

Public Science: From Earth to the Solar System

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Abstract

This talk will describe how the International Year of Astronomy (IYA2009) was used to launch a new initiative of science outreach, which the authors describe as “public science.” The enormous scope and range of IYA2009 allowed From Earth to the Universe (FETTU) to reach millions of people around the globe by putting large-scale astronomical images into public and community-based settings such as parks, metro stations, libraries, and more. Currently, its derivative project, From Earth to the Solar System (FETTSS), continues the implementation of this public science paradigm. Public science projects, like FETTU and FETTSS, are very much akin to public art, which attempts to gain attention and expose large numbers of people to its content. Can such public science projects be used to increase exposure and awareness for STEM (science, technology, engineering, and mathematics) topics? This talk will briefly describe some of the measureable outcomes in this area found in FETTU, which have already been published in scholarly journals. We will also share some preliminary findings from new data being collected from FETTSS, as well as discuss other public science projects in development. The presenter will finally explore how this concept of public science may be useful for science communication efforts in the future.

1. Introduction

The *From Earth to the Solar System* (FETTSS) project exhibits images from across the Solar System in public venues such as public parks and other free, community-based “public science” locations. FETTSS is a derivative effort of *From Earth to the Universe* (FETTU), which was a major project of the International Year of Astronomy 2009 (IYA2009) and supported by UNESCO and the International Astronomical Union. FETTU has put astronomy

content into more than 1,000 locations since 2009, including parks, metro stations, airports, hospitals and libraries. FETTU was seen to attract, at least partially, a non-self-selected audience for science outreach, and shown, by the limited evaluation of a subset of the FETTU locations, that inspiration and small learning gains can occur in such informal science education (ISE) environments.

The goal of FETTSS then is two-fold: to determine if the FETTU model of public science can be successfully implemented in programs beyond the pre-orchestrated IYA2009 environs (where a well-organized, and partially funded architecture existed, as well as where a common purpose was adopted and utilized as an impetus by many event organizers new to this type of outreach), and to provide more complete data to practitioners on the intentionality of the public science participant, as well as exploring additional participant outcomes of the events.

2. FETTSS Methodology

FETTSS was conceived as a response for NASA’s Year of the Solar System (YSS) – a content-based way to motivate NASA planetary projects into new activities - and adds to the now-defined category of public science. The content was co-curated using a public submission system (where any one could submit) and a special request for submissions to well-known experts or high quality missions. The FETTSS content then weaves together themes in multi-wavelength astrophysics, astrobiology and planetary science and includes images from amateur astronomers, field scientists, NASA missions, and international astronomy organizations.

The FETTSS organizational structure follows the FETTU-style, a grass-roots approach that allows local organizers to print their own version of the exhibition for their selected venues. The FETTSS project supplies high-resolution electronic files to be

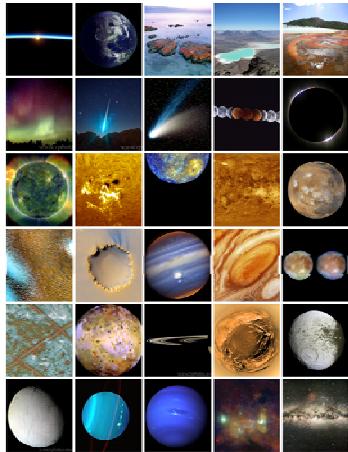


Figure 1. 30 of the 90+ curated images for FETTSS.

displayed in ways that makes sense for a given venue. These free images and related materials are approved for non-commercial outreach use. Identifying resources for the printing, installation, and other logistics are the responsibility of the local hosts.

3. Outcomes

In the U.S., the first location of FETTSS was at a high-traffic shopping mall, La Palmera, in Corpus Christi, TX from May 9-31, 2011, and featured events programmed around Space Week activities coordinated by the Corpus Christi Museum of Science and History and the National Center for Earth and Space Science Education. In 2011 and 2012, FETTSS has been displayed in Washington DC, Puerto Rico, Texas, Florida, Pennsylvania and Missouri. Internationally, the FETTU network was leveraged to advertise the opportunity beyond NASA and U.S.-specific audiences. As of October 2011, over 70 FETTSS venues abroad, from cafes to art galleries, had signed up to participate or already hosted FETTSS events. The organizational structure (an online repository and a few volunteers) has allowed exponential amounts of distribution of FETTSS content worldwide.

The FETTSS research questions will continue to follow up on previous public science project results, as well as results from the ongoing Aesthetics & Astronomy research project. These questions include: Who are we attracting with science displays in these “everyday situations”? Are there more incidental visitors than intentional visitors with public science

events? Are we attracting a less-science-initiated audience than traditional science center and planetariums? Do any participants follow up with their local science center or library or other resources? Is there any reshaping of the participant’s identity (or non-identity) with science through public science events such as these? This evaluation may help shed light on whether public science events can be effective ways of reaching new audiences.

Evaluation data from two of the FETTSS-NASA sites have been digitized; data from the La Palmera mall in Corpus Christi and data from outside the National Air and Space Museum (NASM) in Washington, DC. The population from Corpus Christi was a fairly local group according to the zip code range. It was also a slightly younger crowd than outside NASM, with ages of 34.4 vs. 42.1 respectively. The population surveyed at NASM was very geographically diverse, spanning the US and many foreign nations. This reflects the Smithsonians role as a tourist destination.

6. Summary and Conclusions

FETTSS has served as an excellent test case for what the authors call “public science,” where scientific content is placed in everyday settings such as shopping malls, libraries, etc. This effort of breaking science out of its traditional venues (classroom settings, science centers, planetariums) has proven valuable and effective not only for FETTSS, but also in its predecessor FETTU and others. We believe there may be implications then for increasing capacity for STEM outreach and public science literacy through FETTSS and other projects like it. Related projects with rigorous data collection should help demonstrate the impact that public science may have on society and its relationship with science.

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