On the Journey From Earth to the Universe

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Summary

The From Earth to the Universe (FETTU) project is a worldwide effort to bring the striking beauty and intriguing science of astronomy to the public. By showcasing some of the best images from the fleet of space-based observatories and wide array of telescopes (and astrophotographers) on the ground, FETTU strives to engage as many people as possible in the wonders of the Universe. As one of the 12 global Cornerstone projects being supported by International Year of Astronomy 2009, FETTU is, in fact, reaching its goals halfway through IYA2009. Over 60 countries in more than 250 separate exhibitions are participating in FETTU. From tiny villages to the largest cities — with budgets large and small — FETTU has been featured on every continent except Antarctica.

Since we have framed this project — largely by way of the title — as a journey, we decided to take a tour of the destinations that we have already visited, take stock of our experiences and look at where FETTU might go in the future.

Getting started

Like most trips into the unknown, this one required a fair amount of research, a lot of work, and then untold numbers of dead ends, restarts and decisions made on the go. In 2007, we agreed to head the IYA2009 Task Group on image exhibitions. Over several months, we came up with the basic structure for FETTU: a collection of beautiful astronomical images that would be made electronically available to anyone in the world who agreed to display the images in a public setting for the benefit of communicating astronomy.

The rationale behind the FETTU project was based on the premise that the inherent beauty of astronomical images could lead to a deeper experience of science. In fact, informal education and outreach through projects such as physical exhibits is recognised as a successful tool for learners of all ages and increases interest in science, technology, engineering, and mathematics in both children and adults[1].

We placed a "call for participation" to both the professional astronomy and astrophotography communities through a variety of outlets. Hundreds of images were submitted and some 125 were chosen using many criteria — from the feasibility of printing large sizes and at high resolution, to the observatory used, the type of object, and more.

One of the most important characteristics of the FETTU project — as in many successful travel adventures — turned out to be flexibility. For example, the FETTU concept dictated that there were to be no restrictions on how the exhibits were to be physically displayed as long as it was in the spirit of IYA2009. We encouraged those preparing the exhibits — who we dubbed "local organisers" — to use whatever monetary resources, venue options, cultural preferences, etc., to create the FETTU exhibit that worked best for their area.

Another aspect of travel is the opportunity to meet new people along the way. In the case of FETTU, there have been many companions and friends who have helped make the journey so successful. With a couple of long-time friends already lined up to help, (Lars Lindberg Christensen and Pedro Russo, to name just two), FETTU quickly tagged up with Gary Evans of the Science Photo Library in the UK.

Gary became an important partner in the early part of FETTU's journey. Employing much resourcefulness, Gary worked to produce a FETTU prototype of approximately

50 images on three-metre-long panels that appeared overlooking the water on Albert Dock in Liverpool, UK, from 7–28 June 2008 (see Figure 1). This successful exhibit helped to demonstrate that the concept and the actual production of FETTU were possible.

"Approximately 50% of the people walking along the dock stopped to look at the pictures and about one in six looked at the caption," said Evans. *"We witnessed children discussing the images with their parents, couples pointing out interesting features to each other, real interaction taking place, and it was just what we hoped to see."*

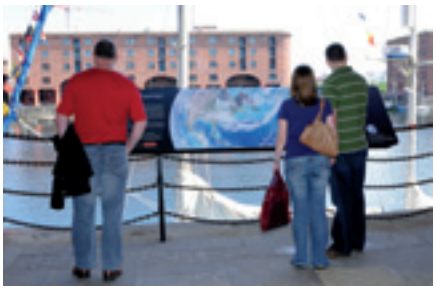


Figure 1. June 2008 — Liverpool, UK, From Earth to the Universe at the Albert Docks. Heavy foot traffic meant many people stopped to look at the images. The brightest and more visually "loud" images attracted the most attention. Credit: FETTU/IYA2009

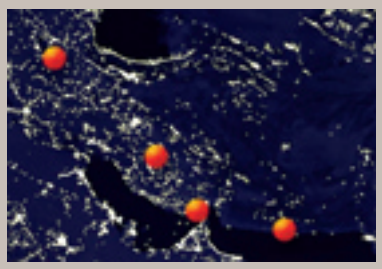
On the way

With the success of the Liverpool prototype, FETTU was ready. In the autumn of 2008, we opened the www.fromearthtothe universe.org website, which has been attracting approximately 3000 to 5000 visits each month. We advertised the project through the International Astronomical Union, American Astronomical Society (AAS), and other organisations in the hopes of attracting local organisers — who received no financial support from us — to take on the task of creating FETTU in their area.

To date, the response has been outstanding. As of July 2009, there have been or are planned to be over 250 separate FETTU exhibitions in more than 60 countries (on every continent except Antarctica). Figure 2 shows the locations of the 250 FETTU exhibits and the boxes on these pages collect a few randomly selected FETTU impressions.

In the United States, NASA funded two semi-permanent exhibits in the international airports at Chicago and Atlanta, as well as a 50-image travelling version (see

Iran



FETTU locations overall: Qeshm Island, Pasabandar Harbor, Khoy, Shiraz, Tehran

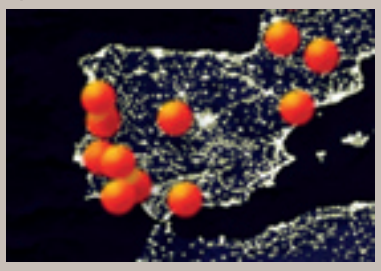
Qeshm Island, Persian Gulf, Iran

"When we saw the excited and wondering faces of people as they saw the beauties of our Universe or when they heard about the huge distances, it was the biggest success for all of us. Especially since we are exhibiting the photos in border regions where there is not much education and most of the inhabitants are poor people, the joy and the smiles that filled their faces when they saw the photos and colours and their huge size was really a big success...

