Observatory News

July 2010 **Published by the Friends of the Observatory** **Volume 21 No. 7**
513-321-5186 www.cincinnatiobservatory.org Bill Cartwright, editor wcartw@aol.com

Coming Up At The Observatory....

July 01, 6:00pm, FOTO Members' Picnic
FOTOKids (No July Meeting)
July 08, 8:30pm, Astronomy Thursday
July 09, 8:30pm, Astronomy Friday
July 10, at dusk, Stonelick Stargaze
July 11, 1- 4:00pm, Historical Tours of the Observatory
July 11, 7:00pm, A2Z Astronomy Class for Members (Sunday session)
July 12, 7:00pm , A2Z Astronomy Class for Members (Monday class)
July 13, 6:30pm, ScopeOut Meet.
July 15, 8:30pm, Astronomy Thursday
July 16, 8:30pm, Venus Friday
July 17, dusk, Stonelick Stargaze
July 19, Museum Committee Meet
July 22, 8:30pm , Astronomy Thursday
July 23, 8:30pm , Venus Friday
July 22, 8:30pm , Astronomy Thursday
July 24, 1- 4:00pm, Historical Tours of the Cincinnati Observatory
July 26-29 , time varies , Out of This World Summer Camp
July 29, 8:30pm , Astronomy Thursday
July 30, 8:30pm Astronomy Friday.

The Word

By Dale Zoller

The Japan Aerospace Exploration Agency (JAXA) has been on a roll lately. In 2007, they launched the SELENE mission to the Moon which made precise maps of the Moon's gravity field. In addition, it carried two HDTV cameras which provided spectacular hi-def views of the Moon and Earth. JAXA also developed the 3-part "Kibo" science module for the International Space Station. It is the space station's largest module.

Perhaps JAXA's most significant accomplishment is their Hayabusa spacecraft which recently completed a 7-year mission to the asteroid Itokawa. Hayabusa is not the first spacecraft to visit or even land on an asteroid, but it is the first designed specifically to land on an asteroid, take off and return a sample to earth. Hayabusa has been referred to as "the little spacecraft that could."

Shortly after it was launched in May 2003, a solar flare damaged its solar panels which reduced power to its ion thruster engines, delaying its arrival at Itokawa by three months. Despite having two of its three reaction wheels fail, it managed to land on the asteroid on November 19 and 25, 2005. The spacecraft was designed to shoot "pellets" into the surface of the asteroid to kick up debris which would be collected in the return capsule. Due to communication problems, it is unclear whether or not it actually collected samples from the surface of the asteroid. Further problems with communications and thrusters put the success of the mission in jeopardy.

However, two years after arriving at Itokawa, Hayabusa began the long trip home. On June 13, 2010 the sample return capsule survived a blazing re-entry and landed in the Australian outback. At this time, the capsule has not been opened and it is still unknown whether or not the sample return was successful. Whether or not samples of the asteroid were actually collected, what makes the mission so intriguing is the tenacity of the mission scientists in overcoming multiple adversities and completing the mission.

On May 21, 2010 JAXA launched its two newest spacecraft. AKATSUKI is on a mission to orbit Venus and study its climate. A separate spacecraft (IKAROS) will test an experimental "solar sail" which, in addition to providing electrical power, will help accelerate the spacecraft using solar radiation. Although JAXA doesn't have the vast resources of NASA, RKA or ESA, they are making significant contributions to the study of the cosmos.

COC President's Remarks

By Dr. Michael Flick,
President of the Board of the Cincinnati Observatory Center

GREETINGS!
I would like to begin my first official remarks as Board President by thanking the many individuals who have made the Cincinnati Observatory Center a viable institution in this era when so many historic observatories are closing forever. Since the Cincinnati Observatory is our nation's first professional observatory, we all have the privilege of serving to help preserve an important astronomical landmark in both the history of Cincinnati and in our Country.

Each of us has a variety of unique talents and interests. It is the combined effort of everyone associated with the COC that insures its long term success and viability. There are no disposable members of either the COC or FOTO. Everyone has unique talents and gifts that will make the COC better. I believe that there are three essential ingredients to our long term success. We must all have ***a vision of greatness*** for the future of the COC, we must ***believe in the vision,*** and we must all ***articulate the vision*** to everyone we know. Astronomy is about involvement – which starts with each of us.

