

Storytelling in the planetarium: Keeping it casual and making connections

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Our goals

- Empower scientists to tell informal stories about space science
- Share successful communication styles for storytelling
- Detail effective (enjoyable and educational) storytelling techniques for the planetarium
- Encourage scientists to think of themselves as storytellers [1]

Star stories know no bounds

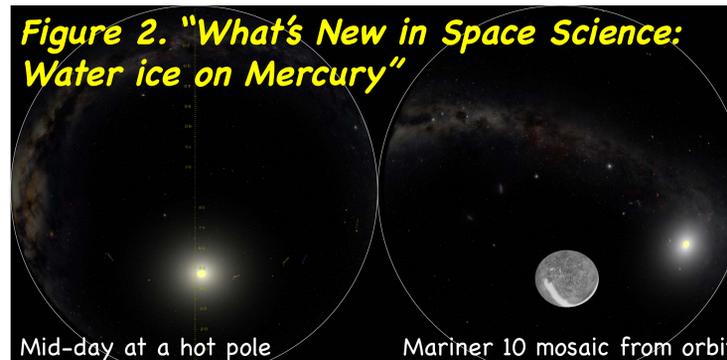
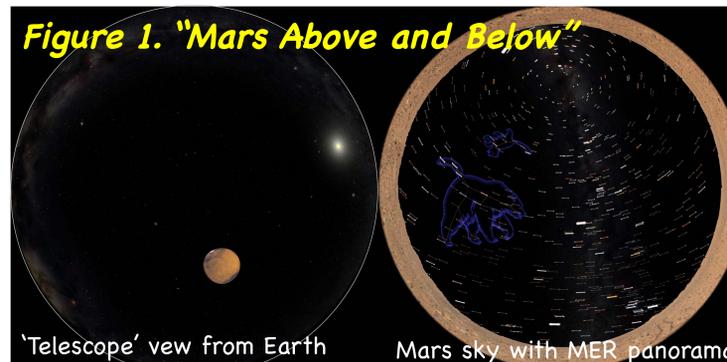
The awe felt beneath the vastness and beauty of a starry sky is a common experience, for scientists and non-scientists, children and adults alike. Cultures throughout human history have created stories in order to remember and celebrate the details of the night sky [e.g., 2–4]. Naturalist stories, for example explaining how star color is related to temperature, can be just as engaging. So are the stories any planetary scientist has to tell about their work and their field of research in general.

What story will you tell?

- What are your interests?
- What are your favorite stories about those topics?
- How did you become interested in science?
- What are you most comfortable talking about?

Storytelling in the Einstein Planetarium

The Einstein Planetarium has offered public programs on astronomy and space exploration since the National Air and Space Museum opened to the public in 1976. We utilize two systems for simulating the night sky. Our Zeiss mechanical-optical projector is operational and still provides a superior view of the night sky. However, for most programs we use a digital projection system. We offer live 25 minute sky lectures multiple times per week. Programs include event presentations (e.g., for *Mars Day!*, Fig. 1), and two regular programs, a weekly lecture on new space science (Fig. 2) and a sky lecture three times per week (Fig. 3). Each of our speakers on the staff have developed partially personalized programs.



