

2010 ESMD

Communications and Outreach Report

TABLE OF CONTENTS



Overview 2

Exploration Web Activities 3

NASA EDGE 5

Partnerships 7

Traveling Exhibits 9

Trade Show Events 14

Internal Initiatives 17

New Initiatives 22

Participatory Engagements 23

The Exploration Systems Mission Directorate (ESMD) Communications and Outreach team works tirelessly to inspire and educate NASA stakeholders about the history, vision and ingenuity of the world's greatest space program using both traditional and unconventional media. The team is able to spark lifelong interests in human space exploration by identifying the optimal channels of communication and establishing meaningful connections to the public.

Through exhibits, the World Wide Web, partnerships and strategically designed products, the team reaches out to the cultural strongholds of the nation, finding common ground to reap the benefits of a shared and synergized community.

Whether the general public, Capitol Hill, technophiles, sports fans, veterans or senior citizens, the ESMD Communications and Outreach team is dedicated to informing and inspiring stakeholders about the benefits NASA provides in their life yesterday, today and tomorrow.

Communications and Outreach faced complexity and challenges in 2010, allowing the team to utilize its skills and expertise in new and creative ways.

2010 Highlights

Exhibits and Outreach

- Total Exhibit Visitors: **99,032**
 - *Exploration Experience* **31,249**
 - *Driven to Explore* **10,183**
 - *Public and Trade Shows* **57,600**
- Metrics show that interest and inspiration, as well as public knowledge and learning, increased in visitors to the *Exploration Experience*.

Exploration Web Activities

- Total page views*: **10.4 million**
- Exploration home page views **1.9 million**
 - Lunar Electric Rover iPhone Application **140,000**
 - PA-1 on MyExploration **62,031**
 - Robonaut 2 on MyExploration **60,976**

Social Media (ESMD program and project accounts)

- Total page views*: **452,309**
 - Total Facebook Friends: **319,112**
 - Total Twitter Followers: **133,197**

NASA EDGE

- 2010 average Downloads per month: **~900,000**
 - 2010 annual downloads **10.3 million**
 - Received a nomination for "Best Video Podcast" from the 6th Annual Podcast Awards
 - The Pegasus Awards recognize the exemplary work being produced by non broadcast professionals
 - Topped 16 million downloads over the life of the show

Figure 1

*A page view is defined as a request made to the Web server to view a page.

ESMD websites saw a total of 10.4 million page views in 2010, including 1.9 million for Exploration, 4.4 million for Constellation, 2.6 million for the Lunar Reconnaissance Orbiter (LRO), 0.6 million for NEEMO and 0.8 million for LCROSS. Two major tests were covered live: Pad Abort 1 and the DM-2 rocket motor. Webcasts of the Exploration Enterprise Workshop and the Exploration of Near-Earth Objects (NEO) Objectives Workshop drove traffic, as did coverage of a launch by Commercial Crew partner SpaceX. Outreach coordinators for the analog field tests NEEMO 14 and Desert RATS successfully leveraged social media and blogged new content daily during the testing season. New interactive features allowed visitors to experience the Pad Abort test and to control a virtual Robonaut.

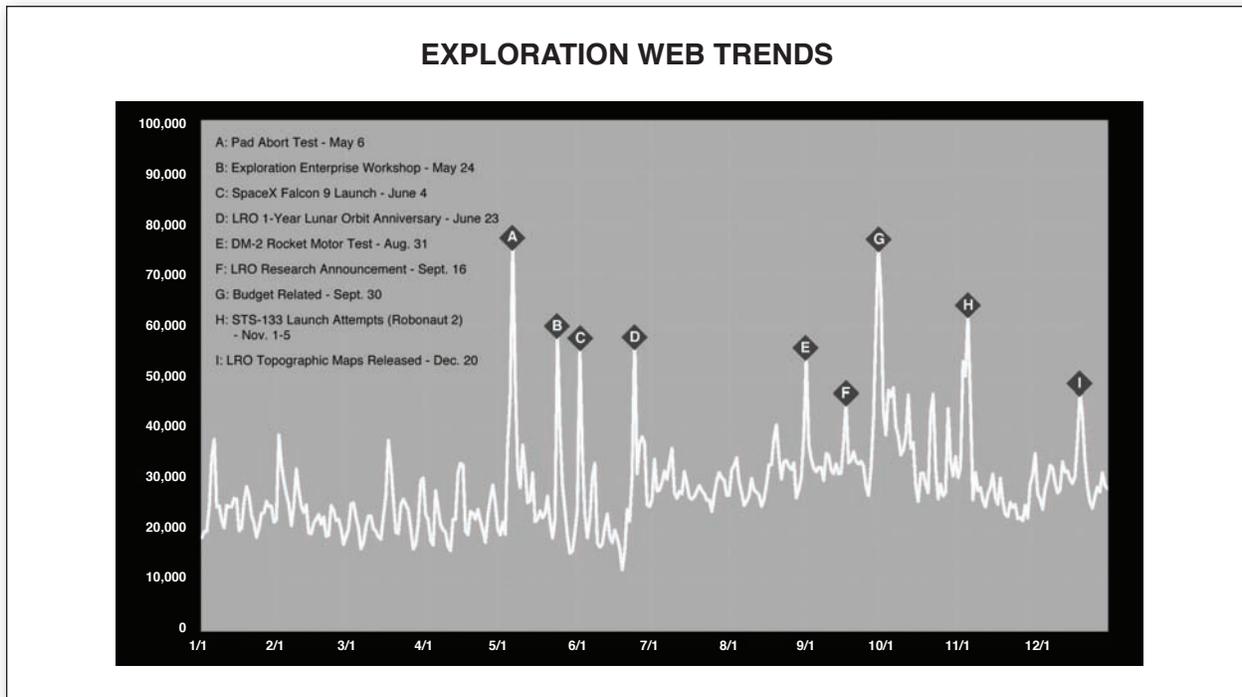


Figure 2



Lunar Electric Rover iPhone Application (NASA EDGE)

Released: February

Estimated downloads: 140,000

<http://itunes.apple.com/app/nasa-lunar-electric-rover/id355542143?mt=8>

NASA deployed a new iPhone Application (app) in Feb. The app includes a photo gallery, interactive viewer, conceptual animation and simulator with multiple difficulty levels. This app was presented by NASA EDGE and is free to the public. User feedback has been positive.



Pad Abort 1 on MyExploration

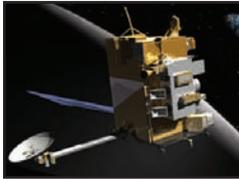
Released: April

Page Views: 62,031

<http://www.nasa.gov/myexploration>

This is an interactive Web feature that visitors use to follow links to a flight timeline, a G-force simulator, social media, videos, images, detailed information about PA-1 and ways that it can be utilized to protect astronauts planning to go into space.

EXPLORATION WEB ACTIVITIES (continued)



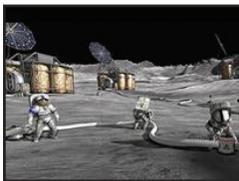
Moon Zoo

Released: May

Images Classified: 1,624,439

<http://www.moonzoo.org>

The number of craters on a particular area of the lunar surface tells us how old it is, so Moon Zoo aims to provide detailed crater counts for as much of the moon's surface as possible. Lunar craters stay almost indefinitely, unlike here on Earth where weather quickly erodes any signs of all but the most recent impacts. On Moon Zoo, participants are asked to look for craters with boulders around the rim. Boulders signify that the impact was powerful enough to excavate rock from beneath the regolith (the lunar 'soil'). Identifying these boulders can help map the depth of the regolith across the lunar surface.



