

Invited Talks

Agde the Antique

Tuesday, September 20

***Odile Berard-Azzouz** received her Ph.D. in Arts from University Montpellier III. In 1985 she was appointed Director and curator of the Ephèbe Museum and the Museum of Agde. She has organized more than 40 outstanding exhibits such as "Glory of Alexandria", and "Coptic Art in Egypt" considered as an international success. She is currently working on gathering masterpieces for a new exhibition: "Alexander, this Immortal". Mme Berard-Azzouz is also teaching at the University Montpellier I. She is Author of more than 20 books, papers and exhibition brochures. In recognition of her outstanding work, she was awarded the title of "Chevalier de l'Ordre National du Mérite".*

The region surrounding Agde, where fresh water from the Herault River merges in the salted water of the sea has favoured prehistoric human settlement. Between the 10th and 7th Century BC, villages appeared on the riverbanks. The first urban traces found, correspond to the Phocian Greek colonization during the 6th century BC. The antique city was located on a basaltic hill, on the riverbanks of the Herault where the cargoes were transferred from the large coastal boats to lighter ones to be carried further on to the north. From Prehistory to present days, the museum of underwater archaeology summarizes 3000 years of History directly influenced by the proximity of the sea.

The Huygens Mission

Wednesday, September 21

***Gérard Huttin**, was born in 1947 from a father teacher of mathematics and a mother teacher of physics. He graduated from the Ecole Nationale Supérieure de l'Aéronautique et de l'Espace (Sup'Aéro) in 1971. In 1972, he supervised the inspection of the first production standard Concorde supersonic jetliner. During his career, he managed several major projects for military and space applications. Between 1992 and 1998 he has managed Huygens and Jason 1 projects. Gérard Huttin retired in 2003.*

The Huygens Programme, its place inside the NASA/ESA joint exploration of the Saturnian System. A video will summarize the main facts of the Cassini/Huygens voyage, showing in particular how the composite space vessel borrowed energy from the different planets to access the Saturn orbit as well as the entry of Huygens in the Titan atmosphere, parachutes deployment and smooth landing on Titan surface. A presentation will follow addressing other aspects of Huygens as the international cooperation which was key to the programme success, the difficulties which had to be overcome during the development phase and after launch and some scientific results obtained from the wealth of data radioed by Huygens to Cassini, and from Cassini to the Earth.

Rapanui (Easter Island): Myth and Mystery

Thursday, September 22

***G. E. McCall** (New South Wales University).*

Rapanui (Easter Island) has been used in European myths of the human destruction of the environment as well as the mystery of their lively trade in artefacts, now renowned the world over for their number, diversity and value. Some myths are queried such as the one that the Rapanui destroyed their own environment through their ceremonial constructions.

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A solution based on unpublished documents is proposed to the mystery of the only known writing system in Oceania: the "kohou rongorongo" ("talking boards") of Rapanui, which never have been deciphered successfully. The core mystery of Rapanui remains: how did people living in the world's most remote place carve, move and erect nearly 1000 *moai*, commemorative statues? The talk will be illustrated with many images, both historical and from my over 30 years research.

Invited Talk: Einstein, Lorentz, Poincaré a centenary of relativity

Friday, September 23

Jean-Claude Boudenot, Thales Research & Technology.

Jean-Claude Boudenot currently leads the team dedicated to micro and nanotechnologies research in THALES Research & Technology (the central research lab of THALES group). He also teaches physics in engineering schools (mostly at ISEP, in Paris) for nearly 20 years. Jean-Claude Boudenot is passionately fond of physics and history of physics. In this last field he has authored several books including ; "Histoire de la physique et des physiciens" (History of physics and physicists) ; "Max Planck" (with Gilles Cohen-Tannoudji) ; "Lorentz" (with Jean-Jacques Samuëli) ; "Poincaré physicien" (also with Jean-Jacques Samuëli) ; "Comment Einstein a changé le monde ?" ; "Comment Branly a inventé la radio" (coming soon).

The year 2005 marks the 100th anniversary of Albert Einstein's "miraculous year" in which he published three important papers describing ideas that have since influenced all of modern physics. This year provides the opportunity to celebrate Einstein, his great ideas, and his influence on life in the 21st century : the World Year of Physics (WYP 2005) is a worldwide celebration of physics. Among the three papers Einstein wrote in 1905 the most famous is the one on special theory of relativity (the two others are on light quanta and on Brownian motion). As Einstein said "I want to know how God created this world. I am not interested in this or that phenomenon, in the spectrum of this or that element. I want to know His thoughts; the rest are details." The story of the relativity is quite complex. The first step (1630 – 1880) starts with Galileo, continues with Bradley, Fresnel and goes on with Maxwell and Michelson. The second step (1880 – 1905) is dominated by a rich dialog between Hendrick Antoon Lorentz and Henri Poincaré from which they will bring : length contraction, dilatation of time, mass increasing with velocity, maximum speed of light, mass-energy equivalence, principle of relativity ! Yes, all had been indicated or suspected, but nothing had been understood : the third and final step have been done by Einstein in June 1905. The talk will recount this long way towards the special theory of relativity and will briefly sketch our three authors : Einstein, Lorentz and Poincaré.

ITER: The Sun in a Bottle

Friday September 23

N.N. (CEA Cadarache).

ITER is the experimental step between today's studies of plasma physics and tomorrow's electricity-producing fusion power plants. It is based around a hydrogen plasma torus operating at over 100 million °C, and will produce 500 MW of fusion power. It is an international project involving The People's Republic of China, the European Union (represented by Euratom), Japan, the Republic of Korea, the Russian Federation, and the United States of America, under the auspices of the IAEA. It is technically ready to start construction and the first plasma operation is expected in 2015. The talk will present the technical aspects of the project and will also address the activities aiming at preparing the Cadarache site to receive it.