Observations of Winter Visitors to
The Janet Annenberg Hooker Hall of Geology, Gems, and Minerals
at the National Museum of Natural History

INSTITUTIONAL STUDIES

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Observations of Winter Visitors to *The Janet Annenberg Hooker Hall of Geology, Gems, and Minerals* at the National Museum of Natural History

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Research Note 99-6

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The study was initiated by the exhibition team, Linda Deck, Project Manager, Sharon Barry, Writer, Richard Fiske, Curator, and Jeffrey Post, Curator, as a follow-up to studies conducted by ISO last year.

In the Institutional Studies Office, Kerry R. DiGiacomo had primary responsibility for all aspects of data collection. David A. Karns and Steven J Smith undertook the data analysis and interpretation. Andrew J Pekarik provided a critical review and many helpful suggestions. Kam Lee, an ISO intern, was especially helpful in data preparation.

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Introduction

The Institutional Studies Office (ISO) conducted a major study of *The Janet Annenberg Hooker Hall of Geology, Gems, and Minerals* (GGM) at the National Museum of Natural History during the summer of 1998. The study consisted of interviews with a sample of visitors about their experience as well as unobtrusive observations of visitor behavior in the exhibition (ISO Report 99-1).

After the original study, an installation in one gallery, "Rocks," was completed. During the summer study, "Rocks" contained only eight exhibit elements, but after the new installation the same space contained 64 elements. Considering the large increase in the number and type of elements in "Rocks," ISO replicated a portion of the summer study, near the end of February, 1999, focusing on observations of visitor behavior in the exhibition.

ISO subsequently studied how the completely installed Rocks Gallery may have changed the behavior of exhibition visitors. Is the amount and allocation of visitor time in the exhibition different after the installation of "Rocks?" How do visitors allocate their time within the Rocks Gallery?

While these two questions are closely related, ISO adopted a research plan that maximized resources by treating the two questions as separate research projects.

To address the first question (i.e., the effect of "Rocks" on total exhibition use), ISO unobtrusively tracked and observed the behavior of 101 randomly selected visitors from their entrance into the exhibition until they physically exited the exhibition. This sample of visitors is referred to here as the "GGM Visitor" sample.

A detailed map of the whole, completed exhibition was used for the Tracking Study. A total of 248 exhibition elements were included in the protocol.[1] An element was any distinct museum artifact ("real thing"), created artifact (e.g., jewelry fashioned from precious gems and metals), or communication medium, (e.g., text panel, large photo, video loop, or interactive). The elements and sections of the exhibition were collaboratively identified by the exhibition team and ISO.

A second sample of 91 visitors were tracked from the time that they entered the Rocks Gallery until they exited the Plate Tectonics Theater area. In the summer, 1998 study, many visitors exited the exhibition after the Winston Gallery and/or National Gem Collection Gallery, thus, behavioral observation in the Rocks Gallery was limited to those relatively few visitors who actually entered the gallery. By focussing on visitors who actually enter the Rocks gallery, we can report on more observations. In this note, we call this sample the "Rocks Visitor" sample.

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[1] See Appendix B. for the map used in the Rocks Gallery. A complete map of the entire exhibition appears in DiGiacomo, K. R., Karns, D. A., Pekarik, A. J., Smith, S. J, Doering, Z. D. (1999). *Summer Visitors to The Janet Annenberg Hooker Hall of Geology, Gems and Minerals at the National Museum of Natural History*. (Report No 99-1). Washington, DC: Smithsonian Institution.

Since the two samples were selected separately, and "Rocks Visitor" is a sample of only part of the exhibition visitors, the two samples can not be combined into a single analysis.

The Effect of the Rocks Gallery on Visitor Behavior in the Exhibition: The GGM Visitor sample

The number of persons visiting GGM during February 1999 was less than the number present during the Summer 1998 study. Thus, a GGM visitor experienced a less crowded gallery in February. In general, the composition of visitor groups at the two times was similar although there were slightly more unaccompanied male adults and fewer adults with children in the February sample.

Overall, an average visitor spent more time in the exhibition in February (17.9 minutes) than during the summer (14.8 minutes) (See Table GGM.1). Likewise, the average visitor spent more time stopped at exhibition elements in February (12.3 minutes) compared with the summer (7.9 minutes). The percentage of the visit spent at stops also increased from 49% to 61%; and the number of stops also increased although the time spent at an average unique stop did not increase. Thus, it appears that increases in visit time are a result of more stops, not more time spent at a stop.

Excluding the Rocks Gallery, the percentage of visitors making a stop in any of the exhibition galleries in February is very similar to the comparable percentage in the summer (See Table GGM.2). For example:

Summer 1998: GGM Sample
74% stopped in the Winston Gallery; and
25% stopped in the Moon, Meteorites & Solar System Gallery.

February 1999: GGM Sample
75% stopped in the Winston Gallery; and
23% stopped in the Moon, Meteorites & Solar System Gallery.

The major behavioral difference is in the percentage of visitors who stopped in the Rocks Gallery. While one in seven visitors who entered the exhibition actually made a stop in this gallery during the summer (14%), more than a third of the visitors stopped there in February (34%).

Likewise, the distribution of time stopped in galleries, when visitors are grouped by their total visit length, is similar across the summer and February studies when we ignore Rocks (See Table GGM.3). But the percentage of time stopped in the Rocks Gallery and the Plate Tectonics Theater (combined) is dramatically greater in February than for the summer study, especially for visitors whose visit length is between 5 and 20 minutes. Since the percentage of visitors making a stop in Rocks is also greater in February, the average visit was lengthened by the completion of the Rocks Gallery. Not only did more people stop in the gallery after it was completed, more visitors engaged in its elements. Although the percentage of visitors stopping in the Plate Tectonics Theater is the same in February, the length of time spent by visitors in the Theater is greater, perhaps reflecting some greater interest stimulated by exposure to the Rocks Gallery.

In conclusion, the number of visitors stopping in the Rocks Gallery more than doubles following installation. Prior to installation of the full complement of exhibit elements, the Rocks Gallery contained bench space and some video units. The new elements included a full range of exhibit elements including videos, interactives, panels, objects, and touchables. As a consequence, the length of an average stop in the gallery actually decreased between the summer and winter observations. Rocks does not appear to be attracting substantial numbers of additional visitors (e.g., visitors who would not enter the GGM exhibition otherwise). Nor does it appear to change the behavior of visitors in other exhibition galleries. It does, however, contribute to increasing the total amount of time that visitors spend in the exhibition. It also provides an additional range of experiences for visitors as reflected in the large increase in the number of visitors who are engaged with its elements.

Visitor Engagement with Rocks: The Rocks Visitor sample

Since only one-third of the observed visitors in the GGM Visitor sample made a stop in the Rocks Gallery, ISO conducted an additional study in which 91 visitors entering the Rocks Gallery were tracked and observed until they exited the Plate Tectonics Theater area. The larger size of the "Rocks Visitor" sample provides a more robust, or reliable, basis for discussing the allocation of visit time in the gallery. Since the "Rocks Visitor" and "GGM Visitor" samples were not taken from the same visitor populations (e.g., starting time, day, or place), the information presented for the two studies should not be merged.

While realizing that independent samples, especially when one sample is small, will yield different statistics, we must still ask whether the two samples are statistically consistent. The distributions of sub-groups of visitors and amount of time spent in the gallery suggest that the two samples are statistically consistent. In addition, ISO correlated visitor stops at exhibit elements in the gallery. The rank order correlation is large and suggests that the two samples used the Rocks Gallery in a similar way.

Thus, although there will be minor differences between the information on the Rocks Gallery for the GGM Visitor and Rocks Visitor samples, the data are consistent overall.

Pattern of Rocks Gallery Use. More than nine out of ten "Rocks" visitors stopped for more than three seconds at one or more exhibit element in the gallery (85 visitors or 93%). The average visitor made 5.7 stops (*SD*=4.3) during his/her time in the Rocks Gallery. The median number of stops was 5.0; the middle 50 percent of visitors made between two and eight stops. Groups of adults without children tended to make fewer stops than groups accompanied by children or individuals visiting alone.

Movement through the exhibit was not always linear. About one-fifth of visitors (18%) returned to see a particular exhibit element more than once. Without counting the duplication of the 'return' stops, the 91 "Rocks" visitors made a total of 477 unique stops. Even though a few "Rocks" visitors stopped in the Plate Tectonics Theater, none returned there.

The average stop time at a specific exhibit element was exactly one minute (*SD*=1.6 minutes), with a median of one half minute (0.5 minutes). (See Table Rocks.2.)

Overall Patterns of Gallery Use. The Rocks Gallery, which featured many hands-on specimens of rocks and three computer interactive locations, was unfinished at the time of the Summer 1998, tracking study. At that time there were only 8 possible stops, and 14.1% of the visitors made a stop in this section. When the February study was conducted, the Gallery was finished and offered 64 possible stop locations to the visitors.

Interestingly, no single exhibit element or set of exhibit elements dominated visitors' attention. More than one-quarter (18 of 64 elements) attracted stops by more than ten percent of Rocks Gallery visitors.

The five most popular stops in this section were:

- *Rock Study Station: Granite* (23.1%)
- *Rock Study Station: Gneiss* (22.0%)
- *Rocks Build Cities* (20.9%)
- *Journey Inside the Earth* (19.8%)
- *Matter of Scale/Appalachian Map* (18.7%).

One-fifth of "Rocks" visitors made a stop in the Plate Tectonics Theater (22%). Only one person made a stop at the panel located there. As might be expected, stops made in this section were the longest, averaging 4.88 minutes (*SD*=3.61) and had a median time of 5.03 minutes for "Rocks" visitors. Three of the five longest stops were made here (over 11 minutes), the other two being in the Rocks Gallery by "Rocks" visitors.

Summary

In summary, the completion of the Rocks Gallery in *The Janet Annenberg Hooker Hall of Geology, Gems, and Minerals* (GGM) has significantly enriched the experience of visitors who visit the entire exhibition. The average visitor spends a longer time in the exhibition and is engaged with a larger number of exhibition elements because of the Rocks Gallery. Concurrently, the Rocks Gallery has not detracted from the experience of GGM visitors elsewhere in the exhibition, as shown in their behavior. The completion of Rocks has not changed the time allocated to the other GGM exhibition galleries.

Appendix A: Tables

Table GGM.1

Behavior in the Geology, Gems and Minerals Exhibition: Subgroups of GGM Visitors

(101 Visitors tracked for the entire visit to GGM)

A. Total Time in the Exhibition (Visit Times): Statistics

Sub-groups	No. of Visitors	Avg. Visit Time (Minutes)	Standard Deviation	Median	Maximum	Q3-Q1*
Male Alone	20	9.2	11.8	8.7	76.5	21.9
Female Alone	8	12.7	10.2	8.3	32.2	14.1
Male in Adult Group	20	20.9	18.5	15.8	76.9	26.9
Female in Adult Group	20	18.9	12.9	18.2	57.3	16.4
Male in Adult(s) & Child(ren) Group	12	25.8	18.0	16.7	68.1	16.2
Female in Adult(s) & Child(ren) Group	21	17.9	13.7	15.0	49.5	23.3
Total	101	17.9	15.3	14.1	76.9	20.7

B. Total Time Observing (Sum of Time at Stops): Statistics

Sub-groups	No. of Visitors	Avg. Stopped Time (Minutes)	Standard Deviation	Median	Maximum	Q3-Q1
Male Alone	20	6.6	10.6	5.6	75.3	15.0
Female Alone	8	9.0	8.7	5.6	24.9	11.5
Male in Adult Group	20	13.9	13.9	8.7	61.3	21.3
Female in Adult Group	20	13.0	9.7	11.0	46.9	11.8
Male in Adult(s) & Child(ren) Group	12	19.0	19.2	9.9	67.0	10.6
Female in Adult(s) & Child(ren) Group	21	11.7	11.5	8.2	42.6	15.3
Total	101	12.3	12.8	8.4	75.3	15.5

C. Percent of Visit Time Spent at Stops: Statistics

Sub-groups	No. of Visitors	Avg. % Stopped Time (0.0 - 100.0)	Standard Deviation	Median	Maximum	Q3-Q1
Male Alone	20	63.8	0.2	0.7	1.0	0.2
Female Alone	8	49.6	0.3	0.6	0.9	0.7
Male in Adult Group	20	59.3	0.2	0.6	1.0	0.3
Female in Adult Group	20	63.0	0.3	0.6	0.9	0.3
Male in Adult(s) & Child(ren) Group	12	64.1	0.2	0.6	1.0	0.3
Female in Adult(s) & Child(ren) Group	21	59.9	0.2	0.6	1.0	0.2
Total	101	61.1	0.2	0.6	1.0	0.3

D. Number of Stops: Statistics

Sub-groups	No. of Visitors	Avg. Number of Stops	Standard Deviation	Median	Maximum	Q3-Q1
Male Alone	20	7.9	11.9	10.5	48.0	21.0
Female Alone	8	9.9	10.4	2.5	29.0	16.5
Male in Adult Group	20	20.0	18.2	13.5	70.0	26.0
Female in Adult Group	20	19.4	16.0	16.0	72.0	19.5
Male in Adult(s) & Child(ren) Group	12	17.0	10.2	13.5	35.0	9.0
Female in Adult(s) & Child(ren) Group	21	12.9	12.4	10.0	50.0	18.0
Total	101	15.5	14.6	13.0	72.0	21.0

* The number that fall between the 25th and 75th percentiles.

(cont.)

Table GGM.1 (cont.)