Moonbase Alpha

Released: July

Downloads: 270,000

<http://www.nasa.gov/moonbasealpha>

NASA has a new way to experience a lunar adventure without leaving the Earth. After giving journalists and video game experts a chance to preview and review Moonbase Alpha, the exciting, new online video game is now freely available for gamers and non-gamers alike. NASA intends for Moonbase Alpha to inspire, engage and educate players about agency technologies, job opportunities and the future of space exploration. It was also selected as the best government serious game of 2010 at the annual Interservice/Industry Training, Simulation and Education Conference (IITSEC) conference in Dec.



MAPPER

Released: Summer

Images submitted: 24,832

<http://www.pavilionlake.com>

This web-based image classification system enables the public to analyze field data from the Pavilion Lake Research Project (PLRP). MAPPER was used to submit 24,832 image classifications last field season. Eighteen users submitted these classifications, most of whom were PLRP team members working at the lake. Note that MAPPER was not widely open to the public last year but was primarily used as a classification tool for the science team, with some additional testing done by the PLRP education team and their students.



Robonaut 2 on MyExploration

Released: November

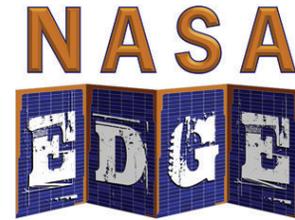
Page Views: 60,976

<http://www.nasa.gov/myexploration>

This is a Web interactive where visitors can follow links to social media, videos, images and detailed information about Robonaut 2, its capabilities and ways it can be utilized to help humans perform tasks in space. It gives an overview of Robonaut 2 and its mission, shows images and video footage and links visitors to 3-DV virtuality interactives.

www.nasa.gov/nasaedge

NASA EDGE is an unscripted, non-traditional HD video podcast (vodcast) designed to highlight all things NASA in a unique and fun way. By using a combination of funny, offbeat and informative sketches, features and interviews, the NASA EDGE team creates a vodcast that reaches a broad online audience. Built in the framework of sports talk radio, NASA EDGE has generated a positive buzz for space exploration and NASA in a way to which young teens and adults can relate. NASA EDGE vodcasts are downloadable directly from the NASA portal and from iTunes.



2010 NASA EDGE Highlights

The two noteworthy items for NASA EDGE in 2010 were downloads and live webcasts. In 2010, NASA EDGE

- Were recognized at the Pegasus Awards for exemplary work produced by non-broadcast professionals
- Produced 14 new vodcasts
- Held five live webcasts
- Achieved 10.3 million downloads in 2010
- Topped 16 million downloads over the 5 year life of the show

Fans also downloaded 5.9 million previous episodes, giving an increase of 174% from last year.

NASA EDGE also received a nomination for “Best Video Podcast” from the 6th Annual Podcast Awards. Approximately 1.1 million nominations covering over 2,900 podcasts were submitted for this competition. The competition was tough, and other nominees included Internet heavyweights such as TED, DiggNation, This Week In Dancing With the Stars, and Chuck Versus the Podcast.

NASA EDGE Finds More Ways to Connect

In keeping with its unconventional style, NASA EDGE conducted five live webcasts via UStream. They covered Sun-Earth Day 2010, Orion Pad Abort-1 Flight Test, Lunabotics Mining Competition, Desert Research and Technology Studies (RATS) 2010 and The A-Train Symposium. They produced a “Best Of” video podcast for each live show, and the combined live show views and vodcast downloads equaled close to two million.

NASA EDGE also released their first Mac Widget, making it easier than ever to stay up-to-date with NASA and NASA EDGE. With the new NASA EDGE Widget, users can have instant access to all NASA EDGE vodcasts, the latest NASA EDGE images, NASA news and the NASA EDGE Twitter Feed. The Mac Widget is available for download here: <http://www.nasa.gov/multimedia/podcasting/nasaedge/widget.html>.

NASA EDGE continues to cultivate its social media networks on Facebook and Twitter, and this year also introduced its own YouTube Channel. Besides the NASA portal and iTunes, users can now view the vodcasts here: <http://www.youtube.com/nasaedge>.

Figure 3

NASA EDGE SOCIAL MEDIA

Table 1

Social Media	Total	Average Growth Per Month
Facebook Friends	25,822	199
Twitter Followers	42,556	210
YouTube Channel Views	45,966	480

