

Introduction

As part of NASA grant award NNX09AL70G, the department of Visitor Research & Program Evaluation at the Denver Museum of Nature & Science (DMNS) has been conducting various evaluations of the Museum's Science on a Sphere (Sphere).

The main goals of the five-year NASA grant are to educate audiences about planetary exploration missions and how they illuminate climate science through comparative planetology, and to produce new educational materials, interpretation techniques, and knowledge that will facilitate more effective informal education on these themes nationally. The objectives in pursuing these goals are to: (1) boost literacy in climate science; (2) build awareness of NASA's space science missions and the relevance of NASA Earth observing satellites to contemporary issues of global change; and (3) provide new knowledge of the effectiveness of different modes of employing these innovative, rapidly proliferating, visually compelling but inadequately tested display systems. Internal evaluation plays a crucial role in assessing and ultimately reaching these goals and objectives.

The Sphere was installed in DMNS' permanent space science gallery, *Space Odyssey*, in February 2010. *Space Odyssey* "Museum Galaxy Guides" (volunteer facilitators) were trained on Sphere operation and content in April 2010. The purpose of the Baseline Visitor Study was to establish a baseline of visitors' length of stay, behavior, interactions, perceptions, and interest in the Sphere near the beginning of the grant period. These data and findings will serve a basis of comparison for future evaluations and studies to occur after enhanced development of Sphere facilities, peripherals, and programming.

Method

Data was collected over four weekends in September 2010. Additionally, data was collected on one Monday—a public holiday (Labor Day). Research assistants timed and observed a random sample of 118 adult visitors at the Sphere. Ninety-two of those visitors were also interviewed following their time at the Sphere. Those interviewed were asked to complete a visitor information sheet, providing researchers with demographic information. An incentive of one IMAX voucher per person was used. There were no refusals, however 36 visitors were at the Sphere for less than 30 seconds and therefore were not observed or interviewed.

The research assistant protocol, observation sheet, interview questions, and visitor information sheet can be found in the Appendix of this report.

The observation sheet, interview questions, and visitor information sheet were adapted from Science Museum of Minnesota's (SMM) 2006 formative evaluation of their Sphere¹. This was done so that comparisons between Sphere locations could be made. Just after the data collection period, the Institute for Learning Innovation released their cross-site summative evaluation of Science on a Sphere for NOAA². Comparisons between DMNS data and that report are also noted where applicable.

¹ http://www.oesd.noaa.gov/network/SOS_evals/SOS%20July06%20Formative%20Report.pdf

² http://www.oesd.noaa.gov/network/SOS_evals/SOS_Final_Summative_Report.pdf

Observation Results and Discussion

Time Spent at Science on a Sphere

Visitors spent a median total time of 3 minutes at the Sphere, with a minimum time of 36 seconds and a maximum time of 20 minutes and 48 seconds. This was comparable to the average time found by SMM, though they did report the high end of their range at over 30 minutes. There are many factors which may influence length of stay at the Sphere, including available seating, total time of the playlist (i.e. loop), if a movie is shown (e.g. *Footprints*), if facilitation (i.e. a show or interactive activity) is occurring, and the fact that the Sphere is part of the *Space Odyssey* gallery experience.

Behaviors at Science on a Sphere

Visitor behavior indicated a high level of engagement. As illustrated in Table 1, a majority of visitors were observed talking about the Sphere's content (86%), pointing at the Sphere (75%), and interacting with a Museum Galaxy Guide (62%). Table 1 also compares and contrasts the findings of the DMNS baseline findings to the SMM 2006 formative evaluation.

Table 1: Behaviors Observed at Science on a Sphere
DMNS and SMM

Behavior	Percent of Visitors	
	DMNS N=118	SMM N=50
Sat down	4%	60%
Pointed at sign	11%	20%
Talked about Sphere's technology	21%	22%
Examined/read sign	31%	82%
Interacted with Museum Galaxy Guide	62%	N/A
Pointed at the Sphere	75%	62%
Talked about Sphere's content	86%	72%

Whereas most behaviors were comparable between DMNS and SMM, signage at SMM appeared to engage visitors more. DMNS has installed flat screen panels and signage since the baseline visitor study data was collected. It will be of interest to assess if new signage appears to affect visitor behavior.