Behavior in the Geology, Gems and Minerals Exhibition: Subgroups of GGM Visitors

(101 Visitors tracked for the entire visit to GGM)

	E. Stop Time : Statistics				
Sub-groups	Unique Stops	Avg. Stop Time (Minutes)	Standard Deviation	Median	Maximum
Alone (Total)	**330**	**1.0**	**1.3**	**0.6**	**11.4**
Male Alone	262	1.0	1.3	0.6	11.4
Female Alone	68	0.9	1.2	0.6	9.7
Group (Total)	**721**	**0.7**	**0.9**	**0.5**	**11.0**
Male in Adult Group	352	0.8	1.0	0.5	11.0
Female in Adult Group	369	0.6	0.7	0.5	10.2
Adults & Children (Total)	**447**	**1.0**	**3.3**	**0.5**	**65.1**
Male in Adult(s) & Child(ren) Group*	181	1.1	4.9	0.5	65.1
Female in Adult(s) & Child(ren) Group*	266	0.9	1.3	0.6	10.8
Total	**1498**	**0.9**	**2.0**	**0.5**	**65.1**

	F. Stop Time : Statistics				
Characteristics	Unique Stops	Avg. Stop Time (Minutes)	Standard Deviation	Median	Maximum
Age					
19 and Younger	233	0.9	1.1	0.5	9.8
20-29	285	0.7	1.1	0.4	11.0
30-39	254	0.8	1.1	0.5	10.8
40-49	408	0.8	1.0	0.6	10.7
50 and Older	318	1.0	3.8	0.5	65.1
Type of Element					
Unnamed	11	7.9	19.2	1.3	65.1
Case & Panel	63	0.6	0.4	0.5	2.0
Case/Specimen	1030	0.7	0.7	0.5	10.2
Computer Interactive	44	1.2	1.2	0.8	5.6
Hands-On	53	1.0	1.5	0.6	10.7
Label	11	0.4	0.4	0.4	1.4
Panel	152	0.8	0.9	0.5	4.7
Touchable	60	0.4	0.5	0.2	4.0
Video	74	2.3	2.8	1.2	11.4
All Stops	**1498**	**0.9**	**2.0**	**0.5**	**65.1**

*Observed individual in a group of Adult(s) & Child(ren)

Table GGM.2

Percent of GGM Visitors who Stopped in Each Exhibition Area

(101 Visitors tracked for the entire visit to GGM)

1	2	3	4	5	6
Exhibition Area	Number of Visitors	Percent of Visitors Who Stopped	Number Making Repeat Stops in Area	Percent of Repeats in Area	Number of Possible Stops in Area
Winston Gallery	76	75.2	10	13.2	24
National Gem Collection	65	64.4	11	16.9	21
Minerals & Gems Gallery	57	56.4	11	19.3	64
Mine Gallery	43	42.6	5	11.6	32
Rocks Gallery	34	33.7	20	58.8	64
Plate Tectonics Theater	17	16.8	1	5.9	2
Plate Tectonics Gallery	26	25.7	1	3.8	48
Moon, Meteorites & Solar System Gallery	23	22.8	2	8.7	45

Table GGM.3

Average Time Stopped/Gallery by Visit Length Type (in Minutes)

(101 Visitors tracked for the entire visit to GGM)

	Visit Length Type*						
Gallery	0-5	5-10 Min	10-15 Min	15-20 Min	20-25 Min	25-35 Min	Over 35 Min
A - Winston	1.0**	1.1	1.8	2.6	2.2	4.0	3.5
B - Nat'l Gem	0.9	2.1	4.0	3.7	3.2	7.9	6.5
C - Min. & Gem	0.8	1.1	2.0	3.5	4.6	6.9	13.4
D - Mine	0.0	1.2	1.1	0.8	0.7	1.4	4.2
E - Rocks	0.0	1.9	1.8	1.9	3.1	2.3	7.8
F - PT Theater	0.0	3.1	9.7	5.4	0.0	6.1	5.7
G - PT Gallery	0.0	0.0	2.5	1.3	2.0	0.9	6.7
H - Moon, M & SS	1.3	0.6	2.1	2.0	0.8	2.9	9.2
Total	4.0	11.1	24.9	21.1	16.6	32.3	56.9
A+B+C+D	2.7	5.5	8.9	10.6	10.7	20.2	27.5
E+F	0.0	4.9	11.5	7.3	3.1	8.3	13.5
G+H	1.3	0.6	4.6	3.3	2.8	3.8	15.9
% A-D	67.5***	49.5	35.7	50.0	64.2	62.5	48.3
% E-F	0.0	44.7	46.0	34.5	18.8	25.7	23.7
% G-H	32.5	5.8	18.4	15.4	17.0	11.7	27.9

*Total time from entry to exit in GGM.

**Cell entries are the average time visitors stopped in a specific gallery.

Table GGM.4

Stops in the Geology, Gems and Minerals Exhibition: Spatial Order

(101 Visitors tracked for the entire visit to GGM)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
Gallery A		**Winston Gallery**	**75.2**	**0.87**	**0.77**	**0.63**
A01	Case/Specimen	Hope Diamond	69.3	1.17	0.67	1.09
A02	Panel	Hope Diamond Social History	13.9	2.10	1.44	2.01
A03	Panel	Hope Diamond Geological History	19.8	0.84	0.41	0.80
A04	Case/Specimen	Copper	9.9	0.58	0.33	0.53
A05	Panel	Copper Panel A	2.0	0.40	0.28	0.40
A06	Panel	Copper Panel B	3.0	0.42	0.15	0.40
A08	Case/Specimen	Quartz	5.9	0.31	0.09	0.28
A09	Panel	Quartz Panel A	3.0	0.47	0.10	0.50
A11	Label	Quartz Label	3.0	0.25	0.13	0.25
A12	Case/Specimen	Meteorite	10.9	0.44	0.29	0.43
A13	Panel	Meteorite Panel A	5.0	0.44	0.25	0.28
A14	Panel	Meteorite Panel B	3.0	0.52	0.19	0.42
A15	Label	Meteorite Label	1.0	0.18	.	0.18
A16	Case/Specimen	Sand	10.9	0.44	0.30	0.32
A17	Panel	Sand Panel A	2.0	0.46	0.08	0.46
A18	Panel	Sand Panel B	5.9	0.54	0.44	0.37
A19	Label	Sand Label	2.0	0.50	0.04	0.50
A20	Case/Specimen	Granite	5.9	0.45	0.15	0.40
A21	Panel	Granite Panel A	2.0	0.67	0.19	0.67
A23	Label	Granite Label	1.0	0.23	.	0.23
A24	Panel	Hope Diamond (center)	7.9	0.33	0.30	0.21

(cont.)

Table GGM.4 (cont.)

Stops in the Geology, Gems and Minerals Exhibition: Spatial Order

(101 Visitors tracked for the entire visit to GGM)

Location	Type	Description	Percent Who Stopped at Each Exhibit	Unique Stops: Statistics Average Stop Time (Minutes)	Standard Deviation	Median
Gallery B		**National Gem Collection**	**64.4**	**0.66**	**0.52**	**0.48**
B01	Panel	Treasures from the Natl Gem Coll.-A	3.0	0.34	0.11	0.38
B02	Case/Specimen	Necklace/Bracelet	25.7	0.53	0.32	0.48
B03	Case/Specimen	Mineral, Crystal, or Gem? Topaz/Quartz	35.6	0.48	0.25	0.42
B04	Panel	Crystal to Gem	3.0	0.51	0.18	0.57
B05	Case/Specimen	Worn by a French Queen/Earrings	20.8	0.61	0.43	0.55
B06	Case/Specimen	Gifts from Napoleon/ Necklace, Tiara	28.7	0.59	0.31	0.65
B07	Panel	Celebrity Jewels	3.0	0.25	0.15	0.17
B08	Case/Specimen	Designed for Spanish Royalty, Necklace	21.8	0.56	0.40	0.48
B09	Panel	Gems	6.9	0.34	0.23	0.28
B10	Case/Specimen	Rubies & Sapphires	37.6	0.87	0.57	0.73
B11	Case/Specimen	Stars & Cat's Eyes	26.7	0.59	0.35	0.55
B12	Case/Specimen	Jade	22.8	0.41	0.25	0.35
B13	Case/Specimen	A Royal Legacy/Emerald Ring	24.8	0.52	0.38	0.43
B14	Case/Specimen	Emeralds & Aquamarines	30.7	1.14	0.88	0.82
B15	Panel	Diamonds-A	5.9	0.48	0.35	0.32
B16	Case/Specimen	Diamonds-B	35.6	1.19	0.77	1.03
B17	Case/Specimen	Diamonds Natural & Cut	27.7	0.54	0.26	0.48
B18	Case/Specimen	Quartz Crystal Ball	30.7	0.56	0.45	0.45
B19	Panel	Treasures from the Natl Gem Coll-B	2.0	0.51	0.53	0.51
B20	Case/Specimen	Pearl Necklace/Quartz Egg	17.8	0.60	0.22	0.52
B21	Case/Specimen	Hooker Jewels	26.7	0.52	0.35	0.42

(cont.)

Table GGM.4 (cont.)
Stops in the Geology, Gems and Minerals Exhibition: Spatial Order
(101 Visitors tracked for the entire visit to GGM)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
Gallery C		**Minerals & Gems Gallery**	**56.4**	**0.82**	**3.31**	**0.40**
C01	Panel	Minerals and Gems Gallery	2.0	0.29	0.05	0.29
C03	Touchable	Touch Some Atoms/Quartz	4.0	0.44	0.20	0.43
C04	Case/Specimen	Salt of the Earth	4.0	0.40	0.21	0.32
C05	Case/Specimen	Look into a Crystal	11.9	0.49	0.38	0.37
C06	Touchable	Amethyst	10.9	0.29	0.23	0.22
C08	Computer Interactive	Crystal Symmetry	1.0	0.53	.	0.53
C09	Case/Specimen	Shape: The Many Faces of Crystals	2.0	0.58	0.50	0.58
C10	Case/Specimen	Shape: What gives crystals their shape	3.0	1.43	1.81	0.60
C11	Case/Specimen	SHAPE: Smoky Quartz, Mix, Calcite	9.9	0.28	0.15	0.23
C12	Case/Specimen	Shape: One mineral, Many shapes	15.8	0.67	0.67	0.46
C13	Case/Specimen	Shape: Pockets of Crystals	8.9	0.53	0.76	0.35
C14	Case/Specimen	From India	6.9	0.42	0.31	0.30
C15	Case/Specimen	COLOR: 5 cases	9.9	0.37	0.19	0.30
C16	Case/Specimen	Color: Mineral Rainbow	18.8	0.67	0.38	0.67
C17	Case & Panel	What gives minerals their color?	7.9	0.49	0.26	0.49
C18	Case/Specimen	Color: Slow Track	28.7	1.22	1.35	0.80
C19	Video	Why are Rubies Red?	9.9	0.97	1.27	0.48
C20	Case/Specimen	How many colors?	7.9	0.43	0.34	0.30
C21	Case & Panel	How many minerals are there?	2.0	0.26	0.18	0.26
C22	Case & Panel	Where are minerals found?	2.0	0.43	0.21	0.43
C23	Case/Specimen	From Two Elements	8.9	0.56	0.30	0.53
C24	Case/Specimen	Arkansas Quartz	11.9	0.43	0.17	0.41
C25	Case/Specimen	All One Mineral	7.9	0.34	0.19	0.30
C26	Case & Panel	Why are there so many kinds of minerals?	3.0	0.34	0.08	0.32
C27	Case & Panel	How are minerals classified?	1.0	0.45	.	0.45
C28	Case/Specimen	Diversity: One Family, Many Uses	5.0	0.39	0.19	0.40
C29	Case/Specimen	Diversity: Study Gallery	14.9	1.33	2.55	0.50
C30	Case/Specimen	Diversity: Mineral Bonanza	4.0	0.23	0.15	0.20
C31	Case/Specimen	Diversity: Slow Track	16.8	0.87	0.49	1.02
C32	Case/Specimen	Amazing Gems: Moon/SunStone, Labradorite	7.9	0.61	0.40	0.63
C33	Case & Panel	Are these minerals playing tricks?	5.9	0.38	0.26	0.33

(cont.)

Table GGM.4 (cont.)

Stops in the Geology, Gems and Minerals Exhibition: Spatial Order

(101 Visitors tracked for the entire visit to GGM)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
Gallery C		**Minerals & Gems Gallery**	**56.4**	**0.82**	**3.31**	**0.40**
C34	Case/Specimen	Alexandrites	3.0	0.63	0.29	0.62
C35	Case/Specimen	Amazing Gems	19.8	1.20	0.85	1.14
C36	Panel	Herkimer Diamonds	1.0	0.53	.	0.53
C37	Case & Panel	A Point at Either End	1.0	0.88	.	0.88
C38	Case/Specimen	Quartz-B	5.9	0.44	0.28	0.29
C39	Case/Specimen	Amazing Gems: Wondrous Diversity	4.0	0.40	0.34	0.41
C41	Case/Specimen	Rio Grande Do Sul	16.8	0.43	0.29	0.32
C42	Case/Specimen	GROWTH: 5 Cases	8.9	0.58	0.49	0.38
C43	Case/Specimen	Growth: The Basics	5.9	0.38	0.15	0.36
C44	Case & Panel	How do crystals grow?	4.0	0.41	0.28	0.38
C45	Case/Specimen	Growth: Slow Track	13.9	0.72	0.43	0.65
C46	Case/Specimen	Growth: Different Environments	3.0	0.35	0.06	0.38
C47	Case/Specimen	Gypsum Giants	5.9	0.46	0.25	0.39
C48	Case/Specimen	Growth: Too Small to See	4.0	0.40	0.24	0.35
C49	Case/Specimen	Growth: Crystal Oddities	5.9	0.68	0.27	0.58
C50	Case/Specimen	Cave of Swords	5.0	0.24	0.09	0.18
C52	Case/Specimen	PEGMATITES: 5 Cases	2.0	0.37	0.05	0.37
C53	Case/Specimen	Peg: Big Crystals	2.0	0.15	0.04	0.15
C54	Case & Panel	What are pegmatites & why special?	1.0	0.25	.	0.25
C55	Touchable	Beryl	4.0	0.31	0.31	0.17
C56	Case/Specimen	Pegmatites: Slow Track	9.9	0.70	0.56	0.58
C57	Computer Interactive	What do pegmatites look like?	3.0	0.39	0.14	0.33
C58	Case/Specimen	Elbaite	2.0	0.74	0.51	0.74
C59	Panel	Pockets of Minerals	2.0	2.15	2.37	2.15
C60	Case/Specimen	Pegmatite Pocket	5.0	0.22	0.18	0.10
C61	Case/Specimen	Elbaites (3 Crystals)	9.9	0.46	0.36	0.28
C63	Panel	Mine Gallery	0.0	0.15	.	0.15
C64	Unnamed	Bench	0.0	25.07	34.95	9.77

(cont.)

