

Ecos del Cosmos: A radio astroexperience at the Universitat de València

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Abstract

During the last three years Ecos del Cosmos has been a radio program dedicated to spreading astronomical hot news to the Universitat de València community and beyond, and also topics of general astronomical interest. To do this, this program by Ràdio Universitat has conducted live interviews with researchers, explored relationships of astronomy with humanities and society, performed contests and explained in a simple way the main monthly ephemerides.

A version of Ecos del Cosmos was broadcasted in the Onda Cero's summer program "Jelo en verano" conducted by Arturo Tellez.

1 Introduction

Ecos del Cosmos was an astronomy popularization radio program at the Universitat de València broadcasted between 2013-2015, three seasons loaded with sections and interviews in which subjects such as literature and astronomy, the landing of Philae or problems with light pollution were addressed.

In 2013, the Audiovisual Workshop of the Universitat de València contacted one of us (E.M.) asking for a draft of a radio program in Catalan about astronomy. The Audiovisual Workshop offers interships in the degree of Audiovisual Communication and Journalism. It is a center for training and teaching practices, general audiovisual services, production and distribution of university audiovisual content, management and digitization of audiovisual archiving, management of the MediaUni [1] multichannel portal or documentary production of popular science from research projects through agreements with entities or institutions. It also is in charge of Ràdio Universitat, a station that broadcasts over the Internet through the aforementioned online platform "MediaUni".

Our proposal, consisting of a bi-weekly section of an hour, was accepted by the director of Radio Universitat, Remei Castelló and in April 2013 we began the emissions of Ecos del



Figure 1: Audiovisual Workshop of the Universitat de València, at Serpis, 29 in Valencia, where the recordings and broadcasts of the Ecos del Cosmos programs took place.

Cosmos, a magazine in Catalan where we talked about astronomy and space exploration, with interviews, competitions and the latest news in the astronomical field. The program was recorded every 14 days in the studio of Ràdio Universitat, at the Audiovisual Workshop (see Fig. 1), in a tiny booth with just enough room for the three presenters and a guest.

2 The team

The conductors of Ecos del Cosmos were Enric Marco (director), Fernando J. Ballesteros and Amelia Ortiz-Gil (Fig. 2a), which had extensive previous experience in outreach, including radio programs (Radio 9 and RNE1 mainly). We three together elaborated programs and scripts and performed the verbalization. The team was complemented by Lorena Hernández, who performed the voiceover and read out literary texts, and Miguel Ángel García, the technician in charge of the mixer, sound effects and broadcast (Fig. 2b).



Figure 2: Top, conductors of the program *Ecos del Cosmos*. From left to right, Amelia Ortiz-Gil, Enric Marco and Fernando J. Ballesteros. Bottom, the complete team of *Ecos del Cosmos*, with Lorena Hernández to the left (reading out of literary texts and voiceover) and Miguel Ángel García to the right, the technician of the program.

3 The program

In Table 1 the rundown of the radio is shown:

Table 1: Rundown of Ecos del Cosmos

Order	Section	Description
1	Presentation	Theme music and introduction of the theme of the day
2	Main subject	Topic of the day or interview
3	Astronomical hot news	Selection from 'Noticias del Cosmos' [2]
4	At that time	Microsection about history of Astronomy
5	The naked-eye sky	The visible sky for the current month
6	What do I care?	Everyday applications of space exploration
7	Science in books	Book review section
8	What's that?	Explanation of an astronomical concept
9	Astroquestion	Astronomical knowledge contest

Regarding the central theme, throughout the three years of the program we addressed issues of astronomy and astronautics as Planck, Kepler, Herschel, Gaia and Rosetta missions, the 25th anniversary of the Hubble Space Telescope or the Ison comet, but we also covered films and documentaries as Gravity, Interstellar or the return of the Cosmos series. Sometimes the topics were suggested by requests from our listeners, such as gravitational waves or why astronauts “float”. Table 2 shows a list with the title and date of emission of the 37 programs broadcasted during the three years of the program.

Table 2: All the Ecos del Cosmos broadcasts, with their original date of issue and titles in Catalan.