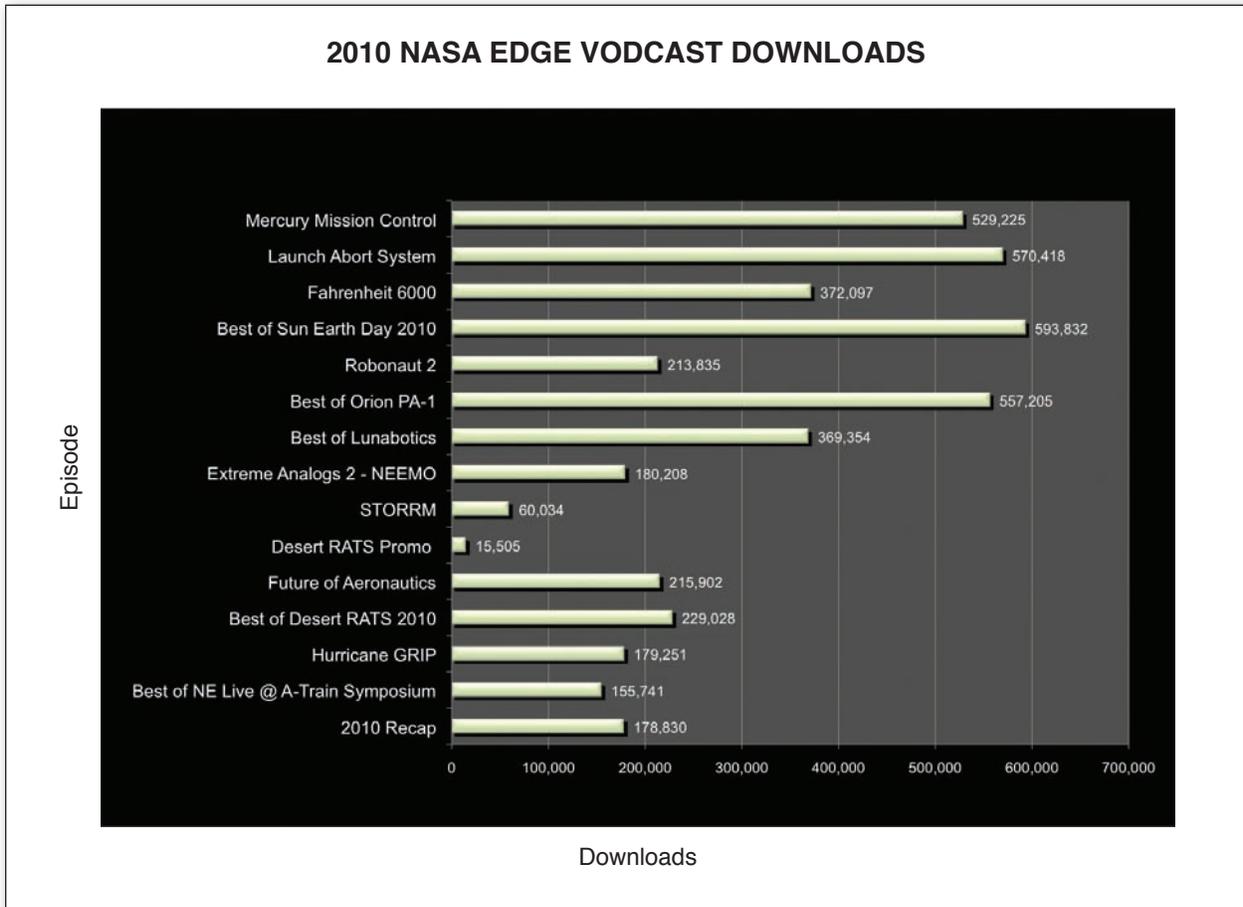
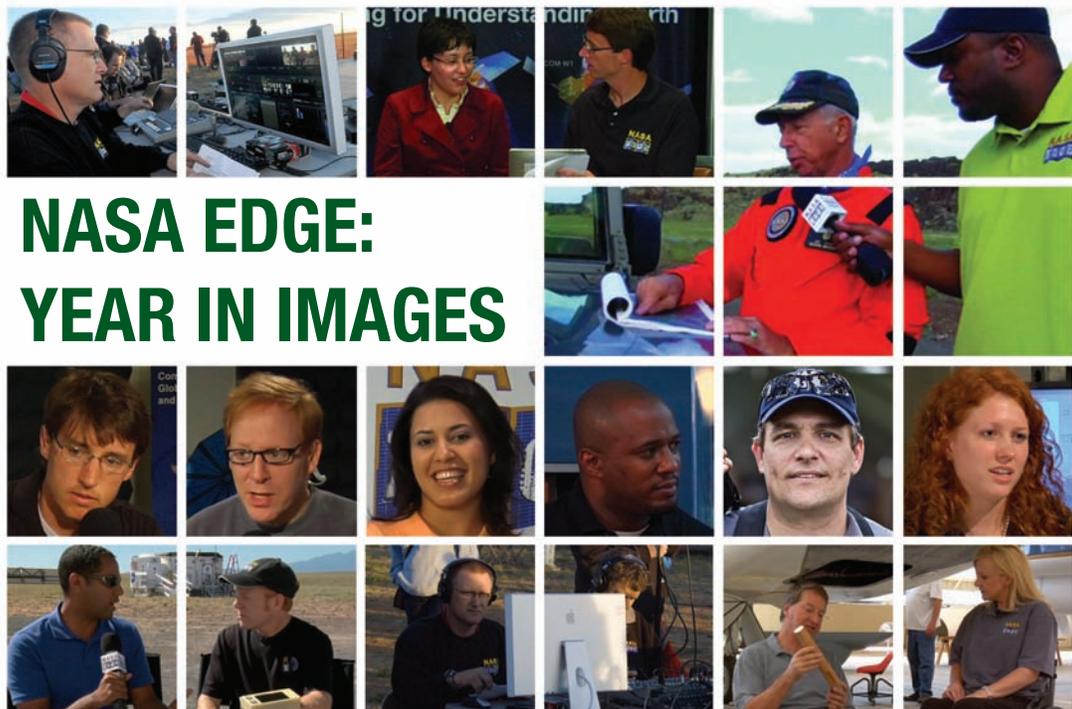


Figure 4



PARTNERSHIPS

The ESMD Outreach team is proactive in its ventures to initiate partnerships with other agencies and organizations to create maximum collaboration and mutual benefit to all parties involved. These efforts leverage and maximize resources across federal, cultural and commercial enterprises.



National Boy Scout Jamboree

The Boy Scouts of America held their 100th Anniversary National Boy Scout Jamboree at Fort A.P. Hill, Va., this summer. NASA partnered with the organization to celebrate the milestone. NASA provided the *Exploration Experience* traveling exhibit, scientists and other NASA personnel from across the agency, displays and exhibits. These resources enhanced the scouts' knowledge and understanding of space exploration and how it affects their everyday lives.



Little League World Series

The Little League World Series and NASA collaborated this year to reach thousands of Little Leaguers, their families and baseball fans from around the world. Over 8,500 attendees visited the *Exploration Experience*, and more than 20,000 game attendees were exposed to NASA trivia throughout the 32 games in the series. During the opening ceremonies, astronauts aboard the International Space Station threw the first pitch, and Colonel Terry Virts (STS-130 Pilot, Endeavour) presented Little League with a patch that went into space with STS-130. Virts also participated as a guest of honor in the Little League parade in downtown Williamsport, Pa., and was interviewed by ESPN live during the opening game. Additionally, NASA displayed exhibits in the Little League World Series Hall of Fame.

Thousands of Little Leaguers and the public line up to walk through the Exploration Experience at the Little League World Series in Williamsport, Va.



Arizona State University - GigaPan Voting

NASA partnered with Arizona State University (ASU) in preparation for the 2010 Desert RATS analog mission. Students were provided the opportunity to analyze and select traverse routes for the Space Exploration Vehicles during the field test using GigaPan technology. Images of Black Point Lava Flow in Ariz. were incorporated into geology classroom lessons, and ASU undergraduate students identified areas of scientific interest through structured geology activities such as geomorphology. Their recommendations were incorporated into the Desert RATS mission plans.

PARTNERSHIPS (continued)



Texas Instruments

NASA's Human Research Program Education Outreach project and Texas Instruments collaborated this year to produce educational material for two digital libraries. The first, called *Exploring Space Through Math: Applications in High School Mathematics*, provides problems based on a NASA data set in the context of space exploration. The project material covers almost the entire high school math curriculum with applications in Algebra 1, geometry, Algebra 2 and pre-calculus. The other, named *Math and Science @ Work*, contains questions for Advanced Placement classes. This program seeks to develop and test problems in calculus, statistics, physics, chemistry and biology.



WHEELS

WHEELS (Workshops Helping Educators Explore and Leverage STEM) offers professional development opportunities and NASA education resources for the elementary and secondary education communities. Current and future educators learn how to utilize NASA's existing education materials developed by the ESMD. Once equipped, teachers can use NASA-related physics, mathematics, technology education and science materials in the classroom to expose students to critical and complex challenges and the development of innovative solutions.



Busch Gardens

Over 1,500 visitors came to the NASA Exploration Experience traveling exhibit during the Achievable Dreams program at Busch Gardens in Williamsburg, Va., Aug. 13 and 14. Close to 80 elementary and middle school students from the Achievable Dreams Program and Virginia Air & Space Museum Day Camps were able to participate. In addition to the NASA *Exploration Experience*, Langley Research Center set up tents with demonstrations on Mars Exploration, Hubble, NASA & Sports, and NASA Education activities. Former space shuttle astronaut and payload specialist Roger Crouch (STS-83 and STS-94) conducted meet & greets and presentations to the public. This event was part of the Summer of Innovation initiative in conjunction with Busch Gardens.

Visitors show off individual portraits after visiting the Exploration Experience trailer tour at Busch Gardens in Williamsburg, Va.