Table GGM.4 (cont.)

Stops in the Geology, Gems and Minerals Exhibition: Spatial Order

(101 Visitors tracked for the entire visit to GGM)

Location	Type	Description	Percent Who Stopped at Each Exhibit	Unique Stops: Statistics Average Stop Time (Minutes)	Standard Deviation	Median
Gallery D		**Mine**	**42.6**	**0.59**	**0.64**	**0.40**
D01	Case/Specimen	Silver/Copper	5.0	0.45	0.23	0.30
D02	Case/Specimen	Gold	22.8	0.72	0.37	0.65
D03	Panel	Metals that stand alone	8.9	0.32	0.21	0.23
D04	Panel	Mineral, Metal, or Ore?	1.0	0.30	.	0.30
D05	Touchable	Rock	4.0	0.30	0.26	0.20
D06	Case & Panel	Pay Dirt	3.0	0.49	0.30	0.42
D07	Case/Specimen	Morefield Mine (Right)	5.0	0.39	0.18	0.38
D08	Panel	Morefield Mine (Main)	4.0	1.03	0.82	0.94
D09	Case/Specimen	Morefield Mine (Left)	5.0	0.42	0.23	0.48
D10	Video	Ore to Product	9.9	1.29	1.69	0.44
D11	Panel	From Ore to Product	1.0	0.37	.	0.37
D12	Touchable	Coal	1.0	0.17	.	0.17
D14	Case/Specimen	Copper Queen Mine	3.0	0.50	0.19	0.43
D15	Panel	Copper Queen Main	1.0	0.22	.	0.22
D16	Case/Specimen	Bisbee Cave	11.9	0.50	0.31	0.48
D17	Case/Specimen	Minerals from Bisbee	5.0	0.72	0.74	0.33
D18	Case/Specimen	Geologist's Treasure Chest	3.0	0.44	0.14	0.48
D19	Case/Specimen	Minerals that Glow	9.9	0.54	0.43	0.41
D20	Panel	Blasting Zone	1.0	0.37	.	0.37
D21	Case/Specimen	Sterling Hill Mine	6.9	0.44	0.26	0.38
D22	Touchable	Franklinite	2.0	0.16	0.01	0.16
D24	Panel	Mores Ores (Outer)	2.0	0.61	0.12	0.61
D25	Computer Interactive	Mining a Car	5.9	1.07	1.09	0.85
D26	Panel	Mining for Ores Today/Dilemma	1.0	0.38	.	0.38
D27	Case/Specimen	Ore Treasures	4.0	0.38	0.12	0.35
D28	Panel	What's that Sound	1.0	0.42	.	0.42
D29	Case/Specimen	Fletcher Mine	3.0	0.61	0.38	0.55
D31	Case/Specimen	Saved from the Crusher	3.0	0.24	0.14	0.32
D32	Panel	Main panel near pipe	2.0	0.16	0.01	0.16

(cont.)

Table GGM.4 (cont.)

Stops in the Geology, Gems and Minerals Exhibition: Spatial Order

(101 Visitors tracked for the entire visit to GGM)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
Gallery E		**Rocks**	**33.7**	**0.93**	**1.21**	**0.61**
E02	Panel	Rocks Tell Stories Intro Panel	1.0	0.62	.	0.62
E03	Touchable	Magnetite Lodestone	3.0	0.72	0.18	0.77
E04	Hands-On	Rocks Snapshots flip-up Q&A	3.0	0.98	0.79	0.98
E06	Case & Panel	Rocks Chronicles Labels, Case	2.0	0.43	0.32	0.43
E07	Computer Interactive	Stories in Rocks	5.9	1.57	1.55	1.15
E08	Case & Panel	Label/Case Layers & Fossils, Atomic Clocks	1.0	0.63	.	0.63
E09	Touchable	Granite Touch Rock	3.0	0.30	0.16	0.35
E10	Video	Clocks in Rocks	2.0	0.43	0.42	0.43
E11	Case/Specimen	Rocks Deform A	1.0	0.72	.	0.72
E12	Computer Interactive	Rocks Deform CI	2.0	0.59	0.30	0.59
E13	Case/Specimen	Rocks Deform B	2.0	0.72	0.07	0.72
E14	Case & Panel	Matter of Scale/Appalachians Map	4.0	0.77	0.58	0.66
E15	Hands-On	Rock Study-Stations Magnifyer	3.0	0.25	0.05	0.25
E16	Hands-On	Study Station: Granite	5.0	0.82	0.83	0.47
E17	Hands-On	Study Station: Sandstone	5.0	0.71	0.54	0.60
E18	Hands-On	Study Station: Gneiss	5.0	2.45	4.64	0.35
E19	Video	Gold or Aluminum	5.9	1.88	2.03	1.07
E21	Case/Specimen	Washington Monument Display Case	1.0	0.35	.	0.35
E22	Case/Specimen	White House Display Case	2.0	0.44	0.09	0.44
E23	Unnamed	Bench (betw. Mon. & W. House)	2.0	0.52	0.28	0.52
E24	Hands-On	This City is Made of Rock	5.9	1.27	0.64	1.27
E25	Case & Panel	Rocks Build Cities	4.0	0.57	0.17	0.50
E26	Case & Panel	Rocks and Their Environments	3.0	0.88	0.25	0.78
E27	Case/Specimen	At the Crossroads Outcrop Model	1.0	0.15	.	0.15
E28	Case/Specimen	Water Recycles Rocks Alcove	2.0	0.53	0.04	0.53
E29	Hands-On	Water Recycles Rocks Experiment	3.0	0.72	0.42	0.63
E32	Case & Panel	Cave (entire alcove)	4.0	1.36	0.71	1.36
E33	Case/Specimen	Destroyed by Weathering	1.0	0.33	.	0.33
E36	Touchable	Destroyed by Weather Natural Sculpture: Gneiss	3.0	0.36	0.25	0.22
E37	Touchable	Destroyed by Weather Natural Sculpture: Quartzite	3.0	0.20	0.03	0.20
E38	Touchable	Destroyed by Weather Natural Sculpture: Limestone	3.0	0.22	0.01	0.22

(cont.)

Table GGM.4 (cont.)

Stops in the Geology, Gems and Minerals Exhibition: Spatial Order

(101 Visitors tracked for the entire visit to GGM)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
Gallery E		**Rocks**	**33.7**	**0.93**	**1.21**	**0.61**
E39	Unnamed	Bench (lava columns)	5.0	2.04	1.41	1.47
E40	Touchable	Columnar Lava	2.0	0.38	0.28	0.38
E41	Panel	Lava	3.0	0.22	0.09	0.18
E44	Hands-On	Journey Inside the Earth	7.9	0.96	0.44	0.95
E45	Panel	Deep Below the Earth's Surface	2.0	1.54	1.18	1.54
E46	Case/Specimen	All Rocks Contain Water	4.0	1.05	0.36	1.18
E48	Panel	Lava Lake	2.0	0.59	0.27	0.59
E49	Touchable	Peridotite	1.0	0.18	.	0.18
E50	Computer Interactive	Melt a Rock/Lava Lamp	6.9	1.83	1.37	1.55
E51	Case/Specimen	Basalt	2.0	0.59	0.59	0.59
E52	Case/Specimen	Rocks Solidify	2.0	0.97	0.30	0.97
E53	Hands-On	Magma Race to the Surface Flip	4.0	1.38	1.47	0.80
E54	Case/Specimen	Rocks Transform	2.0	0.25	0.18	0.25
E55	Video	The Geological Gourmet	2.0	0.46	0.37	0.46
E57	Case & Panel	Leesburg, Crestmore	4.0	0.35	0.15	0.39
E58	Case/Specimen	What Happened atNew England	1.0	0.37	.	0.37
E59	Case & Panel	Variations on Metamorphic Theme	1.0	0.22	.	0.22
E60	Touchable	Jade	1.0	0.25	.	0.25
E63	Touchable	Garnet Touch Rock	1.0	0.37	.	0.37
Gallery F		**Plate Tectonics Theater**	**15.8**	**5.83**	**3.65**	**5.97**
F03	Video	The Greatest Show on Earth	15.8	5.83	3.65	5.97

(cont.)

Table GGM.4 (cont.)

Stops in the Geology, Gems and Minerals Exhibition: Spatial Order

(101 Visitors tracked for the entire visit to GGM)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
Gallery G		**Plate Tectonics**	**23.8**	**0.71**	**0.82**	**0.43**
G01	Panel	Geological Revolution	1.0	0.73	.	0.73
G03	Case & Panel	Secrets from the sea floor	4.0	0.69	0.38	0.60
G04	Panel	The View Today	1.0	0.65	.	0.65
G05	Panel	Volcanoes!	1.0	1.03	.	1.03
G06	Hands-On	Volcano Anatomy	4.0	0.93	0.33	0.90
G07	Computer Interactive	Design a Volcano	3.0	2.58	2.69	1.77
G08	Case/Specimen	Volcano Profiles Specimens	3.0	0.98	0.80	0.60
G09	Computer Interactive	Volcano Study Station	4.0	1.28	0.90	1.28
G10	Panel	Plate Tectonics Main Panel	1.0	0.38	.	0.38
G11	Case/Specimen	Spreading Ridges (right)	1.0	0.55	.	0.55
G12	Case/Specimen	Spreading Ridges (left)	3.0	0.75	0.64	0.57
G15	Case/Specimen	Continental Hot Spots	2.0	1.07	0.28	1.07
G16	Case/Specimen	Oceanic Hot Spots	3.0	0.89	0.70	0.55
G17	Computer Interactive	Hot Spots	1.0	1.35	.	1.35
G18	Panel	Above Hot Spots	1.0	0.35	.	0.35
G19	Case/Specimen	Globe	4.0	1.24	1.78	0.51
G22	Panels	Panels	2.0	0.36	0.16	0.36
G20	Video	Earth like an Apple	1.0	0.32	.	0.32
G23	Case/Specimen	Building Continents	4.0	1.65	1.67	1.10
G24	Touchable	Olivine Gabbro	1.0	0.20	.	0.20
G27	Video	Plates Defined	5.9	1.30	0.95	1.32
G28	Case/Specimen	Slice of the Fault	1.0	0.42	.	0.42
G29	Computer Interactive	Explore transform Faults	5.0	0.41	0.25	0.33
G30	Case/Specimen	Transform Faults	5.0	1.10	0.31	1.13
G31	Hands-On	Three Pigs	2.0	0.29	0.02	0.29
G32	Panel	Where Plates Pass By	1.0	0.23	.	0.23
G33	Panel	Where Plates Come Together	1.0	0.93	.	0.93
G34	Case/Specimen	Explosive Volcanoes	1.0	1.97	.	1.97
G35	Case/Specimen	Destructive Earthquakes	1.0	0.93	.	0.93
G36	Computer Interactive	Convergent Margins	2.0	0.77	0.40	0.77
G39	Panel	Earthquakes in the News	3.0	1.37	0.92	1.08
G40	Video	Seismic Waves	1.0	0.38	.	0.38
G41	Hands-On	Make Your Own Earthquake	5.0	0.49	0.17	0.52
G42	Computer Interactive	World Earthquake Watch	2.0	0.99	0.65	0.99
G43	Panel	Inside Earth	2.0	1.35	0.60	1.35
G44	Case/Specimen	How Did the Layers Form?	2.0	0.76	0.13	0.76
G46	Panel	Clues from Diamonds	3.0	2.32	2.10	1.73
G47	Panel	Clues from (...wall)	3.0	1.62	1.75	0.87

(cont.)

Table GGM.4 (cont.)

