



Aerospace Education

January - February 2008

News

Inspiring Students To Excel

**HAVE A SAFE
AND HAPPY
2008!**

CAP Teachers Set to Soar in the Skies...

Fly-a-Teacher Program is Priority in Alabama Wing

The CAP Alabama Wing has geared up to fly any teacher who has not had a Fly-A-Teacher orientation airplane flight. AL Wing Commander Mike Oakman and Vice Commander David Boswell have teamed up with Maxwell Unit Commander, Capt Lee Harrison, and AL Director of AE, Maj Silvano Wueschner, to organize flights for new teacher members in Alabama.

Capt Harrison has flown numerous teacher flights in the past several years and he is always willing to accommodate the schedules of teachers so they can participate in the teacher flight program. "The teachers are so excited to be able to take a flight over their community so they can photograph their school from the air. They are eager to share their experience with their students." Capt Harrison also shares a bit of flight instruction during the flights. "Giving the teachers an orientation to the airplane intrigues the teachers. I feel they will be able to share much of the magic of the flight with students, and that is the beauty of the teacher flight program."

Vice Commander Boswell has recruited numerous pilots to fly new teacher members in upcoming months. He is also working with the Huntsville Space Camp to fly their teacher workshop attendees during the summer months. Thus, the excitement about the program is growing quite rapidly.

Another innovative initiative in Houston will be happening in January when teachers from across the nation will participate in a Space Educators Conference workshop session presented by CAP Capts James Hein and Ray Bufkin of Houston. Those teachers will

be the first participants to be able to receive a Fly-a-Teacher flight as a part of that conference.

A similar effort occurred last summer wherein Kentucky Department of Aviation sponsored a CAP Teacher workshop under the leadership of CAP Lt Col Alice Faye Noble. As a culmination of that workshop, CAP pilots are still flying those 100 teachers as teacher schedules will permit.



What does this mean for teachers and for CAP wings all across the nation?

CAP Wings need missions to fly when there are no search and rescue missions to fill required flying hours. Teacher flights could fill that need. Although the pilots may not be able to save a lost person or plane, they may be able to inspire a lost young person via an introduction to the wonder of flight through the eyes and heart of a teacher.

Teachers can be invited to join CAP and receive a myriad of educational resources through the Fly-a-Teacher program. For everyone involved, it is a win-win plan!

For more information about the Fly-a-Teacher program, go to www.cap.gov/ae.

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Aerospace Education News

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Judy Stone
Editor

Contributing Writers

- Jeff Montgomery
- Susan Mallett
- Angie St. John
- Debbie Dahl

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Terry Fontaine & CAP Print Plant

If you have news, events, or ideas we might consider for the newsletter, please submit them electronically to jstone@cap.gov.



In the AEM spotlight ...

Donna Smith

It takes a special person to teach K-2 and Donna Smith is one of those special people. Teaching in Symrna, Georgia for the last four years, she has accepted the challenge of being the science lab coordinator and the space team advisor for Russell Elementary. Donna has taught for 29 years total in New Jersey, West Virginia and now in Cobb County, Georgia. Throughout her career, her dream has been to teach science to students, to inspire students and open their minds to an endless world of possibilities. In order to accomplish her dream, she has prepared herself with education, workshops and accepting challenges as they were offered. Donna's aerospace and aviation training began in 2000 when she attended a NASA Educational Workshop at Langley, Virginia. She was "hooked" and started attending every aerospace event that she could find. She went to teacher training at Kennedy Space Center, Johnson Space Center, the Challenger Learning Center, Space Academy for Educators in Huntsville, Alabama, STARBASE training, and Civil Air Patrol workshops. She has received Mars Rover and robotics training for educators. Donna is also field-testing



the CAP Jr. Cadet Program. All of these experiences have helped her become a wonderful resource and motivator to her students.

The students at Russell Elementary have benefited from Donna Smith's expertise by the wonderful science lab activities she has provided them. Such hands-on experiences supported the science standards and curriculum for each grade level. Her stu-

"The Russell Elementary Space Team program truly inspires our students to achieve, set goals, assume responsibilities, persevere and to work as a team. Maybe someday I will be reading about a former member of the team who is an astronaut, scientist or one of the mission controllers working for NASA."

---Donna Smith

dents are all scientists that explore, discover and experience first-hand the elements of each topic they study. The students are so excited, engaged and enthused when they work in the science lab that she has even heard the remark, "I wish we had science lab everyday!" and "This is better than P.E.!" She watches as her kindergartners make predictions and determine



the solutions to their self-created hypotheses. They also demonstrate their ability to work as a team just like scientists.

