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# Van Allen Probes Education and Public Outreach

February 27, 2013

**Space Department Education and Public Outreach**

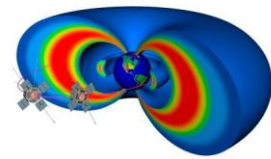
*Alexandra Matiella Novak*

*Dawn Turney*

*Linda Butler*



# Overview



## 1. Outcomes of EPO Launch Activities

## 2. Resources on Scientist Involvement with EPO

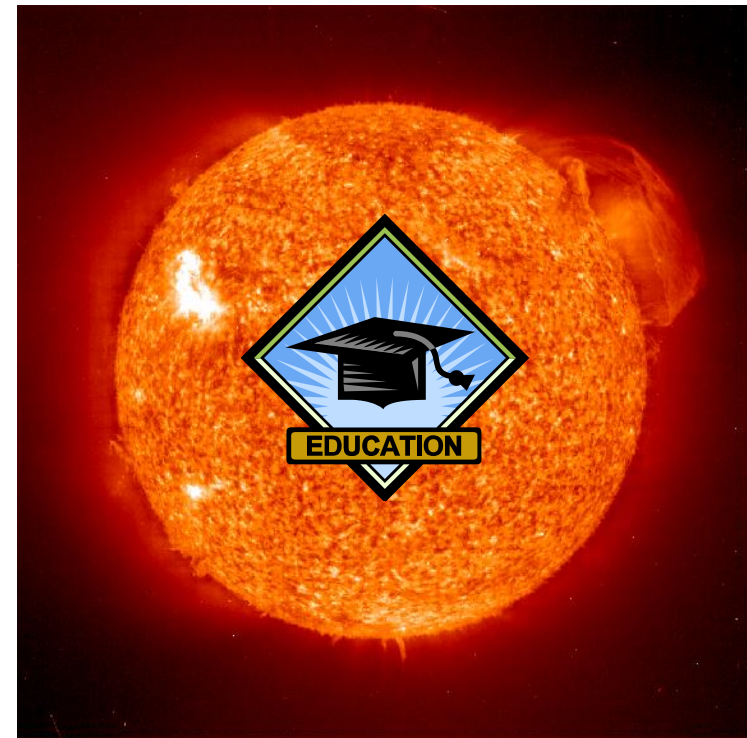
- What are the Similarities between Science Research and Science Education Reform?
- Improving Science Education: The Role of Scientists
- A brief update on the development of the Next Generation Science Standards with links for more information.

## 3. Upcoming EPO Activities

- Pre-service Teacher Workshop
- FY13 EPO Plans for Instrument Teams: Opportunities to Partner

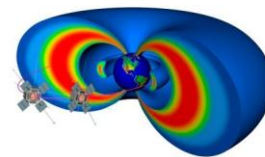
## 4. 3-minute Survey

## 5. Instrument Teams' EPO Reports for FY 12





# Outcomes of EPO Launch Activities July 31-August 25, 2012



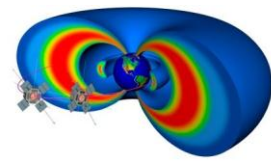
## ***Formal Education – approx. 2,560***

- ***Educator Workshop – 31 educators ,21 States***
- ***Distance Learning Network (DLN) – 60 students & 2 teachers***
- ***High schools – 575 students & 15 teachers***
- ***Middle schools – 250 students & 12 teachers***
- ***Elementary schools – 500 students & 11 teachers***
- ***INSPIRE Un-Conference at KSC – 70 students & parents***
- ***Educator Resource Center at KSC – apx 1,000 educators***





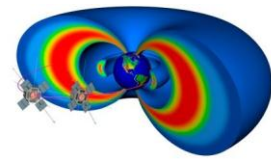
# Outcomes of EPO Launch Activities July 31-August 25, 2012



## ***Informal Education – over 16,000 during launch week***

- ***Four RBSP Exhibits throughout KSC Visitors Complex***
- ***Main RBSP Exhibit in IMAX Theater with 5 hands-on activity stations***
  - ***Direct interactions and materials passed out at IMAX Exhibit – approx. 4,000***
- ***RBSP Exhibit and video at LC 39 Tour Stop***
- ***Interactive kiosk in Exploration Space***
- ***Twelve Astronaut Encounter Auditorium Briefings – approx. 100 attendees***
- ***Museum Alliance Pre-launch Training – 25 informal educators***
- ***Public Lecture at Brevard County Planetarium***





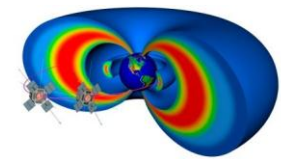
# Science Education – Some Resources

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- **What Are the Similarities between Scientific Research and Science Reform?**
  - Discussion on cultural differences between scientists and K-12 educators;
  - Areas of common ground that can be used in partnerships;
  - **Table 1.** Comparison of Practicing Science vs. Teaching Science.
- **Improving Science Education: The Role of Scientists**
  - At the college level, faculty should consider developing collaborations with faculty in their school/department of education;
  - Faculty in four-year colleges and universities should develop teaching and research liaisons with faculty in near-by, two-year colleges;
    - Two-year faculty have strategies for engaging underrepresented groups.
  - **Figure 1.** A Sampling of Roles for Scientists in Education.
- **Developing Next Generation Science Standards**
  - It has been 15 years since science standards have been reviewed;
  - Second public draft was released January 8 for public comments, now being revised based on those comments, completed in **March 2013**.