Stops in the Geology, Gems and Minerals Exhibition: Spatial Order

(101 Visitors tracked for the entire visit to GGM)

Location	Type	Description	Percent Who Stopped at Each Exhibit	Unique Stops: Statistics Average Stop Time (Minutes)	Standard Deviation	Median
Gallery H		**Moon, Meteorites, & Solar System Gallery**	**22.8**	**0.51**	**0.55**	**0.33**
H01	Panel	MMSS/SS Through time	2.0	0.49	0.20	0.49
H02	Panel	Our Solar System	1.0	2.18	.	2.18
H03	Video	Take a Planetary Tour	5.0	1.80	1.71	1.33
H04	Case/Specimen	Samples	1.0	1.23	.	1.23
H05	Touchable	Sample	3.0	0.43	0.13	0.40
H06	Panel	Our Celestial Neighbor	1.0	0.05	.	0.05
H08	Case/Specimen	Lunar Rocks	1.0	1.65	.	1.65
H11	Case/Specimen	Moon/Earth Display	1.0	0.55	.	0.55
H12	Panel	Impact!	1.0	0.50	.	0.50
H13	Case/Specimen	From Dust to Planets	3.0	0.64	0.53	0.37
H14	Computer Interactive	Make an Impact	2.0	1.50	1.02	1.50
H15	Case/Specimen	Impacts: Evidence on Earth	2.0	2.32	2.83	2.32
H16	Case/Specimen	Impacts on Other Worlds	2.0	0.90	0.33	0.90
H17	Case & Panel	Do Meteorites Ever Fall on People?	1.0	1.05	.	1.05
H18	Touchable	Meteorites	8.9	0.82	1.21	0.35
H19	Video	Peekskill Fireball	3.0	1.26	1.20	1.12
H22	Case/Specimen	Recognizing Meteorites	1.0	0.25	.	0.25
H23	Panel	Meteorites	1.0	0.95	.	0.95
H25	Case/Specimen	What Killed the Dinosaurs	4.0	1.94	1.70	1.73
H26	Video	Target Earth	6.9	1.35	1.06	1.00
H28	Video	Read Between the Lines	1.0	1.20	.	1.20
H30	Touchable	Trace a Meteorites Lineage	1.0	0.50	.	0.50
H33	Case/Specimen	Old Woman	1.0	0.60	.	0.60
H35	Panel	When Worlds Collide/Antarctica	2.0	0.61	0.55	0.61
H38	Case & Panel	Bigger is Better	2.0	0.50	0.31	0.50
H40	Video	Birth of the Solar System	3.0	3.57	3.82	2.25
H41	Case/Specimen	Ancient Stardust	2.0	2.58	2.47	2.58
H43	Case/Specimen	Amazing Allende	2.0	1.04	1.18	1.04
H45	Unnamed	Bench Solar System Birth	1.0	0.47	.	0.47
		Total Stops, Without Returns	1498			
		Total Visitors Tracked	101			

Table GGM.5

Stops in the Geology, Gems and Minerals Exhibition: Rank Order

(101 Visitors tracked for the entire visit to GGM)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
A01	Case/Specimen	Hope Diamond	69.3	1.17	0.67	1.09
B10	Case/Specimen	Rubies & Sapphires	37.6	0.87	0.57	0.73
B03	Case/Specimen	Mineral, Crystal, or Gem? Topaz/Quartz	35.6	0.48	0.25	0.42
B16	Case/Specimen	Diamonds-B	35.6	1.19	0.77	1.03
B14	Case/Specimen	Emeralds & Aquamarines	30.7	1.14	0.88	0.82
B18	Case/Specimen	Quartz Crystal Ball	30.7	0.56	0.45	0.45
B06	Case/Specimen	Gifts from Napoleon/ Necklace, Tiara	28.7	0.59	0.31	0.65
C18	Case/Specimen	Color: Slow Track	28.7	1.22	1.35	0.80
B17	Case/Specimen	Diamonds Natural & Cut	27.7	0.54	0.26	0.48
B11	Case/Specimen	Stars & Cat's Eyes	26.7	0.59	0.35	0.55
B21	Case/Specimen	Hooker Jewels	26.7	0.52	0.35	0.42
B02	Case/Specimen	Necklace/Bracelet	25.7	0.53	0.32	0.48
B13	Case/Specimen	A Royal Legacy/Emerald Ring	24.8	0.52	0.38	0.43
B12	Case/Specimen	Jade	22.8	0.41	0.25	0.35
D02	Case/Specimen	Gold	22.8	0.72	0.37	0.65
B08	Case/Specimen	Designed for Spanish Royalty, Necklace	21.8	0.56	0.40	0.48
B05	Case/Specimen	Worn by a French Queen/Earrings	20.8	0.61	0.43	0.55
C35	Case/Specimen	Amazing Gems	19.8	1.20	0.85	1.14
A03	Panel	Hope Diamond Geological History	19.8	0.84	0.41	0.80
C16	Case/Specimen	Color: Mineral Rainbow	18.8	0.67	0.38	0.67
B20	Case/Specimen	Pearl Necklace/Quartz Egg	17.8	0.60	0.22	0.52
C31	Case/Specimen	Diversity: Slow Track	16.8	0.87	0.49	1.02
C41	Case/Specimen	Rio Grande Do Sul	16.8	0.43	0.29	0.32
C12	Case/Specimen	Shape: One mineral, Many shapes	15.8	0.67	0.67	0.46
F03	Video	Plate Tectonics	15.8	5.83	3.65	5.97
C29	Case/Specimen	Diversity: Study Gallery	14.9	1.33	2.55	0.50
A02	Panel	Hope Diamond Social History	13.9	2.10	1.44	2.01
C45	Case/Specimen	Growth: Slow Track	13.9	0.72	0.43	0.65
C05	Case/Specimen	Look into a Crystal	11.9	0.49	0.38	0.37
C24	Case/Specimen	Arkansas Quartz	11.9	0.43	0.17	0.41
D16	Case/Specimen	Bisbee Cave	11.9	0.50	0.31	0.48
A12	Case/Specimen	Meteorite	10.9	0.44	0.29	0.43

(cont.)

Table GGM.5 (Cont.)

Stops in the Geology, Gems and Minerals Exhibition: Rank Order

(101 Visitors tracked for the entire visit to GGM)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
A16	Case/Specimen	Sand	10.9	0.44	0.30	0.32
C06	Touchable	Amethyst	10.9	0.29	0.23	0.22
C11	Case/Specimen	SHAPE: Smoky Quartz, Mix, Calcite	9.9	0.28	0.15	0.23
C15	Case/Specimen	COLOR: 5 cases	9.9	0.37	0.19	0.30
C19	Video	Why are Rubies Red?	9.9	0.97	1.27	0.48
C56	Case/Specimen	Pegmatites: Slow Track	9.9	0.70	0.56	0.58
C61	Case/Specimen	Elbaites (3 Crystals)	9.9	0.46	0.36	0.28
D10	Video	Ore to Product	9.9	1.29	1.69	0.44
D19	Case/Specimen	Minerals that Glow	9.9	0.54	0.43	0.41
A04	Case/Specimen	Copper	9.9	0.58	0.33	0.53
C13	Case/Specimen	Shape: Pockets of Crystals	8.9	0.53	0.76	0.35
C23	Case/Specimen	From Two Elements	8.9	0.56	0.30	0.53
C42	Case/Specimen	GROWTH: 5 Cases	8.9	0.58	0.49	0.38
D03	Panel	Metals that stand alone	8.9	0.32	0.21	0.23
H18	Touchable	Meteorites	8.9	0.82	1.21	0.35
C17	Case & Panel	What gives minerals their color?	7.9	0.49	0.26	0.49
C20	Case/Specimen	How many colors?	7.9	0.43	0.34	0.30
C25	Case/Specimen	All One Mineral	7.9	0.34	0.19	0.30
C32	Case/Specimen	Amazing Gems: Moon/SunStone, Labradorite	7.9	0.61	0.40	0.63
E44	Hands-On	Journey Inside the Earth	7.9	0.96	0.44	0.95
A24	Panel	Hope Diamond (center)	7.9	0.33	0.30	0.21
B09	Panel	Gems	6.9	0.34	0.23	0.28
C14	Case/Specimen	From India	6.9	0.42	0.31	0.30
D21	Case/Specimen	Sterling Hill Mine	6.9	0.44	0.26	0.38
E50	Computer Interactive	Melt a Rock/Lava Lamp	6.9	1.83	1.37	1.55
H26	Video	Target Earth	6.9	1.35	1.06	1.00
B15	Panel	Diamonds-A	5.9	0.48	0.35	0.32
C33	Case & Panel	Are these minerals playing tricks?	5.9	0.38	0.26	0.33
C38	Case/Specimen	Quartz-B	5.9	0.44	0.28	0.29
C43	Case/Specimen	Growth: The Basics	5.9	0.38	0.15	0.36
C47	Case/Specimen	Gypsum Giants	5.9	0.46	0.25	0.39
C49	Case/Specimen	Growth: Crystal Oddities	5.9	0.68	0.27	0.58
D25	Computer Interactive	Mining a Car	5.9	1.07	1.09	0.85
E07	Computer Interactive	Stories in Rocks	5.9	1.57	1.55	1.15
E19	Video	Gold or Aluminum	5.9	1.88	2.03	1.07
E24	Hands-On	This City is Made of Rock	5.9	1.27	0.64	1.27

(cont.)

Table GGM.5 (Cont.)

Stops in the Geology, Gems and Minerals Exhibition: Rank Order

(101 Visitors tracked for the entire visit to GGM)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
G27	Video	Plates Defined	5.9	1.30	0.95	1.32
A08	Case/Specimen	Quartz	5.9	0.31	0.09	0.28
A18	Panel	Sand Panel B	5.9	0.54	0.44	0.37
A20	Case/Specimen	Granite	5.9	0.45	0.15	0.40
A13	Panel	Meteorite Panel A	5.0	0.44	0.25	0.28
C28	Case/Specimen	Diversity: One Family, Many Uses	5.0	0.39	0.19	0.40
C50	Case/Specimen	Cave of Swords	5.0	0.24	0.09	0.18
C60	Case/Specimen	Pegmatite Pocket	5.0	0.22	0.18	0.10
D01	Case/Specimen	Silver/Copper	5.0	0.45	0.23	0.30
D07	Case/Specimen	Morefield Mine (Right)	5.0	0.39	0.18	0.38
D09	Case/Specimen	Morefield Mine (Left)	5.0	0.42	0.23	0.48
D17	Case/Specimen	Minerals from Bisbee	5.0	0.72	0.74	0.33
E16	Hands-On	Study Station: Granite	5.0	0.82	0.83	0.47
E17	Hands-On	Study Station: Sandstone	5.0	0.71	0.54	0.60
E18	Hands-On	Study Station: Gneiss	5.0	2.45	4.64	0.35
E39	Unnamed	Bench (lava columns)	5.0	2.04	1.41	1.47
G29	Computer Interactive	Explore transform Faults	5.0	0.41	0.25	0.33
G30	Case/Specimen	Transform Faults	5.0	1.10	0.31	1.13
G41	Hands-On	Make Your Own Earthquake	5.0	0.49	0.17	0.52
H03	Video	Take a Planetary Tour	5.0	1.80	1.71	1.33
C03	Touchable	Touch Some Atoms/Quartz	4.0	0.44	0.20	0.43
C04	Case/Specimen	Salt of the Earth	4.0	0.40	0.21	0.32
C30	Case/Specimen	Diversity: Mineral Bonanza	4.0	0.23	0.15	0.20
C39	Case/Specimen	Amazing Gems: Wondrous Diversity	4.0	0.40	0.34	0.41
C44	Case & Panel	How do crystals grow?	4.0	0.41	0.28	0.38
C48	Case/Specimen	Growth: Too Small to See	4.0	0.40	0.24	0.35
C55	Touchable	Beryl	4.0	0.31	0.31	0.17
D05	Touchable	Rock	4.0	0.30	0.26	0.20
D08	Panel	Morefield Mine (Main)	4.0	1.03	0.82	0.94
D27	Case/Specimen	Ore Treasures	4.0	0.38	0.12	0.35
E14	Case & Panel	Matter of Scale/Appalachians Map	4.0	0.77	0.58	0.66
E25	Case & Panel	Rocks Build Cities	4.0	0.57	0.17	0.50
E32	Case & Panel	Cave (entire alcove)	4.0	1.36	0.71	1.36
E46	Case/Specimen	All Rocks Contain Water	4.0	1.05	0.36	1.18
E53	Hands-On	Volcanic or Plutonic	4.0	1.38	1.47	0.80
E57	Case & Panel	Leesburg, Crestmore	4.0	0.35	0.15	0.39
G03	Case & Panel	Secrets from the sea floor	4.0	0.69	0.38	0.60
G06	Hands-On	Volcano Anatomy	4.0	0.93	0.33	0.90

(cont.)

Table GGM.5 (Cont.)
Stops in the Geology, Gems and Minerals Exhibition: Rank Order
(101 Visitors tracked for the entire visit to GGM)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
G09	Computer Interactive	Volcano Study Station	4.0	1.28	0.90	1.28
G19	Case/Specimen	Globe	4.0	1.24	1.78	0.51
G23	Case/Specimen	Building Continents	4.0	1.65	1.67	1.10
H25	Case/Specimen	What Killed the Dinosaurs	4.0	1.94	1.70	1.73
A06	Panel	Copper Panel B	3.0	0.42	0.15	0.40
A09	Panel	Quartz Panel A	3.0	0.47	0.10	0.50
A11	Label	Quartz Label	3.0	0.25	0.13	0.25
A14	Panel	Meteorite Panel B	3.0	0.52	0.19	0.42
B01	Panel	Treasures from the Natl Gem Coll.-A	3.0	0.34	0.11	0.38
B04	Panel	Crystal to Gem	3.0	0.51	0.18	0.57
B07	Panel	Celebrity Jewels	3.0	0.25	0.15	0.17
C10	Case/Specimen	Shape: What gives crystals their shape	3.0	1.43	1.81	0.60
C26	Case & Panel	Why are there so many kinds of minerals?	3.0	0.34	0.08	0.32
C34	Case/Specimen	Alexandrites	3.0	0.63	0.29	0.62
C46	Case/Specimen	Growth: Different Environments	3.0	0.35	0.06	0.38
C57	Computer Interactive	What do pegmatites look like?	3.0	0.39	0.14	0.33
D06	Case & Panel	Pay Dirt	3.0	0.49	0.30	0.42
D14	Case/Specimen	Copper Queen Mine	3.0	0.50	0.19	0.43
D18	Case/Specimen	Geologist's Treasure Chest	3.0	0.44	0.14	0.48
D29	Case/Specimen	Fletcher Mine	3.0	0.61	0.38	0.55
D31	Case/Specimen	Saved from the Crusher	3.0	0.24	0.14	0.32
E03	Touchable	Magnetite Lodestone	3.0	0.72	0.18	0.77
E04	Hands-On	Rocks Snapshots flip-up Q&A	3.0	0.98	0.79	0.98
E09	Touchable	Granite	3.0	0.30	0.16	0.35
E15	Hands-On	Rock Study-Stations Magnifyer	3.0	0.25	0.05	0.25
E26	Case & Panel	Rocks and Their Environment	3.0	0.88	0.25	0.78
E29	Hands-On	Experiment: Suspended Animation	3.0	0.72	0.42	0.63
E36	Touchable	Destroyed by Weather Natural Sculpture: Gneiss	3.0	0.36	0.25	0.22
E37	Touchable	Destroyed by Weather Natural Sculpture: Quartzite	3.0	0.20	0.03	0.20
E38	Touchable	Destroyed by Weather Natural Sculpture: Limestone	3.0	0.22	0.01	0.22
E41	Panel	Lava	3.0	0.22	0.09	0.18
G07	Computer Interactive	Design a Volcano	3.0	2.58	2.69	1.77
G08	Case/Specimen	Volcano Profiles	3.0	0.98	0.80	0.60
G12	Case/Specimen	Spreading Ridges (left)	3.0	0.75	0.64	0.57

(cont.)

