

## NAVEGAR FOUNDATION

5 Years of Communicating Astronomy

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### ABSTRACT

The Navegar Foundation was created to manage Centro Multimeios de Espinho—Portugal. From the beginning, one of the foundation's main areas was, by default, astronomy education: its main equipment was a planetarium. Regular planetarium shows attracted a large number of schools (we now have an average of 20,000 students per year in a city of 30,000 inhabitants, so our public is now national and not regional). With the introduction of new ideas and equipment new activities came to life: the astronomy public library; observatory; student and teacher training; content development; astronomy laboratories; production of planetarium shows; public talks, among others.

Figure.1 – Centro Multimeios de Espinho



### MISSION

Created in the year 2000, the Navegar Foundation works to increase the awareness of Art, Science, and Cultural Science. Among other things, the Foundation is responsible for the management of the Centro Multimeios de Espinho (fig.1), a building with several separate facilities, such as a planetarium, a large format film theatre, an astronomical observatory, an astronomical library, and an exhibition gallery. The creation of educational material, mainly in astronomy, is one of the major tasks of those

working at Navegar Foundation. It includes planetarium shows, DVDs, books and other educational material.

The Konica-Minolta Cosmoleap 10 star projector is at the centre of our dome. This machine enables our audience to see more than 6000 stars, the Sun and its planets from any point in the Solar System using the most accurate calculations. Under the stars, people can appreciate a variety of shows covering different subjects in astronomy, science in general and even history. But the planetarium is not only made of stars and planets. A great number of projectors surround the audience with images and videos. A digital sound system with six independent channels and three subwoofers creates an even more splendid ambiance. The Planetarium is not only a scientific tool, it's a place where science, culture and art can meet to celebrate the conquests of human mind.

The Astronomical Observatory is located in Centro Multimeios de Espinho, at the top of the building. It has an automated roof that can be opened in order to make astronomical observations. The observatory is equipped with a modern 16 inch reflector telescope, digital CCD cameras, filters, autoguider and several eyepieces. Everything is automated and controlled by a computer, using astronomical software thus making its operation very simple, whether in loco, or remotely. The observatory is used for public shows, workshops for students, and science purposes.

Cosmoteca is a public library dedicated to astronomy. It works as a complement to the planetarium and the astronomical observatory that also can be visited at Centro Multimeios de Espinho. It is a place for study, training and science education, where it is possible to find educational and didactic material, including books, magazines, videos, CD-Roms, DVDS and computers. Cosmoteca, Sky and Space Library, is available for everyone who has an interest in astronomy. It was created with the rising importance of astronomy in modern school programs in mind. Here, teachers can find support in their class preparation, and the students in their homework and group projects.

The Navegar Foundation already has several years of experience in the production of new content for planetarium shows. The shows are completely original, and targeted at specific audiences, according to their ages. The production involves a team with different areas of expertise, such as astronomers, planetarium technicians, movie directors, animators, music composers, sound technicians, among and others. The shows are intended to reach an international audience, and special care is taken that they are both entertaining and educative. The shows are first exhibited in our Planetarium, as this gives us the opportunity to test them before release, and to evalu-

## PLANETARIUM

## OBSERVATORY

## COSMOTECA: SKY AND SPACE LIBRARY

## CONTENT DEVELOPMENT, RE- SEARCH AND PRODUCTION: PLANETARIUM SHOWS

ate several different aspects of the shows, such the story, astronomical content, music, sound effects, etc.

***The Moon is Angry:*** The challenge was to produce a session for a very young audience between 3 and 10, where the basic concepts of astronomy and space sciences are introduced in 25 minutes. The premise for the story is a never ending solar eclipse. The Moon is fixed in the sky, obscuring the home town of the story heroes, who go on a fantastic trip around the Solar System to solve the mystery. The creation and production of this session involved experts from more than 10 different areas, from scriptwriters to astronomers.

***Camping With the Stars:*** This is the fourth show produced by the Navegar Foundation, and its main target audience are students in the 8th grade, although it can be seen and enjoyed by all the family. The producers decided to use comics as the foundation for the entire show to illustrate the scientific themes that are being introduced, making this a very colourful and dynamic show. The story: a school class goes on a camping trip with some teachers. At night everyone goes to sleep, except one of the teachers, who takes the opportunity to watch the sky. Two of the students, Pedro and Luis, hear a noise and decide to see what is happening. They find the teacher admiring the sky and decide to stay with him. Their curiosity is aroused and they question the teacher about the galaxies, the stars, and the movement of the sky and so on—you can see how it unfolds.