Seating was an addition to the exhibit area based on reports from several Sphere installations of enhanced visitor comfort and experience, however very few visitors (4%) sat down or utilized the benches during their time at the Sphere. Table 2 demonstrates that longer length of stay did appear to increase the likelihood that a visitor would sit.

Table 2: Sitting Behavior Observed at Science on a Sphere

Behavior	Visitor Count	
	Stood	Sat
Stayed less than 3min	64	1
Stayed more than 3min	46	4
Total	110	5

Observations indicated that the majority (61.5%) of visitors stood in one place while viewing the Sphere. About one in ten visitors (12.8%) circled the entire Sphere.

Museum Galaxy Guide Facilitation

A unique element of DMNS’ Sphere is the presence of *Space Odyssey* Museum Galaxy Guides who facilitate the visitor experience. DMNS is four times more likely to facilitate the Sphere when compared to other Sphere sites. ILLI’s cross-site summative evaluation cited facilitation 21.2% of the time, whereas DMNS’ Sphere was facilitated 84.7% of the time. Examining what behaviors occurred as part of the facilitation, Museum Galaxy Guides were observed using the Wii remote to manipulate the Sphere, using their fingers and hands—as well as electronic pointers—to point things out on the Sphere, amplifying their voices with a microphone, and using peripheral laptops to show visitors websites and send links home to visitors’ emails. Table 3 illustrates the most commonly observed methods of facilitation observed, as well as the percent of time that Museum Galaxy Guides were not present to facilitate the Sphere.

Table 3: Museum Galaxy Guide Facilitation Observed at Science on a Sphere

Type of Museum Galaxy Guide Facilitation	Percent of Visitors
Wii	69.50%
Pointer	23.70%
Microphone	16.10%
Laptop	6.80%
Finger/Hand	5.10%
<i>No Museum Galaxy Guide Present</i>	<i>15.30%</i>

Museum Galaxy Guide facilitation did not appear to have a statistically significant affect on whether visitors found the Sphere interesting or would recommend it to a friend. The one exception was when Museum Galaxy Guides used electronic pointers. The use of pointers *did* seem to significantly increase the visitors’ self-reported interest level in the Sphere³.

The ILLI cross-site summative evaluation found that 87% of visitors who had a facilitated Sphere experiences reported learning something new. This difference in visitor perception was statistically significant, meaning that visitors who had facilitated experiences were more likely to perceive they learned something new.

Images Viewed

Visitors were observed viewing several images more often than others, including “Earth: Weather,” “Earth: Air Traffic,” “Earth: Seasonal Changes and Sea Floor,” “Earth: Day and Night,” and “Mars.” The top two observed images (“Earth: Weather” and “Earth: Air Traffic”) were observed almost twice as often any other images available on the playlists. It is unknown whether or not this is due to Museum Galaxy Guides choosing these images, visitors requesting them, or a combination of these and other factors.

Interview Results and Discussion

Previous Experience with Science on a Sphere

For two thirds of those interviewed (66%, n=51/78), it was their first time seeing a Science on a Sphere. Most visitors who had seen a Sphere previously had done so at DMNS (a previous visit), but the National Oceanic and

³ $\chi^2(5, N = 85) = 13.27, p = .021$

Atmospheric Administration (NOAA, in nearby Boulder, CO), the Denver Botanic Gardens (which is a *Magic Planet*), and Washington, D.C. were also cited.

Interest in Science on a Sphere

Employing a rating scale of 1 (not at all interesting) to 10 (extremely interesting), visitors gave the Sphere a mean score of 9.15. Almost 50% (49.4%, n=42/85) of visitors rated it a 10. Over 90% of those interviewed rated it an 8, 9, or 10. The lowest rating a visitor gave was a 6 (one individual). These results were comparable to SMM’s formative evaluation⁴.

