# seec

19th Annual
Space Exploration Educators Conference

Space Center Houston

February 7-9, 2013

# Session descriptions

## Thursday

# Thursday 2/07/2013

| | |
|---|---|
| 7:15am | Check-in Begins |
| 7:30am | SEEC 101 (recommended for all new attendees to SEEC) |
| 8:00 am | Welcome Address |
| | and Key Note (TBA) |
| 10:00am-11:30am | First Session |
| 11:30am-12:30pm | Lunch (Buffet lunch in Astronaut Gallery) |
| 12:45pm-2:15pm | Second Session |
| 2:45pm-4:15pm | Third Session |
| 4:45 pm | Dismiss (Bus Run Begins) |
| 5:30 pm | Those staying for Epicurean will watch a film in Northrop Grumman Theater. |
| 6:30pm-9:30pm | "A Taste of Space" Epicurean (Bus will run hotel loops) |

Sessions will take place at Space Center Houston, JSC Gilruth and other JSC areas **8 hours CPE Credit*

## Session Selection

Selecting your individual breakout sessions is easy! Just read through this conference booklet to see the selections for each time slot. Then, use the "Organize Your Sessions" form on page 10 to organize your sessions. Finally, go online and make your session selections at www.spacecenter.org/TeachersSEEC.html. Sessions that are full will not appear. It's that easy! **Just be sure to move quickly as some sessions fill up fast.** Breakout sessions include NASA tours as well as the hands-on sessions. Tours fill up especially fast, so please plan accordingly. **(All tours require closed-toe shoes)**

If a session is full, don't worry. Check with the Conference Help Table when you arrive to see if there are openings or watch the "swap" board for the session ticket.

If you have any questions, please contact us by e-mail at **SEEC@spacecenter.org**.

## Johnson Space Center Tours:

### Aircraft Operations Tour
A plane that creates free-fall, high altitude research aircraft, T-38s, and other NASA aircraft… Johnson Space Center's Aircraft Operations has it all! Hear how aeronautics is a part of the future of space exploration.

### Mission Control Tour
Once the manned spacecraft have launched, Houston Mission Control takes over. Visit this secure location and see the rooms where history happened. You will be able to see both Historic Mission Control and ISS Control rooms.

### Neutral Buoyancy Lab
Take a trip to the largest pool in the world where astronauts practice for their spacewalks—the NBL. This facility is the
underwater training facility for the astronauts and your chance to see state-of-the-art training—the next best thing to space!

### Space Vehicle Mock-up Facility (SVMF)
Explore the training grounds for the astronauts. See full size mock-ups of the Space Station and Orion. It also includes several other small part task trainers and mockups.

### Energy Systems Test Laboratory (Pyrotechnics)
Visit the area that supports testing of pyrotechnically actuated devices. The facility includes explosive loading and handling room, and pyrotechnic storage in earth covered bunkers.
Sophisticated equipment, such as the laser interferometer for measuring speeds of up to 10,000 m/s is available in the B352 complement of instrumentation.

### Precision Air Bearing Floor (PABF)
The Precision Air Bearing Floor (PABF) is used for extravehicular activity (EVA) training, Intravehicular activity (IVA) training, and mass handling training. It is primarily a human factors training facility for microgravity operations. A major use is to train the astronauts in the importance of moving/doing things slowly in microgravity. It can demonstrate the validity of the three Newton's Laws of motion in microgravity.

### Habitat Demonstration Unit & Morhpeus
Tour NASA's conceptual, human- centered design studio. The HDC creates opportunities for design to solve the unique
challenges of living and working in extreme environments, providing advanced concepts to the NASA community using Human Factors as a design tool to develop products, systems, and architecture.

## IMPORTANT NOTICE!!!
## PLEASE READ CAREFULLY

- Your visit to the Johnson Space Center (JSC) is a special event. You will be entering working facilities subject to strict safety and security policies. Please follow the direction of your host escort at all times.

- It is essential that all members of the group stay together and not venture from their JSC escort. Wandering into restricted areas constitutes a security violation and could result in the termination of your visit.