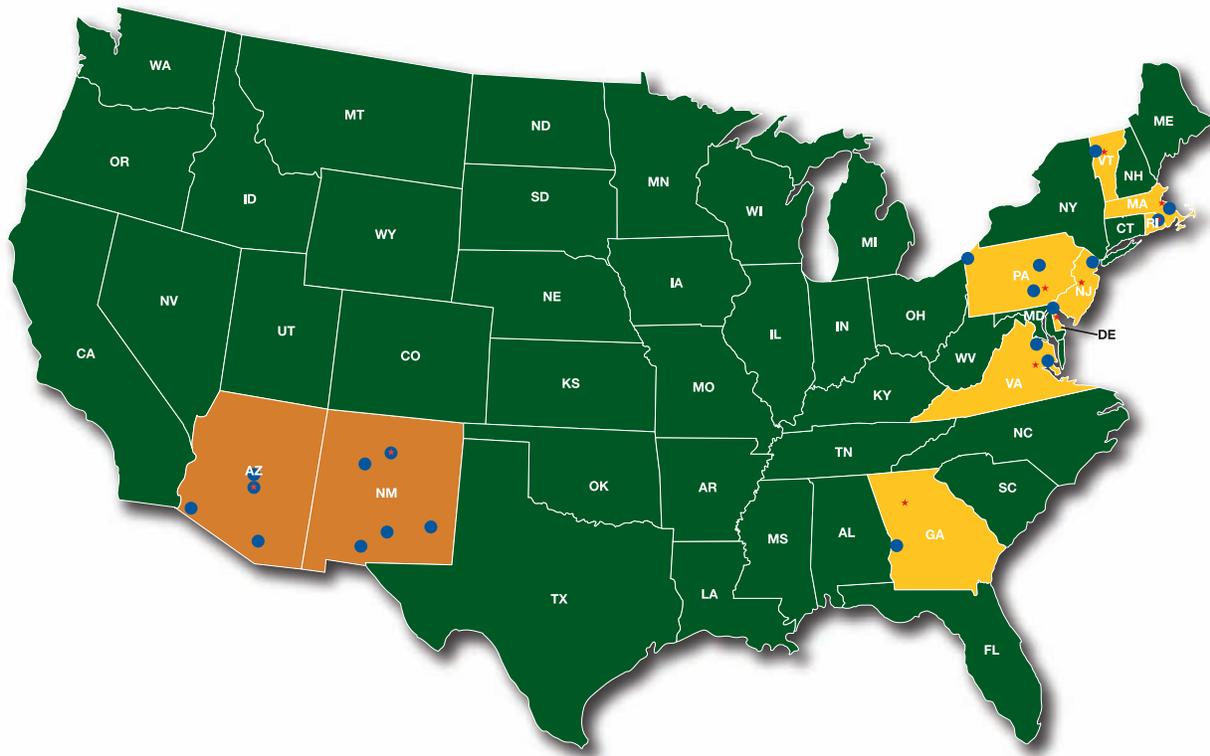


TRAVELING EXHIBITS

ESMD successfully utilized both the *Exploration Experience* and *Driven To Explore* traveling exhibits in 2010. These exhibits **enlightened over 33,400 visitors** as they traveled a **collective 7,277 miles** across **10 states**.

ESMD also showed a strong presence at public and trade show events around the country. Over **57,600 visitors** took the opportunity to interact with Outreach and science professionals at these events.

For more information visit <http://www.nasa.gov/exploration/outreach>.



Exploration Experience and Driven to Explore Tour Stops

- State visited by *Exploration Experience*
- State visited by *Driven To Explore*
- City Visited
- ★ State Capital

Figure 5

Exploration Experience (EE)

Total Attendance: 31,249



Tour Highlights

- Traveled more than 3,627 miles across the U.S., covering eight states and 14 cities
- Received media coverage from over 20 media outlets
- Inspired over 31,000 visitors via interactive 3-D experiences and conversations with NASA professionals
- Partnered with Workshops Helping Educators Explore and Leverage STEM (WHEELS)
- Established major partnerships with both the Boy Scouts and Little League World Series

Figure 6

The 2010 *Exploration Experience* underwent significant content modification in response to the President's proposed agency re-direction. The exhibit's front room was altered to incorporate a 3-D interactive experience featuring NASA spin-offs. Participants were given 3-D glasses to use in the exhibit, and at home on a special website to learn more independently. An introductory movie gave an overview of what a NASA spin-off is and how such inventions improve everyday life. To enhance the experience, guests could touch a real moon rock on their way to the second room where they were surrounded by images and information regarding NASA's past, present and future endeavors. Participants exit with a better understanding of how exploration influences their world and are inspired about future exploration by NASA.

EXPLORATION EXPERIENCE TOUR ATTENDANCE

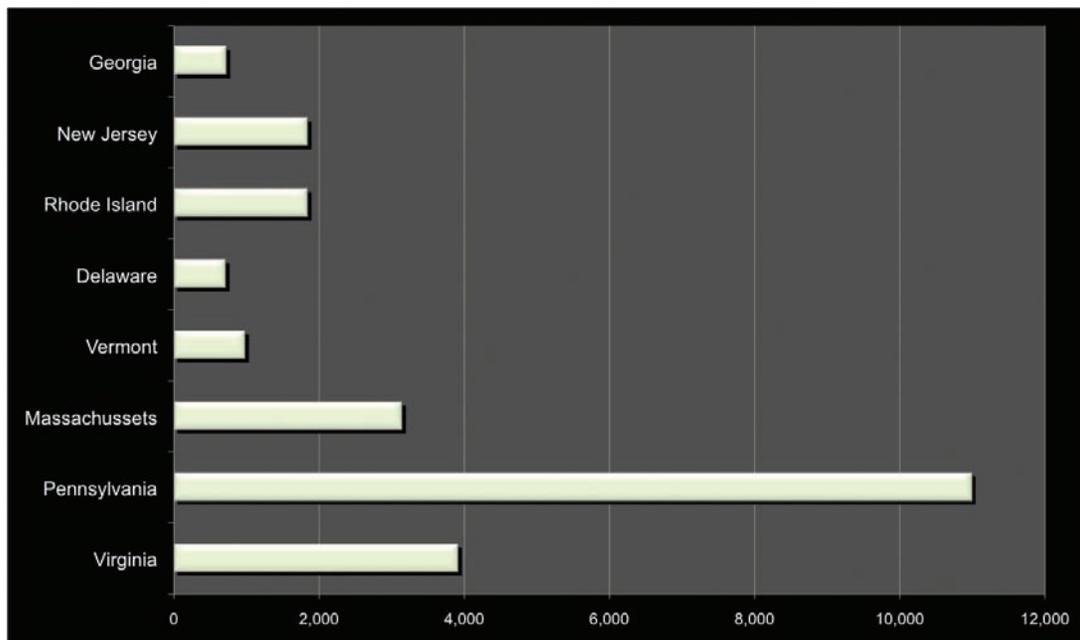


Figure 7

Driven to Explore (DTE)

Total Attendance: **10,183** visitors



Tour Overview

- Traveled approximately 3,650 miles across the U.S., visiting two states and nine cities
- Enlightened over 10,000 visitors
- Visited six congressional districts
- Community Outreach events reached nearly 1,000 additional attendees at venues away from the exhibit
- Included Aerospace Education Services Program (AESP) Educator Workshops at three sites in N.M.