Describing Science on a Sphere

When asked how they would describe the Sphere to a friend, several themes emerged. The words “see” and “seen” particularly prominent (mentioned 22 times), referencing the visual nature of the Sphere. For example:

- “Floating globe of the earth that has all the air traffic flow within 24 hour period; see movement of all airplanes and where it’s going”
- “Coolest thing I’ve seen in a museum in a long time”
- “Pretty big, never seen anything like that before, presentation awesome”
- “I love it; I wouldn’t be able to tell them to [describe it], tell them to stop in and see it themselves”

Also prominent were mentions of the Earth (16 times) and planets (9 times):

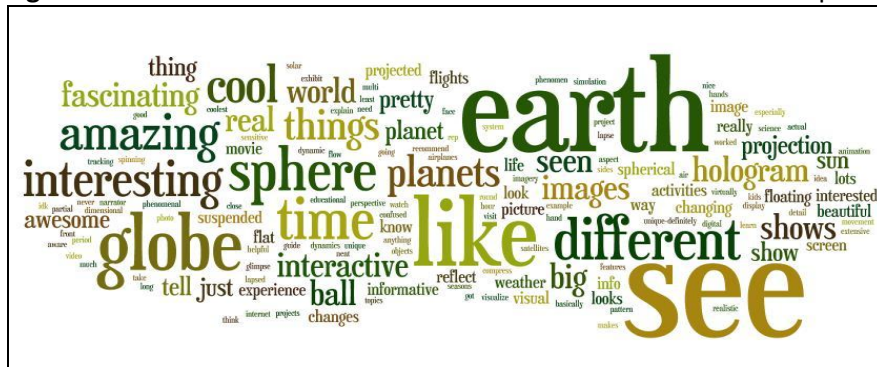
- “It’s wild, very interesting, big round Earth thing”
- “Earth on movie screen”
- “Example of the Earth from outer space”
- “It’s a really cool way to visualize sun, Earth, Mars, Moon, see the planets as it is”
- “A big ball they can show you virtually any planet and they can rotate to show you any aspect”

Words like cool (5 times), amazing (6 times), and different (7 times) also were pronounced:

- “Very interesting, technology is cool”
- “Amazing, so informative, different, especially if your kid’s interested in science”
- “Amazing, fascinating”
- “Changing, informative, lots of different things, not just Earth can be seen”
- “It’s different, not flat, just like Earth, mesmerizing”

Figure 1 below visually represents the visitors’ answers in a “word cloud,” with words visitors used with greater frequency appearing larger.

Figure 1: Word Cloud of How Visitors Would Describe Science on a Sphere



⁴ 72% “I was so interested I’d come see it again” and 22% “I was interested, but I wouldn’t come see it again.”

Recommending Science on a Sphere

When asked how they would recommend the Sphere to a friend, all visitors who responded to this question (n=90) indicated they would recommend it.

Circling Science on a Sphere

Visitors who were not observed walking around the perimeter of the Sphere were asked if they were aware they could walk all the way around it. Most (88.4%, n=61/69) *did* know they could walk around the Sphere. When asked if there were particular reasons for not circling the Sphere, most referred to the rotation of the Sphere and an understanding that “the other side would come around.” SMM reported a similar finding on their formative evaluation, with 14% of visitors believing it “wasn’t necessary to see everything.” Visitors also stated that they were “listening to the Galaxy Guide,” and therefore did not circle the Sphere.

Technology of Science on a Sphere

Almost two-thirds (64.5%, n=58/90) of visitors expressed interest in knowing more about the technology behind the Sphere. In particular, visitors wanted to know “how it works.” Visitors were curious about the projection, how the Sphere was suspended/hung, converting images to spherical format, and how the Wii remote was used. Similarly, SMM found that 43% of visitors wanted to know “how images are projected,” 22% wanted to learn “how the Sphere is set up,” and 22% wanted to know generally “how the exhibit works⁵.”

Confusion with Science on a Sphere

About eighty-six percent (86.2%, n=75/86) of visitors indicated they did *not* find anything confusing. When visitors did indicate confusion, it was to do with what they were seeing (what the images were and what the colors meant). Several visitors did mention that the Museum Galaxy Guides were able to explain things and eradicate the confusion.

Signage for Science on a Sphere

At the time of data collection, a tall sign (see Figure 2) was displayed near the Sphere to provide visitors with information about the visualizations in the playlist.

Figure 2: Sign for Science on a Sphere



⁵ Following this evaluation, wall label interpretation was added to address this interest.