- Your visit will require walking and standing for extended periods and may involve climbing several flights of stairs. Guests should wear comfortable, flat, fully-enclosed shoes **(no high-heels, sandals, flip-flops, slides, mules, Crocs, etc.)** during their visit. We also recommend that guests wear slacks (instead of shorts or skirts) as an additional safety precaution.

- Cameras are welcome in all facilities unless instructed otherwise. However, photography of individuals is discouraged without permission.

**ATTENTION ALL NON-U.S. CITIZENS**

If you are not a U.S. citizen, you must fill out a JSC Security Form in order to attend the NASA Tours. Please go to the SEEC website for more information and to download the form. http://www.spacecenter.org/TeachersSEEC.html

**10:00am—11:30 am**

### Airplanes for Preschool and Kindergarten

*Karla J. Wright, MTSU Aerospace Department*
*Phyl Taylor, MTSU Aerospace Department*

Airplanes are everywhere and even the very youngest children can learn the basics of aerodynamics. In this session you will learn how to teach your little ones about the forces of flight and the parts of an airplane using Science, Technology and Math - with some Language Arts and Social Studies thrown in! Come fly with us. Take home activities to use in your classroom Monday.
*Grades: K-2*
*Subjects: Science, Technology, Language Arts, Math, Social Studies*

### Blue Marble Matches: Using Earth for Planetary Comparison

*Paige V. Graff, Jacobs ESCG @ NASA JSC*

Join this hands-on, inquiry-based session and build a planetary comparison feature wall to learn about geologic processes that have sculpted the surface of Earth and other planets. Gain experience creating questions that will help facilitate student investigation projects allowing teams to request astronaut imagery from the ISS. NASA resources/ handouts provided.
*Grades: 6-12 Subject: Science*

### Classifying Climate—Weather you Knew or Not!

*Lynne Hehr, Arkansas NASA ERC/CMASE*
*John Hehr, Univ of Arkansas, Geoscience*

One of the Earth's most important global connectors is climate. Join this session to explore the Koppen Climatic Classification from plant distribution/ecotone boundaries to temperature/precipitation categories that define climatic regions. Learn how to classify your region and compare to other regions around the world. Ideas/methods for simple data collection provided.
*Grades: 3-12 Subject: Science*

### The Challenges of Getting to Mars-Launch, Entry, Descent, Landing

*Angelo Casaburri, NASA Aerospace Education Services*

You will design a variety of paper rockets and launch them with an air pressure stomp launcher. You'll construct a Mars Lander Capsule of paper. Then you'll design, build, and test a newspaper parachute for the capsule and a sky crane delivery system.
*Grades: 6-8 Subjects: Science, Math*

### Have a Blast in your Classroom

*Daniel W. Bateman, Spaceport Sheboygan*

Build a rocket launcher for your classroom for less than $30! Teachers will learn how to build their own rocket launcher using the NASA Rockets Guide with a twist. Work through building the launcher and rockets and launch them into space. Teachers will design their own fins and see how the placement and shape affects the flight of the rocket.
*Grades: K-12 Subjects: Science, Math*

### ISS Complete! A Global Cooperative Achievement

*Julie Muffler, NASA Aerospace Education Services Project*
*Carla Rosenberg, NASA Aerospace Education Services Project*

As members of international teams, participants work together to assemble the ISS. Three NASA guides are explored as the session begins with a mock summit, continues through the assembly simulation, and concludes with hands-on STEM activity investigations: getting to orbit, building the truss, operating a robotic arm, and monitoring Earth from space. Resource DVD provided.
*Grades: 3-5*
*Subjects:: Science, Math, Technology, Physical Education*

### Juno the Way to Jupiter

*Jayma Koval, NASA-JPL Solar System Ambassador*

The Juno spacecraft launched August 2011 and is en route to Jupiter. Come learn how you can incorporate this mission and hands-on activities of waves and light into your electromagnetic spectrum lessons. Give students the space exploration content they are hungry for. NASA giveaways are included.
*Grades: 6-12 Subject: Science*