Figure 8

NASA's 2010 *Driven to Explore* exhibit and its team of communicators and educators set out to inform and inspire America's next generation of explorers. The self-contained interactive exhibit traveled thousands of miles across the U.S. and gave visitors the opportunity to immerse themselves in our nation's space exploration future. Visitors also learned more about the development of America's next-generation launch vehicles, as well as what it will take to sustain a working and living outpost on the moon. Schools, universities, science centers and museums hosted *Driven to Explore*, which delivered NASA material to a diverse audience. This traveling exhibit provided visitors personal interaction, nurtured public interest in human exploration and encouraged students to pursue studies in science, technology, engineering and math (STEM).

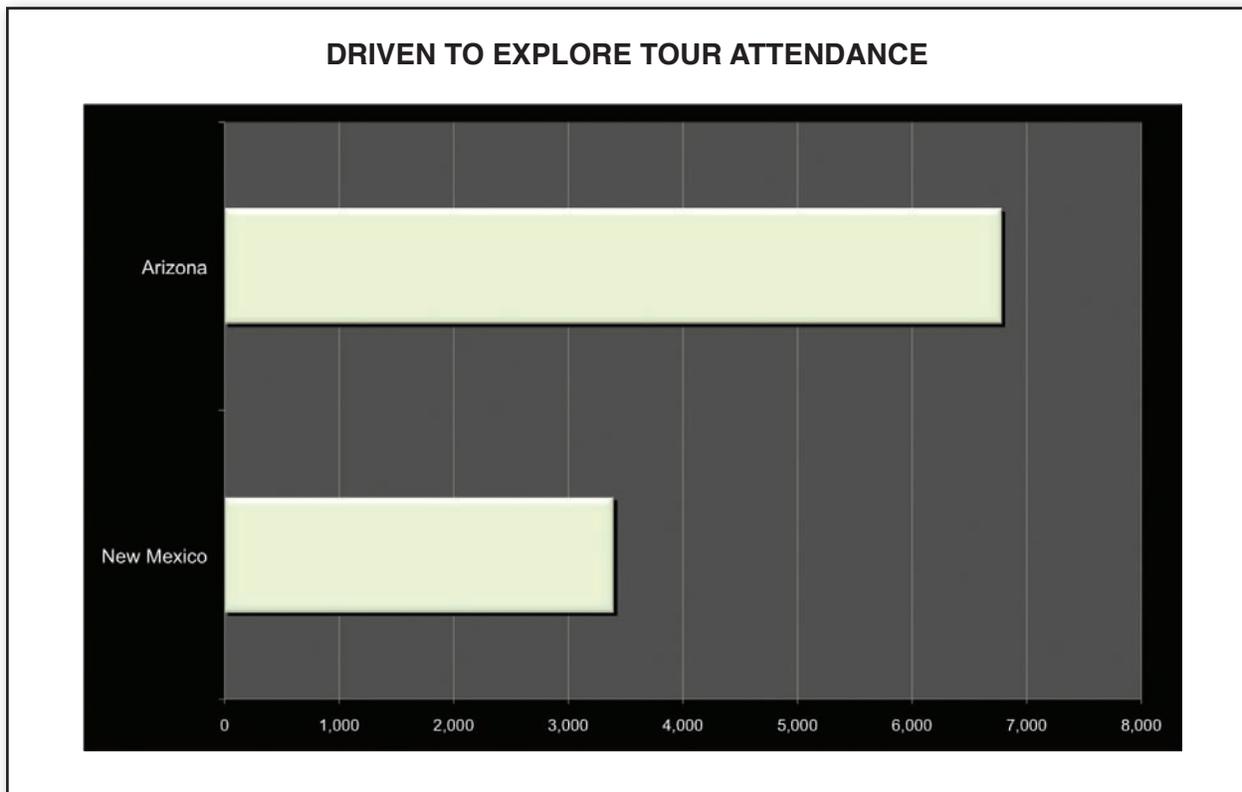


Figure 9

The ESMD Communications and Outreach team constantly pulses the trade show and public event scene to find the largest and most diverse audiences. Many times the best return on investment is found in existing venues where there is an established audience. No matter the venue, ESMD exhibits and speakers strive to inform, educate and excite visitors not only about the future of human spaceflight, but also NASA's impact on their current, daily lives.

Total Attendance: **57,600 visitors**



2010 NBA All-Star Jam Session

Attendance: 8,000

Dates: February 10-13, 2010

Location: Dallas, Texas

Media Attention: *NBA TV and Fox Sports Network took video footage of the NASA exhibit area.*

NASA engaged approximately 8,000 visitors with interactive exhibits and explained how NASA has improved daily life. Staffers showed visitors one of the ways NASA is exploring Mars and introduced them to Robonaut, one of the latest advancements in robotics. Fans who visited the NASA Launch Pad exhibit area saw and touched a 3.75 billion year old moon rock and stepped inside the Galactic Explorer Module to create a photograph and video of themselves in outer space. On the final day, over 200 visitors had the opportunity to meet and receive an autograph from astronaut Robert "Bobby" Satcher, who recently returned from a mission with STS-129 (Nov. 16-29, 2009).



2010 National Space Symposium

Attendance: 9,000

Dates: April 11-14, 2010

Location: Colorado Springs, Colo.

Media Attention: *Mark Reis of The Colorado Springs Gazette and Channel 9 (NBC) from Denver*

Congressional Representation: *Bennie Milliner, Community Liaison, office of U.S. Senator Michael Bennett*

VIPs: *Colorado Springs City Councilman Tom Gallagher; Nat'l Science Foundation Einstein Fellow Kevin Simmons; Joyce Riquelme, Chief NASA – KSC Planning & Development Office; Nona Cheeks – Chief, Innovative Partnerships Program – NASA GSFC; Andrea Landin, Present Space Science Solutions; STS-17 astronaut Jim Reilly (as a booth visitor); former AIAA Executive Director Robert Dickman*

Visitors interacted with all four NASA mission directorates Aeronautics Research Mission Directorate (ARMD), Exploration Systems Mission Directorate (ESMD), Science Mission Directorate (SMD), Space Operations Mission Directorate (SOMD). Features included the Marshall LRO/LCROSS and Lunar Quest exhibits, Green Aviation from Ames, SOFIA from Dryden Flight Research Center, and other exhibits from Whites Sands Test Facility and Wallops Flight Facility. The Human Research Project from Johnson Space Center and the Innovative Partnership Program Office at Headquarters also provided materials. The conference is geared toward space professionals, but over 400 middle and high school students from the community visited the NASA booth as well.

TRADE SHOW EVENTS (continued)



Earth Day Climate Change Rally

Attendance: 6,500

Dates: April 21-25, 2010

Location: Washington, D.C.

Quote from a rally visitor: "NASA touches our lives every day and it is important that people know that NASA does more than just rockets and astronauts."

Thousands attended this hot-topic event on the National Mall in Washington, D.C. to celebrate the 40th anniversary of Earth Day, and to advance climate policy, energy efficiency, renewable energy and green jobs. ESMD joined this celebration to educate visitors about NASA's contributions to make our planet a greener place. Participants had the opportunity to ask questions directly to NASA scientists and listen to Earth Science mini-lectures. Visitors learned how NASA harnesses solar power, and many took the NASA Home and City Challenge, which exposed them to a number of innovations and technological advancements NASA has contributed to the sustainability of our planet.