Unfortunately, funding is a key to the long term health and welfare of our observatory. I believe that there are three main sources of funding available to the COC. They are ***memberships***, ***contributions***, and ***grants***. We need everyone's help to increase ***memberships***. I challenge everyone to not only renew a personal membership, but to bring in new blood – at least one new member this year. New members help by providing new ideas and energy. Of course ***contributions*** above and beyond membership dues are greatly needed. We all have planned giving in our budgets. Perhaps each of us could consider remembering the Observatory in our planned giving. Planned giving to the COC is a natural for anyone interested in astronomy, its history, and future.

The staff of the COC has been diligent in applying for ***grants*** to support our programs. The FUTURE GALILEO'S program is an excellent example of a grant that supports our mission. Several other grants are in progress and have the potential to greatly expand our reach into our community.

Community outreach and spreading the joy of astronomy is the heart of our mission. The Board of Trustees, COC staff and I are truly thankful to all of the volunteers who help to make our many programs possible. My dream is that each of us can accelerate our enthusiasm and dedication for both astronomy and the COC. I believe this is a great calling that has been entrusted to each one of us.

I know that the future of the COC is one of greatness. I hope that each of you will join me in adopting the three ingredients of long term success. Finally, know that I am always available to discuss your ideas, dreams and hopes for the COC.

Please do not hesitate to contact me any time. My email address is flick@xavier.edu and my office telephone number is 513-745-3225.

FOTO Picnic

By Dale Zoller

Mark your calendar now for the annual FOTO picnic! The picnic will be held at the Observatory on **Thursday July 1, starting at 6pm.** Drinks and a charcoal grill will be provided; bring your own meat and (optional) a side dish to share. This is a great chance to enjoy the company of your fellow FOTO members, meet some new friends, and relax in the beautiful summer evening at the Observatory. The picnic will move inside if it is raining, so come one, come all!

FOTOkids Meeting

By Dean Regas

There will be no FOTOKids meeting in July because of the 4th of July Weekend. However all FOTOKids are encouraged to go take their friends and family to view the dark skies at Stonelick State Park. Stonelick is a great place to view the heavens through a variety of telescopes. It is a real star party where you can go from telescope to telescope and see a nebula, star cluster, planet, and galaxy in five minutes.

Friends of the Observatory have been meeting there for years and you can join the fun on Saturday, July 10 and Saturday, July 17. Just show up after dark – no telescope required. One warning, our members only meet at Stonelick if it is clear. For more on Stonelick visit: http://www.cincinnatiobservatory.org/darkskysite.html FOTOKids will resume their normal meetings on Friday, August 6 at 8:30pm.

FOTO's July Meeting

By Dale Zoller

The July 2010 FOTO meeting will be replaced by the annual FOTO members' picnic on the first Thursday of the month, **July 1 at 6pm** (note time change). Grills and drinks will be provided; members are invited to bring a dish to share and their own food to grill. Obviously, we will ***NOT*** have an informal dinner at Panera Bread – unless you're *really* hungry.

June 2010 FOTO Meeting Highlights

COC Director: Craig Niemi

- A grant was submitted to NASA today, requesting $350,000 in funding for the Planet Day series. If funded, this will provide support for Dean Regas' position and another educator.
- A meeting was held today with representatives from several public schools, which were enthusiastic about the program and provided letters of support for the grant application.
- Dean is planning 2 summer camp programs.

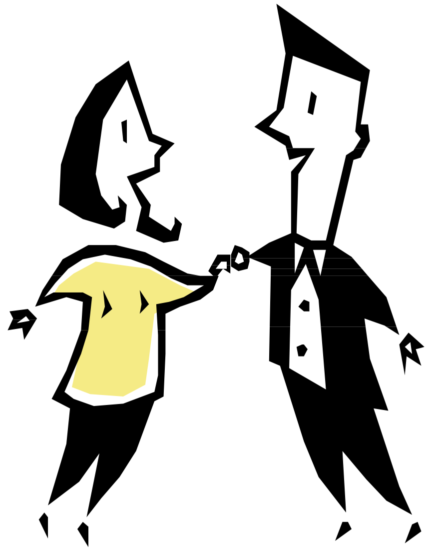
COC Representative: Scott Gainey:

Scott thanked everybody who came out to help at the Camp Friedlander training session for Boy Scout summer camp leaders.

The COC Board has approved the 2011 Calendar project.

This month's speaker was FOTO volunteer **Anne Schmid** who gave a presentation titled ***Francis Bacon and the Scientific Revolution***. Anne compared the scientific and philosophical paradigm developed by Francis Bacon (which led to the modern principles of scientific inquiry) to that of the ancient philosophers. A lively discussion followed the presentation – who knew we had so many philosophy buffs?