# The Next Generation Science Standards



<http://www.nextgenscience.org/>

The screenshot shows the website's header with the logo, navigation links (News, FAQ, Contact), a search bar, and an email sign-up box. Below the header is a main navigation bar with links for HOME, ABOUT THE DEVELOPMENT, WHY SCIENCE STANDARDS?, NEXT GENERATION SCIENCE STANDARDS, and IMPLEMENTATION. The main content area features a large banner image of a student in a lab with the text "Add Your Voice of Support". Below this is a carousel with 9 items; item 7 is highlighted with a red box and labeled "CURRENT PHASE" with the text "The standards are being revised based on your feedback." and a link to "Learn more about the standards development process". Below the carousel are three columns: "About NGSS" with a paragraph about the standards development process, "Latest News" with three news items, and "Resources" with a video thumbnail and the text "Watch a webinar about the NGSS".

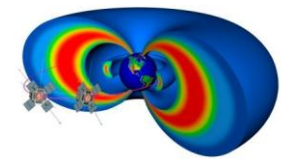
**Current Phase**

Contact Us | Press | Site Map

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# The Next Generation Science Standards



<http://www.nextgenscience.org/>

News | FAQ | Contact

**NEXT GENERATION SCIENCE STANDARDS**  
For States, By States

SEARCH [input] [button]

SIGN UP TODAY FOR EMAIL UPDATES [input] [button]

HOME ABOUT THE DEVELOPMENT **WHY SCIENCE STANDARDS?** NEXT GENERATION SCIENCE STANDARDS IMPLEMENTATION

**Add Your Voice of Support**

CURRENT PHASE

The standards are being revised based on your feedback.

Learn more about the standards development process

1 2 3 4 5 6 7 8 9

**About NGSS**

*Next Generation Science Standards for Today's Students and Tomorrow's Workforce:* Through a collaborative, state-led process managed by Achieve, new K-12 science standards are being developed that will be rich in content and practice, arranged in a coherent manner across disciplines and grades to provide all students an internationally benchmarked science education. The NGSS will be based on the *Framework for K-12 Science Education* developed by the National Research Council.

**Latest News**

NSTA Statement on Release of Second Public Draft of the Next Generation Science Standards  
January 08, 2013

NGSS Second Public Draft will be Released January 2013  
November 28, 2012

As education standards shift, schools rediscover science class  
November 12, 2012

**Resources**

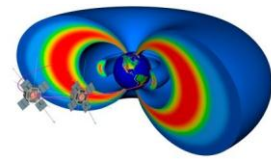
Watch a webinar about the NGSS

## The Need for New Science Standards:

- Reduction of the US competitive economic edge;
- Lagging achievement of US Students;
- Essential preparation for all careers in the modern workforce;
- Scientific and technological literacy for an educated society.



# Upcoming EPO Activities

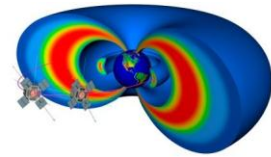


- **Pre-Service Teacher Workshop April 16** – In partnership with Historically Black Colleges and Universities
  - **Very diverse mix of student teachers** – HS: 3 math, 2 health, 4 English, 3 music, 3 art, 1 technology; 6 elementary going across all subjects; 12 special education.
  - We are emphasizing the “**Science Across Curriculum**” aspect of NASA missions and resources, using the Van Allen Probes mission as a case study.
- **Instrument Team EPO Plans for FY 13**
  - ECT (lead Andrew Jordan, UNH) – Developing two education standards-based books for grades K-8.
  - EFW (lead Nancy Ali, UC Berkeley) – partnering with THEMIS-ARTEMIS mission to facilitate a Heliophysics Community of Practice for formal educators.
  - RBSPICE (lead Jerry Manweiler, Fund. Techs.) – Developing lesson plans and activities for secondary and higher ed, and develop and deliver talks for general public audiences.





# 3-minute Survey



*Thank you for participating in our Evaluation efforts!*

*Your feedback is DATA that we need to make sure our activities are effective.*

Resources from this presentation have been printed out for you - please take them!