World Science Festival, NYU Campus

Attendance: 11,000

Date: June 6, 2010

Location: New York, N.Y.

Guest Astronaut Speakers: *Leland Melvin and Sandy Magnus*

Visitors engaged with exhibits from all four NASA mission directorates including: the Jet Propulsion Laboratory (JPL) rocker-bogie mini-rover and McMurdo Panorama 3-D backdrop and 3-D glasses, SMD UV beads activity, space shuttle artifacts (tiles, blanket, foam), ISS Camera body (flown), examples of space food pouches (shuttle and ISS), the Mark III photo-op space suit and shuttle EVA photo op suit displays. The resources deployed were a 1:20 scale inflatable space shuttle, shuttle front tire display (painted), spin-off Prize Wheel and Hubble and ISS backdrops. The event was a success with 11,000 visitors.



NASA Day on the Hill

Attendance: 1,100

Date: June 23, 2010

Location: Washington, D.C.

Congressional Representation: *Congressmen Sullivan (R-OK); Ehlers (R-MI); Edwards (D-MD); Posey (R-FL); Cuellar (D-TX); McIntyre (D-NC); Etheridge (D-NC); McCaul (R-TX); Altmire (D-PA); Boren (D-OK); Lucas (R-OK); Jackson Lee (D-TX); Garamendi (D-CA); Rogers (R-MI), and Wu (D-OR)*

Guest Astronauts: *Jose Hernandez, Anna Fisher and Pat Forrester*

Featured exhibits from all four NASA mission directorates included: the Carnegie Mellon 'Scarab' rover, GigaPan, Robonaut, space food tasting activity, James Webb Space Telescope staff and model, examples of space food pouches, Galactic Explorer Module (GEM) photo kiosk display, Aeronautics Research Mission Directorate 'fuselage' exhibit, a tire exhibit with assorted rover tire samples, ISS backdrop with large ISS image, ISS 1:100 model, NASA City and Home Wii edition, Space Exploration Vehicle model and the debut showing of the Dynamic Planet display. The event reached 1,100 visitors and was supported via the NASA legislative and intergovernmental affairs office.

PUBLIC TRADE AND SHOW EVENTS (continued)



National Council of La Raza
Attendance: 20,000
Date: July 10-12, 2010
Location: San Antonio, Texas

Guest Astronaut Speaker: *Jose Hernandez*

ESMD contributed to the NASA exhibit at the National Council of La Raza (NCLR) National Latino Family Expo. This culturally relevant event was one of the largest Hispanic events in the U.S. and was designed to educate and inform the Latino community. Corporations, agencies, organizations and businesses showcased products, services and programs that positively impacted the American Latino community. The conference had an estimated attendance over 20,000, including some of the most influential individuals in the Hispanic community.



AARP Annual Meeting
Attendance: 10,000
Date: September 30-October 3, 2010
Location: Orlando, Fla.

Guest Speakers: *NASA Chief Technologist Bobby Braun*

ESMD contributed to the NASA exhibit at the AARP meeting with the NASA Home and City interactive station, GigaPan technology, the Space Exploration Vehicle model, space food and Human Research Program videos and discussion topics. This pro-NASA audience expressed a great desire to learn more about our nation's space program and its future. NASA's Chief Technologist, Bobby Braun, conducted a well-received presentation to roughly 100 AARP members on Friday, Oct. 1. Additional NASA exhibitors included SOMD, KSC and the Kennedy Space Center's Visitor Center, JPL's Mars Rover and the James Webb Space Telescope.



USA Science & Engineering Festival
Attendance: 12,000
Date: October 23-24, 2010
Location: Washington, D.C.

VIPs: *NASA Administrator Charlie Bolden; NASA Associate Administrator for Education Leland D. Melvin*

ESMD engaged visitors as part of the One-NASA effort at the inaugural USA Science and Engineering Festival. Content included Robonaut 2, NASA City and Home, GigaPan, LRO and LCROSS displays, meteoroid and asteroid information and Solar Dynamic Observatory information. This free event's purpose was to re-invigorate the American youth's interest in STEM-related fields. It presented a compelling, exciting, educational and entertaining science forum.

ESMD Newsletter

Each month, the ESMD Communications and Outreach team wrote, designed and distributed the ESMD Newsletter to the directorate. This publication provided the latest progress, activity and personnel news to keep the directorate abreast of changes throughout the year. The team always strives to provide timely and relevant information, as well as links to learn more. Readers regularly volunteer positive feedback and constructive suggestions for improvement.

Employee Ambassadors Program

Background

The Exploration Ambassadors Program is an ESMD initiative that provides a two-fold approach to managing speaker requests. The primary goals of this program are to seamlessly coordinate each request received and to ensure that ESMD presents current, accurate and consistent messages.

The program strives to respond to each request with the most suitable speaker and serve as a central point of contact for both internal and external communication. The program also provides speaker support by offering assistance with logistic planning and creating Outreach materials for the ambassador. Ambassadors are selected from a voluntary pool of trained ESMD employees.

2010 Highlights

- There were 24 voluntary Ambassadors from across the directorate
- Ambassadors delivered 143 presentations at 99 separate events
- More presentations were delivered in 2010 than in 2009
- ESMD Ambassadors achieved a record mark by fulfilling 94% of requests received
- ESMD reached audiences in 13 states, the District of Columbia and four countries outside of the U.S.

Figure 10

Request Results

In 2010, the Exploration Ambassador Program received 105 presentation requests (highlighted below in purple). After the event evaluation and Ambassador recruitment process was applied to each request, 99 event requests were fulfilled (highlighted in green). That can be considered a 94% success rate.

ESMD declined two events in 2010, fewer than ever before, because the request was either not a good fit or due to a schedule conflict. Events are classified as cancelled if an ambassador has committed to give a presentation but the event does not take place; either the requestor or the ambassador may have canceled the event.

Table 2

Event Request Result	2010	2009	2008
Received	105	94	118
Fulfilled	99	87	104
Success Rate	94%	93%	88%
Declined	2	5	7
Canceled	4	2	7

INTERNAL INITIATIVES (continued)

Events and Presentation Totals

Ambassadors attended more events and delivered more presentations in 2010 than in 2009. The following table shows a three-year comparison beginning in 2008, broken down by month.¹

Table 3

Month	2010		2009		2008	
	Events	Presentations	Events	Presentations	Events	Presentations
January	5	11	6	6	5	5
February	3	6	11	13	11	11
March	8	9	9	12	12	12
April	14	16	5	5	16	15
May	12	23	13	20	15	15
June	7	9	7	11	14	14
July	12	14	6	7	5	6
August	10	15	3	7	3	3
September	9	18	6	11	9	9
October	11	11	7	13	3	3
November	4	5	9	12	8	8
December	4	6	5	8	3	4
Total	99	143	87	125	104	105

Events by Audience Category

The audiences reached in 2010 can be divided into four distinct categories:

- Aerospace industry
- General public
- Policy makers
- Internal groups

The table above and graph below show the three-year trend for these four audience categories.

