



This is an information exchange that is available to all teachers in the Anchorage School District. Please read and then DO it!

**In this Issue:**

1. **LCROSS Slams into Moon**
2. **Online Resources from Math Science Conference**
3. **Science-Art Contest for...Grades 2-4-Habitat: ...That**
4. **NASA Endeavor Science Teaching Certificate Project to Begin Accepting Applications for Cohort 2**
5. **Teacher Training Opportunity: Goldstone Apple Valley Radio Telescope Program**
6. **NASA FIRST Robotics Grants Available**
7. **Mission Patch Contest Announced**
8. **from Science Matters October News**
9. **Interstellar Boundary Explorer IBEX - Update**
10. **MyMoon**

***NSTA Conferences 2009-2010***

March 17-20, 2010 Philadelphia, PA

***Science Olympiad***

March 20, 2009 Teeland & Mat-Su Career and Tech HS

***Alaska State Science & Engineering Fair***

March 26-28, 2010 Begich Middle School

**LCROSS slams into Moon**

LCROSS just slammed into the moon, looking for water in the plume. Photos will be released soon... website <http://lcross.arc.nasa.gov> <<http://lcross.arc.nasa.gov/>>

**Online Resources - 2010 AK Math Science Conference**

Attached are the URLs that were shared at the ASTA/ACTM conference in Juneau this past week. If you have other online resources to share, please send them my way so that they can be sent out on the list serve.

<http://polar.alaskapacific.edu/edted/SMC09>

The location of the sites I shared in Juneau with hot links.

[http://www.scienceeducationreview.com/open\\_access/inquiry\\_discussion.pdf](http://www.scienceeducationreview.com/open_access/inquiry_discussion.pdf)

An Australian set of questions and answers regarding inquiry science are presented in the Science Education Review (2007).

[http://www.nwrel.org/msec/science\\_inq/whatisinq.php](http://www.nwrel.org/msec/science_inq/whatisinq.php)

The Northwest Regional Educational Laboratory provides a rendering of science inquiry and the continuum it represents.

<http://www.science.org.au/events/npc2008.htm>

From the Australian National Academy of Science, a National Press Club Address titled "Inquiry-based Science Education in Australia: A National Curriculum", presented on 2 July 2008 is provided.

[http://www.t2tweb.us/Digital/workshop\\_hots/index.html](http://www.t2tweb.us/Digital/workshop_hots/index.html)

Got the H.O.T.S. for inquiry? An interactive workshop format with slides, narration, questions and answers guides the participant through the scientific process, inquiry and a new look at Bloom's Taxonomy.

[http://www.exploratorium.edu/ifi/resources/classroom/inquiry\\_based.html](http://www.exploratorium.edu/ifi/resources/classroom/inquiry_based.html)

Inquiry-based science<what does it look like? A Trinity College publication provides observations and discussions from teachers and administrators participating in the Vermont Elementary Science Project regarding the actions of students engaged in hands-on, minds-on science exploration.

<http://www.ericdigests.org/1993/inquiry.htm>

This Educational Research in Instruction and Curriculum paper discusses the history and definitions of inquiry science.

<http://www.teachersdomain.org>

Digital media for the classroom and professional development.

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<http://polar.alaskapacific.edu/edted>

**Science-Art Contest for Children in Grades 2-4 - Habitat: Imagine That!**

Entries Due: Oct. 26, 2009

From a tiny insect to a huge blue whale, all animals have a place they call home. Their home -- called a habi-

tat -- provides them with the food, water and shelter they need to survive.

An art contest for grades 2-4 challenges young scientists and artists to become wildlife investigators by exploring habitats, small and large, in their backyard or around the world, and then draw a picture showing what they learned. Artwork might focus on one animal or many, from an area as small as a single habitat or large as a biome.

"Habitat: Imagine That!" is the 14th annual art contest held by the Institute for Global Environmental Strategies (IGES) in Arlington, Va. The contest supports national education standards for grades K-4.

The first-, second- and third-place artists will receive \$100, \$75 and \$50 Visa gift cards, respectively, framed color certificates, and their artwork will be showcased on IGES's Web site. For all entrants, certificates of participation will be available online as PDF files for teachers or parents to download and print.

Entries are due Oct. 26, 2009.