Welcome Renewing & New FOTO and COC Members!



Joe Albert
Andrew Chun
John Ciliege
Charles and Debra Clark
John and Stella Cottam
Jeffrey Dobranski
Chris and Jeanette Duncan
Robert Economou
Mary Ellert
Rob and Ann Flanagan
Jane Garvey and John Lanier
Daniel and Anne Gentile
Jim and Sue Groen
Kenneth Haag and Ardythe Morrow
Len and Jakki Haussler
Thomas and Jeanne Hayden
Marilyn and Robert Mallow
Constance McClure
Michael C. Perry
Louis Prince
Tony Rein
Ralph and Amy Sexton
George and Linda Strietmann
Brent Thompson
James L. Thompson
John Ventre

Craig's Corner

By Craig Niemi

Welcome to the "dog days of summer." Officially the dog days didn't start until July; but Sirius has already been hard at work adding its effect to our already warm and muggy days.

We hope you all have had a chance to relax a bit. It seems like everyone I've talked to has been "up to here" with work, school, kid's activities – life in general. It has certainly been busy at the Observatory with Summer Camps, Boys & Girl's Club programs, day care group visits. The public Thursday and Friday Astro Evenings have been surprisingly full considering the rainy weather we've had of late. They have become a popular attraction for out of town visitors.

Lyn is taking a well deserved vacation after a very busy spring/early summer working on several successful grant applications, with others pending that we're sure will be approved. Dean is sneaking out over the 4th for some overdue time to unwind a bit. Until we can fund another full-time educator Dean has been taking the brunt of the ever increasing demand for outreach programs. Our thanks go out to all the tireless volunteers who have helped Dean with school programs as well as our public offerings. Put your feet up and open a cold one, you've worked hard too. We'll be sneaking out-of-here for Northern Michigan to celebrate the Fourth of July with family and a chance to get out under some truly dark skies for a change.

One of our first projects when we get back is the July 19th Museum Committee meeting. It's been awhile since the committee has met and there is plenty to discuss and many projects that need to be worked on. Some of the topics I want to discuss are to reaffirm the COC's museum goals, the role of

COC history in our STEM programs, investigate the Observatory's potential role in K-12 social studies and history programs, our preservation / restoration needs and collaborations with other museums and historic Sites.

For a fresh perspective we'll have several guests at the meeting including Julie Carpenter from the *Betts House,* Martha Good representing *Harriet Beecher Stowe House* and Miami University, Ray Henderson from the *Taft National Historic Site* and Dr. Rebecca Bailey from NKU's Public History program. All accepted our invitation enthusiastically which speaks volumes about our history programs. The Museum Committee is open to all who have an interest in preservation and history.

If you'd like to participate in museum activities or research, just let me know, or contact COC Historian John Ventre.

I hope you're having a fun and safe summer and be sure to make the Observatory one of your restful moments.

Venus Fridays

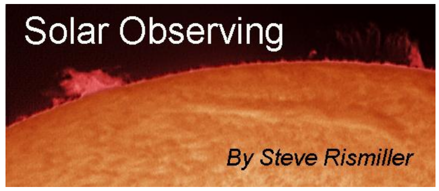
At the Observatory Center
July 16th and 23rd
8:30-11:00pm

Is it a plane? Is it a UFO? No, that bright thing in the west is Venus!

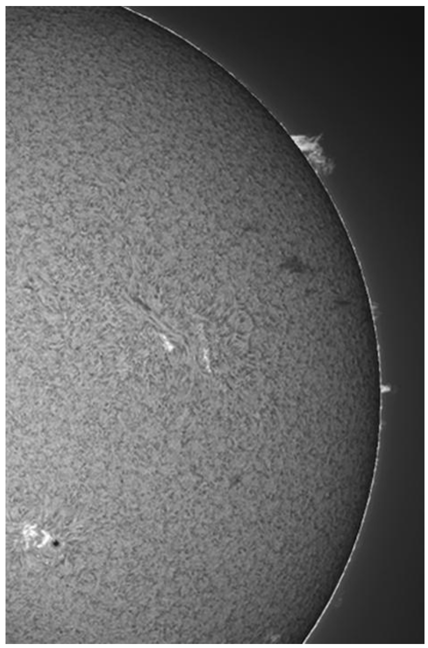
Venus Fridays include programs about our closest planetary neighbor and tours of the Observatory. Then, see the clouded, shrouded goddess of beauty for yourself through our historic telescopes along with the Moon and Saturn (weather permitting).

