



FOOTPRINTS: EXIT INTERVIEW REPORT

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Purpose

Science on a Sphere has been utilized at SMM to display a variety of scientific visualizations. A regular playlist developed by SMM staff plays continually for visitors. The playlist is composed of three thematic groups of visualizations covering the solar system, water, and Earth surface dynamics. Starting in December 2006, SMM began showing the NASA-produced film *Footprints* on the Sphere. A study was carried out to gain visitor feedback on the film and inform future development of visualizations and films for the Sphere.

Methodology

For the purpose of the study, *Footprints* was set to run continuously. To alert visitors to what was playing on the Sphere, signs were posted in the exhibit area that said "Now Showing: NASA's Footprints Movie".

To select visitors for the study, a continuous random sampling method was used. The first visitor to walk over an imaginary line near the exhibit entrance was chosen as the target visitor. When the visitor left the Sphere area, they were approached for an interview. Only visitors who viewed *Footprints* for at least a minute were approached, to ensure visitors saw a minimum amount of the film in order to be able to answer questions related to comprehension of the movie's content. The sample included all visitors ages 8 and above. Interviews took place December 22 - 31, 2006. A total of 57 visitors were interviewed. Visitor demographics can be found on page 7.

Interview Results & Discussion

Overall Enjoyment of Footprints

Visitors were asked how much they enjoyed the *Footprints* movie, using a four-point scale. Almost all visitors (98%) chose the two highest levels of enjoyment; with over half (56%) stating the movie was so enjoyable they would encourage others to see it. None of the visitors chose the lowest level of enjoyment, "not enjoyable at all".

<u>Overall Enjoyment of <i>Footprints</i> (n=57)</u>	
	<u>Percent of Visitors</u>
So enjoyable, encourage others to see it	56%
Enjoyable	42%
Didn't enjoy it	2%
Not enjoyable at all	0%

Negative Reactions to Footprints

Visitors were asked if they had any negative reactions to the film. A little more than a quarter of visitors (28%) had a negative reaction. These 16 visitors were asked to explain their reaction. Reactions were coded into themes. Negative reactions were most often related to the lack of explanation of the content (7 out of 16). *“Wasn’t sure what the story was. Not very focused.”* *“A little facile in it’s exploration of things. Too ‘feel good’, not informative.”* *“Didn’t understand the title ‘Footprints’.”* *“Didn’t know what some of the things were such as the planets.”* Visitors also had difficulties hearing the audio (5 out of 16). *“The sound. I had trouble with some of the enunciation.”* *“Not especially easy to hear.”* Additional negative reactions from four visitors included not liking the music, technical difficulties while viewing the Sphere, and disagreeing with the information presented. *“Some of the information doesn’t work with my religion. I don’t believe in the Big Bang.”*

Most Interesting Images

Visitors were asked what image in *Footprints* they found most interesting. Responses were coded into themes and representative responses are included for each. Some visitors mentioned more than one image of interest. Solar system visualizations were most commonly mentioned (60%), with 14 out of these 34 responses related to Mars images.

Most Interesting Image (n=57)

60% (34) Solar System Images

- The different heights and depths on Mars.
- Pictures of Mars.
- Planets and moons.
- Different planet surfaces.
- The moon.
- Outer space intrigues me. The stars and galaxies and imagery in general. The sphere was fascinating.
- Black holes.
- Gamma ray bursts.

37% (21) Earth Images

- The view showing the inside of the hurricane.
- Lights at night.
- Earth spinning on its axis.
- The thermal Earth. Ice caps.
- Heat of the oceans.
- When it showed the spread of life over the planet with the phytoplankton.
- The Earth.

11% (6) Satellite Images

- Satellite doing orbits and building image of earth
- Movement of light on the sphere where they painted the images on.
- Satellites.

7% (4) Other Images

- Street patterns.
- Basketball.
- Stones moving at the end.
- I liked the handprints.

5% (3) Didn't Indicate a Particular Image

- The whole thing.
- All the different views.
- The sphere motion is just fascinating -- no one image stood out.

Most Interesting Audio

Visitors were also asked what they heard during *Footprints* that they considered most interesting. Responses were coded into themes and representative responses are included for each. Most visitors (70%) mentioned something they heard of interest. The interesting things they heard varied, as illustrated in the list of themes below. However, there were a quarter of visitors (26%) who said they did not hear anything that was particularly interesting to them and a small percentage (4%) said they were unable to hear the narration.

Most Interesting Thing Heard (n=57)

16% (9) Gamma Ray Bursts

- The creation of the stars. The explosions. That it happens every day.
- Cosmic blasts happen everyday.
- At the end, the planets smashing into each other.