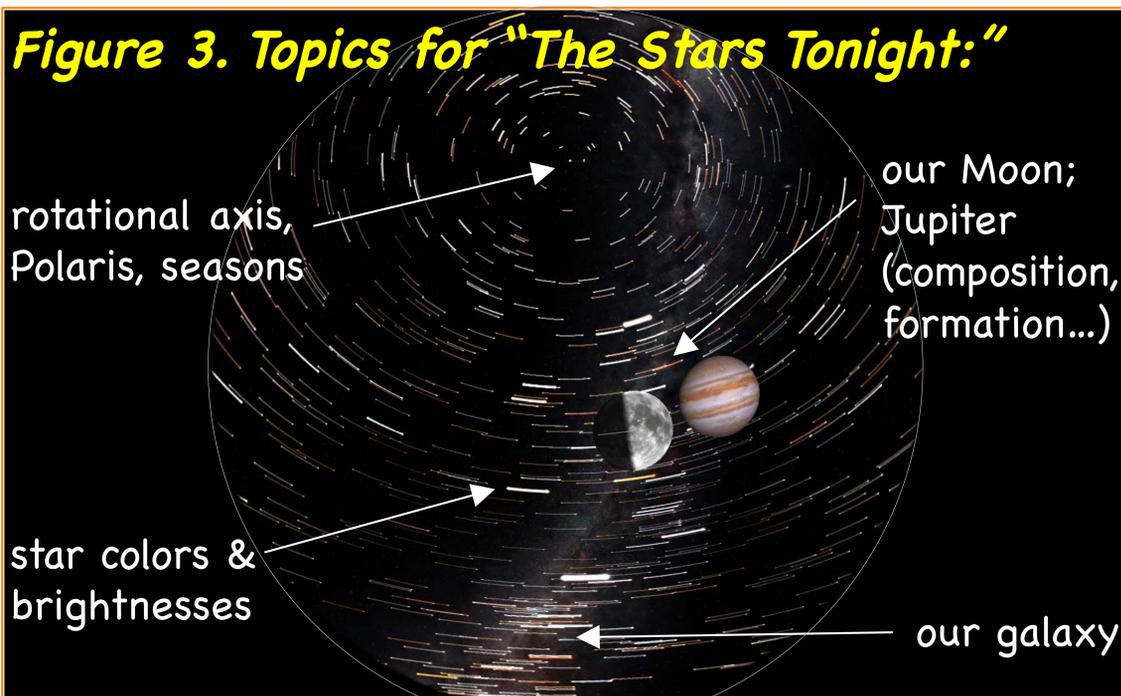
Components of a live planetarium show

- 1) Share your enthusiasm for the subject:** Your audience will share your excitement if you express it. To help this happen, use an informal style of conversation, as if you were talking to a friend, with colloquial rather than formal language.
- 2) Use accessible wording and concepts:** The public has a wide range of exposure to space science. Use simple, familiar words to explain complex ideas. Albert Einstein: "If you can't explain it to a six-year-old, you don't understand it yourself."
- 3) Hook the audience (create anticipation):** Telling a good story requires the audience to care about its conclusion. Create anticipation to help people pay attention and understand a story [5–6].

Hooks for drawing in the audience

(our favorites)

- 1) Open questions in science:** Science is a litany of unanswered questions that lead to fascinating puzzles that someone, somewhere might figure out. Speculating on what is unknown requires first learning what is known, which provides a personal incentive to listen to a scientific story.
- 2) Scientific discovery as an adventure:** There is an aspect of heading out into the unknown when we start a research project, and a sense of having a satisfying conclusion at its end. Highlighting the excitement of participating in the process of discovery can help your audience relate to doing science, if only by analogy to an adventure of their own.
- 3) Recent discoveries in science:** Something from current events works well, such as how many extrasolar planets have been confirmed to date, while pointing out the location of the Kepler Mission's field of view. However, your audience will probably find that some of the most interesting recent discoveries you can talk about are your own.
- 4) Familiar entry point to the topic:** Using a culturally familiar image of the story's subject matter, even if it is not connected to the science you will talk about, is a good way to get people thinking about the topic. Science fiction could be your entry point, or a cultural origin myth. You could even use a common understanding, such as one's own weight being a segue into talking about gravity and the mass of other planets.
- 5) Interaction:** There are multiple levels of interaction that can work well in a planetarium. One benefit of having the audience call out answers to yes-or-no questions, or identify an object, is that there will almost always be someone who calls out the correct answer(s), which you can reinforce by explaining a bit more about that answer. Asking an open-ended question (such as 'What animal do you think this group of stars looks like?,' or 'Where would you want to land on Venus?') is another way to draw the audience into the story, by inviting them to be part of the storytelling process.



References:

- [1] Meader, J. T. et al. (1993), *The Planetarium* 22, N.4. [2] Thompson, V. L. (1966), *Hawaiian Myths of Earth, Sea, and Sky*, U. of Hawaii Press, Honolulu, HI. [3] Taylor, H. P. (1993), *Coyote Places the Stars*, Aladdin Paperbacks, New York, NY. [4] Rey, H. A. (1952), *The Stars*, Houghton Mifflin Co., New York, NY. [5] Stephens, G. J. et al. (2010), *Proceed. Natl. Acad. Sci.*, doi:10.1073/pnas.1008662107. [6] Strauss, S. (1996), *The Passionate Fact: Storytelling in Natural History and Cultural Interpretation*, Fulcrum Publishing, Golden, CO. [7] DigitalSky 2 software, by Sky-Skan.

[7]

The bottom line: You don't have to be an expert on your storytelling topic, you only have to be excited to share it in an **informal and accessible** way. Keep it casual, connect to your audience, and tell a story you'd love to hear.