Table GGM.5 (Cont.)

Stops in the Geology, Gems and Minerals Exhibition: Rank Order

(101 Visitors tracked for the entire visit to GGM)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
G16	Case/Specimen	Oceanic Hot Spots	3.0	0.89	0.70	0.55
G39	Panel	Earthquakes in the News	3.0	1.37	0.92	1.08
G46	Panel	Clues from Diamonds	3.0	2.32	2.10	1.73
G47	Panel	Clues from (...wall)	3.0	1.62	1.75	0.87
H05	Touchable	Sample	3.0	0.43	0.13	0.40
H13	Case/Specimen	From Dust to Planets	3.0	0.64	0.53	0.37
H19	Video	Peekskill Fireball	3.0	1.26	1.20	1.12
H40	Video	Birth of the Solar System	3.0	3.57	3.82	2.25
A05	Panel	Copper Panel A	2.0	0.40	0.28	0.40
A17	Panel	Sand Panel A	2.0	0.46	0.08	0.46
A19	Label	Sand	2.0	0.50	0.04	0.50
A21	Panel	Granite Panel A	2.0	0.67	0.19	0.67
B19	Panel	Treasures from the Natl Gem Coll-B	2.0	0.51	0.53	0.51
C01	Panel	Minerals and Gems Gallery	2.0	0.29	0.05	0.29
C09	Case/Specimen	Shape: The Many Faces of Crystals	2.0	0.58	0.50	0.58
C21	Case & Panel	How many minerals are there?	2.0	0.26	0.18	0.26
C22	Case & Panel	Where are minerals found?	2.0	0.43	0.21	0.43
C52	Case/Specimen	PEGMATITES: 5 Cases	2.0	0.37	0.05	0.37
C53	Case/Specimen	Peg: Big Crystals	2.0	0.15	0.04	0.15
C58	Case/Specimen	Elbaite	2.0	0.74	0.51	0.74
C59	Panel	Pockets of Minerals	2.0	2.15	2.37	2.15
D22	Touchable	Franklinite	2.0	0.16	0.01	0.16
D24	Panel	Mores Ores (Outer)	2.0	0.61	0.12	0.61
D32	Panel	Main panel near pipe	2.0	0.16	0.01	0.16
E06	Case & Panel	Rocks Chronicles	2.0	0.43	0.32	0.43
E10	Video	Clocks in Rocks	2.0	0.43	0.42	0.43
E12	Computer Interactive	Rocks Deform CI	2.0	0.59	0.30	0.59
E13	Case/Specimen	Rocks Deform B	2.0	0.72	0.07	0.72
E22	Case/Specimen	White House	2.0	0.44	0.09	0.44
E23	Unnamed	Bench (betw. Mon. & W. House)	2.0	0.52	0.28	0.52
E28	Case/Specimen	Water Recycles Rocks Alcove	2.0	0.53	0.04	0.53
E40	Touchable	Columnar Lava	2.0	0.38	0.28	0.38
E45	Panel	Deep Below the Earth's Surface	2.0	1.54	1.18	1.54
E48	Panel	Lava Lake	2.0	0.59	0.27	0.59
E51	Case/Specimen	Basalt	2.0	0.59	0.59	0.59
E52	Case/Specimen	Rocks Solidify	2.0	0.97	0.30	0.97
E54	Case/Specimen	Rocks Transform	2.0	0.25	0.18	0.25
E55	Video	The Geological Gourmet	2.0	0.46	0.37	0.46

(cont.)

Table GGM.5 (Cont.)

Stops in the Geology, Gems and Minerals Exhibition: Rank Order

(101 Visitors tracked for the entire visit to GGM)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
G15	Case/Specimen	Continental Hot Spots	2.0	1.07	0.28	1.07
G22	Panels	Panels	2.0	0.36	0.16	0.36
G31	Hands-On	Three Pigs	2.0	0.29	0.02	0.29
G36	Computer Interactive	Convergent Margins	2.0	0.77	0.40	0.77
G42	Computer Interactive	World Earthquake Watch	2.0	0.99	0.65	0.99
G43	Panel	Inside Earth	2.0	1.35	0.60	1.35
G44	Case/Specimen	How Did the Layers Form?	2.0	0.76	0.13	0.76
H01	Panel	MMSS/SS Through time	2.0	0.49	0.20	0.49
H14	Computer Interactive	Make an Impact	2.0	1.50	1.02	1.50
H15	Case/Specimen	Impacts: Evidence on Earth	2.0	2.32	2.83	2.32
H16	Case/Specimen	Impacts on Other Worlds	2.0	0.90	0.33	0.90
H35	Panel	When Worlds Collide/Antarctica	2.0	0.61	0.55	0.61
H38	Case & Panel	Bigger is Better	2.0	0.50	0.31	0.50
H41	Case/Specimen	Ancient Stardust	2.0	2.58	2.47	2.58
H43	Case/Specimen	Amazing Allende	2.0	1.04	1.18	1.04
A15	Label	Meteorite	1.0	0.18	.	0.18
A23	Label	Granite	1.0	0.23	.	0.23
C08	Computer Interactive	Crystal Symmetry	1.0	0.53	.	0.53
C27	Case & Panel	How are minerals classified?	1.0	0.45	.	0.45
C36	Panel	Herkimer Diamonds	1.0	0.53	.	0.53
C37	Case & Panel	A Point at Either End	1.0	0.88	.	0.88
C54	Case & Panel	What are pegmatites & why special?	1.0	0.25	.	0.25
D04	Panel	Mineral, Metal, or Ore?	1.0	0.30	.	0.30
D11	Panel	From Ore to Product	1.0	0.37	.	0.37
D12	Touchable	Coal	1.0	0.17	.	0.17
D15	Panel	Copper Queen Main	1.0	0.22	.	0.22
D20	Panel	Blasting Zone	1.0	0.37	.	0.37
D26	Panel	Mining for Ores Today/Dilemma	1.0	0.38	.	0.38
D28	Panel	What's that Sound	1.0	0.42	.	0.42
E02	Panel	Rocks Tell Stories	1.0	0.62	.	0.62
E08	Case & Panel	Label/Case Layers & Fossils, Atomic Clocks	1.0	0.63	.	0.63
E11	Case/Specimen	Rocks Deform A	1.0	0.72	.	0.72
E21	Case/Specimen	Washington Monument	1.0	0.35	.	0.35
E27	Case/Specimen	At the Crossroads	1.0	0.15	.	0.15
E33	Case/Specimen	Destroyed by Weathering	1.0	0.33	.	0.33
E49	Touchable	Peridotite	1.0	0.18	.	0.18
E58	Case/Specimen	What Happened in New England	1.0	0.37	.	0.37

(cont.)

Table GGM.5 (Cont.)

Stops in the Geology, Gems and Minerals Exhibition: Rank Order

(101 Visitors tracked for the entire visit to GGM)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
E59	Case & Panel	Variations on Metamorphic Theme	1.0	0.22	.	0.22
E60	Touchable	Jade	1.0	0.25	.	0.25
E63	Touchable	Garnet	1.0	0.37	.	0.37
G01	Panel	Geological Revolution	1.0	0.73	.	0.73
G04	Panel	The View Today	1.0	0.65	.	0.65
G05	Panel	Volcanoes!	1.0	1.03	.	1.03
G10	Panel	Plate Tectonics	1.0	0.38	.	0.38
G11	Case/Specimen	Spreading Ridges (right)	1.0	0.55	.	0.55
G17	Computer Interactive	Hot Spots	1.0	1.35	.	1.35
G18	Panel	Above Hot Spots	1.0	0.35	.	0.35
G20	Video	Earth like an Apple	1.0	0.32	.	0.32
G24	Touchable	Olivine Gabbro	1.0	0.20	.	0.20
G28	Case/Specimen	Slice of the Fault	1.0	0.42	.	0.42
G32	Panel	Where Plates Pass By	1.0	0.23	.	0.23
G33	Panel	Where Plates Come Together	1.0	0.93	.	0.93
G34	Case/Specimen	Explosive Volcanoes	1.0	1.97	.	1.97
G35	Case/Specimen	Destructive Earthquakes	1.0	0.93	.	0.93
G40	Video	Seismic Waves	1.0	0.38	.	0.38
H02	Panel	Our Solar System	1.0	2.18	.	2.18
H04	Case/Specimen	Samples	1.0	1.23	.	1.23
H06	Panel	Our Celestial Neighbor	1.0	0.05	.	0.05
H08	Case/Specimen	Lunar Rocks	1.0	1.65	.	1.65
H11	Case/Specimen	Moon/Earth	1.0	0.55	.	0.55
H12	Panel	Impact!	1.0	0.50	.	0.50
H17	Case & Panel	Do Meteorites Ever Fall on People?	1.0	1.05	.	1.05
H22	Case/Specimen	Recognizing Meteorites	1.0	0.25	.	0.25
H23	Panel	Meteorites	1.0	0.95	.	0.95
H28	Video	Read Between the Lines	1.0	1.20	.	1.20
H30	Touchable	Trace a Meteorites Lineage	1.0	0.50	.	0.50
H33	Case/Specimen	Old Woman	1.0	0.60	.	0.60
H45	Unnamed	Bench Solar System Birth	1.0	0.47	.	0.47
C63	Panel	Mine Gallery	0.0	0.15	.	0.15
C64	Unnamed	Bench	0.0	25.07	34.95	9.77

Total Stops, Without Returns	1498
Total Visitors Tracked	101

Table GGM.6

Stops in the Geology, Gems and Minerals Exhibition: Element Order

(101 Visitors tracked for the entire visit to GGM)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
Unnamed			**10.9**	**4.74**	**12.6**	**1.40**
E39	Unnamed	Bench (lava columns)	5.0	2.04	1.41	1.47
E23	Unnamed	Bench (betw. Mon. & W. House)	2.0	0.52	0.28	0.52
H45	Unnamed	Bench Solar System Birth	1.0	0.47	.	0.47
C64	Unnamed	Bench	0.0	25.07	34.95	9.77
Case & Panel			**33.7**	**0.63**	**0.62**	**0.45**
C17	Case & Panel	What gives minerals their color?	7.9	0.49	0.26	0.49
C33	Case & Panel	Are these minerals playing tricks?	5.9	0.38	0.26	0.33
C44	Case & Panel	How do crystals grow?	4.0	0.41	0.28	0.38
E14	Case & Panel	Matter of Scale/Appalachians Map	4.0	0.77	0.58	0.66
E25	Case & Panel	Rocks Build Cities	4.0	0.57	0.17	0.50
E32	Case & Panel	Cave (entire alcove)	4.0	1.36	0.71	1.36
E57	Case & Panel	Leesburg, Crestmore	4.0	0.35	0.15	0.39
G03	Case & Panel	Secrets from the sea floor	4.0	0.69	0.38	0.60
C26	Case & Panel	Why are there so many kinds of minerals?	3.0	0.34	0.08	0.32
D06	Case & Panel	Pay Dirt	3.0	0.49	0.30	0.42
E26	Case & Panel	Rocks and Their Environments	3.0	0.88	0.25	0.78
C21	Case & Panel	How many minerals are there?	2.0	0.26	0.18	0.26
C22	Case & Panel	Where are minerals found?	2.0	0.43	0.21	0.43
E06	Case & Panel	Rocks Chronicles	2.0	0.43	0.32	0.43
H38	Case & Panel	Bigger is Better	2.0	0.50	0.31	0.50
C27	Case & Panel	How are minerals classified?	1.0	0.45	.	0.45
C37	Case & Panel	A Point at Either End	1.0	0.88	.	0.88
C54	Case & Panel	What are pegmatites & why special?	1.0	0.25	.	0.25
E08	Case & Panel	Time Detectives	1.0	0.63	.	0.63
E59	Case & Panel	Variations on Metamorphic Theme	1.0	0.22	.	0.22
H17	Case & Panel	Do Meteorites Ever Fall on People?	1.0	1.05	.	1.05

(Cont.)

Table GGM.6 (Cont.)