The cost is just $6 per person. Reservations are recommended.

For further information or to make reservations, please call 513-321-5186.



As many of you know, using your telescope has not been easy this last month. With the heat and humidity, rainstorms have been with us constantly. I did manage to get a few observations of the sun in H-alpha near the end of May and early June.



This image of the partial solar disk shows quite a few features. The most obvious is the large prominence on the limb in the upper right. If you look closely, you will see a total of four prominences among the small white spicules that line the edge of the disk. Along the edge, you can see limb darkening which gives the disk a 3-D appearance. Some dark clouds, called filaments, are seen against the web structure of the chromoshpere. In the lower left corner is a sunspot with white faculae to the left of the sunspot.

As this solar cycle progresses, larger and more of these features will likely be seen on any given day.

Upcoming Communiversity Classes at the Observatory

By Craig Niemi

UC Communiversity offers adults in Greater Cincinnati life-long learning opportunities in many diverse topics. This summer quarter offers new and perennial favorites. All classes are taught by Observatory's talented staff and volunteers and are held at the Observatory. Members are always welcome to sign up (part of your UC Communiversity fee comes back to the Observatory). Cost per course: $18

"Comets & Meteors"
Basil Rowe
July 6, 2010 7:30-9:30 pm.

"Behind the Scenes"
John Ventre
July 13, 2010 7-9 pm.

"Astronomy By The Numbers (but without the math)"
Chuck Strubbe
July 14, 2010 7:30-9:30 pm.

"Saturn"
Dean Regas
August 11, 2010 8-10 pm.

"Stargazing 101"
Dean Regas
August 16, 2010 7:30-9:30 pm

Dave's Excellent A2Z Astronomy Class

Dave Bosse's next two classes will be Sunday, July 11 and a repeat the following night, Monday, July 12. The topics will be *The Planets, Terrestrials, Jovians, Moons and Rings*.

Class will start on the dot at 7 pm and will end in the vicinity of 9 pm. Take your chances. Reserve your spot by calling 513-321-5186.

Paul Nohr Memorial Sundial

By Craig Niemi

We hope you've taken the opportunity to visit the Observatory and explore the grounds this summer. You are welcome to bring a picnic lunch prior to any of the Astro Thursdays and Friday programs. While you're here be sure to hike the ***Planet Walk*** which begins by the Blue Sign. Each foot is nearly a million miles, and while you're strolling to the outer solar system you can debate if Pluto should be a planet or not.

And be sure to visit the **Paul Nohr Memorial Sundial**. While deceptively simple in appearance Paul's sundial is a surprisingly elegant yet sophisticated teaching tool revealing much about our place in the solar system. The sundial serves as a constant reminder of Paul's legacy and focuses our vision for this truly unique astronomical landmark.

Did You Know….

Gliese 581e, located in the constellation Libra, is just 1.9 times the size of Earth, whereas previous planets found outside our solar system are closer in size to the massive Jupiter.

Astronomers said Gliese 581e is too hot to support life, but a neighboring, previously discovered planet might have water.

Stonelick State Park Stargazes

By Craig Niemi

Pack your picnic basket and enjoy a warm summertime evening in the park. Then stay and explore all the celestial treasures found in the dark skies of Stonelick State Park.

Stonelick stargazes are a great informal learning opportunity for all. The stargazes are free and open to Observatory members, teachers, scouts, and the general public wanting to learn the night sky, learn how to use their telescopes all while enjoying the company of Observatory members.

The next stargazes are July 10th & 17th beginning at dusk. For information phone Scott Naylor at 513-575-5556.

CHARITY CHECKS™ GIVE THE JOY OF GIVING

By Craig Niemi

The Observatory was recently the recipient of a generous donation that came through *Charity Checks*. A non-profit organization offers an easy way for donors to contribute to over 1,000,000 IRS registered organizations such as the Observatory. They like people to think of Charity Checks as gift certificates for good. You can learn more at: www.charitychecks.us

FOTO Planning Meeting

By Dale Zoller

The next FOTO Planning meeting is scheduled for **Thursday, July 22, 2010** at 6pm at the **Observatory**. The meeting generally lasts a couple hours. The Planning meetings are open to all FOTO members. We encourage your participation in planning future FOTO activities.

Observatory Museum Committee Recent Acquisition

By Craig Niemi

Union army volunteers crossing the Ohio from Cincinnati to Covington in 1862.

Note the start of construction on the Kentucky side of the Suspension Bridge.

