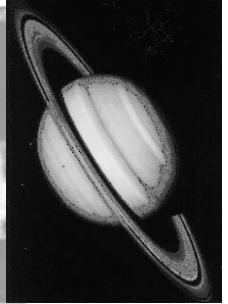


The

# Heavenly Herald

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### THE MORRIS MUSEUM ASTRONOMICAL SOCIETY

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The *Heavenly Herald* is produced monthly for the membership of the Morris Museum Astronomical Society

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## President's Message...

This month our meeting will fall on Valentine's Day. One of our members, Sherwood Waggy, suggested that rather than abandoning our significant others on such a special evening, we bring them along with us. I agree that this would be a great way to share the evening, especially since the topic of the presentation will be the UACNJ observatory at Jenny Jump and will include photos and videos of MMAS members participating in various activities at the site. Hope you can make it.

This month also brings a **Total Lunar Eclipse** which promises to one of the better ones if the weather permits, beginning early in the evening and lasting 50 minutes as the Moon passes nearly through the center of the Earth's shadow. See more details on the next page.

Ted Barker, President

## THIS MONTH'S MEETING

Presentation on UACNJ Activities at Jenny Jump

*Valentine's Day*

Thursday, Feb 14, 2008 at 7:30 P.M.  
 Held at the Morris Museum.

Monthly Meetings are the second Thursday of each month at 7:30 P.M.  
 During July & August be sure to check the web site for our summer schedule of events.

# LOOK TO THE SKY - FEBRUARY 2008

Feb 1: Venus will pass 0.6 degrees north of Jupiter at 8 a.m. If you look to the south east near the horizon just before sunrise, you should be able to see them both. They may be washed out in the glare of the Sun by 8:00.

Feb 16: The Moon passes 1.6 degrees north of Mars at 3 a.m.

Feb 20: A "Total Lunar Eclipse" will occur. The Moon will enter the dark umbral shadow of the Earth at 8:43 p.m. EST. Totality will begin at 10:01 p.m. and last for 50 minutes.

This is the third lunar eclipse visible in North America in the last year, but the next one will not occur until Dec 20, 2010!

While observing the eclipse, take an opportunity to see Saturn, only four degrees to the left of the Moon in the constellation of Leo.

Feb 24: Saturn is at opposition at 5 a.m.

Your feedback is needed.  
What would you like to see in the Heavenly Herald?  
Send comments to [TedBarker@att.net](mailto:TedBarker@att.net)

Article submissions for future issues.  
Please send to [TedBarker@att.net](mailto:TedBarker@att.net)

## Hands On Observing

Observing sessions at Jenny Jump always depend on the weather and a certified scope observer's availability. Session notifications will go out via email, usually no earlier than the day before. Based on the response, plans will be made for qualifications and/or observing. In order to have a high quality experience, the number of participants may sometimes have to be limited.

Please send an email to Eric at [ericleonard@lucent.com](mailto:ericleonard@lucent.com) with your contact information, and whether you'd like to be certified on the 16" telescope. Eric will then provide additional information, and add you to his email list.



## No Mars Rock Unturned

by Patrick L. Barry

Imagine someday taking a driving tour of the surface of Mars. You trail-blaze across a dusty valley floor, looking in amazement at the rocky, orange-brown hillsides and mountains all around. With each passing meter, you spy bizarre-looking rocks that no human has ever seen, and may never see again. Are they meteorites or bits of Martian crust? They beg to be photographed.

But on this tour, you can't whip out your camera and take on-the-spot close-ups of an especially interesting-looking rock. You have to wait for orders from headquarters back on Earth, and those orders won't arrive until tomorrow. By then, you probably will have passed the rock by. How frustrating!

That's essentially the predicament of the Spirit and Opportunity rovers, which are currently in their fourth year of exploring Mars. Mission scientists must wait overnight for the day's data to download from the rovers, and the rovers can't take high-res pictures of interesting rocks without explicit instructions to do so.

However, artificial intelligence software developed at JPL could soon turn the rovers into more-autonomous shutterbugs.

This software, called Autonomous Exploration for Gathering Increased Science (AEGIS), would search for interesting or unusual rocks using the rovers' low-resolution, black-and-white navigational cameras. Then, without waiting for instructions from Earth, AEGIS could direct the rovers' high-resolution cameras, spectrometers, and thermal imagers to gather data about the rocks of interest.

"Using AEGIS, the rovers could get science data that they would otherwise miss," says Rebecca Castaño, leader of the AEGIS project at JPL. The software builds on artificial intelligence technologies pioneered by NASA's Earth Observing-1 satellite (EO-1), one of a series of technology-testbed satellites developed by NASA's New Millennium Program.

AEGIS identifies a rock as being interesting in one of two ways. Mission scientists can program AEGIS to look for rocks with certain traits, such as smoothness or roughness, bright or dark surfaces, or shapes that are rounded or flat.