Stops in the Geology, Gems and Minerals Exhibition: Element Order

(101 Visitors tracked for the entire visit to GGM)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
Case/Specimen			**94.1**	**0.69**	**0.67**	**0.48**
A01	Case/Specimen	Hope Diamond	69.3	1.17	0.67	1.09
B10	Case/Specimen	Rubies & Sapphires	37.6	0.87	0.57	0.73
B03	Case/Specimen	Mineral, Crystal, or Gem? Topaz/Quartz	35.6	0.48	0.25	0.42
B16	Case/Specimen	Diamonds-B	35.6	1.19	0.77	1.03
B14	Case/Specimen	Emeralds & Aquamarines	30.7	1.14	0.88	0.82
B18	Case/Specimen	Quartz Crystal Ball	30.7	0.56	0.45	0.45
B06	Case/Specimen	Gifts from Napoleon/ Necklace, Tiara	28.7	0.59	0.31	0.65
C18	Case/Specimen	Color: Slow Track	28.7	1.22	1.35	0.80
B17	Case/Specimen	Diamonds Natural & Cut	27.7	0.54	0.26	0.48
B11	Case/Specimen	Stars & Cat's Eyes	26.7	0.59	0.35	0.55
B21	Case/Specimen	Hooker Jewels	26.7	0.52	0.35	0.42
B02	Case/Specimen	Necklace/Bracelet	25.7	0.53	0.32	0.48
B13	Case/Specimen	A Royal Legacy/Emerald Ring	24.8	0.52	0.38	0.43
B12	Case/Specimen	Jade	22.8	0.41	0.25	0.35
D02	Case/Specimen	Gold	22.8	0.72	0.37	0.65
B08	Case/Specimen	Designed for Spanish Royalty, Necklace	21.8	0.56	0.40	0.48
B05	Case/Specimen	Worn by a French Queen/Earrings	20.8	0.61	0.43	0.55
C35	Case/Specimen	Amazing Gems	19.8	1.20	0.85	1.14
C16	Case/Specimen	Color: Mineral Rainbow	18.8	0.67	0.38	0.67
B20	Case/Specimen	Pearl Necklace/Quartz Egg	17.8	0.60	0.22	0.52
C31	Case/Specimen	Diversity: Slow Track	16.8	0.87	0.49	1.02
C41	Case/Specimen	Rio Grande Do Sul	16.8	0.43	0.29	0.32
C12	Case/Specimen	Shape: One mineral, Many shapes	15.8	0.67	0.67	0.46
C29	Case/Specimen	Diversity: Study Gallery	14.9	1.33	2.55	0.50
C45	Case/Specimen	Growth: Slow Track	13.9	0.72	0.43	0.65
C05	Case/Specimen	Look into a Crystal	11.9	0.49	0.38	0.37
C24	Case/Specimen	Arkansas Quartz	11.9	0.43	0.17	0.41
D16	Case/Specimen	Bisbee Cave	11.9	0.50	0.31	0.48
A12	Case/Specimen	Meteorite	10.9	0.44	0.29	0.43
A16	Case/Specimen	Sand	10.9	0.44	0.30	0.32
C11	Case/Specimen	SHAPE: Smoky Quartz, Mix, Calcite	9.9	0.28	0.15	0.23
C15	Case/Specimen	COLOR: 5 cases	9.9	0.37	0.19	0.30
C56	Case/Specimen	Pegmatites: Slow Track	9.9	0.70	0.56	0.58
C61	Case/Specimen	Elbaites (3 Crystals)	9.9	0.46	0.36	0.28

(Cont.)

Table GGM.6 (Cont.)

Stops in the Geology, Gems and Minerals Exhibition: Element Order

(101 Visitors tracked for the entire visit to GGM)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
D19	Case/Specimen	Minerals that Glow	9.9	0.54	0.43	0.41
A04	Case/Specimen	Copper	9.9	0.58	0.33	0.53
C13	Case/Specimen	Shape: Pockets of Crystals	8.9	0.53	0.76	0.35
C23	Case/Specimen	From Two Elements	8.9	0.56	0.30	0.53
C42	Case/Specimen	GROWTH: 5 Cases	8.9	0.58	0.49	0.38
C20	Case/Specimen	How many colors?	7.9	0.43	0.34	0.30
C25	Case/Specimen	All One Mineral	7.9	0.34	0.19	0.30
C32	Case/Specimen	Amazing Gems: Moon/SunStone, Labradorite	7.9	0.61	0.40	0.63
C14	Case/Specimen	From India	6.9	0.42	0.31	0.30
D21	Case/Specimen	Sterling Hill Mine	6.9	0.44	0.26	0.38
C38	Case/Specimen	Quartz-B	5.9	0.44	0.28	0.29
C43	Case/Specimen	Growth: The Basics	5.9	0.38	0.15	0.36
C47	Case/Specimen	Gypsum Giants	5.9	0.46	0.25	0.39
C49	Case/Specimen	Growth: Crystal Oddities	5.9	0.68	0.27	0.58
A08	Case/Specimen	Quartz	5.9	0.31	0.09	0.28
A20	Case/Specimen	Granite	5.9	0.45	0.15	0.40
C28	Case/Specimen	Diversity: One Family, Many Uses	5.0	0.39	0.19	0.40
C50	Case/Specimen	Cave of Swords	5.0	0.24	0.09	0.18
C60	Case/Specimen	Pegmatite Pocket	5.0	0.22	0.18	0.10
D01	Case/Specimen	Silver/Copper	5.0	0.45	0.23	0.30
D07	Case/Specimen	Morefield Mine (Right)	5.0	0.39	0.18	0.38
D09	Case/Specimen	Morefield Mine (Left)	5.0	0.42	0.23	0.48
D17	Case/Specimen	Minerals from Bisbee	5.0	0.72	0.74	0.33
G30	Case/Specimen	Transform Faults	5.0	1.10	0.31	1.13
C04	Case/Specimen	Salt of the Earth	4.0	0.40	0.21	0.32
C30	Case/Specimen	Diversity: Mineral Bonanza	4.0	0.23	0.15	0.20
C39	Case/Specimen	Amazing Gems: Wondrous Diversity	4.0	0.40	0.34	0.41
C48	Case/Specimen	Growth: Too Small to See	4.0	0.40	0.24	0.35
D27	Case/Specimen	Ore Treasures	4.0	0.38	0.12	0.35
E46	Case/Specimen	All Rocks Contain Water	4.0	1.05	0.36	1.18
G19	Case/Specimen	Globe	4.0	1.24	1.78	0.51
G23	Case/Specimen	Building Continents	4.0	1.65	1.67	1.10
H25	Case/Specimen	What Killed the Dinosaurs	4.0	1.94	1.70	1.73
C10	Case/Specimen	Shape: What gives crystals their shape	3.0	1.43	1.81	0.60
C34	Case/Specimen	Alexandrites	3.0	0.63	0.29	0.62
C46	Case/Specimen	Growth: Different Environments	3.0	0.35	0.06	0.38

(Cont.)

Table GGM.6 (Cont.)

Stops in the Geology, Gems and Minerals Exhibition: Element Order

(101 Visitors tracked for the entire visit to GGM)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
D14	Case/Specimen	Copper Queen Mine	3.0	0.50	0.19	0.43
D18	Case/Specimen	Geologist's Treasure Chest	3.0	0.44	0.14	0.48
D29	Case/Specimen	Fletcher Mine	3.0	0.61	0.38	0.55
D31	Case/Specimen	Saved from the Crusher	3.0	0.24	0.14	0.32
G08	Case/Specimen	Volcano Profiles	3.0	0.98	0.80	0.60
G12	Case/Specimen	Spreading Ridges (left)	3.0	0.75	0.64	0.57
G16	Case/Specimen	Oceanic Hot Spots	3.0	0.89	0.70	0.55
H13	Case/Specimen	From Dust to Planets	3.0	0.64	0.53	0.37
C09	Case/Specimen	Shape: The Many Faces of Crystals	2.0	0.58	0.50	0.58
C52	Case/Specimen	PEGMATITES: 5 Cases	2.0	0.37	0.05	0.37
C53	Case/Specimen	Peg: Big Crystals	2.0	0.15	0.04	0.15
C58	Case/Specimen	Elbaite	2.0	0.74	0.51	0.74
E13	Case/Specimen	Rocks Deform B	2.0	0.72	0.07	0.72
E22	Case/Specimen	White House	2.0	0.44	0.09	0.44
E28	Case/Specimen	Water Recycles Rocks Alcove	2.0	0.53	0.04	0.53
E51	Case/Specimen	Basalt	2.0	0.59	0.59	0.59
E52	Case/Specimen	Rocks Solidify	2.0	0.97	0.30	0.97
E54	Case/Specimen	Rocks Transform	2.0	0.25	0.18	0.25
G15	Case/Specimen	Continental Hot Spots	2.0	1.07	0.28	1.07
G44	Case/Specimen	How Did the Layers Form?	2.0	0.76	0.13	0.76
H15	Case/Specimen	Impacts: Evidence on Earth	2.0	2.32	2.83	2.32
H16	Case/Specimen	Impacts on Other Worlds	2.0	0.90	0.33	0.90
H41	Case/Specimen	Ancient Stardust	2.0	2.58	2.47	2.58
H43	Case/Specimen	Amazing Allende	2.0	1.04	1.18	1.04
E11	Case/Specimen	Rocks Deform A	1.0	0.72	.	0.72
E21	Case/Specimen	Washington Monument	1.0	0.35	.	0.35
E27	Case/Specimen	At the Crossroads	1.0	0.15	.	0.15
E33	Case/Specimen	Destroyed by Weathering	1.0	0.33	.	0.33
E58	Case/Specimen	What Happened at New England	1.0	0.37	.	0.37
G11	Case/Specimen	Spreading Ridges (right)	1.0	0.55	.	0.55
G28	Case/Specimen	Slice of the Fault	1.0	0.42	.	0.42
G34	Case/Specimen	Explosive Volcanoes	1.0	1.97	.	1.97
G35	Case/Specimen	Destructive Earthquakes	1.0	0.93	.	0.93
H04	Case/Specimen	Samples	1.0	1.23	.	1.23
H08	Case/Specimen	Lunar Rocks	1.0	1.65	.	1.65
H11	Case/Specimen	Moon/Earth	1.0	0.55	.	0.55
H22	Case/Specimen	Recognizing Meteorites	1.0	0.25	.	0.25
H33	Case/Specimen	Old Woman	1.0	0.60	.	0.60

(Cont.)

Table GGM.6 (Cont.)

Stops in the Geology, Gems and Minerals Exhibition: Element Order

(101 Visitors tracked for the entire visit to GGM)

Location	Type	Description	Percent Who Stopped at Each Exhibit	Unique Stops: Statistics Average Stop Time (Minutes)	Standard Deviation	Median
Computer Interactive			**22.8**	**1.42**	**1.90**	**0.78**
E50	Computer Interactive	Melt a Rock/Lava Lamp	6.9	1.83	1.37	1.55
D25	Computer Interactive	Mining a Car	5.9	1.07	1.09	0.85
E07	Computer Interactive	Stories in Rocks	5.9	1.57	1.55	1.15
G29	Computer Interactive	Explore transform Faults	5.0	0.41	0.25	0.33
G09	Computer Interactive	Volcano Study Station	4.0	1.28	0.90	1.28
C57	Computer Interactive	What do pegmatites look like?	3.0	0.39	0.14	0.33
G07	Computer Interactive	Design a Volcano	3.0	2.58	2.69	1.77
E12	Computer Interactive	Rocks Deform CI	2.0	0.59	0.30	0.59
G36	Computer Interactive	Convergent Margins	2.0	0.77	0.40	0.77
G42	Computer Interactive	World Earthquake Watch	2.0	0.99	0.65	0.99
H14	Computer Interactive	Make an Impact	2.0	1.50	1.02	1.50
C08	Computer Interactive	Crystal Symmetry	1.0	0.53	.	0.53
G17	Computer Interactive	Hot Spots	1.0	1.35	.	1.35
Hands-On			**26.7**	**0.79**	**0.97**	**0.55**
E44	Hands-On	Journey Inside the Earth	7.9	0.96	0.44	0.95
E24	Hands-On	This City id Made of Rock	5.9	1.27	0.64	1.27
E16	Hands-On	Study Station: Granite	5.0	0.82	0.83	0.47
E17	Hands-On	Study Station: Sandstone	5.0	0.71	0.54	0.60
E18	Hands-On	Study -Station: Gneiss	5.0	2.45	4.64	0.35
G41	Hands-On	Make Your Own Earthquake	5.0	0.49	0.17	0.52
E53	Hands-On	Volcanic or Plutonic	4.0	1.38	1.47	0.80
G06	Hands-On	Volcano Anatomy	4.0	0.93	0.33	0.90
E04	Hands-On	Rocks Snapshots flip-up Q&A	3.0	0.98	0.79	0.98
E15	Hands-On	Rock Study-Stations Magnifyer	3.0	0.25	0.05	0.25
E29	Hands-On	Water Recycles Rocks Experiment	3.0	0.72	0.42	0.63
G31	Hands-On	Three Pigs	2.0	0.29	0.02	0.29
Label			**8.9**	**0.40**	**0.35**	**0.35**
A11	Label	Quartz	3.0	0.25	0.13	0.25
A19	Label	Sand	2.0	0.50	0.04	0.50
A15	Label	Meteorite	1.0	0.18	.	0.18
A23	Label	Granite	1.0	0.23	.	0.23

(Cont.)

Table GGM.6 (Cont.)

Stops in the Geology, Gems and Minerals Exhibition: Element Order

(101 Visitors tracked for the entire visit to GGM)

Location	Type	Description	Percent Who Stopped at Each Exhibit	Unique Stops: Statistics Average Stop Time (Minutes)	Standard Deviation	Median
Panel			**52.5**	**0.75**	**0.83**	**0.48**
A03	Panel	Hope Diamond Geological History	19.8	0.84	0.41	0.80
A02	Panel	Hope Diamond Social History	13.9	2.10	1.44	2.01
D03	Panel	Metals that stand alone	8.9	0.32	0.21	0.23
A24	Panel	Hope Diamond (center)	7.9	0.33	0.30	0.21
B09	Panel	Gems	6.9	0.34	0.23	0.28
B15	Panel	Diamonds-A	5.9	0.48	0.35	0.32
A18	Panel	Sand Panel B	5.9	0.54	0.44	0.37
A13	Panel	Meteorite Panel A	5.0	0.44	0.25	0.28
D08	Panel	Morefield Mine (Main)	4.0	1.03	0.82	0.94
A06	Panel	Copper Panel B	3.0	0.42	0.15	0.40
A09	Panel	Quartz Panel A	3.0	0.47	0.10	0.50
A14	Panel	Meteorite Panel B	3.0	0.52	0.19	0.42
E41	Panel	Lava	3.0	0.22	0.09	0.18
B01	Panel	Treasures from the Natl Gem Coll.-A	3.0	0.34	0.11	0.38
B04	Panel	Crystal to Gem	3.0	0.51	0.18	0.57
B07	Panel	Celebrity Jewels	3.0	0.25	0.15	0.17
G39	Panel	Earthquakes in the News	3.0	1.37	0.92	1.08
G46	Panel	Clues from Diamonds	3.0	2.32	2.10	1.73
G47	Panel	Clues from (...wall)	3.0	1.62	1.75	0.87
A05	Panel	Copper Panel A	2.0	0.40	0.28	0.40
A17	Panel	Sand Panel A	2.0	0.46	0.08	0.46
A21	Panel	Granite Panel A	2.0	0.67	0.19	0.67
E45	Panel	Deep Below the Earth's Surface	2.0	1.54	1.18	1.54
E48	Panel	Lava Lake	2.0	0.59	0.27	0.59
G43	Panel	Inside Earth	2.0	1.35	0.60	1.35
B19	Panel	Treasures from the Natl Gem Coll-B	2.0	0.51	0.53	0.51
C01	Panel	Minerals and Gems Gallery	2.0	0.29	0.05	0.29
C59	Panel	Pockets of Minerals	2.0	2.15	2.37	2.15
D24	Panel	Mores Ores (Outer)	2.0	0.61	0.12	0.61
D32	Panel	Main panel near pipe	2.0	0.16	0.01	0.16
H01	Panel	MMSS/SS Through time	2.0	0.49	0.20	0.49
H35	Panel	When Worlds Collide/Antarctica	2.0	0.61	0.55	0.61
G22	Panel	Panels	2.0	0.36	0.16	0.36
E02	Panel	Rocks Tell Stories	1.0	0.62	.	0.62
G32	Panel	Where Plates Pass By	1.0	0.23	.	0.23
G33	Panel	Where Plates Come Together	1.0	0.93	.	0.93

(Cont.)