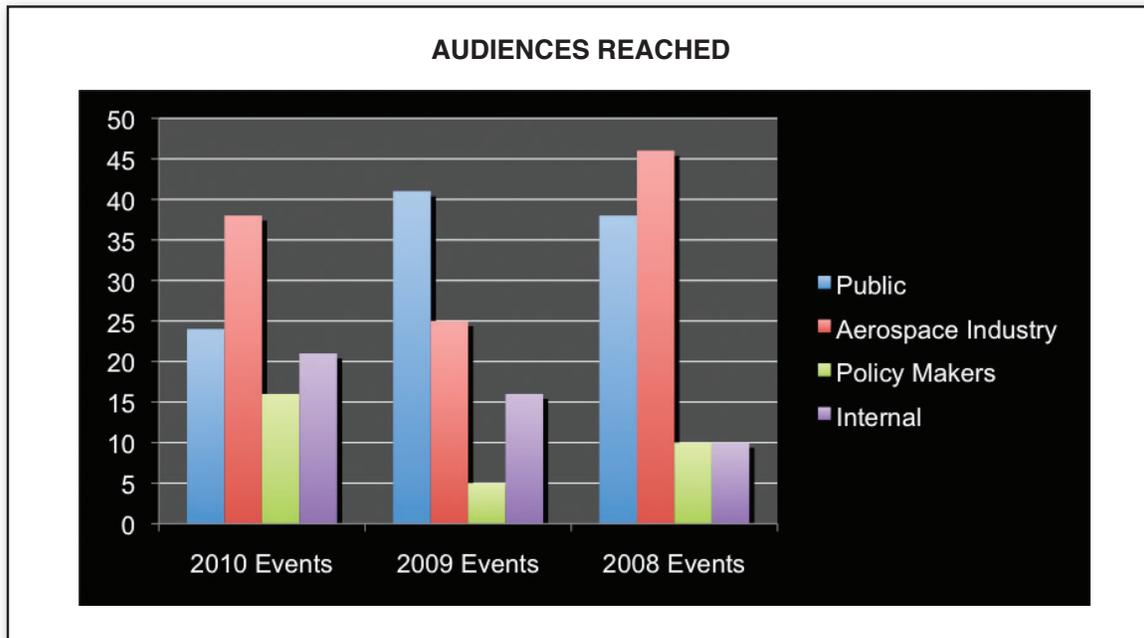


Figure 11

¹ Note: an event may have more than one presentation attributed to it by more than one Ambassador; for example, several Ambassadors may present at a large conference, or an Ambassador may visit a school and speak to several classes in one day.

INTERNAL INITIATIVES (continued)

The audience most frequently reached in 2010 was the aerospace industry. Because of the recent widespread changes to NASA, this industry was particularly interested in receiving updates first-hand. ESMD also hosted two large workshops, the Exploration Enterprise Workshop and the Exploration of Near-Earth Objects Workshop, primarily targeting this audience. Additionally, many ambassadors are leaders in their fields and are invited personally to address their colleagues.

Exploration Experience Qualitative Measurement

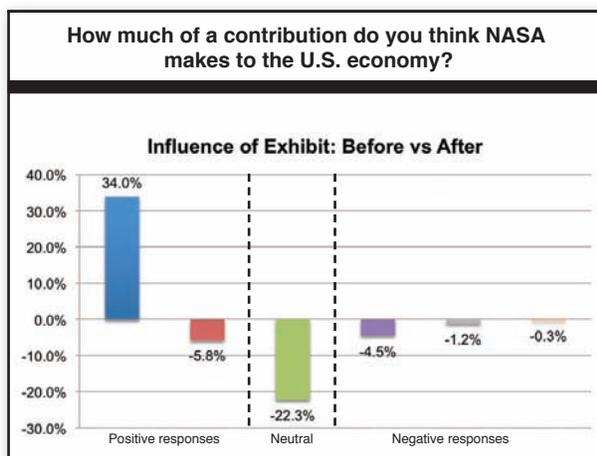
Overview

In 2010, the ESMD Communication and Outreach team Quality Measurement Plan completed its second year and built on lessons learned from the 2009 “pilot” year. Survey results will supply us with the voice of the public or the “external perspective,” which will help us in making strategic design and communication decisions in the future.

The questions were designed with consideration to the market research done by the Office of Communications and Planning (OCP). By aligning the questions in a similar manner, we look to not only contribute another source of information to the OCP market research but also to gain baseline measurements and data to better understand initial results.

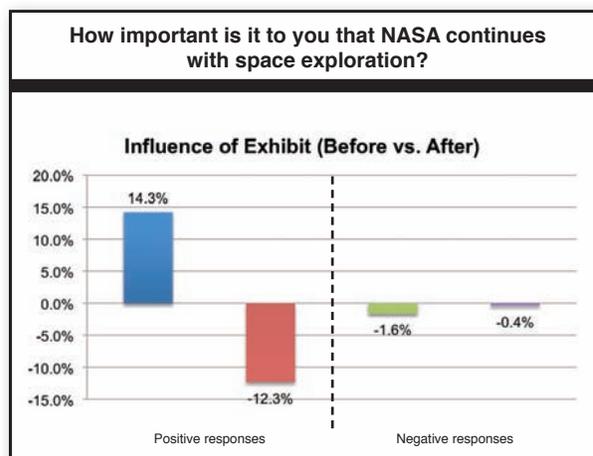
The surveys were conducted under Office of Management and Budget (OMB) authority. The general ESOMAR Code Of Conduct (<http://www.esomar.org>) was followed in survey administration and data collection/analysis to ensure ethical practices and data quality.

Surveys were administered by onsite staffers to a statistically significant population of the public (ages 13 and above) both before and after they experienced the exhibit.



Results indicated that the Exploration Experience positively influenced visitor perceptions concerning the contribution NASA makes to the U.S. economy.

Figure 12



Results indicated that the Exploration Experience inspired visitors to support NASA's continued efforts in space exploration.

Figure 13

INTERNAL INITIATIVES (continued)

Key Findings: Inspiration

The Exploration Experience exhibit successfully inspired and engaged the public.

- After visiting the exhibit, participants significantly increased views that space exploration is very important (+15%), the belief that humans should explore Mars (+14%), views that NASA has an extremely large impact on the U.S. economy (+34%), views that NASA is very relevant (+33%), and views that the space program has inspired their generation (+17%).
- Participants were more positive about “space exploration” than they were about human missions to a specific destination (Mars).
- Overall, about 75% (before) compared to 90% (after) of participants thought continuing space exploration was “very important.” When asked about human missions to Mars, answers in support were about 60% in favor (before) to 75% in favor (after).

Key Findings: Relevance

The strongest positive shifts in participants’ views were in response to questions about NASA’s relevance to everyday life and impact on the U.S. economy.

- For both questions, participants overall showed over a 30% increase in favor of the view that “NASA is ‘very relevant’” and the view that “NASA’s economic contributions are ‘extremely large.’”
- The 2010 *Exploration Experience*, with strategic content, was much more effective than the 2009 *Exploration Experience* at demonstrating the relevance of NASA to everyday life. Both the 2009 and 2010 surveys asked about the relevance of NASA. In 2009, before the exhibit 45% of participants said NASA was “very relevant,” and 51% after. In 2010, before the exhibit, 48% said “very relevant,” and 81% after.

Key Findings: Public Knowledge and Learning

The Exploration Experience successfully increased visitor knowledge.

- Responses showed a small increase in learning from the *Exploration Experience*. Most questions focused on the benefits of NASA technologies; responses showed that participants were likely to concur that important products and transportation systems benefited from NASA technologies.
- Participants generally (+90%) answered these questions correctly before the exhibit and answered them correctly at even higher rates, nearly reaching 100% after the exhibit.