These have been downloaded from:

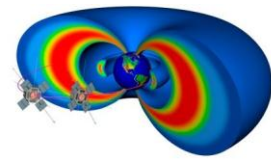
[http://www.space-science.org/education/extra/resources\\_scientists\\_cd/index.html](http://www.space-science.org/education/extra/resources_scientists_cd/index.html)

And

[www.nextgenscience.org](http://www.nextgenscience.org)

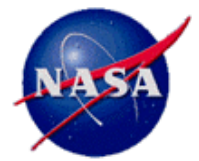


And Now Time For.....

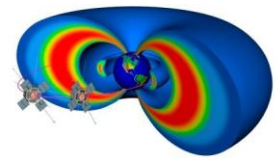


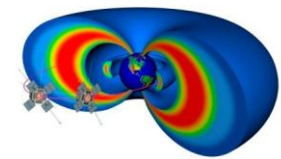
# Instrument Teams Report of FY 12 EPO Activities



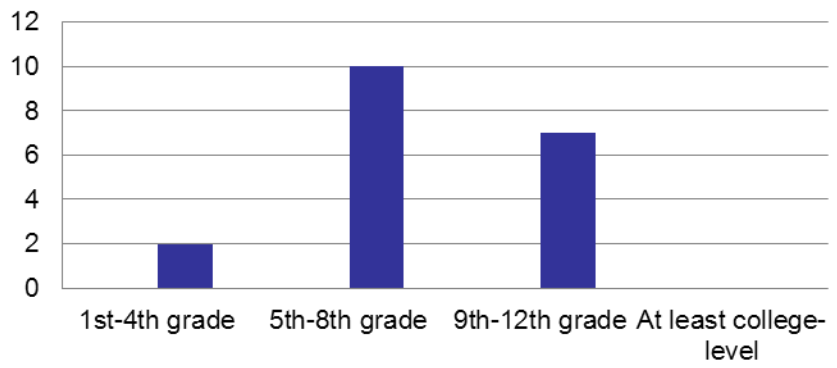


# More Slides

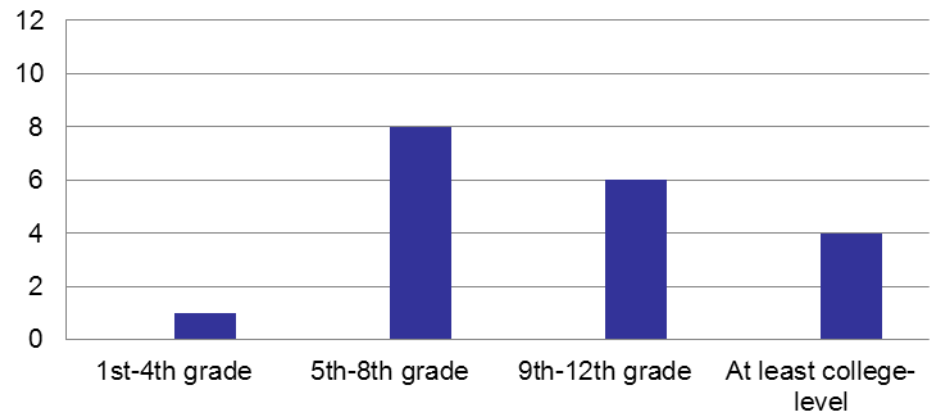




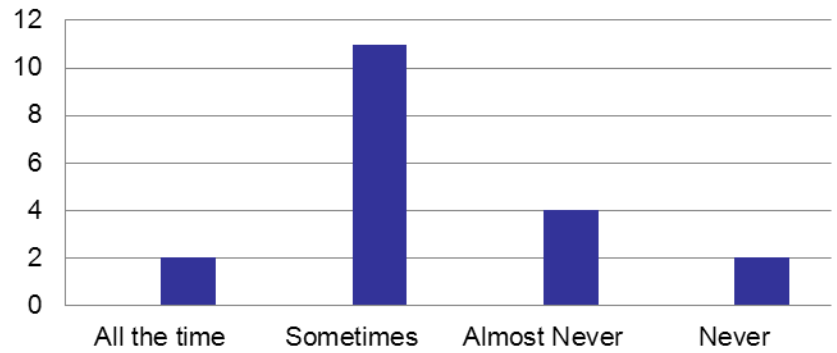
1. What is the general science comprehension level of a museum or science center guest (e.g., the guests you will be encountering at KSC)?