For more information, including detailed contest instructions, information for teachers and parents, a list of educational resources, and to view artwork of past winners, please visit:

[www.strategies.org/artcontest](http://www.strategies.org/artcontest) <[http://rs6.net/tn.jsp?et=1102764099158&s=3274&e=001U2bNpv\\_xwS6Sa2o0Dh9qW8ghQ3H-Be9giVIg2Ni3XMhBgRCIFJg-ejsURahiR2vgJVN-ggtd5DAWDZYIJOK4dA3oU2xUr9NXpb5DErtvbcQfN-LK0F9XusUFJjd7Ukv](http://rs6.net/tn.jsp?et=1102764099158=3274=001U2bNpv_xwS6Sa2o0Dh9qW8ghQ3H-Be9giVIg2Ni3XMhBgRCIFJg-ejsURahiR2vgJVN-ggtd5DAWDZYIJOK4dA3oU2xUr9NXpb5DErtvbcQfN-LK0F9XusUFJjd7Ukv)>>

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### **NASA Endeavor Science Teaching Certificate Project to Begin Accepting Applications for Cohort 2**

The NASA Endeavor Science Teaching Certificate Project awards one-year fellowships each year to over 40 current and prospective teachers. The project is administered by U.S. Satellite Laboratory, Inc. Funding authorization for the project is provided through the NASA Endeavor Teacher Fellowship Trust Fund as a tribute to the dedicated crew of the space shuttle Challenger.

In partnership with state departments of education, Endeavor Fellows take five graduate courses in an innovative, online format from the comfort of their home or school. In these courses, participants will learn to apply research-based pedagogical strategies and cutting-edge STEM (science, technology, engineering and mathematics) content to their classroom contexts while becoming a part of a special network of like-minded educators across the nation.

Endeavor Fellows will be awarded a NASA Endeavor Certificate in STEM Education from Teachers College, Columbia University. In addition, 15 graduate

credits are awarded from other regionally accredited partners in higher education.

Applications for Cohort 2 will be accepted through **Nov. 10, 2009.**

For more information, visit

<http://www.us-satellite.net/nasa/endeavor/index.cfm>.

Additional questions about this opportunity should be directed to [nasa\\_endeavor@us-satellite.net](mailto:nasa_endeavor@us-satellite.net).

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### **Teacher Training Opportunity: Goldstone Apple Valley Radio Telescope Program**

The Lewis Center for Educational Research announces an opportunity for K-12 teachers to participate in a unique program. The Goldstone Apple Valley Radio Telescope Program, or GAVRT, is an education partnership involving NASA, the Jet Propulsion Laboratory and LCER. The program is a K-12 project using radio astronomy to provide an opportunity for students to experience real science and to learn that science is an ongoing process and actual discovery is possible. Using classroom computers, 32,000 students have taken control of a 34-meter, 500-ton, nine-story-tall radio telescope located at NASA's Deep Space Network at Goldstone, Calif. There are currently 473 trained teachers at 283 schools in 37 states across the United States and at American schools in 14 countries and three U.S. territories.

What is in it for the students? They learn how to gather data, understand what the data mean and how to follow through with analysis. Students and teachers team with scientists to conduct cutting-edge research leading to discovery. GAVRT is exciting for students while accomplishing educational and scientific objectives.

In 2010, the teacher training program will also include Radio JOVE. Radio JOVE is a hands-on educational activity that brings the radio sounds of the sun, Jupiter, the Milky Way galaxy, and terrestrial radio noise to students, teachers and the public. This program targets students in grades 6 - 14 and involves building a simple radio telescope, making observations, and sharing results with other participants and with professional radio astronomers.

To bring the GAVRT program into the classroom, teachers must attend a five-day class. Teacher training classes are scheduled to take place at the Lewis Center on **March 8-12, July 19-23, and Oct. 25-29, 2010.** The program strongly recommends that at least two teachers attend the training from each school or area. While this is not a requirement, it will definitely help in program support once back in the classroom. The cost of the five-day class is \$745. Teachers interested in participating are invited to apply online at

<http://www.lewiscenter.org/gavrt/opportunities.php>.

For more information about GAVRT and Radio JOVE, visit <http://www.lewiscenter.org/gavrt/> and <http://radiojove.gsfc.nasa.gov>.