INTERNAL INITIATIVES (continued)



ESMD Highlights

The ESMD communications team began posting “ESMD Highlights” to the nasa.gov/exploration website each week beginning in Jan. This initiative came about in an effort to provide concise information to our senior leadership and more resources to NASA’s ever-broadening audience. These brief snippets of information highlight current research and exploration development, providing a summary, description, interesting information and links to find out more. See more at <http://www.nasa.gov/exploration/multimedia/highlights/index.html>.



InsideNASA: New Space Enterprise

In response to the President’s proposed budget in Feb., the necessity arose for a place to house internal information amid fast-paced changes. This section on the employee-only website InsideNASA provides recent news, information about study team activities, past briefings, a place to submit questions and comments and more. The easily navigable layout makes searching for and finding information fast and efficient, which is imperative in times of such change. To learn more, visit http://insidenasa.nasa.gov/web/insidenasa/new_space_enterprise.



Transition Workshop

ESMD began conducting Transition Workshops across the agency to keep lines of communication open and adapt to the organization’s new direction. Workshops were held at Stennis Space Center, Johnson Space Center and Headquarters, with discussions primarily focusing on honoring our achievements, understanding ESMD’s current status, positively ending the previous direction and preparing for the future.



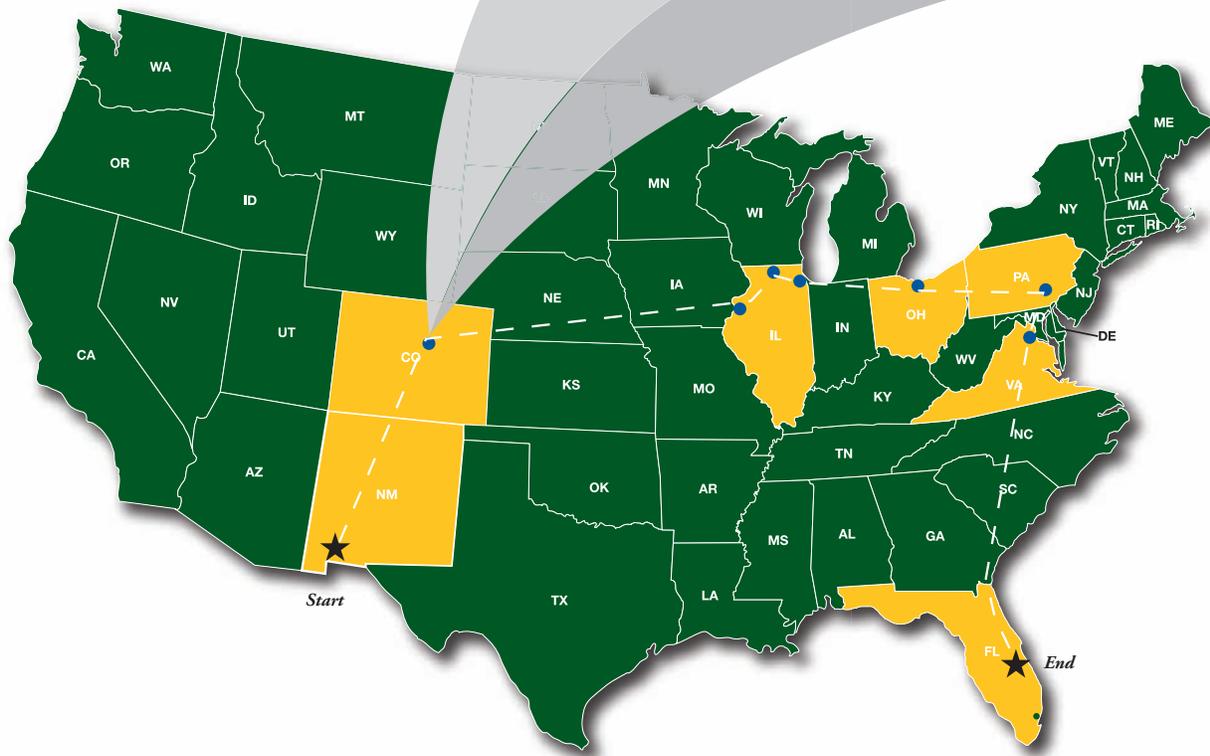
Robonaut 2 STS-133 Launch Activities

Robonaut 2 (R2) was prepared to launch aboard STS-133 in Nov., which provided ample opportunity to showcase NASA’s dexterous robot. Media demonstrations proved successful, with over 390 media personnel present. A Tweetup was also held with 125 selected national and international participants whose total followers numbered over 1.8 million.

Launch Abort Systems Tour

The Orion Launch Abort System Pathfinder was transported from White Sands Missile Range, N.M., to NASA's Kennedy Space Center in Fla. The tour made stops in:

- Denver, Colo.
- Orion, Rockford and Chicago, Ill.
- Cleveland, Ohio
- Philadelphia, Pa.
- Langley, Va.



Launch Abort Systems Tour Stops

■ State visited by *Launch Abort Systems Tour*

● City Visited

-- Tour Trail

The tour took place in Sept. and Oct. and hosted over 100,000 visitors. With 27 total media interviews, this Outreach initiative made a significant impression on the general public locally at each stop, but also on a broader scope via televised and Internet media attention.



NASA EDGE Live

The NASA EDGE team conducted five NE live webcasts via UStream in 2010, reaching over 23,000 people both nationally and internationally. Viewers were able to communicate with the NASA EDGE team either by email, Twitter, Facebook or the UStream chat line. Events covered in 2010 included Sun-Earth Day 2010, Orion Pad Abort-1 Flight Test, Desert RATS 2010, and the A-Train Symposium. Look for more NE Live events in 2011.



Lunabotics Mining Competition

This university level competition is designed to engage and retain students in STEM studies. NASA directly benefits from the competition by encouraging the development of innovative lunar excavation concepts from universities, which may result in clever ideas and solutions that could be applied to an actual lunar excavation device or payload. NASA EDGE took advantage of this opportunity May 27 and 28 by hosting live shows:

- NE Live@Lunabotics Mining Competition – 3,821 views
- Best of NE Live@Lunabotics Mining Competition – 369,354 downloads



GigaPan Mission Voting Activity

Released: July

Page Views: 4,047

Votes: 1,174

<http://www.gigapan.org/profiles/27956>

This Web activity took place during Desert RATS, July 26 - Aug. 8. It enabled the public to explore high-fidelity images at multiple resolutions, create and share snapshots of what they found and collaborate about their discoveries. NASA published two GigaPan panoramic images of the Desert RATS test site in the Ariz. desert. The public viewed the GigaPans online and voted on a location for the Desert RATS crew to visit and conduct technology development research. The Desert RATS crews navigated to the winning location in the Space Exploration Vehicles during the Aug. 31 - Sept. 16 field tests.

Through the use of GigaPan images, the public was given the opportunity to vote on possible test sites for the 2010 Desert RATS team to explore.



2010 ESMD

Communications and Outreach Report



Exploration Systems Mission Directorate has exciting news and images to share as we prepare for the nation's next steps in space exploration. Follow it all at:

www.nasa.gov/exploration

National Aeronautics and Space Administration

Headquarters

300 E Street, SW
Washington, DC 20546
www.nasa.gov/centers/hq

www.nasa.gov