From *Harper's Weekly*, September 27, 1862.

Invitation to Join Museum/History Committee

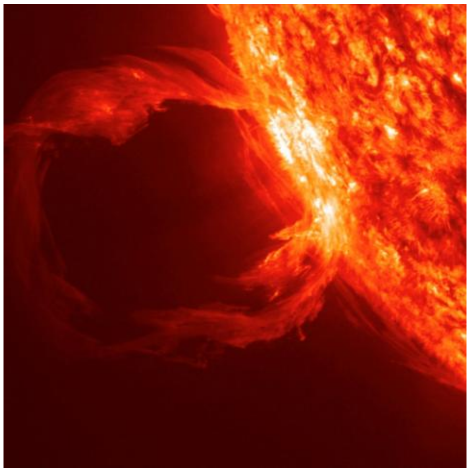
By John Ventre

The Cincinnati Observatory Center's Museum/History Committee is being expanded to support the Observatory's historical research and museum projects. If you are interested in contributing to the Observatory's history tours, historical research, library research, planning and constructing new museum exhibits, etc., we would like the opportunity to talk with you.

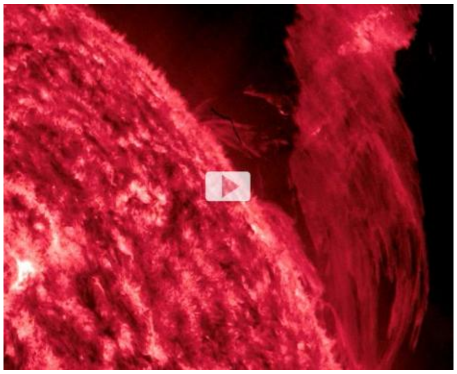
A meeting to discuss these needs will be held on Monday, July 19, 7:00pm at the Observatory.

Please let **John Ventre** know if you will be able to attend: jeventre@ix.netcom.com.

Recent Photo of a Solar Flare



A magnetic filament erupts. The black "hair-like object" is a speck of dust on the CCD camera.



NASA's new "Hubble for the Sun" has just observed one of the most dramatic eruptions in years. Movies ten times better than HDTV show billions of tons of magnetized plasma blasted into space while debris from the explosion rains back onto the sun's surface. http://science.nasa.gov/science-news/science-at-nasa/2010/27apr10_plasmarain/

Did You Know….

Neptune's moon Triton is one of the strangest places in the solar system. It is the coldest place at just 40 degrees above absolute zero, the polar caps there are frozen nitrogen, not frozen water, and there are geysers spouting nitrogen miles high.

Unlocking the Secrets of ESO 306-17

In this image, taken by the Advanced Camera for Surveys aboard Hubble, it appears that ESO 306-17 is surrounded by other galaxies, but the bright galaxies at bottom left are thought to be in the foreground, not at the same distance in the sky. In reality, ESO 306-17 lies fairly abandoned in an enormous sea of dark matter and hot gas.

When zooming in closely on ESO 306-17, one can see faint clusters of stars through the bright shine of the galaxy's large halo. These are globular clusters -- tightly bound groups of stars that can often fend off cannibalism from larger, "bully" galaxies. Studying these surrounding clusters will prove helpful to astronomers in their pursuit to put the pieces of ESO 306-17's history together.

Did You Know….

Thunderstorms here on Earth produce bizarre displays called Sprites, Elves and Blue Jets which blast upward as high as 30-50 miles above Earth. Elves are so brief they require a video camera running at 25,000 frames per second.

ScopeOut 2010 Planning Meeting

By Dale Zoller

ScopeOut 2010 is scheduled for Saturday, September 11, 2010. We will have our next planning meeting for ScopeOut 2010 on Tuesday, July 13 at 6:30pm in the Herget Building. We need volunteers to help with organizing all the various activities that make ScopeOut one of the Observatory's signature events.

Word of the Month

By Greg Huber

"Kruskal Diagram"

Last Months Word: Super-Rotation. Super-Rotation is a phenomenon where the atmosphere of a planet does not rotate with the planet. Venus is one such example. Planet Rotation = 243 days Atmosphere = 4 days.

