

Awesome Universe: an exhibition with images that showcase celestial objects as seen by ESO’s observatories and associated activities

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Abstract

In September 2013, an ESO exhibition was shown in Santander: “Awesome Universe – the Cosmos through the eyes of the European Southern Observatory”. Around the exhibition, were proposed several activities: guide tours for children, younger and adults, workshops, film projections. . . In this way, the exhibition was visited by more than two thousand persons. We must keep in mind that Santander is a small city and its population does not usually take part in outreach activity. With this contribution, we want to teach the way in which it is possible to take advantage of science exhibitions. It made possible to show stunning images that showcase celestial objects as seen by ESO’s observatories to the great majority of Santander population, and to awaken their interest in or enthusiasm for science.

1 Introduction

The present society is highly reliant on technological achievements. Transportation, communication, food, learning, even the way we interact with each other is changing at dramatic speed due to technological advances. This progress is made possible thanks to our deeper understanding of the laws of physics, mathematics and engineering among other disciplines, fields which also have experienced great progress in the last 100 years. The future is pulling for this direction and the basis of that future is the children of today’s present. Because of this, it is of enormous importance for general public to get exposed to science and get them to appreciate as a motorlife of a high standard of life.

In this way, exhibitions offer us a great opportunity to show and provide science. In according with this idea, as Caulton [1] said, “the growth of hands-on museums and science centers has been one of the most remarkable features of the leisure industry in the last decade,

with almost every new exhibition proposal today incorporating an interactive element for visitors”.

Aware of the importance of all this, the Institute of Physics of Cantabria has carried out a great effort in order to bring to the city and profit science exhibitions. We organize a set of different proposals around them, to enhance the potential learning from them, these events varies from guided tours for students and general public, talks, contexts, etc. These activities have always attracted a lot of people.

In September 2013, an ESO exhibition was shown in Santander: “Awesome Universe the Cosmos through the eyes of the European Southern Observatory”. A framework of activities as described above was set for it, and the exhibition was visited by more than two thousand persons, when usually this type of exhibition does not have more a few dozens of people. The objective of this work is to show how to profit from science exhibitions to a huge outreach event in a small city as ours. It made possible to show stunning images that showcase celestial objects as seen by ESO’s observatories to the great majority of Santander population, and to awake their interest in our enthusiasm for science.

2 Awesome Universe – the Cosmos through the eyes of the European Southern Observatory

At European Southern Observatory (ESO), during the past few years, increasing efforts have been made to improve awareness in the general public of the importance of natural science to everyone. As a result of an increased awareness of the importance of outreach activities, many activities have been proposed, such as permanent and travelling exhibitions.

In this way, it was created the exhibition calling “Awesome Universe – the Cosmos through the eyes of the European Southern Observatory”, an initiative of ESO. This is a public exhibition celebrating 50 years of Europe’s quest to explore the southern sky.

In Spain, the exhibition was organized by the CONSOLIDER INGENIO 2010-GTC project. They coordinated it in this country (<http://www.iac.es/consolider-ingenio-gtc/>). Nevertheless, this exhibition was not limited to Spain, but took place across the world.

As in the official web is explained, the main component of this exhibition is a gallery of 50 visually stunning images with captions, showcasing celestial objects such as galaxies, nebulae, and star clusters as seen by ESO’s observatories – home to the world’s most advanced ground-based telescopes – as well as beautiful images of the observatories themselves, which are located in some of the most unusual places on Earth (<http://www.eso.org/public/unitedkingdom/events/special-evt/awesome-universe/organisers/>). Moreover, a reference specification for the images and a beautifully illustrated catalogue of the exhibition are provided.

2.1 Characteristic of the Exhibition: “Awesome Universe the Cosmos through the eyes of the European Southern Observator”

In short, the exhibition covers the following aspects:

- Images of the telescopes and the observatories.
- Business Spanish participation in the telescope building and in the ESO projects (knowledge transfer).
- Library collections.
- Mock-up of the E-ELT.
- Celestial objects:
 - Galaxies
 - Nebulae
 - Star clusters

The explanation comes complete with reference specification for the images and a beautifully illustrated catalogue of the exhibition.

3 The exhibition in Cantabria region

3.1 Cantabria region

Firstly, it is important to make a stop and review some significant characteristics that we should keep in mind. Cantabria is a Spanish historical community with Santander as its capital city. According to the 2009 Census, the region has a population of more than five hundred thousand which constitutes 1.29% of the population of Spain. From a geographical point of view, it is a small region. Specifically, Santander has 177 000 people with this number of 25 202 kids.