In addition, AEGIS can single out rocks simply because they look unusual, which often means the rocks could tell scientists something new about Mars's present and past.

The software has been thoroughly tested, Castaño says, and now it must be integrated and tested with other flight software, then uploaded to the rovers on Mars. Once installed, she hopes, Spirit and Opportunity will leave no good Mars rock unturned.

Check out other ways that the Mars Rovers have been upgraded with artificial intelligence software at [nmp/TECHNOLOGY/infusion.html#sciencecraft](http://nmp/TECHNOLOGY/infusion.html#sciencecraft).

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

Please see the illustration on the next page

# Events and Information

## THE MOON THIS MONTH

February 2008



Last Quarter 28

New Moon 6

First Quarter 13

Full Moon 20

## INTERNET LINKS TO VISIT

[nasa.gov](http://nasa.gov)

[space.com](http://space.com)

[spaceweather.com](http://spaceweather.com)

[skyandtelescope.com](http://skyandtelescope.com)

[astronomy.com](http://astronomy.com)

[kidsastronomy.com](http://kidsastronomy.com)

[nso.edu](http://nso.edu)

[uacnj.org](http://uacnj.org)

[astronomylinks.com](http://astronomylinks.com)

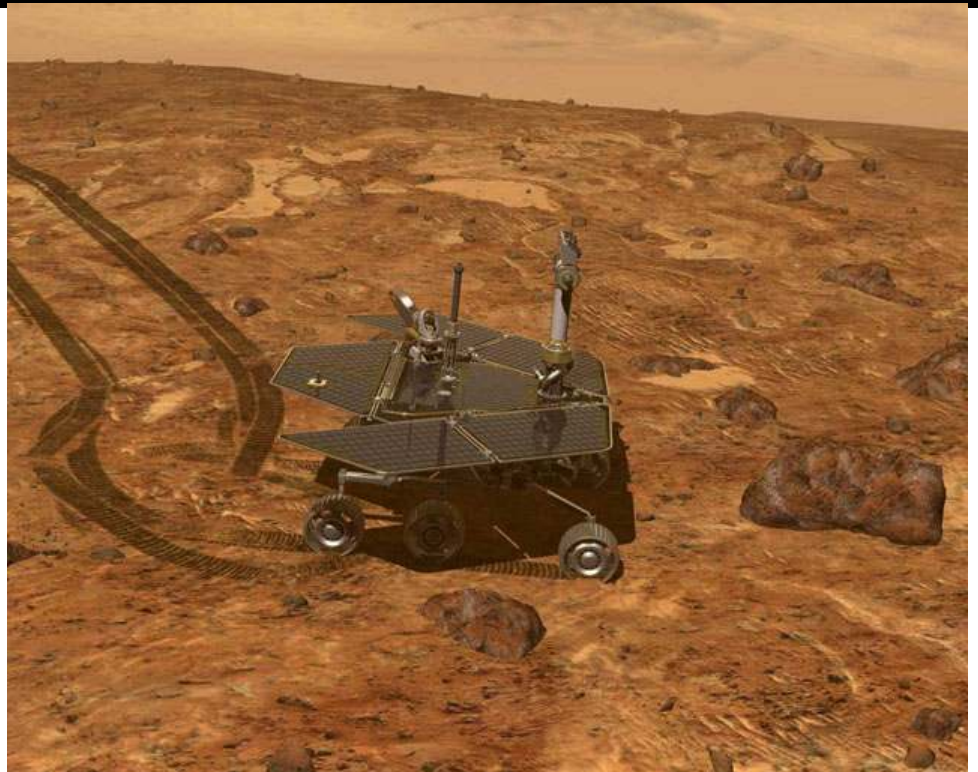
[enchantedlearning.com/](http://enchantedlearning.com/)

[subjects/astronomy/](http://subjects/astronomy/)

[heavens-above.com](http://heavens-above.com)

[http://  
spaceplace.nasa.gov](http://spaceplace.nasa.gov)

And don't forget our site  
<http://mmastrosociety.tripod.com>



*Are these rocks of any scientific interest? With the new AEGIS software, the Mars Rovers, Spirit and Opportunity, will be able to judge for themselves whether a scene is worth a high-resolution image. (Artist's rendering.)*

## Upcoming MMAS Events

Friday, Feb 29, 2008: 7 p.m.: Extension Observing at a church in Randolph

**Saturday, March 8, 2008: MMAS ASTRO DAY 2008**

Friday, April 11, 2008: Extension Observing at Hughes School

Thursday, May 8, 2008: Family Stargazing Night

**Interested in joining the Morris Museum Astronomical Society?**

It's really easy. Club dues started in January for our 2008 membership drive.  
Please Send Payment to:

**Morris Museum  
MMAS—Membership**