

# Chandra Public Science

Public science projects such as From Earth to the Universe (FETTU), Light: Beyond the Bulb (LBTB), Here There & Everywhere (HTE), and others put astronomy and related science content into accessible public settings such as parks, metro stations, cafes, and libraries in order to attract, at least partially, a non-self-selected audience for science outreach.



<http://hte.si.edu>

<http://lightexhibit.org>

<http://fettss.arc.nasa.gov>

<http://www.fromearthtotheuniverse.org>

Example photos shown below (left to right): LBTB at Senate Rotunda (D.C.); HTE at the East Regional Library, NC; From Earth to the Solar System (FETTSS) at The National Air and Space Museum (D.C.); FETTU at the World Science Festival in NYC, NY; LBTB at the Planetarium in Carmel High School, IN.



## LESSONS LEARNED

There is a need to provide high quality, easy to understand, and easy to implement science content to “volunpeers” for public spaces.

## IMPACTS

Many hundreds of the resulting public science exhibits created continue to provide impacts on their communities beyond the themed “expiration dates” of their originating programs. E.g., materials from the International Year of Light in 2009 lasted many years beyond (some through today). Additionally, a network of active science event hosts was created and maintained.

## EVIDENCE

Using self-selected survey responses, evaluations of public science participants have shown increased learning gains, increased interest in science and increased motivation to participate in follow-on science events. Additionally, volunpeer networks report their own learning gains, gains in experience hosting events and desire to create new experiences in the future. Follow-up projects have been successful partly through this volunpeer network creation.

## BEST PRACTICES

The public science programs have built on prior programs’ evaluations and responses to improve with user and host feedback. Additionally, original research results from the Aesthetics & Astronomy project has been incorporated into the materials creation/events planning.

Kim Arcand  
Smithsonian Astrophysical Observatory/  
Chandra X-ray Center  
[kkowal@cfa.harvard.edu](mailto:kkowal@cfa.harvard.edu)

## NASA INVOLVEMENT

The projects satisfy multiple NASA SMD EPOESS goals:

**Content:** NASA missions, NASA science, NASA themes. From high-energy astrophysics to planetary science to atmospheric and earth science to optics and photonics.

**Customer needs focus:** Derived originally from feedback from other running NASA/Chandra projects, additional user feedback was sought and analyzed to determine if audiences were being reached.

**Partnerships:** Cross-NASA linkages (from planetary science to heliophysics to astrophysics), Informal science education practitioner collaboration (including libraries, Museum Alliance, NPS, etc.), and direct community involvement to leverage local knowledge bases.

**Sustainability:** This model of public science continues reaching out to previous event organizers and participants, building upon established relationships for new opportunities in engaging audiences with NASA content.

## ACCESSIBILITY

These science outreach projects have been conducted outdoors or in other types of public and/or accessible spaces (from public parks to hospitals to metro stops to malls), as well as with collaboration, community support and involvement. Such initiatives aim to reach new audiences—particularly non-experts or casual visitors who might not actively seek out science—by hosting events in spaces where the draw is not typically science-themed materials. These events tend to be learner-centered as the participants can set their own agenda and may be considered as neutral territory for participants who don’t necessarily have to take on the burden of actively seeking out science, or whose gender, race or socio-economic status might seem to instill some limitation on their participation. For example, self-selected survey data as well as audience tracking show a more even ratio of female to male participants in a number of the public science projects that is not always found in online/digital science participatory projects.