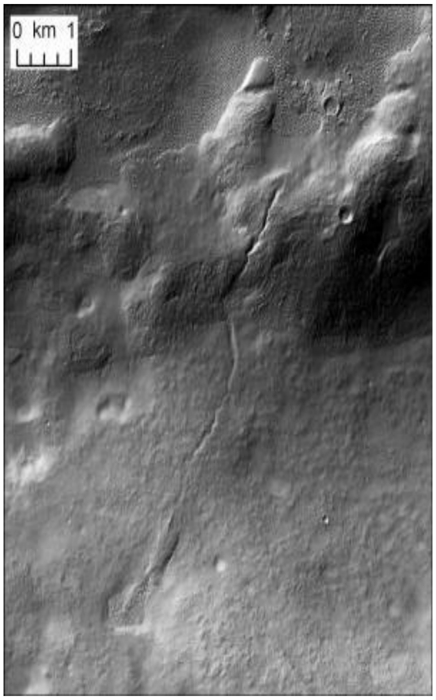
Early Galaxy Went Through 'Teenage Growth Spurt,'

Scientists have found a massive galaxy in the early Universe creating stars like our sun up to 100 times faster than the modern-day Milky Way.

Due to the amount of time it takes light to reach Earth the scientists observed the galaxy as it would have appeared 10 billion years ago -- just three billion years after the Big Bang.

They found four discrete star-forming regions within the galaxy known as SMM J2135-0102. Each region was more than 100 times brighter than star-forming regions in the Milky Way, such as the Orion Nebula.

Widespread Glacial Meltwater Valleys Found on Mars



Researchers have found evidence that melting glaciers spawned rivers on Mars as recently as several hundred million years ago. This image shows a river that sprang from a past glacier from an unnamed crater in Mars' middle latitudes. (Credit: NASA/JPL/MSSS)

A research team led by Brown University has documented dozens of channels carved by melted water from glaciers located in the midlatitude region of Mars. This supports the idea that the Red Planet was home to diverse watery environments in its recent past. Results are published in *Icarus*.

Planetary scientists have uncovered telltale signs of water on Mars -- frozen and liquid -- in the earliest period of the Red Planet's history. A new claim is that a deep ocean covered some of the northern latitudes.

http://www.sciencedaily.com/releases/2010/06/100624092518.htm

Star Parties

By Scott Naylor

The next scheduled Stonelick Star Parties will be **Saturday, July 10th and Saturday, July 17th.**

For directions or for more information phone Scott Naylor at 513-575-5556.

Trivia Question

By Greg Huber

Why would you want to be in Hopkinsville, Kentucky, on August 21, 2017?

Last Month's Trivia Question

In what year did Congress approve money for the Hubble Space Telescope?

The Answer

Congress approved funding for the Hubble Space Telescope in 1977!

Tour of the Moon

http://moon.arounder.com/en/sightseeings/moon/apollo-17.html

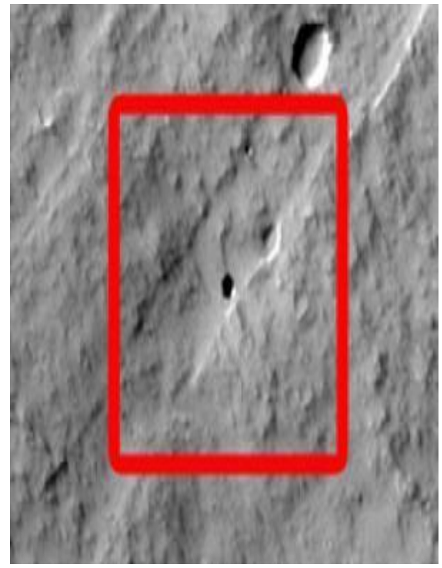
Lost Rover Found

A Soviet robot lost on the dusty plains of the Moon for the past 40 years has been found again, and it is returning surprisingly strong laser pulses to Earth. Researchers plan to use the aged robot to help them measure the Moon's orbit and test theories of gravity.

FULL STORY at

http://science.nasa.gov/science-news/science-at-nasa/2010/03jun_oldrover/

Seventh Graders Find a Cave on Mars



Using the camera on NASA's Mars Odyssey orbiter, 16 seventh-graders at Evergreen Middle School in Cottonwood, Calif., found lava tubes with one pit that appears to be a skylight to a cave. Mars Odyssey has been orbiting the Red Planet since 2001, returning data and images of the Martian surface and providing relay communications service for Mars Rovers Spirit and Opportunity.

http://www.sciencedaily.com/releases/2010/06/100624141934.htm

Did You Know….

The Ku Band transmitter sending all the data and pictures from the WISE Space Telescope was manufactured at Cincinnati Electronics.

FOTO's own **Rick Hunter** designed most of the Ku band transmitter.

That same transmitter is also on the Fermi Space Telescope (formerly known as GLAST).