### Light and Color

*David Temple, Longview High School*
*Jennifer Smith, Longview High School*

An interactive workshop that will explore light and color. Participants will use lasers and hand held spectrometers to examine emission spectrums, as well as investigating why the sky is blue and the reason we use a red, orange or yellow crayon when we draw the sun.
*Grades: 9-12 Subjects: Science and Technology*

**L.U.N.A.R. Eggs-Prize (Landing Unique Navigable Astronaut-Controlled Rovers)**
*Amy Bartlett, NASA MESSENGER Educator Fellow*
*Marion Gilmore, Civil Air Patrol*

*Are you up for a challenge…a lunar landing challenge? Learn the history of payload protection and be the first to design a lunar lander that will descend to the moon and deploy a rover* and astronaut safely. Groups will apply STEM practices and be judged on budget, safety, and workmanship.
*Grades: 6-8*
*Subjects: Science, Technology, Math, Social Studies, History*

**MoonKAM**
*Leesa Hubbard, Sally Ride Science*
*Dr. Karen Flammer, Sally Ride Science*

During the GRAIL mission, students used the MoonKAM cameras to take their own images of the moon. Those images are now available, along with many activities and lessons for teachers at www.moonkam.ucsd.edu. Come experience some of these fun lessons and see how you might incorporate them in your classroom, across the curriculum!
*Grades: 3-8*
*Subjects: Science, Math, Technology, Language Arts, Math, Social Studies, History*

**NASA's Digital Learning Network Presents "Roving on Mars with Curiosity"**
*Lyle Tavernier , NASA JPL Digital Learning Network*
*Scott Anderson, NASA MSFC Digital Learning Network*
*Patricia Moore , NASA JSC Digital Learning Network*

Enhance your lessons with FREE live connections to NASA's Digital Learning Network (DLN). Give your students the amazing opportunity to speak LIVE with NASA engineers, scientists and education specialists! Session participants will travel onsite to the Johnson Space Center DLN studios to connect live with NASA Education specialists at the Jet Propulsion Laboratory and Marshall Space Flight Center to learn how students in grades 4-12 can participate with the DLN in a brand new lesson, Roving on Mars with Curiosity.
*Grades: 3-12* *Subjects: Science, Technology*

**Podcasting for Education**
*Suzanne Foxworth, Solar System Educator/TSGC*
*Michael Myers, LiftOff TSGC*

This session will be hands on with participants creating mp3's and mp4's. Participants will gain knowledge of audio and video casting for their classrooms, and will receive the tools to be successful. Although, this will be a beginners level course these tools can easily be used to create impressive projects.
*Grades: K-12* *Subjects: Science, Technology, Math*

**Teaching Inquiry With Solar Science**
*Lauren Parker, NASA Heliophysics Educator Ambassador*
*Jayma Koval , NASA Heliophysics Educator Ambassador*

Come experience how you can introduce your students to the concept of inquiry through NASA space science. Participants will use data based on NASA missions to give students an
introduction to how scientists work. NASA giveaways included!
*Grades: 6-8* *Subject: Technology*

**Rovers: Pathways to Discovery**
*Daniel J. Loewen, Fresno County Office of Education*
*Veronica Seyl, NASA Johnson Space Center*

Rovers: Pathways to Discovery will challenge your math ematical ability, engineering creative, and team work. Collaborate with colleagues across the curriculum and across the nation. Discover the development and deployment of robotic advanced scouts on land, in the sea and air. Harness the creative power within a multidisciplinary professional learning community.
*Grades: 6-12*
*Subjects: Science, Technology, Language Arts, Math, History*

**Tours:**
Mission Control Tour
Neutral Buoyancy Lab
Aircraft Operations Tour

***Tour descriptions listed on page 3***

## Thursday 12:45pm–2:15pm

### Come Fly with Civil Air Patrol! (Double Session)

*Susan Mallett, Civil Air Patrol*
*Debbie Dahl, Civil Air Patrol*

Fly over Houston in Civil Air Patrol airplanes, weather permitting. Take aerial photos, learn about flight, get air-field tour, and receive free K-12 STEM materials! Must be a CAP teacher member to fly. Join at www.capmembers.com/joinaem . Use Coupon Code SEEC for 1/2 price ($17.50). Lots of free membership benefits! Can also fly free back at your local airport! NOTE: This is a double session!