Questions about this program and the training opportunities should be directed to [gavrt-info@lcer.org](mailto:gavrt-info@lcer.org) or 760-946-5414, ext. 23.

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### **NASA FIRST Robotics Grants Available**

NASA sponsorship grants are available for teams participating in the FIRST Robotics Competition. Three types of grants are available: Regional Challenge Grants, Program Growth Grants and Sustaining Grants.

These sponsorships are not tied to any particular competition event. The grants will provide \$6,000 funding to cover the registration costs for a team to attend one Regional Competition event, along with a kit of parts.

Applications for this grant opportunity are due **Nov. 2, 2009**.

To learn more about the NASA FIRST Robotics Growth Grants, visit

<http://frc-grants.arc.nasa.gov/frc/app/directions.php>.

Questions about this sponsorship should be directed to [ARC-FRC-Grants@mail.nasa.gov](mailto:ARC-FRC-Grants@mail.nasa.gov).

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### **MISSION PATCH CONTEST ANNOUNCED**

Space Explorers' annual Mission Patch Contest is underway. With every space flight, a mission patch is created to represent the tasks at hand. These patches include information on the mission's purpose and goals. Here is your chance to have your students design your very own mission patch. All entries must be postmarked by Friday, December 11, 2009!

More Info... <http://news.space-explorers.com/?v=7&e=6>  
<<http://news.space-explorers.com/?v=7&i=6&a=6>>

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### **New UAA Science Building & Planetarium**

To access the information on the new UAA planetarium.

<http://www.ktuu.com/Global/searchresults.asp?vendor=e=uaa>

<<http://www.ktuu.com/Global/searchresults.asp?vendor=e=z&qu=uaa>>

<http://www.uaa.alaska.edu/news/uaa-hosts-a-grand-opening-for-cpisb.cfm>

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### **from Science Matters October News**

**A Movie about DIRT** <http://dirthemovie.org/>

A new film is out and it is a topic that we all share concern about. DIRT! the Movie brings to life the environmental, economic, social and political impacts of soil. It provides a greater understanding of soil and the responsibility rests on all of us to take care of it. Check out the trailer and sign up to find out how to see DIRT!

**Gr 5-8: Learn Space Science Through Social Media**

<http://www.adlerplanetarium.org/cyberspace/podcasts/Teencasts/>

The Adler Planetarium's Teencasts are a cool way for teens to become educated about the universe. On this site, students will find interesting facts about science.

### **Gr 6-12: Body Learning Experience**

<http://dsc.discovery.com/tv/human-body/explorer/explorer.html>

Created by the Discovery Channel as part of the "Human Body: Pushing the Limits" video, "The Human Body Learning Experience" is an interactive web site exploring vision, memory, strength and sensation. Each of these four sections has games and videos to help you learn about the nervous system.

### **9-12 5th Annual DNA Day Essay Contest!**

<http://www.ashg.org/education/dnaday.shtml>

2010 Essay questions:

#### *Option 1*

Scientists can now determine the complete DNA sequences of organisms, including humans. Now that this milestone has been reached, is there a reason to continue learning about Mendel, alleles, and inheritance patterns? Explain your answer.

#### *Option 2*

Genetic testing allows geneticists to determine an individual's DNA sequence, and research has identified a number of genes, such as HMGA2 and GDF5, that are associated with height. Will such associations allow scientists and physicians to predict a person's final adult height from infancy? Explain your answer.

A 1st, 2nd, 3rd place will be chosen for each question. Winning students will receive:

1st Place Winners: \$400.00 + Teacher receive a \$2,000

grant for laboratory genetics equipment

2nd Place Winners: \$250.00

3rd Place Winners: \$150.00

Please expect an email in January 2010 when the submission site is live.

Submission Deadline: March 15, 2010 at 5:00 PM EST

Questions? Please email Angie Wong ([awong@ashg.org](mailto:awong@ashg.org)).

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### **Interstellar Boundary Explorer (IBEX) Update: An Unexpected Discovery**

IBEX is a Small Explorer NASA mission that orbits Earth and studies the edge of our Solar System. At the boundary of our Solar System, the interactions between solar wind particles and interstellar medium particles create Energetic Neutral Atoms (ENAs), particles with no charge that move very fast. Some of the ENAs happen to be traveling in just the right direction so that they move inward through the Solar System toward Earth where IBEX can collect them. In this way, IBEX is a special kind of "telescope." This region emits no light and so it cannot be studied by conventional telescopes. Instead, IBEX measures these inward-traveling particles.