Donna Smith enjoys being the Space Team Advisor for the Russell Space Center project that began at the school in 1997 with the simulated launch of their own "STS-1." The Russell Elementary Space Team is an after school program made up of enthusiastic, self-motivated and responsible fourth and fifth graders with outstanding academics and behavior. This year Donna will be advisor to STS-10 Intrepid on May 8th and 9th, 2008. They spend hundreds of



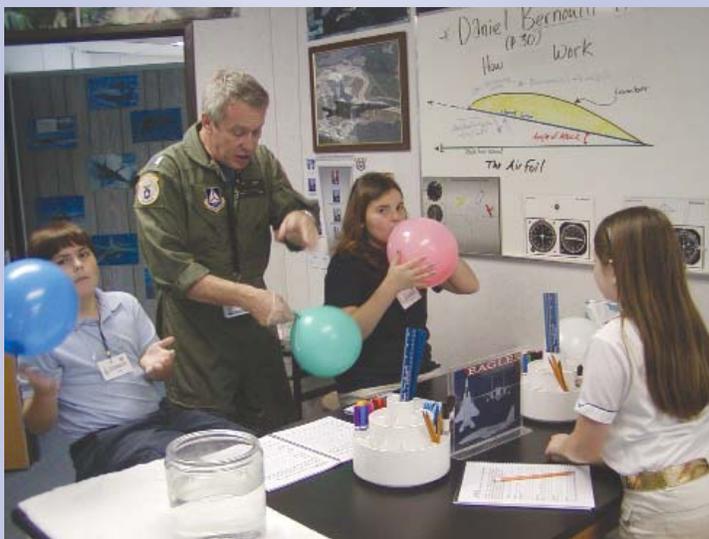
hours planning and training for the simulated mission. We wish the team and Ms. Smith much success on their mission!

Donna Smith loves what she does and has spent her life doing what she loves. There is no better testimonial to the efforts of a teacher than to have students enjoy and learn. We are fortunate to have such a dedicated and enthusiastic educator giving children the excitement of learning. What a gift!

In the AEO Capt Greg Stritch (FL)

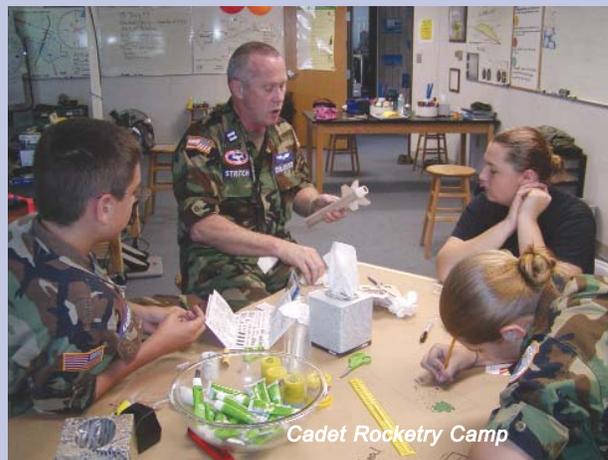
Article information sent in by Lt Col Valerie Brown, FL 383,
Deputy Commander for Cadets.

The enthusiasm and energy that Greg Stritch brings to the Jacksonville Composite Squadron is truly a gift. Greg not only serves as the CAP Aerospace Education Officer for the Group and Squadron; he is also the Program Director for STARBASE at the 125th Fighter Wing of the Florida Air National Guard. STARBASE is the aerospace initiative of the Department of Defense, in association with such groups as the Florida Air National Guard, for enrichment of STEM subjects (Science, Technology, Engineering and Math). Greg's program in Florida targets under-represented and low-income student populations in his area.



Balloon Balance activity with local students

The STARBASE background was a perfect fit for Greg to bring his expertise to CAP. He explores many of the same topics as he uses at STARBASE to engage and excite his CAP cadets. Such topics as properties of matter and air, Bernoulli's principle, forces of flight, Newton's laws of motion and cross-country flight planning with hands-on exploration and experimentation are made more dynamic by the personal energy of Greg Stritch. Not only does Greg work with the cadets, but he is also setting goals for the Yeager test for Senior Members.