*Grades: K-12* *Subjects: Science, Technology, Math*

### Don't Let the Moon Phase You!

*Lynne F. Zielinski, Yerkes Observatory*
*Margie Corp, Orenic Intermediate School*

Go beyond traditional moon phase activities. Tell time using the Moon Dance. A moon collar and wheel reveal more than orbital relationships. Engage using astrophotography and international collaboration to teach journaling, mapping, graphing and celestial coordinate system skills. There is more to exploring moon phases than meets the eye.

*Grades: 6-12* *Subjects: Science, Technology, Math*

### How Big is It?

*Bryan DeBates, Space Foundation*

This session will explore the various relationships of size and scale in the solar system. Children often have a difficult time understanding scale when it comes to the distances and sizes of the solar system. We will complete several hands-on activities that will help students with this concept.

*Grades: K-8*
*Subjects: Science, Math, Language Arts*

### LEGO Bricks in Space! Building and Engineering in Space

*Angelo Casaburri, Aerospace Education Service Project*

Test your creativity and learn how micro-gravity affects "LEGO Bricks in Space." Build and test simple machines with LEGO bricks and watch videos of the astronauts on the International Space Station building and experimenting with the same LEGO brick machines. Compare your results on Earth with astronauts in orbit.

*Grades: 3-5* *Subjects: Science, Technology, Math*

### Lift-Off To Learning!

*Colleen Howard, Mesa Public Schools*
*Diana LeSueur, Mesa Public Schools*

Soar into the future with inquiry-based flight / space activities and strategies that will energize student learning. Teachers will participate in hands-on STEM projects using collaboration, communication and critical thinking. Go boldly back to the classroom and prepare students for Lift-Off into the 21st Century!

*Grades: 3-8* *Subjects: Cross Curriculum*

### Looking For Life

***Eric Colchin, Johnson High School***
***Laura Klevin, Johnson High School***

Learn how to bring space exploration into your biology class through the lens of astrobiology, and the search for extraterrestrial biology. In this session you will perform activities that will engross your students in the possibilities of life outside of our terrestrial boundaries. This session will help your students become enthusiastic about the search for "Life Out There", while learning about the definition of life.

***Grades: 9-12*** ***Subjects: Science***

### NASA's Educator Resource Center and You!

*Elaine Lapka, NASA Educator Resource Center*

ERC staff is your guide to NASA educational programs and standards-aligned K-18 teaching resources online, on paper, and on disc. Bring your laptop to this session to explore free online lessons, activities, simulations, and inter-actives for all disciplines, emphasizing STEM.

*Grades: K-12* *Subjects: Cross Curriculum*

### New NASA Education Space Life Sciences Website

*Elicia "Dynae" Fullwood*
*Teaching From Space, NASA JSC*

Come learn about classroom materials that support teaching space life science topics! In this session we will explore the newly developed NASA Education Space Life Sciences website that was designed to serve as the central location for education content, resources, opportunities, and updates on research conducted on the International space Station in the life science areas. See what NASA has to help you teach about life in the space environment with topics focused on plants, animals, habitats, food & nutrition, the human body, and the potential for life beyond Earth.

*Grades: K-12* *Subject: Science*

**"Out of this World Learning" for the Younger Space Scientist**

*Deborah A. Ericsson, Sheboygan Area School District*
*Jeannine Roseberry, Sheboygan Area School District*

Let's get younger children excited about space exploration! Educators will receive complete ready to use units of space study and valuable resources designed for K-12 students. We'll look at space travel, big space ideas, and how to create a simulated Mars settlement. A hands-on activity will give each participant a "Make and Take" project.
*Grades: K-2 Subjects: Cross Curriculum*

**Project Based Learning with the NASA HUNCH Program**

*Florence Gold, NASA HUNCH Program*
*Stacy Hale, NASA HUNCH Program*

This session involves hands-on operation of an actual experiment that was designed, fabricated, and flown on the Zero Gravity plane by high school students. Learn how you can join the HUNCH Microgravity Program for a once in a lifetime experience!
*Grades: 6-12*
*Subjects: Science, Technology, Language Arts, Math, Social Studies, Physical Education and Health, History*