14% (8) Mars

- That if Mars had water, the northern hemisphere would be underwater.
- Mars is mountainous and volcanoes are higher than the atmosphere

11% (6) Everything Was Interesting

9% (5) Earth

- The temperature of water and its influence on tropical storms. (We just saw the hurricane movie and that put it all together.)
- The fact that you could photograph hurricanes in that way to see inside the hurricane.
- Things about the future of the Earth and changes that might occur.
- Phytoplankton bloom

7% (4) Satellites

- The stuff about how the satellites work painting a map of the whole globe piece by piece.

5% (3) Narrator's Voice

- The voice tone is marvelous; good at drawing you in. If the kids weren't with me I'd watch it again.

4% (2) Asking the Right Questions

- "What we know is an element of what we think to ask." I'm not sure if exact, but it sure resonated with me.

5% (3) Other

- Connection of all energy connected to Sun.
- The music.

4% (2) Couldn't Hear

26% (15) Nothing in Particular

Confusion with Footprints

Visitors were asked if there was anything they found confusing about the film. Around a third of visitors (30%) expressed confusion. These visitors were then asked to explain their confusion. Their responses were coded into themes and all responses are included below to illustrate the range of confusion. Some visitors had more than one area of confusion. Visitors were most frequently confused with particular images they viewed on the Sphere (53%), citing the planet images, moving rock images, map of the universe, and cell phone bars.

What Visitors Found Confusing (n=17)

53% (9) Confusion with Particular Images

- The beginning; what were all those other planets? I thought Mars was a hot planet.
- Are those all planets, or moons, or what?
- The planets.
- The moving rocks -- didn't make sense.
- What's up with the rocks in the sand?
- Didn't know what the rocks in the sand were about.
- The map of the universe, "baby picture", didn't understand that.
- The picture of the universe that it related to an energy field; it didn't make sense to me. That could have been explained more.
- Bars on the sun (cell phone); weren't sure what they were.

29% (5) Rapid Rate in which Images Change

- Too fast at changing topics. I wanted it to stay on one thing for longer.
- Transition felt abrupt.
- Needs more explanation of what you're seeing. Focus jumps too frequently and too quickly.
- It all went a little fast; couldn't tell which planets went with which name.
- They didn't know where they were going in the end. The wrap-up was abrupt. Poor ending.

18% (3) Why Movie is Called Footprints

- The title. I didn't understand why it was called Footprints.
- Came in the middle - didn't know what it was about - the title didn't help.
- Why is it called Footprints?

12% (2) Couldn't See Certain Features From All View Points

- Some with Katrina -- Katrina was only visible from one side. The Apollo landing sites were only visible from one side.
- On one half of the sphere so I had to walk around to see them.

12% (2) Other

- How the satellites work.
- It's all new, all of it. I'd watch it twice if I could.

Desire for More Information about Footprints

Over half of the visitors (56%) indicated that they would like the museum to provide more information about something they saw in the film, while an additional 5% said they would “maybe” like more information. Responses of what these 35 visitors would like to see were coded into themes and representative responses are included below. Some visitors requested more than one thing they would like additional information about. Responses were spread across themes with information about our solar system most frequently requested (40%).

Additional Information about Footprints (n=35)

40% (14) Information about Our Solar System

- General space info, like about stars and other planets.
- Separate information for each planet or subject mentioned.
- More on the solar system, planets.
- Gamma rays,
- Space exploration.

20% (7) General Information about the Movie

- Sign with the topic of the film. Title doesn't tell you what it's about.
- More detailed information about the movie's theme.
- A pamphlet to go with the movie.
- A general synopsis -- for kids especially.

14% (5) Information about Earth Images

- More about hurricanes and how they work.
- How our planet got to where it is today.
- Interactive exhibits about the earth and life spreading on planet and lighting.
- More about the arctic areas, kind of left it hanging

14% (5) Information about Satellites

- More about satellites -- how they're launched and used.

11% (4) More Advertising

- Put out a sign to tell folks that there's a new movie.
- Use the website to note that this is available.
- Schedules.

6% (2) Information about the Sphere

- Brochures about SOS.
- Where is this information coming from; how can we see it?

11% (4) Other

- More specific shows. A bunch of movies that each focus on one moon.
- An expanded exhibit.
- Different learning styles covered.
- Facts and statistics.

Main Messages

Visitors were asked what they felt the movie was trying to show visitors. Responses were coded into themes and representative responses are included for each. Some visitors mentioned more than one thing the movie was about. The most frequently mentioned main message was related understanding the solar system (51%). Only 5% of visitors were unable to articulate what they thought the movie was trying to show.

