the Arabic globes label four of the stars in Aquila as marking the distinguishing rhombus of Antinous. My source book doesn't even list the stars in this asterism. Personally I think the soul of such a self-sacrificing youngster deserved better! At the least, his own constellation!

## CALENDAR TIME ALREADY!!!

I just got the information in the mail from Kalmbach on the 2008 Deep Sky Astronomy wall calendars. The price this year has not gone up. It is still \$6.50 a piece. Please get your order to me as soon as possible. Unless I get a call from Lucy at Kalmbach, urging me to send in our order quickly, I will again place our order after the September meeting.

The 2008 calendar has the following photos: The Orion Nebula, Planet Orbits Epsilon Eridani, Star Cluster NGC 346, Starburst Galaxy, Gemini North Observatory in Hawaii, Spiral Galaxy M101, The Celestial Mandrill (NGC 2467), The Milky Way, Hercules Galaxy Cluster, Cometary Globule, Star Forming Region and Crab Nebula.

Due to the increase in postage, if you receive your calendars in the mail, it would be appreciated if you could reimburse the club for the postage. Thank you so much!!!

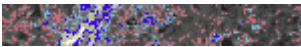
## Good News from Sky Publishing!!!

Here is some good news from Sky Publishing. No, they are not going to reduce the subscription price. That's wishful thinking! However, if you are already taking advantage of the discount by renewing through BCAAS, you can now renew by contacting Sky Publishing directly and sending your money to them without using me as an intermediary. And you still get your club discount.

Club members can now renew directly via mail or phone. You will not need to validate that you are a club member because they already have that info on file. If you wish to renew by phone, the number is 1-800-253-0245.

This is not mandatory. If you still wish to renew by giving me the money, that is fine. Renewing directly with Sky Publishing is just an option that you never had before.

This does **NOT** apply if you are beginning a subscription or renewing through BCAAS for the very **FIRST** time. You still need to subscribe the first time through me to get your name into their files as qualifying for a discount.



**BCAAS Award Winners**  
for the  
**2007 - 55<sup>th</sup> Reading-Berks Science and Engineering Fair**

By Michael Bashore

This year, BCAAS decided to award two \$50 checks to the top Astronomy related projects in the Junior and Senior divisions at the science fair. We also gave out invitations contact BCAAS to receive a one-year membership to other students that had projects that were astronomy related and did not win the main BCAAS award. As in the years past, astronomy related projects were hard to find. I found only two other projects in the Junior division that were given invitations.

Joseph Feeg, an 8<sup>th</sup> grade student at the Oley Valley Middle School received the \$50 award for the Junior division, which consists of grade 6 through 8 science projects. His project was entitled "How does Light Pollution Affect the Berks County Night Skies."

Joseph used a very interesting way of determining the light pollution from 5 locations in Berks County. His procedure was to visit each location, wait 5 minutes for eyes to adapt, look through a toilet paper tube and count the number of stars. He would take 20 sightings then add all the numbers together from the site and divide by 20 and multiply by 99.2 (amount of tubes it would take to view the entire sky. The sites in ranking from most light pollution to least are as follow; Reading was ranked the worst light pollution site (duh), Temple was second, Rural Womelsdorf, third, Pleasantville, fourth, and finally, French Creek had the least light pollution.

My thoughts about Joseph's project are, what are the factors in bringing him to do this study? Was he interested in Astronomy? Are his parents into astronomy? Or did he know that there was a check waiting for him at the Science Fair if he did a nice astronomy related project? Unless he joins the club, I will never know.

The Senior Project that I found was as close to "astronomy related" as I could find. Seth Fisher, a tenth grade student at The Kings Academy created a project named, "Electromagnetic Propulsion". The experiment was to build an electromagnetic shooter, using spools wrapped with wire, and hooked to an electric source. The spools were slid over a PVC tube end to end and each spool's wire was connected to a terminal point on a circular hand crank dial. A metal ball was placed in one end of the tube and the hand dial was turned to energize each spool in succession. The experiment did not work. There could have been a number of problems with the set-up and procedure for Seth's experiment. I did not delve into the projects written process and procedures enough to come close to answering the question as to why it would not work. I wonder if Seth has since determined where his set-up or hypothesis went wrong.

Anyway, BCAAS did not have anyone available to present the awards checks to the winners. So, the Science fair committee presented checks to the two winners. I'm not sure if the winners showed up at the presentation ceremony. At last year's award ceremony, I showed up to present and none of the 6 winners came to the event. I was a little peeved at that one. Hopefully, the winners will forgive us for not attending and possibly come to see what we are all about.



### Endeavour Readies for August Launch



Fresh off the success of STS-117, NASA is quickly gearing up for the shuttle's next visit to the International Station, the STS-118 mission, targeted for an Aug. 7 launch. The mission will deliver the S5 truss to the station and will mark the first flight of Mission Specialist Barbara Morgan, the teacher-turned-astronaut whose association with NASA began more than 20 years ago.

Processing for STS-118 continues at NASA's Kennedy Space Center in Florida. Orbiter Endeavour arrived inside the Vehicle Assembly Building on Monday after a short roll from the nearby Orbiter Processing Facility. In the assembly building's transfer aisle, Endeavour was lifted vertically, transferred to a high bay and attached to its external tank and solid rocket boosters. STS-118 will be the first flight for Endeavour since 2002.

On July 3, Orbiter Atlantis made its graceful landing at Kennedy Space Center mounted atop a modified 747 jetliner called the Shuttle Carrier Aircraft, officially concluding the STS-117 mission.



This photo of the moon over McDonald's was submitted by club member, Barry Shupp.



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SOCIETY**

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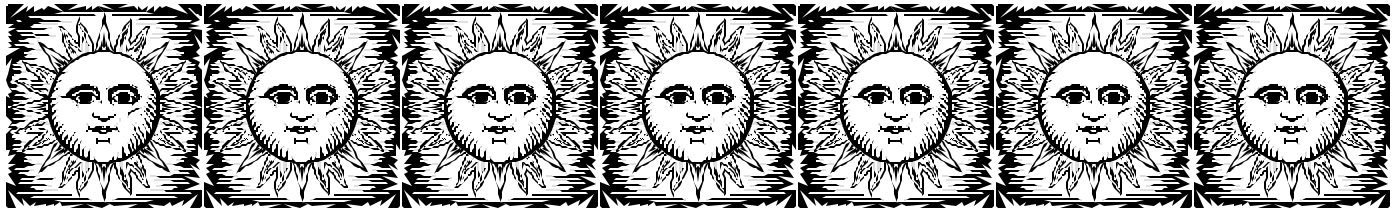
Call our hotline at  
610-921-0173 for the latest club  
events and meeting details!



CHECK OUT OUR WEBSITE  
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## Schedule of Upcoming Events



**Thursday, July 12** - 7:30pm, Monthly Club meeting at the Reading Museum.  
Tonight's program is Member's Night and will be presented by various club members, including  
"Structure and Evolution of the Milky Way Galaxy by Ron Kunkel.  
Please contact Dave Brown to secure a topic. Everyone is invited.

**Saturday, July 21** - 7:00pm, Starparty at Blue Marsh Lake, Dry Brooks Day Use Area.  
Raindate: Saturday, July 28th at the same time and location.

**Saturday, August 11** - Annual Club Picnic at Dave Brown's Farm. Members are  
invited and asked to bring a covered dish or drinks for all to share. Hope to see  
everyone there. Time to be announced at a future meeting.

**Thursday, September 13** - 7:30pm, Monthly Club Meeting at the Reading Planetarium.  
This evening's program will be announced at a future meeting.