**Rocks from Space in Your Classroom – Yes You Can! (Double Session)**

*Jaclyn Allen, Science Education Specialist, ESCG*

Get the Lunar Sample Education rock samples in your hands and experience some easy activities and content to help your students explore the major processes that formed our solar system. Participants will receive a security briefing so they may borrow the samples for use in their classrooms or with public events. ( for those who want to also get certified in Meteorite samples this session will be continued from 4:45pm—5:45 pm at SCH)
*Grades: K-12 Subjects: Science*

**Space-roo: Using "What if" question to facilitate critical thinking**

*Marie Kavanagh, University of Southern Queensland Australia*
*Natasha Levak, University of Southern Queensland Australia*
*Anita Williamson, University of Southern Queensland Australia*

The focus of this presentation is to inform participants about using "What if?" questions to facilitate critical thinking in their classrooms. Participants will analyze environments on Earth and in Space and create a habitat on the moon for Space-roo to visit. They will then create a Space-roo transporter using pulleys.
*Grades: 3-5 Subject: Science*

**Space Tools**

*Heather Paul, NASA Crew and Thermal Systems Division Strategic Communications Lead*

Can we build it? Yes We Can! Learn how tools have been used during extravehicular activities throughout the space program. Participants will also learn how to request engineers from our fantastic team to present to their students and inspire the next generation of space explorers. Presentation with speaker notes will be available for session attendees.
*Grades: 6-12 Subjects: Science Technology*

**Start Your Own Space Program**

*Brian Krauklis, Katy ISD*

Ever wanted to start a space program at your school but weren't sure how? Since 1995, the Nottingham Country Space Program has produced multiple exciting 24 hour space simulations. Join us as we show you how easily you too can send your astronauts on a journey they'll never forget!
*Grades: K-12 Subjects: Science, Technology*

**TechNOWlogy**

*Christi Lesikar, Dallas ISD*
*Carol Hordge, Education Consultant*

Finally--a session you can use when SEEC is over…home, laundry, dinner…UGH! The alarm. It's Monday morning…not to worry. Your TechNOWlogy has you ready for 1st period. Using Edmodo, Prezi, Wikis, and Blogs, you can manage your classroom from a payload bay to Mars. Participants will need to bring a laptop or tablet.
*Grades: 6-12 Subjects: Science, Technology*

**Tours:**

**Space Vehicle Mock-up Facility (SVMF)**
**Energy Systems Test Laboratory (Pyrotechnics)**
**Habitat Demonstration Unit & Morhpeus**
**Precision Air Bearing Floor (PABF)**

***Tour descriptions listed on page 3***

## Thursday 2:45-4:15

**Airborne Robotics "Wild Blue Yonder Rush"**
*Tracie Adams, Waldron Middle School*

Airborne Robotics! Participants will be using hands-on activities to take students to new heights! Use flight simulators, computers, and remote controlled planes to complete missions!
*Grades: 6-12*
*Subjects: Science, Technology, Math, History*

**Aerospace Connections in Education: Be an ACE Teacher!**
*Marian Gilmore, Civil Air Patrol*
*Judy Stone, Civil Air Patrol*

Create a high-interest, high-achieving, motivated ace classroom with Civil Air Patrol's Aerospace Connections in Education (ACE) Program for grades K-6! You'll receive 9 aerospace lesson plans, a NASA aeronautics CD, a set of solar system cards, and you'll learn how to connect aerospace to your grade's curriculum. We'll make flying Fun Shuttles and Geobats! Door prizes!
*Grades: K-8*
*Subjects: Science, Technology, Language Arts, Math, Physical Education and Health, Fine Arts, Social Studies, History*

**Astronaut Rescue**
*Michael Myers, Liftoff Educator & SEEC Alumni*
*Susan Foxworth, Solar System Educator*

Teachers will engage in a rescue mission of a stranded space shuttle where they will use their critical thinking skills to eliminate and discover possible locations for the shuttle. This lesson will use Skype to simulate communication between a space station and mission control. CD's with needed material is provided.
*Grades: 3-8* *Subjects: Science, Technology, Math*