Though most visitors did notice the sign, over 40% did not (41.1%, n=37/90). Of these, about half (47.1%, n=16/34) *did* feel that their visit to the Sphere would have been different had they seen the sign. These visitors believed the sign would have provided more information about what they were seeing on the Sphere. Several visitors did mention that the Museum Galaxy Guides provided similar information.

Improvements to Science on a Sphere

Just under half (46.1%, n=41/89) of the visitors interviewed felt that there were things the Museum could do differently to help visitors better understand the Sphere. Several visitors expressed the need for more explanations to accompany the visuals, in both written (signage) and oral forms (Museum Galaxy Guides)⁶:

- “Making sure Guide is describing what is on sphere”
- “Screen that shows what is displaying”
- “Description of what you're seeing right in front of you”
- “Have more signage around sphere so you could read sign with each image on sphere”
- “False color guide to hard to understand”

Visitors also referenced how useful it was to have the Museum Galaxy Guides at the Sphere”

- “As long as Galaxy Guide is there it's okay”
- “Galaxy Guide did a really good job”
- “There could be 2 people, one could explain and one to answer questions”
- “I liked someone there interpreting it to say what was going on”
- “Keep Galaxy Guides”

Comparing these suggested improvements with SMM’s formative data, it appears that Denver’s Museum Galaxy Guides may alleviate the need for some improvements. For example, in Minnesota 33% of interviewed visitors suggested improvements to the quality of the audio and 28% requested labels. In the absence of live interpreters, the Sphere relies on good audio and clear, descriptive signage. While the issues of written and oral explanations appear consistent, Galaxy Guides may be able to more quickly and readily address the visitor concerns. Additionally, 22% of SMM visitors requested “a different view,” 11% wanted “more narration,” and 11% wanted to slow down images.” Again, these are improvements that Galaxy Guides can accommodate in real time.

Visitors were also asked if there were other images they would find interesting to see on the Sphere. A variety of ideas were expressed, including: population shifts, galaxies, star maps, eclipses, volcanoes, tidal waves, landslides, rovers exploration path, Hurricane Katrina, pollution, prehistory, moving plates, different layers of atmosphere, seasonal changes, the moon (with astronauts on it), continental drift from Pangaea to present, ice ages, and sun spots.

When asked if the Museum Galaxy Guides could do anything with the Sphere to make it more interesting or improve their experience, most visitors (80%, n=72/90) either commented on the helpfulness of the Guides or could not think of any improvements. Of the visitors who did have recommendations, seven requested more detailed information, three would have liked to have more interaction or to have been able to manipulate the Sphere themselves, and two mentioned the need for more knowledgeable or better informed Guides.

⁶ Following this evaluation, side and back screens/monitors were added to address this.

Visitor Information: Demographic Results and Discussion

Visitor demographic information was self-reported.

Sex/Gender (n=90)

Male: 52.8%

Female: 47.2%

Ethnic Background/Heritage (n=86)

African, African American,
or Black: 3.5%

American Indian, Native American, or
Alaskan Native: 1.2%

Asian or Asian American: 3.5%

Latino, Hispanic, Chicano, or
Latin American: 11.6%

Middle Eastern, Arab, or
Arab-American: 0%

Native Hawaiian, Filipino, or
Pacific Islander: 0%

White, Caucasian, or
European American: 77.9%

*Of the above, 2.3% chose more than one category

Museum Membership (n=90)

Members: 28.9%

Lapsed Members: 14.4%

Non-Members: 50%

Someone else in Group is Member: 6.7%

Visits in Past Year (n=90)

First-time Visitor: 23.3%

First Visit in Past Year: 22.3%

1-2 Visits: 24.4%

3-5 Visits: 18.9%

More than 5 Visits: 11.1%

Age (n=89)

18-25: 11.1%

56-65: 8.9%

26-35: 20%

66-75: 4.4%

36-45: 36.7%

Over 75: 0%

46-55: 18.9%

Languages Spoken in the Home (n=86)

English only: 83.7%

Spanish only: 2.3%

Russian only: 1.2%

English *and* Another Language: 12.8%

*Of the above, Spanish and Russian were most common

Highest Level of Education Completed (n=90)

Less than High School: 0%

Completed High School: 5.6%

Some College or Technical Education: 25.5%

College Degree: 33.3%

Graduate/Post-Graduate Degree: 35.6%

Group Composition (n=90)