Table GGM.6 (Cont.)

Stops in the Geology, Gems and Minerals Exhibition: Element Order

(101 Visitors tracked for the entire visit to GGM)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
H06	Panel	Our Celestial Neighbor	1.0	0.05	.	0.05
C36	Panel	Herkimer Diamonds	1.0	0.53	.	0.53
D04	Panel	Mineral, Metal, or Ore?	1.0	0.30	.	0.30
D11	Panel	From Ore to Product	1.0	0.37	.	0.37
D15	Panel	Copper Queen Main	1.0	0.22	.	0.22
D20	Panel	Blasting Zone	1.0	0.37	.	0.37
D26	Panel	Mining for Ores Today/Dilemma	1.0	0.38	.	0.38
D28	Panel	What's that Sound	1.0	0.42	.	0.42
G01	Panel	Geological Revolution	1.0	0.73	.	0.73
G04	Panel	The View Today	1.0	0.65	.	0.65
G05	Panel	Volcanoes!	1.0	1.03	.	1.03
G10	Panel	Plate Tectonics	1.0	0.38	.	0.38
G18	Panel	Above Hot Spots	1.0	0.35	.	0.35
H02	Panel	Our Solar System	1.0	2.18	.	2.18
H12	Panel	Impact!	1.0	0.50	.	0.50
H23	Panel	Meteorites	1.0	0.95	.	0.95
C63	Panel	Mine Gallery	0.0	0.15	.	0.15
Touchable			**32.7**	**0.41**	**0.43**	**0.31**
C06	Touchable	Amethyst	10.9	0.29	0.23	0.22
H18	Touchable	Meteorites	8.9	0.82	1.21	0.35
C03	Touchable	Touch Some Atoms/Quartz	4.0	0.44	0.20	0.43
C55	Touchable	Beryl	4.0	0.31	0.31	0.17
D05	Touchable	Rock	4.0	0.30	0.26	0.20
E03	Touchable	Magnetite Lodestone	3.0	0.72	0.18	0.77
E09	Touchable	Granite Touch Rock	3.0	0.30	0.16	0.35
E36	Touchable	Destroyed by Weather Natural Sculptures: Gneiss	3.0	0.36	0.25	0.22
E37	Touchable	Destroyed by Weather Natural Sculptures: Quartzite	3.0	0.20	0.03	0.20
E38	Touchable	Destroyed by Weather Natural Sculptures: Limestone	3.0	0.22	0.01	0.22
H05	Touchable	Sample	3.0	0.43	0.13	0.40
E40	Touchable	Lava Touch Rocks	2.0	0.38	0.28	0.38
D22	Touchable	Franklinite	2.0	0.16	0.01	0.16
E49	Touchable	Peridotite	1.0	0.18	.	0.18
E60	Touchable	Jade	1.0	0.25	.	0.25
E63	Touchable	Garnet Touch Rock	1.0	0.37	.	0.37
D12	Touchable	Coal	1.0	0.17	.	0.17
G24	Touchable	Olivine Gabbro	1.0	0.20	.	0.20
H30	Touchable	Trace a Meteorites Lineage	1.0	0.50	.	0.50

(Cont.)

Table GGM.6 (Cont.)

Stops in the Geology, Gems and Minerals Exhibition: Element Order

(101 Visitors tracked for the entire visit to GGM)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
Video			**34.7**	**2.74**	**3.16**	**0.37**
F03	Video	The Greatest Show on Earth	15.8	5.83	3.65	5.97
C19	Video	Why are Rubies Red?	9.9	0.97	1.27	0.48
D10	Video	Ore to Product	9.9	1.29	1.69	0.44
H26	Video	Target Earth	6.9	1.35	1.06	1.00
E19	Video	Gold or Aluminum	5.9	1.88	2.03	1.07
G27	Video	Plates Defined	5.9	1.30	0.95	1.32
H03	Video	Take a Planetary Tour	5.0	1.80	1.71	1.33
H19	Video	Peekskill Fireball	3.0	1.26	1.20	1.12
H40	Video	Birth of the Solar System	3.0	3.57	3.82	2.25
E10	Video	Clocks in Rocks	2.0	0.43	0.42	0.43
E55	Video	The Geological Gourmet	2.0	0.46	0.37	0.46
G20	Video	Earth like an Apple	1.0	0.32	.	0.32
G40	Video	Seismic Waves	1.0	0.38	.	0.38
H28	Video	Read Between the Lines	1.0	1.20	.	1.20
		Total Stops, Without Returns	1498			
		Total Visitors Tracked	101			

Table Rocks.1

Behavior in the Geology, Gems and Minerals Exhibition: Subgroups of "Rocks" Visitors

(91 Visitors tracked in Rocks Gallery)

	A. Total Time in the Exhibition (Visit Times): Statistics					
Sub-groups	No. of Visitors	Avg. Visit Time (Minutes)	Standard Deviation	Median	Maximum	Q3-Q1*
Male Alone	13	15.2	17.5	2.7	63.2	6.9
Female Alone	10	5.2	2.7	6.0	14.0	8.5
Male in Adult Group	21	4.7	4.3	3.1	26.5	3.2
Female in Adult Group	16	8.7	7.6	4.8	28.7	7.7
Male in Adult(s) & Child(ren) Group	13	8.3	6.2	6.0	18.6	7.1
Female in Adult(s) & Child(ren) Group	17	8.5	8.0	5.4	34.5	7.4
Total	90	15.6	36.6	4.7	212.7	7.5

	B. Total Time Observing (Sum of Time at Stops): Statistics					
Sub-groups	No. of Visitors	Avg. Stopped Time (Minutes)	Standard Deviation	Median	Maximum	Q3-Q1
Male Alone	13	5.9	7.3	1.6	35.9	4.7
Female Alone	10	3.6	2.3	3.8	12.1	6.6
Male in Adult Group	21	3.1	4.4	1.9	25.5	2.6
Female in Adult Group	16	4.7	3.3	3.6	10.3	6.0
Male in Adult(s) & Child(ren) Group	14	6.7	4.8	4.9	13.5	7.0
Female in Adult(s) & Child(ren) Group	17	5.7	6.9	2.8	33.9	5.6
Total	91	5.0	5.2	3.0	35.9	5.9

	C. Percent of Visit Time Spent at Stops: Statistics					
Sub-groups	No. of Visitors	Avg. % Stopped Time (0.0 - 100.0)	Standard Deviation	Median	Maximum	Q3-Q1
Male Alone	13	55.5	0.2	0.6	0.9	0.4
Female Alone	10	61.0	0.2	0.7	0.9	0.3
Male in Adult Group	21	48.5	0.3	0.6	1.0	0.6
Female in Adult Group	16	57.1	0.2	0.7	1.0	0.4
Male in Adult(s) & Child(ren) Group	13	75.7	0.2	0.8	1.0	0.1
Female in Adult(s) & Child(ren) Group	17	60.1	0.2	0.6	1.0	0.4
Total	90	57.2	0.3	0.7	1.0	0.4

	D. Number of Stops: Statistics					
Sub-groups	No. of Visitors	Avg. Number of Stops	Standard Deviation	Median	Maximum	Q3-Q1
Male Alone	13	6.1	6.3	2.0	21.0	5.0
Female Alone	10	6.8	3.3	6.5	14.0	8.0
Male in Adult Group	21	3.8	3.4	3.0	21.0	3.0
Female in Adult Group	16	4.5	2.7	6.0	10.0	5.5
Male in Adult(s) & Child(ren) Group	14	8.0	5.3	7.0	17.0	4.0
Female in Adult(s) & Child(ren) Group	17	5.7	3.4	5.0	12.0	5.0
Total	91	5.7	4.3	5.0	21.0	6.0

* The number that fall between the 25th and 75th percentiles.

(cont.)

Table Rocks.1 (cont.)

Behavior in the Geology, Gems and Minerals Exhibition: Subgroups of "Rocks" Visitors

(91 Visitors tracked in Rocks Gallery)

	E. Stop Time : Statistics				
Sub-groups	Unique Stops	Avg. Stop Time (Minutes)	Standard Deviation	Median	Maximum
Alone (Total)	**145**	**0.9**	**1.5**	**0.5**	**13.1**
Male Alone	68	1.1	2.2	0.5	13.1
Female Alone	77	0.6	0.6	0.5	3.1
Group (Total)	**156**	**1.0**	**1.7**	**0.4**	**8.9**
Male in Adult Group	79	1.0	1.7	0.4	8.9
Female in Adult Group	77	0.9	1.7	0.4	8.1
Adults & Children (Total)	**176**	**1.1**	**1.6**	**0.5**	**13.2**
Male in Adult(s) & Child(ren) Group*	89	0.9	1.3	0.5	8.3
Female in Adult(s) & Child(ren) Group*	87	1.2	1.9	0.5	13.2
Total	**477**	**1.0**	**1.6**	**0.5**	**13.2**

	F. Stop Time : Statistics				
Characteristics	Unique Stops	Avg. Stop Time (Minutes)	Standard Deviation	Median	Maximum
Age					
19 and Younger	84	1.2	2.0	0.5	13.2
20-29	40	0.8	1.3	0.4	7.9
30-39	107	1.1	2.0	0.5	13.1
40-49	145	0.8	1.2	0.5	7.8
50 and Older	92	0.9	1.5	0.4	8.6
Type of Element					
Unnamed	15	2.4	2.5	1.6	7.7
Case & Panel	84	0.7	0.7	0.4	3.9
Case/Specimen	98	0.5	0.4	0.4	2.0
Computer Interactive	35	1.6	2.5	0.7	13.2
Hands-On	115	0.7	0.5	0.5	2.3
Label					
Panel	29	0.5	0.4	0.4	1.6
Touchable	62	0.4	0.3	0.4	1.9
Video	39	3.5	3.6	2.2	13.1
All Stops	477	**1.0**	**1.6**	**0.5**	**13.2**

*Observed individual in a group of Adult(s) & Child(ren)

Table Rocks.2

Percent of "Rocks" Visitors who Stopped in Each Exhibition Area

(91 Visitors tracked in Rocks Gallery)

1	2	3	4	5	6
Exhibition Area	Number of Visitors	Percent of Visitors Who Stopped	Number Making Repeat Stops in Area	Percent of Repeats in Area	Number of Possible Stops in Area
Rocks Gallery	85	93.4	16	18.8	64
Plate Tectonics Theater	20	22.0	0	0.0	3

Table Rocks.3

Average Time Stopped/Gallery by Visit Length Type (in Minutes)

(91 Visitors tracked in Rocks Gallery)

	Visit Length Type*						
Gallery	0-5	5-10 Min	10-15 Min	15-20 Min	20-25 Min	25-35 Min	Over 35 Min
E - Rocks	1.4**	3.6	7.3	12.1	0.0	18.1	11.3
F - PT Theater	1.3	4.4	8.1	3.4	0.0	8.2	6.7
Total	2.8	8.0	15.4	15.4	0.0	26.3	17.9

*Total time from entry to exit in **Rocks Gallery**.

**Cell entries are the average time visitors stopped in a specific gallery.

Table Rocks.4

Stops in the Rocks Gallery: Ranked Within Gallery Order

(91 Visitors tracked in Rocks Gallery)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
Gallery E		**Rocks**	**93.4**	**0.79**	**1.23**	**0.45**
E16	Hands-On	Study Station: Granite	23.1	0.58	0.56	0.37
E18	Hands-On	Study Station: Gneiss	22.0	0.55	0.51	0.38
E25	Case & Panel	Rocks Build Cities	20.9	0.55	0.34	0.52
E44	Hands-On	Journey Inside the Earth	19.8	1.04	0.57	0.95
E14	Case & Panel	Matter of Scale/Appalachians Map	18.7	1.13	1.24	0.45
E24	Hands-On	This City is Made of Rock	16.5	0.92	0.67	0.58
E50	Computer Interactive	Melt a Rock/Lava Lamp	16.5	1.13	1.39	0.60
E32	Case & Panel	Cave (entire alcove)	15.4	0.48	0.36	0.33
E17	Hands-On	Study Station: Sandstone	14.3	0.38	0.22	0.37
E15	Hands-On	Rock Study-Stations Magnifyer	13.2	0.56	0.22	0.54
E40	Touchable	Columnar Lava	13.2	0.27	0.13	0.25
E39	Unnamed	Bench (lava columns)	12.1	3.14	2.51	1.82
E46	Case/Specimen	All Rocks Contain Water	12.1	0.56	0.48	0.35
E07	Computer Interactive	Stories in Rocks	11.0	2.44	3.91	1.10
E12	Computer Interactive	Rocks Deform CI	11.0	1.63	2.11	0.85
E19	Video	Gold or Aluminum	11.0	2.99	4.00	1.57
E26	Case & Panel	Rocks and Their Environments	11.0	0.67	0.49	0.58
E38	Touchable	Destroyed by Weather Natural Sculpture: Limestone	11.0	0.36	0.20	0.34
E21	Case/Specimen	Washington Monument	9.9	0.49	0.39	0.42
E29	Hands-On	Experiment: Suspended Animation	9.9	0.71	0.29	0.72
E33	Case/Specimen	Destroyed by Weathering	9.9	0.63	0.56	0.55
E59	Case & Panel	Variations on Metamorphic Theme	9.9	0.32	0.13	0.32
E03	Touchable	Magnetite Lodestone	8.8	0.88	0.64	0.62
E58	Case/Specimen	What Happened in New England	8.8	0.69	0.43	0.58
E22	Case/Specimen	White House	7.7	0.46	0.28	0.38
E27	Case/Specimen	At the Crossroads Outcrop Model	7.7	0.63	0.23	0.55
E31	Panel	Outside Cave Map	7.7	0.55	0.45	0.35
E37	Touchable	Destroyed by Weather Natural Sculpture: Quartzite	7.7	0.40	0.25	0.45
E45	Panel	Deep Below the Earth's Surface	7.7	0.41	0.35	0.20
E57	Case & Panel	Leesburg, Crestmore	7.7	0.68	0.60	0.42

(Cont.)

