

PLANETARIUMS, THE GREAT MESSENGERS OF THE ASTRONOMICAL RESEARCH

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ABSTRACT

A close partnership between planetariums and astronomers allows the public better access to the results of the astronomical research through high quality audiovisual tools. The French-speaking planetariums have shared their areas of expertise, their different approaches and techniques and their resources since 1984. They created the *Association of French Language Planetariums* (APLF) in 1989, with a head-office located at the Observatory/University of Strasbourg in collaboration with teachers and astronomers. The French Planetariums welcome ~1,300,000 visitors per year, 65 % of which come from schools. APLF comprises about thirty fixed structures, 70 small and portable planetariums, and ten French-speaking Planetariums: Brussels and Genk (Belgium), Brescia (Italy), Lafayette (the USA), Lucerne (Swiss), Montreal (Canada), Tunis.

APLF wish to develop planetariums in France and beyond in order to diffuse scientific knowledge towards a large audience and especially towards young people.

APLF ACTIVITIES ARE FOCUSED ON FOUR POINTS

Annual meetings, taking place around 8th May since 1986:

- Annual Journal "*Planetariums*" published since 1995 and web-site since 2003: www.aplf-planetariums.org
- Training activities in 1990-91, 1994, 1999, 2005: about 100 people involved so far.
- Documents for education: 2000-01: booklets *Earth, planet to be protected* and *The astronomical Universe*. 2002: booklet *The Earth and its Universe in 7 models*. 2004-2005: CDrom *Universe Explorer*.

On the web:

You are invited for a real-life astronomical adventure in an observatory. Choose a mission, collect relevant images, and analyse them on the computer by using a tool-box. <http://www.2exvia.fr/HOU/trilingue/#>

APLF creates specific shows in conjunction with institutions that conduct astronomical research and wish to communicate their results to a large public. The shows stand out from the usual productions thanks to the exceptional quality and brightness achieved through the collaboration with professional producers, the cost being supported by grants of the scientific organizations and by those involved. The shows transmit (i) discoveries in “natural science” of the Earth and Universe, (ii) the process of research, and are:

- based on a story-board created by a “science communicator” under the supervision of a scientific committee and in interaction with all the planetariums involved
- illustrated with images, videos and animations developed at international institutes
- enriched continuously with music (including classical music) and special effects
- audiovisual elements are adapted by a professional society for three different technical levels of planetarium configurations
- proposed in six language synchronized versions (French, German, English, Italian, Spanish, Dutch)
- duplicated and distributed by APLF to 40 planetariums in Europe and beyond.

2001-02 “*The planet with a thousand eyes*” about the Earth as seen from space:

- natural phenomena coming from inside the Earth (seismic effects, volcanic effects,...)
- natural climate interplay (greenhouse effect, El Niño,...)
- human interaction by natural resource management (agriculture, forests..)
- human influence on long term climate evolution (ice thaw, desertification, increase in sea level ...)

The scientists provide the original information, and each of us plays a role in the preservation of our planet. A version has also been produced for deaf people with the support of the CNES—(French Space Agency). Overall, 37 planetariums were involved and 10 of them still present the show to date (June 2005).

2002-03 “*The Mysteries of the Southern Sky*”—the VLT and new Astronomy at ESO:

- A journey from Europe to the Atacama Desert and the VLT
- Discovery of the southern sky
- New technology !
- Nebulae, dust, and formation of stars and planets
- Death of the stars

PLANETARIUM SHOWS ARE PRODUCED AT A EUROPEAN LEVEL: A UNIQUE EXPERIENCE





CONCLUSIONS

- From the Milky Way and out beyond the galaxies
- mysteries of the expanding Universe.

With the support of ESO within the framework of its 40th birthday, 45 planetariums were involved and most of them still present the show to date.

2004 “*Venus and the planet hunters*” - transits of Venus (historic and 2004), the description of Venus and of the Solar System, the discovery of extrasolar planets.

With the support of the Ministère de l'Éducation Nationale et de la Recherche, through a specific “Opération Vénus” for 16 European planetariums.

Astronomical research provides a lot of exciting results and wonderful visuals. But both the high technology used in making the observations and the methods of analysis are very difficult to understand, and some concepts remain very difficult to explain (especially the “Big Bang” — it is a cosmological model and should not be described wrongly as a time-zero explosive event). Planetariums are very attractive sites with increasing technological resources, have very large audiences and play an important role in science communication, being the “voice” of the research. Planetariums need the collaboration of the astronomers, and the astronomical research organizations need the help of planetariums to communicate their work.