Until recently, in Cantabria, general public was not very receptive to participate in outreach activities. For this reason, in order to change this, at Institute of Physics of Cantabria (IFCA), there have been organised many activities for general public, covering practically every age, with different proposal and formats (master classes, workshops, talks, scientific cafes, guided tours, exhibitions, etc.)

3.2 The exhibition in Santander

On 23rd September 2013, the exhibition “Awesome Universe the Cosmos through the eyes of the European Southern Observatory” was opened in Cantabria, specifically in Santander. It was exhibited for three weeks: from that day, 23rd September, to 18th October. The exhibition was situated in a public library of Cantabria (Central Library of Cantabria, <http://bcc.cantabria.es/>), a place of culture, with many users per day of all ages. It was for this reason because we chose the library as the perfect place to situate the exhibition. The public opening time was from 9 a.m. to 9 p.m., from Monday to Friday; by contrast, on Saturdays, the public opening time was from 9 a.m. to 2 p.m.

The exhibition was very successful: around 100 users visited the exhibition per day.

3.3 The awareness campaign

The awareness campaign was designed to ensure optimum community impact. This provides the opportunity to engage directly with members of community and influential community organisations. As previously was stressed, Santander is a small city and its population does not usually take part in outreach activity. For this reason it was so important the awareness campaign to attract people and make them part of the proposed project.

In this way, our awareness campaign covered the following aspects:

- It were designed a poster and folded sheet.
- Letters and e-mails were sent to schools, institutes, and several organizations
- Social networks were used and constantly updated.
- Press release were edited and published.
- Finally, we published the exhibitions and the proposal activities in cultural calendars at the city.

3.4 Activities

The exhibition was complemented by several activities proposed around it. They were the reason why it was visited by more than two thousand persons. Guided tours to the exhibitions and lectures were offered to groups of students, organisations and to the general public, respectively.

Guided visits

There is not doubt that daily guided visits were very successful. This would not have been possible without the collaboration of the researchers at the institution that work at IFCA. All guided visits were done by them: more than 15 scientists were involved from the Galaxies and AGN and Cosmology researchers group at IFCA. In this way, daily guided visits were organised to schools and organisations. There was one or two visits per day all morning shift upon request. Moreover, there were two free guided visits every week for general public every afternoon, without prior request. Through these guided visits, the exhibition was shown to more than one thousand five hundred people.

Lectures

There were organised five lectures for general public non specialist without having into account the opening event, which took place on 23rd September. The opening event was composed by a guided visit and a short lecture. Xavier Barcons was the person in charge to this short lecture.

Here, a brief summary of the remaining lectures is shown:

Table 1: Summary of the organized lectures

Title	Speaker	Participants	Date
ESO: 50 years building and operating the most powerful ground-based telescopes on the planet	Xavier Barcons (IFCA)	103	23rd September 2013
Planets and life	Agustín Sánchez Lavega	120	2nd October 2013
What is the composition of our Universe	Patricio Vielva (IFCA)	120	8th October 2013
The impact of astronomical technology in our days	Natalia Ruiz and Miguel Mas (INTA)	112	10th October 2013
Galaxies: the place in which stars live	Almudena Alonso (IFCA)	95	17th October 2013

3.5 Results

The exhibition made possible to show pictures of the awesome Universe to the great majority of Santander population, and to awaken their interest in or enthusiasm for science. In this way, more than two thousand people visited the exhibition. In Fig. 1, it is shown in a more detailed way the number of participants per day (there were not counted free visits).

TOTAL NUMBER OF PARTICIPANTS SEPTEMBER - OCTOBER 2013						
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
23 103	24 38	25 34	26 55	27 35	28	29
30 35	1 88	2 155	3 50	4 36	5	6
7 50	8 187	9 13	10 154	11 36	12	13
14 95	15 72	16 22	17 139	18 39	19	20

Figure 1: Total number of participants at the exhibition in Santander.

4 Conclusions

Outreach activities offer the opportunity to see first-hand how science (including all areas) is part of their daily lives and not only what people do in unaccessible laboratories, while also learning to appreciate the benefits of supporting a scientific society. With these activities it is possible to show that basic research is important for the progress of the society and that it is a fundamental part of what being a human being means, starting at childhood for instance when they play, explore, ask questions, etc. Temporal science exhibitions are one of these

kind of activities. Nevertheless, it is necessary to go deeper to attract people. One possibility is to organise activities around exhibitions in order to awake the interest of general public. With this contribution, we want to help to take advantage of science exhibitions and teach the ways in which it is possible to awake the interest of general public in our enthusiasm for science.

Acknowledgments

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References

- [1] Caulton, T., 1998. *Hands-On exhibitions: Managing Interactive Museums and Science Centres* (Routledge, London and New York)