Table Rocks.4 (cont.)
Stops in the Rocks Gallery: Ranked Within Gallery Order
(91 Visitors tracked in Rocks Gallery)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
E63	Touchable	Garnet	7.7	0.29	0.14	0.30
E08	Case & Panel	Time Detectives	6.6	0.84	1.16	0.38
E10	Video	Clocks in Rocks	6.6	0.89	1.04	0.36
E13	Case/Specimen	Rocks Deform B	6.6	0.65	0.45	0.61
E28	Case/Specimen	Water Recycles Rocks Alcove	6.6	0.41	0.19	0.44
E36	Touchable	Destroyed by Weather Natural Sculpture: Gneiss	6.6	0.39	0.12	0.43
E41	Panel	Rocks Remember	6.6	0.45	0.27	0.43
E09	Touchable	Granite	5.5	0.48	0.17	0.53
E30	Case Specimen	Geyserite	5.5	0.25	0.05	0.23
E42	Case Specimen	Lava Mudracks	5.5	0.29	0.07	0.30
E48	Panel	Lava Lake	5.5	0.87	0.58	0.63
E52	Case/Specimen	Rocks Solidify	5.5	0.60	0.43	0.48
E04	Hands-On	Rocks Snapshots flip-up Q&A	4.4	1.15	0.90	1.03
E11	Case/Specimen	Rocks Deform A	4.4	0.51	0.27	0.53
E23	Unnamed	Bench (betw. Mon. & W. House)	4.4	0.46	0.31	0.35
E47	Case Specimen	Once Molten Rock	4.4	0.53	0.53	0.32
E55	Video	The Geological Gourmet	4.4	1.27	1.19	1.03
E35	Touchable	Pikes Peak Granite	3.3	0.22	0.08	0.22
E53	Hands-On	Volcanic or Plutonic	3.3	0.29	0.13	0.28
E54	Case/Specimen	Rocks Transform	3.3	0.36	0.32	0.22
E60	Touchable	Jade	3.3	0.30	0.24	0.17
E06	Case & Panel	Rocks Chronicles	2.2	0.20	0.03	0.20
E20	Panel	Rocks Build Cities Intro Panel	2.2	0.23	0.00	0.23
E43	Case Specimen	Rocks Melt Inside Earth Globe	2.2	0.29	0.09	0.29
E51	Case/Specimen	Basalt	2.2	0.27	0.19	0.27
E56	Case Specimen	Minerals Out Of Bounds	2.2	0.58	0.64	0.58
E01	Panel	Rocks Gallery Intro Panel	1.1	0.13	.	0.13
E05	Case Specimen	Rocks Snapshots	1.1	0.17	.	0.17
E34	Touchable	Cathedral Peak Granite	1.1	0.55	.	0.55
E61	Case Specimen	Basalt	1.1	0.13	.	0.13
E62	Case Specimen	Altered Volcanic Rock	1.1	0.88	.	0.88

(Cont.)

Table Rocks.4 (cont.)
Stops in the Rocks Gallery: Ranked Within Gallery Order
(91 Visitors tracked in Rocks Gallery)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
Gallery F*		**Plate Tectonics Theater**	**22.0**	**4.88**	**3.61**	**5.03**
F03	Video	The Greatest Show on Earth	20.9	5.12	3.54	7.00
F02	Panel	Plate Tectonics Panel	1.1	0.28	.	0.28
		Total Stops, Without Returns	477			
		Total Visitors tracked	91			

*There was no F01

Table Rocks.5

Stops in the Rocks Gallery: Element Order

(91 Visitors tracked in Rocks Gallery)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
Gallery E		**Rocks**	**93.4**	**0.79**	**1.23**	**0.45**
Case & Panel			57.1	0.67	0.74	0.42
E25	Case & Panel	Rocks Build Cities	20.9	0.55	0.34	0.52
E14	Case & Panel	Matter of Scale/Appalachians Map	18.7	1.13	1.24	0.45
E32	Case & Panel	Cave (entire alcove)	15.4	0.48	0.36	0.33
E26	Case & Panel	Rocks and Their Environments	11.0	0.67	0.49	0.58
E59	Case & Panel	Variations on Metamorphic Theme	9.9	0.32	0.13	0.32
E57	Case & Panel	Leesburg, Crestmore	7.7	0.68	0.60	0.42
E08	Case & Panel	Time Detectives	6.6	0.84	1.16	0.38
E06	Case & Panel	Rocks Chronicles	2.2	0.20	0.03	0.20
Case/Specimen			58.2	0.51	0.38	0.38
E46	Case/Specimen	All Rocks Contain Water	12.1	0.56	0.48	0.35
E21	Case/Specimen	Washington Monument	9.9	0.49	0.39	0.42
E33	Case/Specimen	Destroyed by Weathering	9.9	0.63	0.56	0.55
E58	Case/Specimen	What Happened in New England	8.8	0.69	0.43	0.58
E22	Case/Specimen	White House	7.7	0.46	0.28	0.38
E27	Case/Specimen	At the Crossroads Outcrop Model	7.7	0.63	0.23	0.55
E13	Case/Specimen	Rocks Deform B	6.6	0.65	0.45	0.61
E28	Case/Specimen	Water Recycles Rocks Alcove	6.6	0.41	0.19	0.44
E30	Case/Specimen	Geyserite	5.5	0.25	0.05	0.23
E42	Case/Specimen	Lava Mudracks	5.5	0.29	0.07	0.30
E52	Case/Specimen	Rocks Solidify	5.5	0.60	0.43	0.48
E47	Case/Specimen	Once Molten Rock	4.4	0.53	0.53	0.32
E11	Case/Specimen	Rocks Deform A	4.4	0.51	0.27	0.53
E54	Case/Specimen	Rocks Transform	3.3	0.36	0.32	0.22
E43	Case/Specimen	Rocks Melt Inside Earth Globe	2.2	0.29	0.09	0.29
E56	Case/Specimen	Minerals Out Of Bounds	2.2	0.58	0.64	0.58
E51	Case/Specimen	Basalt	2.2	0.27	0.19	0.27
E05	Case/Specimen	Rocks Snapshots	1.1	0.17	.	0.17
E61	Case/Specimen	Basalt	1.1	0.13	.	0.13
E62	Case/Specimen	Volcanic Rock	1.1	0.88	.	0.88
Computer Interactive			25.3	1.65	2.52	0.67
E50	Computer Interactive	Melt a Rock/Lava Lamp	16.5	1.13	1.39	0.60
E07	Computer Interactive	Stories in Rocks	11.0	2.44	3.91	1.10
E12	Computer Interactive	Rocks Deform CI	11.0	1.63	2.11	0.85

(Cont.)

Table Rocks.5 (Cont.)

Stops in the Rocks Gallery: Element Order

(91 Visitors tracked in Rocks Gallery)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
Hands-On			53.8	0.69	0.54	0.50
E16	Hands-On	Study Station: Granite	23.1	0.58	0.56	0.37
E18	Hands-On	Study Station: Gneiss	22.0	0.55	0.51	0.38
E44	Hands-On	Journey Inside the Earth	19.8	1.04	0.57	0.95
E24	Hands-On	This City is Made of Rock	16.5	0.92	0.67	0.58
E17	Hands-On	Study Station: Sandstone	14.3	0.38	0.22	0.37
E15	Hands-On	Rock Study-Stations Magnifyer	13.2	0.56	0.22	0.54
E29	Hands-On	Experiment: Suspended Animation	9.9	0.71	0.29	0.72
E04	Hands-On	Rocks Snapshots flip-up Q&A	4.4	1.15	0.90	1.03
E53	Hands-On	Volcanic or Plutonic	3.3	0.29	0.13	0.28
Panel			25.3	0.51	0.42	0.35
E31	Panel	Outside Cave Map	7.7	0.55	0.45	0.35
E45	Panel	Deep Below the Earth's Surface	7.7	0.41	0.35	0.20
E41	Panel	Rocks Remember	6.6	0.45	0.27	0.43
E48	Panel	Lava Lake	5.5	0.87	0.58	0.63
E20	Panel	Rocks Build Cities	2.2	0.23	0.00	0.23
E01	Panel	Rocks Gallery Intro	1.1	0.13	.	0.13
Touchable			44.0	0.41	0.33	0.37
E40	Touchable	Lava Touch Rocks	13.2	0.27	0.13	0.25
E38	Touchable	Destroyed by Weather Natural Sculpture: Limestone	11.0	0.36	0.20	0.34
E03	Touchable	Magnetite Lodestone	8.8	0.88	0.64	0.62
E37	Touchable	Destroyed by Weather Natural Sculpture: Quartzite	7.7	0.40	0.25	0.45
E63	Touchable	Garnet	7.7	0.29	0.14	0.30
E36	Touchable	Destroyed by Weather Natural Sculpture: Gneiss	6.6	0.39	0.12	0.43
E09	Touchable	Granite	5.5	0.48	0.17	0.53
E35	Touchable	Pikes Peak Granite	3.3	0.22	0.08	0.22
E60	Touchable	Jade	3.3	0.30	0.24	0.17
E34	Touchable	Cathedral Peak Granite	1.1	0.55	.	0.55
Unnamed			16.5	2.42	2.45	1.63
E39	Unnamed	Bench (lava columns)	12.1	3.14	2.51	1.82
E23	Unnamed	Bench (betw. Mon. & W. House)	4.4	0.46	0.31	0.35

(Cont.)

Table Rocks.5 (Cont.)
Stops in the Rocks Gallery: Element Order
(91 Visitors tracked in Rocks Gallery)

				Unique Stops: Statistics		
Location	Type	Description	Percent Who Stopped at Each Exhibit	Average Stop Time (Minutes)	Standard Deviation	Median
Video			17.6	2.01	3.02	0.81
E19	Video	Gold or Aluminum	11.0	2.99	4.00	1.57
E10	Video	Clocks in Rocks	6.6	0.89	1.04	0.36
E55	Video	The Geological Gourmet	4.4	1.27	1.19	1.03

Geology, Gems, and Minerals Hall

Gender: M F ID ______ (office)

Age: ______

Race/Ethnic: ______

Group Size: ______

Group Composition: adults & kids

alone grp adults 0-6 ______

couple grp teens 6–12 ______

over 12 ______

Selection Location: stairs – elevator

1st Gallery: Rocks

Time Begin: ______

Time End: ______

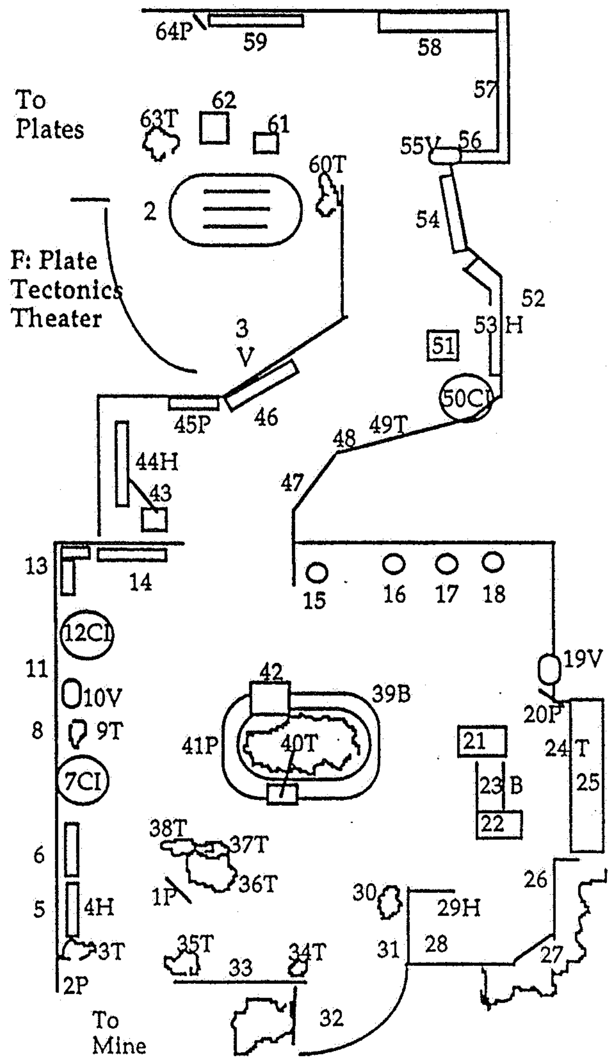
Tracker: ______

Session: ______

Segment: 1 2 3 4 5 6

Additional Notes:

-B-1-



E: Rocks Gallery

F: Plate Tectonics Theater

	Loc	Start	Stop	Activ.	Comments
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Activities		L: Look at/Watch Inter.
U: Using		G: Talking to Guard
D: Doing together		P: Photogr/Videotaping
C: Calling attention		W: Waiting to view

Appendix B.