In countries like Iran we don't have access to photos of space telescopes or big ground-based observatories, and opportunities such as FETTU help us to bring astronomy and science more effectively to the public. Photo exhibitions are a good tool to teach people astronomy and make them interested in science."

Irene Shivaei, co-founder of the StarPeace organisation

Spain



FETTU locations overall: Andalucia, Seville, Malaga, Madrid, Granada

Malaga, Spain

"We got one of the FETTU platinum exhibits placed at the Malaga main train station, with one and a half million visitors in one month. And we are about to inaugurate one more platinum exhibition at the Alhambra, the most visited monument in Spain.

It could be expected that people just passing by at train stations would remain quite indifferent to this kind of exhibition, but the reactions were absolutely to the contrary. The impressive images, the size and appeal of the LED-back-illuminated panels, made people stop, read... and even take notes!"

David Galadi-Enriquez, director of public outreach of the Calar Alto Observatory

Figure 2. Locations of FETTU exhibits worldwide. Over 60 countries in more than 250 separate exhibitions are participating in FETTU. Credit: FETTU/IYA2009



Figure 3. FETTU travelling exhibits in the United States. Left: outside the Smithsonian's Air and Space Museum in Washington DC, July 2009. Middle: FETTU was part of the World Science Festival's family activities in Washington Square Park, NYC, June 2009. Right: Tactile exhibit unveiled at the Martin Luther King, Jr. Library in Washington, DC, July 2009. Credit: FETTU/IYA2009

Figure 3) that will visit several of the country's largest cities, and a tactile and Braille subset of special image stands that are being provided to the blind and visually-impaired communities.

The wide range of FETTU exhibits has truly reflected the diversity of the communities and countries in which it has landed. From public parks to airports to art festivals to shopping malls to even prisons, FETTU has found its way into incredibly exciting places[2].

Suffice it to say, FETTU would not have happened if it were not for those mentioned in this article and hundreds of others — from the local organisers, to the participating observatories, and everyone in between — who employed creativity and passion to bring the wonders of the cosmos to everyday people (see example stories in the insets).

Where to next?

Even though we still have several months to go in this year, plans are now being considered for what to do beyond IYA2009. There will be literally thousands of large-format astronomical images that have been created for FETTU. It would be a waste for them to go into storage, or, even worse, be discarded.

We are discussing ideas to develop a means for an informal "FETTU swap" where a location that perhaps could not raise the funds for production might be able to get panels from somewhere else where the exhibit has concluded for the cost of shipping. We are hoping to find funds to make this possible before FETTUs around the world begin to be dismantled.

To sum up, the journey for FETTU has been great so far, but it's not done yet. We hope FETTU travels as widely as possible during IYA2009, but our intentions are to extend the project far beyond this year. After all, a journey around the world doesn't seem so difficult when compared with going from the Earth to the Universe.

USA

FETTU US locations overall: Atlanta, Georgia; Chicago, Illinois; Anchorage, Alaska; Memphis, Tennessee; Washington, DC; Bay Area, California; Madison, Wisconsin; and many others

Madison, Wisconsin, USA

"A recurring theme [for the FETTU exhibits] is that the images make it easy for people to stretch their imagination and put words to questions that they've either wondered about before but had trouble articulating or never realised that they could wonder about before coming across a particular image...

Another constant with each showing is witnessing children teaching their parents as well as parents sharing knowledge with their children."

Laura Trouille, University of Wisconsin graduate student in physics and astronomy




Figure 4. FETTU on display in Shanghai, China (upper left), Coimbra, Portugal (upper right), Geneva, Switzerland (lower left), and Mendoza, Argentina (lower right). Credit: FETTU/IYA2009

Notes

[1] National Academy of Sciences, *Learning Science in Informal Environments: People, Places, and Pursuits*, 2009

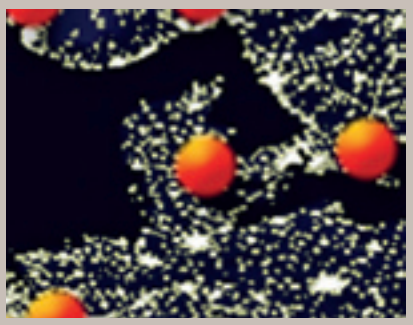
[2] See http://www.fromearthtotheuniverse.org/table_events.php for a full list.

Biographies

Kimberly Arcand is the visualisation & media production coordinator for NASA's Chandra X-ray Observatory. Along with Megan Watzke, she is co-chair for the IYA2009 From Earth to the Universe Task Group.

Megan Watzke is the press officer for NASA's Chandra X-ray Observatory. Both she and Kim Arcand are based at the Chandra X-ray Center at the Harvard-Smithsonian Center for Astrophysics in Cambridge, Mass., USA.

Denmark



FETTU locations overall: 20 public places in major cities, including Copenhagen

Copenhagen, Denmark

"The city of Copenhagen bought their own copy of the exhibition and this is now touring the schools of Copenhagen. I guesstimate that by the end of the year more than 100 000 people (2% of the Danish population) will have seen the exhibition.

Most people are amazed about the fantastic images. Personally, I've been surprised about the wide audience who are fascinated by the exhibition: small kids with their grandparents, drunks in the street, ministers... In this way we reach a lot of people — and make an impact as far as I can judge — with a rather modest effort. In particular, I appreciate that exhibitions like this can be located in places where people normally do not expect to see astronomy and hence reach people who would not actively seek information about astronomy."

Kristian Pedersen, astronomer at the Niels Bohr Institute/Copenhagen University