**Authentic Multi-Wavelength Astronomy – Yerkes, SOFIA and NITARP Programs**
*Margaret (Peggy) Piper, Yerkes Observatory/ Lincoln Way High School*
*Jacqueline Barge, Yerkes Observatory/ Walter Payton College Prep High School*

Travel the electromagnetic spectrum and find your way to NASA Authentic Research opportunities including SOFIA and NITARP. Learn the basics of multi-wavelength radiation, assemble mini-filters to view astronomical images, mix glow gels to create star colors, "see" infrared light and receive materials, links and support contacts. Active Astronomy Kit Raffle.
*Grades: 6-12* *Subjects: Science, Technology, Math*

**Blast off with Energy Through the 5E Instructional Model**
*Sarah Coker, Goldthwaite Elementary*
*Amy Hall, Goldthwaite Elementary*

*Launch your students into critical thinking through these hands-on, inquiry-based 5E model lessons! You will explore ways to improve science instruction by grabbing the students' interest with a hands-on engaging activity. You will receive three*
*complete lesson cycles: (sound) make some noise with your own sonic blaster, (light) see light differently by making a kaleidoscope, and (heat) explore heat by growing your own bubbles!*
*Grades: K-5*
*Subjects: Science, Language Arts, Fine Arts*

**Digital Ink**
*Javier Montiel, Velasco Elementary BISD*

NASA enthusiasts, bring your own laptop computer with Power Point and discover an exciting way to create and customize space related, personal, digital, thematic units with resources you might already have in your classroom! Engage your
students by making fun and interactive learning experiences, based on digital interactive boards. Dabble in everything from graphic design and even learn how to make your own document camera and electronic board. Come fly high with space inspired ingenuity...the limit is your unique imagination!
*Grades: K-12*
*Subjects: Science, Technology, Language, Math*

**EarthKAM: Taking pictures of the Earth from space**
*Leesa Hubbard, Sally Ride Science*
*Julie Miller, Olathe Public Schools*

Learn how to teach your students to take pictures of the Earth from the ISS with NASA/EarthKAM! While participating in
engaging, hands-on activities teachers will learn how EarthKAM engages students in understanding geography, maps and Earth's surface geology. They will use EarthKAM images to investigate features such as urban areas, water sheds, glaciers and river deltas.
*Grades: 6-12*
*Subjects: Science, Technology, Geography*

**Examining the Effects of Spaceflight on the Skeletal System**
*Alissa Keil, Oklahoma State University/ TAMU*
*Teresa Sindlelar, Oklahoma State University*

How does bone formation and calcium metabolism change in microgravity? We will focus on the effects fo spaceflight on human Physiology. The activities for this session will focus on bone growth characteristics in our skeletal sustem and the important chemicals that participate in bone metabolism.
*Grades: 9-12*
*Subject: Science*

**Science Fiction/ Space Technology: A Tool for STEM Learning**
*Jerry Woodfill, NASA JSC Employee*

Compare Science Fiction to Space Technology to engage your students with a WOW factor. This is sure to involve your class in all facets of STEM learning. Popular "sci-fi" media, models, and art are compared to NASA vehicles. The lessons will end classroom boredom with a 40+ page booklet provided to
attendees.
*Grades: K-12*
*Subjects: Science, Technology, Math*

**Structure of Earth's Atmosphere**
*Elias Molen, Space Foundation*

Participants will learn the uncommon properties and composition of the Earth's atmosphere. A fun, unique hands-on model will be created that can be performed for any number of subjects and classrooms. The activities are perfectly suited for modification to all grades and programs taught!
*Grades: 6-12*
*Subjects: Science, Social Studies, History*

**Up, Up & Away with Astrobiology and Scientific Ballooning**
*Sharon Eggleston, Maine Space Grant Consortium*
*Diane Bowen, Maine Space Grant Consortium*

Join us and travel to the edge of space to see what harsh conditions can support life. Learn how to engage your students in authentic scientific research experiences. This session will challenge students to look beyond Earth's boundaries to seek answers to questions 'Are we alone? Does life exist elsewhere in our universe, What is life, What is an extremophile?'
*Grades: 9-12*
*Subjects: Science, Technology, Math, Engineering*