Cadet Rocketry Camp

Greg Stritch's personal goals as a CAP Senior Member have been fulfilled in his usual exceptional manner. He accelerated through the AE Specialty Track and received the Master Rating. He has also pursued qualifications in Emergency Services, earning UDF (Urban Direction Finding), Scanner-Observer and CAP pilot status. He is even meeting a need at the unit as a Moral Leadership Officer (connecting his youth church work with his CAP family volunteerism).

Other endeavors for Greg Stritch include: providing teacher in-service training for the Duval County Public School instructors; working with local JROTC and AFA (Air Force Association); and training other STARBASE instructors. Never at a loss to tackle a new program, Greg is currently working to get his unit involved in the CAP Fly-A-Teacher program. Valerie Brown, Deputy Commander for Cadets at FL 383, says of Greg, "What makes Greg such an incredible asset to us and to CAP is his immense curiosity. Greg is always ready for a new adventure and his enthusiasm motivates everyone."

Greg Stritch and his lovely wife, Mary, fly frequently to Haiti for work on economic and community development projects. Greg is also an experienced surfer, from his childhood in Hawaii, and an accomplished musician in addition to his lifelong love of aviation. Many interests for a many-faceted man.....Greg Stritch leads a full and rewarding life and we are grateful that he is sharing it with Civil Air Patrol.

"I look forward to many years of serving the squadron and community performing CAP missions for America."

----Greg Stritch



School Enrichment Program Spotlight: Coffee County, Alabama Elementary Schools

Zion Chapel paraplane descends at Lift-off ceremony.



The phrase "Operation Lift Off" was coined by New Brockton Elementary School's Jr Cadet Coordinator, Brandi DeSandro, to denote the school's special celebration of the start of the Civil Air Patrol's Jr Cadet pilot program on Veteran's Day. However, the phrase more broadly describes the Coffee County School System's participation in the Jr Cadet pilot program. Superintendent Dr. Linda Ingram has committed all of the elementary schools in Coffee County, Alabama to be field-testing sites for the new aerospace and youth development program being piloted in 20 schools nationwide. Dr. Ingram has a love of aerospace and believes that her students and teachers can benefit from the lessons and experiences that the Jr Cadet program can provide. All three elementary schools in Coffee County are field-testing the prototype program during this school year and each school has conducted a "Lift-off" celebration for the Jr Cadet program.

Heatherly Smith, Jr Cadet Coordinator for Kinston School, arranged for Angie St. John, CAP School Enrichment Program (SEP) Manager, to lead the "Lift-off" event for Kinston students. Mrs. St. John shared an inspirational astronaut story to encourage students to find and pursue a dream. CAP member, airline pilot,

and USAF Reserves Officer, Major Greg Hataway, spoke about his career as a pilot and bright young students' imaginations began to fly as he vividly described what it is like to go on an airplane flight. Many students commented that this was their first encounter with a real pilot. Major Hataway was impressed by the quality and quantity of questions students asked, including many science questions from girls.

Zion Chapel School's coordinator, Chris Kirkland, arranged for students to participate in pre "Lift-off" aerospace contests, such as coloring contests for kindergarten - first grade students, a poetry writing contest for grades 2-3, and a mission patch contest for fifth and sixth grades. On the day of the "Lift-off" celebration at the high school's football stadium, students were surprised to see a paraplane appear over the tree line right as the high school band was finishing the "National Anthem." What an impressive entrance! The students cheered and screamed as Vice Principal Joan Calhoun told students that the paraplane might return if the children were loud enough. Little did they know that the pilot of that plane, Billy Dean, would be landing his plane and coming to speak to them at their assembly.

Finally, New Brockton's "Operation Lift Off" had students looking to the skies to see rocket launches and remote control airplanes flying. Additionally, their guest speaker, Chief Warrant Officer 4 Anthony Nistico from Fort Rucker, incorporated the four pillars of the Jr Cadet program (aerospace ed, character ed, leadership dev, and physical fitness) into his speech, bringing a personal touch to the values of the Jr. Cadet Program. In addition to Officer Nistico, several high school student role models spoke to the young elementary students about the importance of setting life goals, working hard to achieve them, and doing one's best in school and in life.

Coffee County is only one of two

total school systems across the nation in which all of the elementary schools are participating in the Jr Cadet pilot program. The School Enrichment Program is providing a unique, structured experience for these rural Alabama schools and encouraging students to dream big both in Alabama and in the other five states across the nation wherein the program is being field-tested.