Alone (no group): 0%

School Group: 0%

Social Group with Children: 73.3%

Social Group *without* Children: 26.7%

*The above includes 64 children (youth under 18)

Joint Annual Income (n=88)

Under \$50K: 21.6%

\$50-74.9K: 21.6%

\$75-99.9K: 17%

\$100-124.9K: 19.3%

\$125-149.9K: 6.8%

\$150-174.9K: 2.3%

\$175K+: 11.4%

When the above demographics are compared to the DMNS visitor baseline study for the entire Museum in fall 2010, they are generally similar. There are more males in this study than is typical for DMNS' general Museum audience (52.2% for the Sphere baseline compared to 40.3% on the fall Museum baseline). Age, race and ethnicity, income, education, past visitation, group composition and membership are all comparable to the fall Museum baseline.

Next Steps

The above data and results will be used as a baseline to compare findings in future studies and evaluations throughout the grant period. Additionally, the ILI cross-cite summative evaluation will serve to inform and direct upcoming evaluation. Possible studies may include the affect of Museum Galaxy Guide facilitation techniques (i.e. use of laptops, spinning the Sphere versus walking visitors around it, etc.) on the visitor experience, visitor understanding and interpretation of color schemes, and prototyping of in-house (DMNS created) visualizations, playlists, and shows. ILI's baseline set of visitor outcomes will be tested at DMNS and future visitor research will be guided by ILI's findings, including an examination of real versus perceived knowledge gain and the potential influence of supplementary space science content in *Space Odyssey*.

For more information, please contact Kathleen Tinworth, Director of Visitor Research & Program Evaluation at the Denver Museum of Nature & Science: kathleen.tinworth@dmns.org.

APPENDIX

Research Assistant Protocol

Science on a Sphere Front-End Evaluation

September 2010

Materials in SOS Box (to be picked up from and returned to Security Subpost):

- Copies of Science on a Sphere: Observations
- Copies of Science on a Sphere: interview (on one side) & Visitor Information Sheet (on the other side)
- 1 clipboard
- Pens/pencils
- RA written assignment for Science on Sphere Front-End Evaluation
- RA protocol for Science on Sphere Front-End Evaluation (this document)
- Kathleen's business cards
- IMAX vouchers (*one per interviewed visitor)
- SOS playlists (For reference only! **Please keep in the box for other RAs!**)

1) Scan in with your badge and pick up the clear plastic survey box at security labeled "Research Assistants S.O.S." Make sure you are visibly wearing your badge. If you forgot your badge, please let security know you need a contractor temp badge for the day.

2) Go into *Space Odyssey* and find a good place to observe visitors approaching the Sphere. Though standing and being mobile is recommended for observations (so that you can see and hear the visitors), feel free to sit on the benches near the Sphere or use one of the mobile stools in the gallery if you need to rest during your shift.

3) Load one observation sheet and one interview/visitor information sheet onto your clipboard with the *observation sheet on top* and have a pen/pencil ready. Make sure your stopwatch is clear/reset to zero. Write the date and your name on the top of the observation sheet where indicated.

4) We want a **random sample** of visitors. When you are free (i.e. not observing or interviewing a visitor), approach the second adult visitor you see looking at/approaching the Sphere. We are surveying **adults only** (those who appear to you to be 18+), and only one adult per group. This approach will help make sure we don't observe and interview the same "type" of people, even on accident (e.g. those who don't have strollers or little kids, those who look annoyed/ unapproachable).

5) Start your stopwatch to time how long the visitor looks at/interacts with the Sphere. There is a space on the observation form for you to record the time (in hours, minutes, and seconds). While the visitor you are observing is looking at/interacting with the Sphere, use the observation form to note behaviors demonstrated, whether or not the visitor circled the Sphere, the Galaxy Guide's role and activities, and what image(s) were displayed during the observed visitor's encounter. If you do not know what image(s) were on the Sphere, consult the playlist reference sheet, the stanchion sign, or ask a Galaxy Guide.

The more information (including detailed notes) that you are able to record on the observation sheet, the better.

6) When the observed visitor appears to disengage, stop the stopwatch and record the total time spent at the Sphere. Record the time on the observation sheet.