Els escriptors parlen del cel (26/06/2015)	Astrònoms del passat (12/06/2015)
ALMA, descobrint l'Univers amagat (29/05/2015)	Plutó, cada vegada més prop (15/05/2015)
25 anys amb el Hubble (24/04/2015)	Les llums del nord (27/03/2015)
Tot esperant l'eclipsi (13/03/2015)	Febreret el curt (27/02/2015)
La Terra com un pèsol (13/02/2015)	Per què floten els astronautes? (30/01/2015)
Planetes sota la llum d'altres sols (16/01/2015)	Interstellar (12/12/2014)
Contaminació lumínica: economia i bones pràctiques (28/11/2014)	Rosetta i el cometa 67P/Chyurimov-Gerasimenko (14/11/2014)
Mart (31/10/2014)	La contaminació lumínica: medi ambient i salut (17/10/2014)
Música de les estrelles (27/05/2014)	Origen de la vida (30/05/2014)
Extraterrestres (16/05/2014)	Pasqua (11/04/2014)
Falles i ciència (28/03/2014)	Torna Cosmos (14/03/2014)
Pífies espacials (28/02/2014)	Tornar a la Lluna (14/02/2014)
La supernova SN2014J a M82 (31/01/2014)	Gaia (17/01/2014)
L'Observatori de l'Ebre (13/12/2013)	El cometa ISON (29/11/2013)
Ones gravitatòries (15/11/2013)	Estafes al cel (1/11/2013)
Gravity (18/10/2013)	Comença l'estiu (28/06/2013)
Música des de l'espai (7/06/2013)	Kepler ja no caça planetes (24/05/2013)
La mort de Herschel (10/05/2013)	Univers en venda (26/04/2013)
Planck i el nou Univers (12/04/2013)	

30% of the programs included an interview with an expert. This was the case of José Carlos Guirado (director of OAUV), José Antonio Font (gravitational waves and Interstellar), Ángel Morales-Rubio (light pollution), Juan Fabregat (the Gaia mission), Ivan Martí-Vidal (the ALMA project), Xavier Serra (Fallas and science) and Pedro Ruiz-Castell (astronomers of the past) in face interview, and Juan José Curto (Observatori de l'Ebre), Pedro Gutiérrez (the Rosetta mission), Alejandro Sánchez de Miguel (again light pollution) and Joan Manel Bullón (March 20, 2015 solar eclipse) by telephone interview.

We want to highlight the section "What do I care?" elaborated by Amelia Ortiz-Gil since October 2014, which dealt with the impact that space technology has on everyday life. The origin of the section was a question that repeatedly appeared in our public outreach talks: "What is that useful for?". The section aimed to demonstrate how basic science, in particular space technology, has an important return on society. Some of the topics discussed in this section were CCDs of the cameras, Wifi, viscoelastic materials, edible toothpaste, liquid metal, robotic arms, fragrance analyzer, mechanism for sharpening ice skates or rescue radar.

In addition, we devised the "Astroquestion" contest as a feedback mechanism to estimate how many listeners the program had. At the end of the program we launched a challenge; for example, we proposed a riddle, or displayed an image on the blog of the program [3] or reproduced a sound or a song, about which we made a question. For example: "What song talks about the constitution and structure of the universe? Hint: it is not The Big Bang Theory soundtrack". The first listener who answered correctly won a book donated by the Càtedra de Divulgació de la Ciència de la Universitat de València.

3.1 Spin-off

In July 2014, the diffusion of the program by the Sociedad Española de Astronomía made the team of "Julia En Las Ondas" (JELO), the veteran Onda Cero radio program led by Julia Otero [4], to contact us to participate in their summer broadcasts. During the summer holidays the program is renamed "JELO en verano" and is led by Arturo Tellez. They proposed us to conduct a short section of 8 minutes to gather the essence of Ecos del Cosmos (although in Spanish). The result of this collaboration were five programs broadcasted weekly during July and August 2014, which were recorded in the studios of Ràdio Universitat with a talk show format. The titles of the five programs were "Stones falling from the sky", "Pulsars", "The International Space Station", "Black Holes" and "Titan, Saturn's giant moon."

4 The end of the program

The main problem the program had to deal with was the bad dissemination of broadcasts and the usability of the platform MediaUni [1] which is rigid, inflexible and uninformative. It is difficult to know what programs are active and when are they issued, and the platform does not allow to know how many downloads of audio files are made or how many times

a program is played online. Therefore radio programs lack any kind of feedback about the number of listeners. Besides, it was not allowed to share programs on other well established broadcasting platforms as Ivoox [5] or similar ones.

On the other hand, although Ràdio Universitat publicized frequently the broadcast of their radio programs (including Ecos del Cosmos) on the generic Universitat de València's Facebook and Twitter, Ràdio Universitat does not have their own social networks, which blurred the message. The consequence was a demotivating low number of listeners, as we were estimating thanks to the "Astroquestion" contest.

This, along with technical and budget problems, and the restructuring that Ràdio Universitat underwent in the summer of 2015, with the elimination or change of several senior officials, implied that Ecos del Cosmos (among other programs) did not continue in antenna. At present, the scientific content of Ràdio Universitat is scarce and it seems that the Universitat de València is not promoting this media.

All in all, the broadcasted Ecos del Cosmos programs can be heard in the MediaUni podcasts, available in Ràdio Universitat [6]. These audios are also linked from the program blog [3].

Acknowledgments

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References

- [1] <http://mediauni.uv.es/radio>
- [2] <http://go.uv.es/RCm9Exs>
- [3] <http://ecosdelcosmos.blogs.uv.es>
- [4] <http://www.ondacero.es/programas/julia-en-la-onda>
- [5] <http://www.ivoox.com>
- [6] <http://mediauni.uv.es/ecosdelcosmos>