The SEP staff at CAP headquarters applauds Superintendent Ingram for her leadership in bringing this program to her school system. The feedback received from Coffee County schools, as well as the other 17 pilot schools across America, will enable CAP to take the program to new heights for the future.



Kinston students celebrate the lift-off with boomerangs: "Like the flight of the boomerang, the choices made today will come back to you tomorrow."

One student participant says of the program: "I have always wanted to be a baseball player, but now I know I want to fly. Now, I know what my dream is."



CURRICULUM CORNER

Follow the Drinking Gourd.....

Activity from NASA Quest at <http://quest.nasa.gov/ltc/special/mlk/mlkarchive.html>

Objectives:

1. Students will learn the story of the drinking gourd as a constellation and a symbol of freedom.
2. Students will use map skills to locate the route of the underground railroad.

National Science Standards:

Social Studies National Standards:

1. Culture
2. Time, Continuity, and Change
3. People, Places, and Environments
4. Individual Development and Identity

Grade Level: 4-6

Materials:

1. Story of the Drinking Gourd
2. Map and directions for Drinking Gourd Latitude Chart
3. Colored pencils

Background:

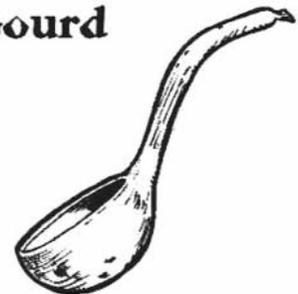
During the era of slavery in the United States, many slaves fled to freedom in the North. In order to reduce the numbers of escaping slaves, some owners kept slaves illiterate and totally ignorant of geography. Some owners even went so far as to try to keep slaves from learning how to tell directions.

Nonetheless, slaves knew perfectly well freedom lay to the north, and they knew how to locate north. They used the North Star, Polaris, to guide their way. The slaves used the simple direction "walk towards the North Star." However, unable to plan a route, they risked walking into impassable or dangerous terrain.

Members of the Underground Railroad were fully aware of the predicament of fleeing slaves. About 1831 the Railroad began to send travelers into the South to secretly teach slaves specific routes they could navigate using Polaris. By the beginning of the Civil War in 1861, well established



The Drinking Gourd



escape routes had been created and about 500 people a year were traveling in the South teaching routes to slaves. Scholars estimate that 60,000 to 100,000 slaves successfully fled to freedom.

Slaves began using coded songs to pass information about routes on to other slaves. One such coded song is called "Follow the Drinking Gourd," and describes an escape route from Alabama and Mississippi.

The song and its translation follows:
**"When the sun comes back and the first quail calls,
 Follow the Drinking Gourd.
 For the old man is awaiting for to carry you to freedom, if you Follow the Drinking Gourd."**

This verse describes winter and spring when the altitude of the sun at noon is higher each day. Quail are migratory birds wintering in the South. The Drinking Gourd is the Big Dipper. The old man is Peg Leg Joe (one of the many men who moved from plantation to plantation spreading the word of the freedom routes).

**"The river bank makes a very good road,
 The dead trees show you the way,
 Left foot, peg foot, traveling on
 Follow the Drinking Gourd."**

This verse taught the slaves to follow the bank of the Tombigbee River north looking for dead trees that were marked with drawings of a left foot and a peg foot. The markings distinguished the Tombigbee from other north-south rivers that flow into it.

**"The river ends between two hills,
 Follow The Drinking Gourd.
 There's another river on the other side,
 Follow the Drinking Gourd."**

These words told the slaves that when they reached the headwaters of the Tombigbee, they were to continue north over the hills until they met another river. Then they were to travel north along the new river which is the Tennessee River. A number of the southern escape routes converged on the Tennessee.

**"Where the great big river meets the little river,
 Follow the Drinking Gourd.
 For the old man is awaiting to carry you to freedom, if you Follow the Drinking Gourd."**

This verse told the slaves the Tennessee joined another river. They were to cross that river (which is the Ohio River), and on the north bank, meet a guide from the Underground Railroad.

CURRICULUM CORNER

Follow the Drinking Gourd (cont.)