7) As soon as possible, approach the visitor you just observed and use the opening line from the interview sheet:

"Hi, my name is _____ and I'm talking to visitors today about (point to Sphere) Science on a Sphere. If you're able to spend a few minutes letting me know what you think, I have a free IMAX voucher for you."

Feel free to let visitors know you expect it to take 5-7 minutes of their time.

If the visitor refuses, please note that on the “survey #” line on the observation sheet (top right). Note the reason for the refusal (if know)—e.g. not a native English speaker, going to IMAX show, etc. **Remember, we are visitor advocates. It is absolutely ok if visitors say no! Expect is to happen on your shift and never feel you have to hound or pressure our visitors. They are helping us!**

If the visitor refuses, return to step #3 above and repeat.

If the visitor accepts, continue as below.

8) Go through the interview sheet in the order it is written and ask the questions verbatim.

If the visitor has questions that you cannot answer, please either refer them to a staff member/volunteer who can help or give them my card. (*Note: If the question is about how the Sphere works, there is an informational sign to the left of the Sphere.)

Please record all answers as clearly and completely as possible and using the visitors’ own words.

9) When you complete the interview, thank them and tell them about the visitor information sheet using the language on the bottom of the interview form:

“Thank you so much! Your feedback will really help us improve this exhibit. Before you go, let me hand this over to you and get you to fill out the back of this.”

10) Flip the sheet over on the clipboard and hand it, with a pen or pencil, to the visitor to complete. This side of the sheet should be filled out by the visitor, not the RA.

Important Notes

Like our Baseline survey, the visitor information sheet has some personal and oftentimes sensitive questions on it. There is an explanation about why we collect this data at the top of the sheet. If you are asked about why we need to know this sort of demographic information, refer to the explanation on the top of the sheet and let them know it is completely confidential.

We have added a check box where people who identify as GLBTIQ can indicate as such. This is a demographic we have not previously collected, and we are experimenting with the best way to collect this data. As such, you may get asked about it. GLBTIQ stands for “Gay, Lesbian, Bisexual, Transgender, Intersex, Queer (or Questioning). Most people who identify as any of these will know the acronym and can choose to self-identify on our form. For some visitors this may be an unfamiliar term. If it is, most will simply ignore it. If you are asked about it however, feel free to simply and directly explain/answer that it is “for those within the gay and lesbian community.”

11) Collect the form from the visitor when they are done and thank them again. Give them an IMAX voucher. (One IMAX voucher per interview. If they do the interview but refuse to do the information sheet/demographics, still give them the IMAX voucher as a thank you for their time.)

12) ***Ensure the date and your name gets added to the interview sheet. Also add the survey number to both the interview sheet and the observation sheet.*** This way the data on the two sheets can be linked. Use this format for survey numbers: mmddyy + #. For example, if it’s September 3rd and it’s your 4th survey of the day, the survey number would be: 0903104.

Go back over all your notes to ensure they are complete and legible before you move to your next observation. *When ready, return to step #3 above.*

13) Take breaks as needed!

At the end of your shift, please note down any additional observations or comments you have. Return all materials to the survey box, return the box to the security Subpost, and remember to scan out with your badge. Be sure you keep a note of the dates and hours you worked, as you will need them for invoicing.

APPENDIX

Observation Sheet

Date: _____/2010 RA: _____

Science on a Sphere: Observations

Total time at SOS Exhibit _____ : _____ : _____
Hour Min. Sec.

Survey # _____
date in mmddyy format + #
(or note if refused and reason)

Did the visitor do the following behaviors?

Behavior	Yes	No	Comments
Sat down			
Examined/Read signage			
Talked about content on the Sphere			
Talked about technology of the Sphere			
Pointed to Sphere			
Pointed to signage			
Interacted with Galaxy Guide			

How did the visitor view the sphere? (Check the highest level of movement)

- Stood in one place
- Circled less than half of the exhibit
- Circled half or more of the exhibit
- Circled the entire exhibit

Describe the Galaxy Guide’s role/facilitation while this visitor was at Sphere (*i.e. using Wii, laptop, laser pointer*):

Note which images were displayed when the visitor was observing the Sphere (*you can use the stanchion sign and/or ask the Galaxy Guides*):

ADDITIONAL NOTES:

APPENDIX

Interview Questions

Date: _____/2010 RA: _____ Survey Number: _____

Science on a Sphere: INTERVIEW

Hi, my name is _____ and I'm talking to visitors today about (*point to Sphere*) Science on a Sphere. If you're able to spend a few minutes letting me know what you think, I have a free IMAX voucher for you.