IBEX provides the only way we currently have of studying the entire edge of our Solar System all at once.

The IBEX team released the first five Solar System boundary maps on October 15, 2009. While the data did show ENAs coming from all over the sky in fairly even numbers as predicted, what is surprising is that there is an unexpected arc-shaped region in the sky that is creating a large amount of ENAs, showing up as a bright, narrow ribbon on the maps. Before the IBEX spacecraft was launched, scientists used models of what we thought was happening at the boundary of our Solar System to predict the ENA pattern across the sky. These models predicted variations of only tens of percents across the sky; in contrast, IBEX has been observing variations that are literally hundreds of percents over small angles in the sky. In other words, we are not only seeing ENAs in an unexpected pattern, we are seeing many more ENAs from small regions than we thought we would. Although the scientists knew the real data would not look exactly as their models predicted, this ribbon feature was a huge surprise to the scientists.

The ribbon appears to be produced by the alignment of magnetic fields outside our heliosphere, but more time is needed to fully understand the data for the team to be able to say for sure if this is what is creating the ENAs. These observations suggest that the interstellar environment has far more influence on structuring the heliosphere than anyone previously believed. It will be exciting for scientists to review these maps and revise the way we understand our heliosphere and how it interacts with the galactic area surrounding us. For more information about these findings and to access the maps, please visit the IBEX website at <http://www.ibex.swri.edu> <<http://www.ibex.swri.edu/>> .

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### **MyMoon**

*MyMoon* is created for (and with) the Net Generation; lunar scientists, educators, engineers, artists, storytellers, and others provide interactive information about the Moon and opportunities for you to be involved.

Keep checking back to see what's new; we'll update the site regularly with your help. Join us through online and Web-conferenced discussions, submit video, art, stories, and more in competitions, vote on your favorites, and share your thoughts.

### **Contests**

We frequently have fun contests; occasionally, prizes are involved. If you don't like the contest, suggest a new one!

### **Famous Last Words**

New MyMoon contest! What were LCROSS's last words? Tell us at <http://mymoon.lpi.usra.edu> <<http://mymoon.lpi.usra.edu/>> . Click on the yellow poster with the yellow moon.. What were LCROSS's last words just before it slammed into the Moon on October 9th? Tell us what LCROSS would have said just before its

demise and you could win a miniature Moon globe! Submissions accepted until October 23, 2009, and will be posted on the MyMoon Facebook group.

### **VOTING OPEN FOR LCROSS CRATER NAME!**

Last contest was to submit names for the newly-created LCROSS crater; submissions are closed and now everyone's welcome to vote on their favorite.

The polls are open. Let's be democratic people!

[http://www.surveymonkey.com/s.aspx?sm=uGCM4Hp\\_2bcdhB67bAjmlAzA\\_3d\\_3d](http://www.surveymonkey.com/s.aspx?sm=uGCM4Hp_2bcdhB67bAjmlAzA_3d_3d)

### **Free Public Webcasts!**

Join us every other week at 8pm Eastern (5pm Pacific) as MyMoon hosts webcasts featuring lunar scientists, authors, and artists. Each presenter speaks about themselves for a few minutes then the rest of the conversation is up to you! Check the MyMoon website for more information on connecting to webcasts!

### ***Schedule of Upcoming MyMoon Webcast Speakers***

**October 21** – Dr. Tony Colaprete, Principal Investigator of the LCROSS mission. Tony will give us an update on the latest results from the LCROSS impact of the Moon.

**November 4** – Marjory Wentworth, Poet Laureate of South Carolina. Marjory will discuss the influence the Moon has had on her poetry.

**November 18** – Dr. Sarah Noble, lunar geologist. Our first scientist-artist! Sarah will discuss the relationship between science and art in general and how her science affects her art in particular.

**December 2** – Dr. Mark Sykes, planetary scientist/space policy expert. Mark will discuss an often over-looked option for the direction of the future of the U.S. Space program.

<http://mymoon.lpi.usra.edu> <<http://mymoon.lpi.usra.edu/>>

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