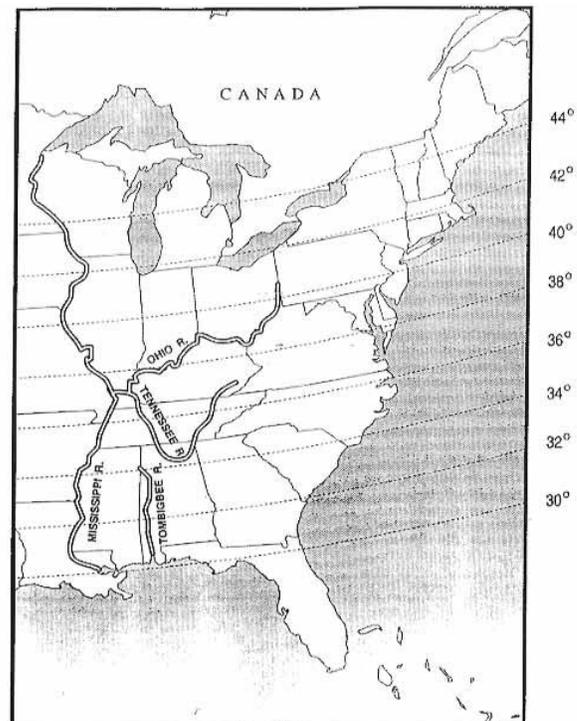
Procedure:

- Once you have explained the idea of the Underground Railroad and what the Drinking Gourd is, students will be instructed to plot one of the courses taken by the slaves on their way to freedom.
 - Halfway up the Tombigbee River
 - (32 degrees N Latitude)
 - Headwaters of the Tombigbee River
 - (34 degrees N Latitude)
 - Crossing the Ohio River from Kentucky to Indiana
 - (38 degrees N Latitude)
 - Near the headwaters of the Ohio River
 - (40 degrees N Latitude)
 - Reaching Canada near Lake Erie
 - (42 degrees N Latitude)
- Starting with the top box on the table, have the students fill in the chart and map using the following latitudes and the directions below.

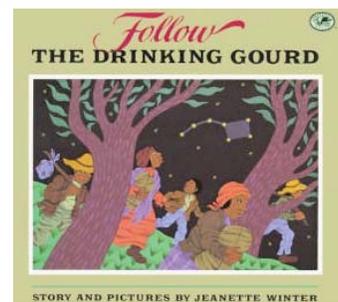
Position	River	Latitude	State or Country
1	Tombigee		
2	Tombigee		
3	Tennessee		
4	Ohio		
5	Ohio		
6	Lake Erie		

Underground Railroad Map -

(Go to website to enlarge and find complete instructions)



- Write in the six latitudes from the Procedure section.
- Color the rivers on the map blue. Trace the states along the dotted lines with a pencil. Label the names of the states. Do not color the states!
- Using the latitude and the name of the river from the above chart, mark positions 1-6 on your map of the United States with an "X" at each position.
- Use your red pencil; connect the "X"es with a line. This is the route for the Underground Railroad.
- Using your U.S. map, find the "X" for position 1. Write the name of the state or country the "X" is in on the chart above. Do the same for 2-6. This will complete the above chart.
- Color the free states and Canada light blue. Color the slave states light gray.





AEO/AEM News and Views



AFA continues to provide outstanding support to Civil Air Patrol and aerospace education. AFA has now given CAP over

\$200,000 in \$250 aerospace grants that have been used to promote aerospace education in CAP squadrons and in the classrooms of America. The next grant cycle is for educators and the deadline for submission of the application is **March 31, 2008**. Go to www.cap.gov/ae for an application.

The Air Force Association also offers 100 supplemental \$250 grants to teachers who are promoting aerospace education in their classrooms. These grants are in addition to the AFA/CAP grants given to our Aerospace Education Members (AEMs) twice a year. This means that AEMs can apply for these additional grants, even those who have already received an AFA/CAP grant. AEMs can apply for two grants in the same year with the possibility of earning a total of \$500. Go to www.afa.org/aef/aid/educator.asp to apply. If you have any questions, please contact jstone@cap.gov or jmontgomery@cap.gov.



NASA Smart Skies™ Distance-Rate-Time Investigations in Air Traffic Control - Great Resource

NASA Smart Skies™ offers two sets of free, standards-based, classroom-tested activities for teaching math to middle school students using real-life air traffic control (ATC) problems.

"FlyBy Math™" includes a hands-on experiment and six different math methods to examine two airplanes flying on intersecting routes.

"LineUp With Math™" features an on-line interactive ATC simulator. Students act as controllers to "line up" several planes, with proper spacing, at an intersection of jet routes. Workbooks provide the underlying mathematics to help students optimize their solutions.

For more information, visit: www.smartskies.nasa.gov. A student website, www.atcsim.nasa.gov, provides direct access to the simulator. The FAA supports this education outreach: www.faa.gov/education.