Is today this first time you've seen a Science on a Sphere before? Yes No
(If no) Where did you see one before? Here (DMNS) Elsewhere: _____

On a scale of 1 to 10, with 1 being 'not at all interesting' and 10 being 'extremely interesting,' how interesting is Science on a Sphere to you?

How would you describe Science on a Sphere to a friend?

Would you recommend Science on a Sphere to a friend? Yes No

(Only ask if they circled less than half of the sphere in your observation...)

Did you realize that you could walk all the way around the sphere? Yes No N/A circled half or more
(If Yes) Is there any particular reason why you didn't walk around the sphere?

Is there anything you would like to know about how the Sphere works or the technology of it? Yes No
(If Yes) What would you like to know?

Was there anything you saw that was confusing? Yes No
(If Yes) What was confusing? What made it confusing?

That sign (*point to sign*) has information about the images on the Sphere.

Did you notice the sign? Yes No

(If someone mentions that they read the sign but you didn't observe it, make sure you go back to observation sheet and check 'yes' for reading signage)

(If no) Would your visit have been different if you had seen the sign? Yes No
(If yes) How so?

Is there anything we could do differently to help visitors better understand what they're seeing on the Sphere? Yes No
(If Yes) What changes would you suggest?

What other images would be interesting to see on the Sphere? It can be anything you can imagine.

We have Galaxy Guides here in Space Odyssey (*point one out*) who talk to our visitors about science and show visitors how things work. What could they do with or using the Sphere that might be interesting to you or other visitors?

Thank you so much! Your feedback will really help us improve this exhibit. Before you go, let me hand this over to you and get you to fill out the back of this.

APPENDIX

Visitor Information Sheet

Science on a Sphere: Visitor Information Sheet

As a nonprofit, many of our funders require demographic information for grants. We also want to ensure we are an inclusive cultural institution, reflective and responsive to our community and visitors. This questionnaire is private and confidential, and will be used only for the purposes of learning more about our visitors. Thank you so much for your help.

Your Age:

- Under 18..... 36 to 45..... 66 to 75.....
- 18 to 25..... 46 to 55..... 76 or more.....
- 26 to 35..... 56 to 65.....

Your Gender: Male Female

Please check if you self-identify as GLBTIQ.....

What is your Ethnic Background or Heritage? (Check as many as apply.)

- African, African American or Black..... Latino, Hispanic, Chicano or Latin American.....
- American Indian, Native American or Alaskan..... Middle Eastern, Arab, or Arab-American.....
- Native..... Native Hawaiian, Filipino or Pacific Islander.....
- Asian or Asian American..... White, Caucasian or European American.....

If other, please specify: _____

What language(s) do you/your family speak at home? _____

Are you, or have you ever, been a member of the Museum of Nature & Science? (Please choose ONE.)

- Yes, I am a member..... No, I am not a member and have never been.....
- No, I am not a member but I used to be..... No, I am not a member but someone in my group is.....

How many times have you visited the Museum in the past year? (Please choose ONE.)

- This is my first visit here ever..... 1-2 times..... 5 or more times....
- This is my first visit in the past year..... 3-5 times.....

What is the highest level of education you have completed? (Please choose ONE.)

- Less than high school..... Completed some college or technical education..... Post-graduate degree.....
- Completed high school..... College degree.....

What is your home Zip Code? _____

What is the joint annual income of your family? (Include you and those you live with; choose ONE.)

- Under \$50,000..... \$125,000 to \$149,999.....
- \$50,000 to \$74,999..... \$150,000 to \$174,999.....
- \$75,000 to \$99,999..... \$175,000 or more.....
- \$100,000 to \$124,999.....

Who did you come to the Museum with today? (Please choose ONE.)

- I came here alone..... I am here in a social group that includes adults and children.....
- I am with a school group..... I am here in a social group that includes just adults.....

If other, please specify: _____

Please list the ages of all the other people who are with you at the Museum today:

Thanks again for your time! Please return this to the person who gave it to you.