**A View of the Earth from Above**
*Dorinda Risenhoover, OK NASA Space Grant Consortium*
*Tayler Satterwhite, OK NASA Space Grant Consortium*

Come and soar through hands-on STEM-based remote sensing/satellite imagery cross-curricular activities! We will create 3-D models of topographical maps, analyze satellite images, explore remote sensing based literature and videos, use a Global Positioning System to "dig" up the past, and much more! A GPS will be given away!
*Grades: 3-8*
*Subjects: Science, Technology, Language Arts, Math, Social Studies, History*

Tours:

Mission Control Tour
Neutral Buoyancy Lab
Aircraft Operations Tour

***Tour descriptions listed on page 3***

# Organize Your Sessions

**10:00 am– 11:30 am**

- ❑ Airplanes for Preschool and Kindergarten
- ❑ Blue Marble Matches: Using Earth for Planetary Comparison
- ❑ Classifying Climate- Weather you Knew or Not!
- ❑ The Challenges of Getting to Mars-Launch, Entry, Descent, Landing
- ❑ Have a Blast in your Classroom
- ❑ ISS Complete! A Global Cooperative Achievement
- ❑ Juno the Way to Jupiter
- ❑ Light and Color
- ❑ LUNAR Eggs Prize (Landing Unique Navigable Astronaut-Controlled Rovers)
- ❑ MoonKAM
- ❑ NASA's Digital Learning Network Presents "Roving on Mars with Curiosity"
- ❑ Podcasting for Education
- ❑ Teaching Inquiry With Solar Science
- ❑ Rovers: Pathways to Discovery

**TOURS**

- ❑ Aircraft Operations Tour
- ❑ Mission Control Tour
- ❑ Neutral Buoyancy Lab Tour

**12:45 pm– 2:15 pm**

- ❑ Come Fly with Civil Air Patrol! (Double Session)
- ❑ Don't Let the Moon Phase You!
- ❑ How Big is It?
- ❑ LEGO Bricks in Space! Building and Engineering in Space
- ❑ Lift-Off To Learning!
- ❑ Looking for Life!
- ❑ NASA's Educator Resource Center and You!
- ❑ New NASA Education Space Life Sciences Website
- ❑ "Out of this World Learning" for the Younger Space Scientist
- ❑ Project Based Learning with the NASA HUNCH Program
- ❑ Rocks from Space in Your Classroom – Yes You Can! (Double session)
- ❑ Space-roo: Using "What if" question to facilitate critical thinking
- ❑ Space Tools
- ❑ Start Your Own Space Program
- ❑ TechNOWlogy
- ❑ Space Vehicle Mock-Up Facility Tour
- ❑ Energy Systems Test Laboratory (Pyrotechnics) Tour
- ❑ PABF The Precision Air Bearing Floor Tour
- ❑ Habitat Demonstration Unit & Morpheus Tour

**2:45 pm - 4:15 pm**

- ❑ Airborne Robotics "Wild Blue Yonder Rush"
- ❑ Aerospace Connections in Education: Be an ACE Teacher!
- ❑ Astronaut Rescue
- ❑ Authentic Multi-Wavelength Astronomy – Yerkes, SOFIA and NITARP Programs
- ❑ Blast off with Energy Through the 5E Instructional Model
- ❑ Come Fly with Civil Air Patrol! (continued)
- ❑ Digital Ink
- ❑ EarthKAM: Taking pictures of the Earth from space
- ❑ Examining the Effects of Spaceflight on the Skeletal System
- ❑ Rocks from Space in Your Classroom – Yes You Can! (continued)
- ❑ Science Fiction/ Space Technology: A Tool for STEM Learning
- ❑ Structure of Earth's Atmosphere
- ❑ Up, Up & Away with Astrobiology and Scientific Ballooning
- ❑ A View of the Earth from Above

**Tours**

- ❑ Aircraft Operations Tour
- ❑ Mission Control Tour
- ❑ Neutral Buoyancy Lab Tour

**Join the SEEC Facebook group:**
https://www.facebook.com/groups/SEECATSCH/