Satellite Tool Kit (STK) For the Classroom

Analytical Graphics, Inc. (AGI) is a great partner to CAP. One of their many products is STK, which is the leading off-the-shelf satellite software package that supports satellite systems from mission planning through operations. Basic applications include tracking satellites and determining locations.

AGI has given CAP hundreds of free copies of STK. We are offering these free disks to our teacher members for educational purposes in the classroom. To receive a disk to excite your students with the wonders of space and satellites, please email jmontgomery@cap.gov. You will be provided instructions and licensing information. For more information on STK, go to www.agi.com.

Graduate Credit Opportunity

CAP, in partnership with Adams State College in Alamosa, Colorado, has developed another wonderful opportunity for our teacher members. Our aviation and space hands-on activities program called the Aerospace Education Excellence (AEX) Award Program has now been divided into six separate courses at Adams State. You can receive up to six hours of graduate credit if you complete all the different AEX courses. For further information on course content and how to go about receiving this credit, go to our website at www.cap.gov/ae or email jmontgomery@cap.gov or jstone@cap.gov.

2007 - The Year in Space

From 10 to one, the Planetary Times counts down the most fascinating space news from the past year.

- 10) NASA Opens Applications for New Astronaut Class
- 9) New NASA Satellite Images Show Vast Size of California Wildfires
- 8) Astronomers Claim to Find the Most Distant Known Galaxies

- 7) Cassini Spacecraft Images Seas on Saturn's Moon Titan
- 6) Success of Missions STS-120, STS-118, STS-117
- 5) Mars Rover Spirit Unearths Surprise Evidence of Wetter Past
- 4) Delivery of the Columbus Module
- 3) "Hot Jupiters" Discovered
- 2) Brightest Supernova Recorded
- 1) Astronomers Find First Earth-like Planet in Habitable Zone

For more information on these stories, go to <http://news.space-explorers.com/?v=5&i=19&a=1>



The accomplishments should be great in 2008!



REGION TO REGION

NORTHEAST REGION

March 27-30

NSTA National Conference will be held in Boston, Massachusetts.

www.nsta.org

MIDDLE EAST REGION

April 12-13

One-day Regional Teaching Exchanges from the Center for Astronomy Education. Improving the College Introductory Astronomy Survey Course for Non-Science Majors Through Active Learning: A Tier I (Introductory) Workshop will be held at Guilford Technical Community College.

<http://astronomy101.jpl.nasa.gov/workshops/index.cfm>

GREAT LAKES REGION

April 12

NASA Center for Astronomy Education Great Lakes Regional Teaching Exchange will be held at Western Michigan University.

<http://astronomy101.jpl.nasa.gov/workshops/index.cfm>

SOUTHEAST REGION

No items for this issue.

NORTH CENTRAL REGION

No items for this issue.



SOUTHWEST REGION

January 31 - February 2

14th Annual Space Exploration Educators Conference will be held at Space Center Houston in Houston, Texas.

<http://www.spacecenter.org/TeachersSEEC.html>

ROCKY MOUNTAIN REGION

February 26-28

3rd Space Exploration Conference and Exhibit will take place at the Colorado Convention Center in Denver, Colorado. Special Education Alley for Educators!

www.aiaa.org

Engineers Week
<http://www.eweek.org/>

PACIFIC REGION

March 1-2

Advanced Strategies for Creating a Learner-Centered Introductory College Astronomy Course: A Tier II (Advanced) Workshop will be held at Santiago Canyon College in Orange, California.

<http://astronomy101.jpl.nasa.gov/workshops/index.cfm>

March 14-15

Improving the College Introductory Astronomy Survey Course for Non-Science Majors Through Active Learning: A Tier I (Introductory) Workshop will be held at University of California at Berkeley in Berkeley, California.

<http://astronomy101.jpl.nasa.gov/workshops/index.cfm>

Special Events

NASA Great Moonbuggy Race applications due February 18.

<http://moonbuggy.msfc.nasa.gov/index.html>

NASA Explorer Schools project applications due January 31.

<http://exploreschools.nasa.gov/portal/site/nas>

Registration for the 2007-2008 eCYBERMISSION science, math and technology competition for 6th-9th grade students closes January 11 at 11:59 p.m. EST. More than \$1 million in U.S. EE Savings Bonds will be awarded in June to students.
<http://www.ecybermission.com>