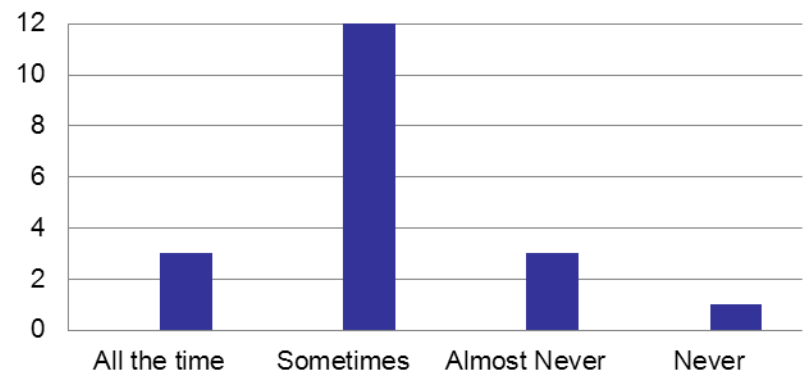
2. When you are speaking to the general public, at which comprehension level do you feel you are speaking?

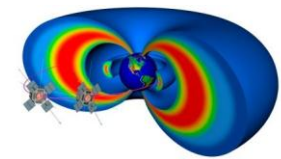


3. How often do you engage with K-12 education communities (teachers or students)?

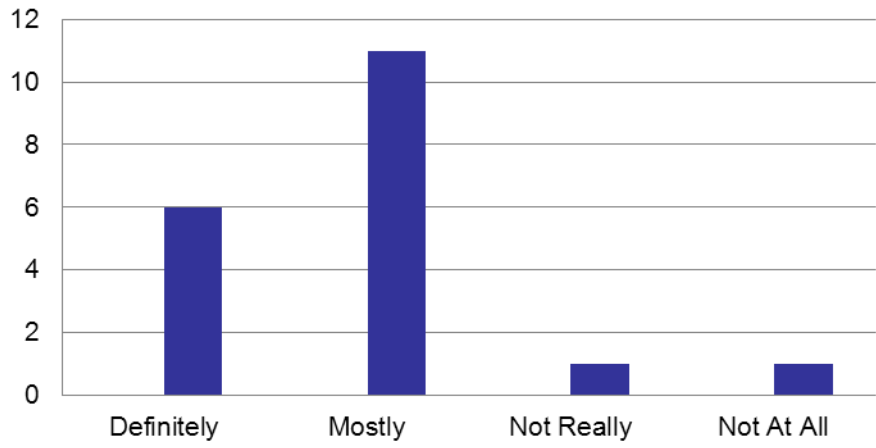


4. How often do you engage with the general public?

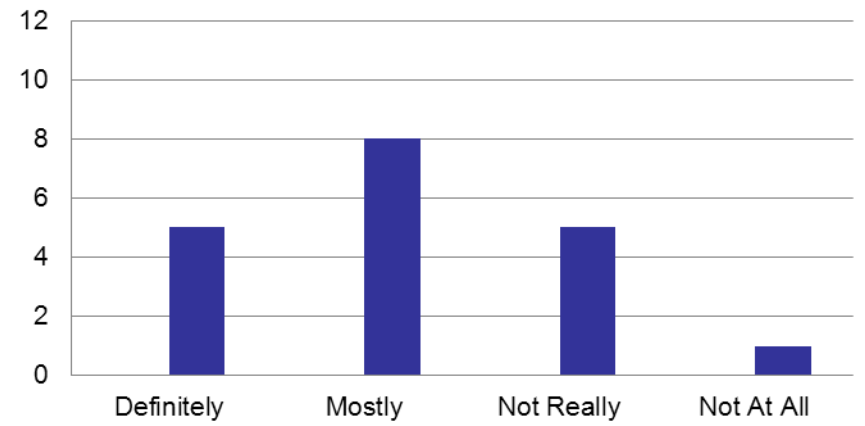




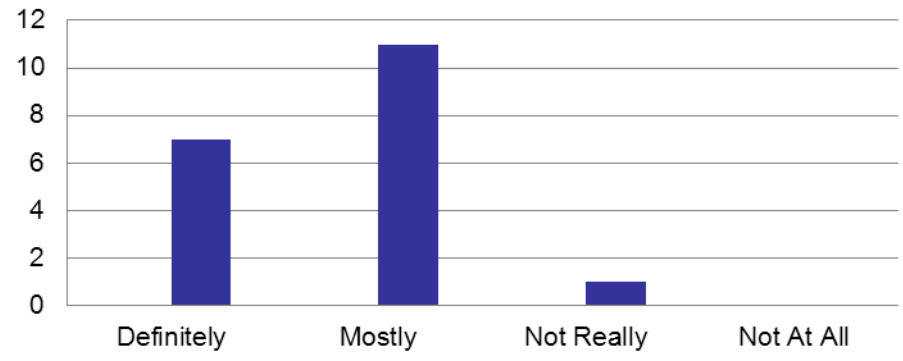
5. Do you enjoy being involved with E/PO?



6. Do you feel like you need to be involved with E/PO?



7. When you go to speak to your audiences, do you feel like your audiences care about your topic or area of expertise?



I am aware of the 1996 NRC National Science Education Standards (NSES) that are in use in today's classroom