Footprints' Main Messages (n=57)

51% (29) Solar System

- Geography of our solar system.
- The complexity of the universe.
- Trying to explain how amazing the earth, sun, moon, and our neighbors are.
- What's happening in the solar system right now.
- Our increase of knowledge about how the universe is.
- The origin of the universe and where we fit into it.
- There are all these places out there; we're just learning more about them.
- We're a tiny spot in our universe and there's a lot to explore.

26% (15) Earth

- Different aspects of Earth.
- Earth. What it looks like from space.
- An overview of earth and changing things around. How things change.

7% (4) About NASA

- What NASA is looking for. Capabilities of what they're doing. A PR piece for NASA.
- Some of the new things they've discovered.

5% (3) Satellites

- How the satellites work.
- Different things that satellites can show.

4% (2) Impact on the planet

- That we leave an impact on the planet.

14% (8) Other

- A complete picture.
- The big picture, perspective.
- Connections with the past and others.
- Opening our eyes to what we don't normally see everyday.
- You can imagine what things will be.
- It's showing me things I couldn't imagine.
- Knowing to ask the right questions.
- Awareness of everything and how much we have to learn.

5% (3) Don't know

Why Visitors Left Before End of Movie

To understand why visitors do not watch the entire movie, those that left before the credits started were asked if there was a particular reason they did not stay until the end of the film, regardless of when they entered the exhibit area. Of the 57 visitors interviewed, 11 visitors left before the end of the credits started to roll. (Note that only visitors who had been at the exhibit for at least one minute were interviewed, see the tracking study for measures of what percent of visitors leave before the credits begin.) The 11 visitors were asked if there was a particular reason they decided not to stay for the entire movie. The most commonly cited reason (8 out of 11) was they left because of other group members, usually kids. “*Child too excited about other things in the museum.*” “*Kids wanted to leave or I would have stayed.*” “*Chasing a 3-year old.*” There were three visitors who had other reasons for leaving which included they didn't want to miss the Omni Movie, they wanted to get in more of the museum before the Omni movie, and they couldn't hear the audio.

The 11 visitors who gave reasons for leaving early were asked if they had any suggestions on how the museum could change the movie so they would have stayed longer. Only two visitors had suggestions. “*More seating.*” “*Close this off so this is what you can focus on. Other things are too distracting*”. One visitor did not have any suggestions and instead stated that they “*liked the ability to leave when kids got restless*”.

Length of the Movie

Around a quarter of the visitors interviewed (25%) saw the entire film from the opening to the closing credits. These visitors were asked what they thought about the length of the film. Most visitors (11 out of 14) thought the length was just right. None of the visitors thought *Footprints* was too long.

<u>Thoughts about Length of <i>Footprints</i> (n=14)</u>	
	<u>Number of Visitors</u>
Just right	11
Too short	3
Too long	0

Visitor Demographics

Visitor demographic information is self-reported.

Interest Level in Science (n=57)

Interest level 1-5: 12%

Interest level 6-10: 88%

Knowledge of Science (n=57)

Knowledge level 1-5: 35%

Knowledge level 6-10: 65%

Sex (n=57)

Females: 58%

Males: 42%

Primary Language (n=57)

English: 97%

Spanish: 2%

Chinese: 2%

Ethnicity (n=57)

White: 86%

African-American: 7%

Asian: 4%

Hispanic: 2%

Mixed: 2%

Age (n=57)

Median age: 41

Minimum age: 9

Maximum age: 72

Age Range (n=57)

8 – 16: 18%

16 – 24: 7%

25 - 34: 14%

35 – 44: 30%

45 – 54: 19%

55 – 64: 7%

65+: 5%

Education (n=57)

Less than High School: 19%

Completed High School: 2%

Some College/Technical School: 11%

College Degree: 37%

Post-grad Degree: 32%

Household Income (n=57)

Under \$30,000: 4%

\$30,000 to \$39,999: 7%

\$40,000 to \$49,999: 2%

\$50,000 to \$59,999: 5%

\$60,000 to \$69,999: 5%

\$70,000 to \$79,999: 4%

\$80,000 to \$89,999: 9%

\$90,000 to \$99,999: 5%

\$100,000 to \$149,999: 25%

\$150,000 and higher: 7%

Didn't provide info (refused and no data): 18%

Group Composition (n=57)

Adults and Children: 81%

Adults only: 19%

Number of Other Visitors in Group (n=57)

Median: 3

Minimum: 1

Maximum: 7

Ages of Other Visitors in Group (n=57)

Median age: 17

Minimum age: 2

Maximum age: 80

SMM Members (n=57)

No: 51%

Yes: 49%

Number of Visits to SMM in the Last 2 Years (n=57)

None: 23%

1-2 times: 30%

3-5 times: 30%

More than 5 times: 18%

