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Exactas, Físicas y Naturales

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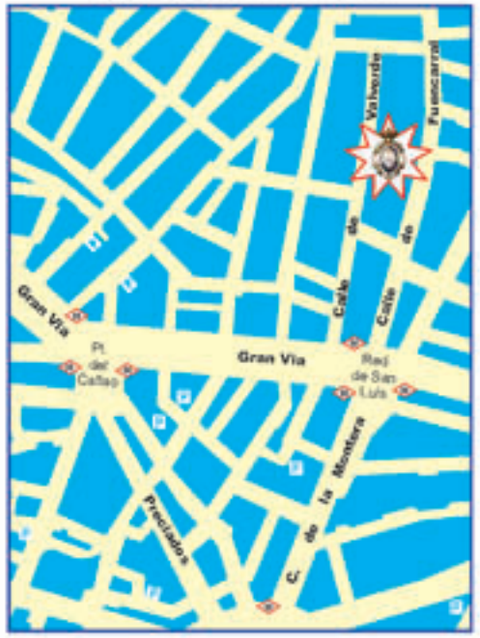


**Valverde, 22**
**28004 Madrid**
**Tel: 917014230 Fax: 917014232**
**web: www.rac.es**

# EXPLORACIÓN ESPACIAL

## LA VISIÓN EUROPEA

Real Academia de Ciencias
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## 11 diciembre de 2007

## Álvaro Giménez

El profesor Alvaro Giménez es coordinador de política científica del Director General de la Agencia Espacial Europea desde 2007, habiendo sido anteriormente director del Departamento de Investigación y Apoyo Científico de la agencia desde 2001. Es astrónomo de formación y ha investigado principalmente estrellas en sistemas binarios eclipsantes. Ha sido profesor titular de la Universidad Complutense e investigador del CSIC. Ahora es Profesor de Investigación del CSIC en excedencia voluntaria. Investigador principal de varios instrumentos a bordo de misiones espaciales como INTEGRAL, ha dedicado también mucho esfuerzo a la gestión de instituciones, como el INTA del que fue Director General, y a proyectos de la agencia. Ha publicado más de 300 trabajos científicos, entre artículos y ponencias.

## 16 enero de 2008

## David Southwood

Professor David Southwood has been Director of Science at the European Space Agency since 2001. His present responsibilities encompass the planning, development and implementation of all ESA's space mission in astronomy, solar and planetary science and fundamental physics in space. He is a space physicist who has spent the bulk of his career at the Blackett Laboratory, the Physics Department of Imperial College London where he worked on many space missions, often with European, American, Japanese and Russian collaborators. He has long had a visiting position at the University of California Los Angeles, having been a Regents' Professor (2000). In addition to serving on many senior British science advisory committees, David Southwood has been chairman of many space science committees in Europe and at ESA, including the Science Programme Committee (SPC) and the Space Science Advisory Committee (SSAC). He has published more than 200 publications and scientific articles, largely in solar terrestrial and planetary physics.

**Las conferencias serán a las 19.00 h en la sede de la Academia**

# Sistema Solar
# Astronomía

The space age changed our grasp of the universe as a whole and its limits. Even now, not only the earliest galaxies imaged remain those recorded by the HST ultra deep field, but due to space so much new observational knowledge has opened up. Black holes have moved from theoretical constructs to observational entities, the ripples in the cosmic microwave background allow us to explore how the universe came out of the undifferentiated confusion of the Big Bang and with the coming of space infra-red astronomy, water has been seen to be almost ubiquitous. In parallel, the space age brought the possibility to think of exploring in situ the celestial bodies closest to Earth in our solar system. Spacecraft have been sent to encounter many of the solar system's bodies large and small. Indeed, using the new science of space helioseismology, we have even seen to the centre of the Sun itself.

What could be left to do? Space science today still offers new possibilities. The detailed examination of the workings of our galaxy, the detection of Earth-like planets beyond our solar system, the identification of dark matter and dark energy are new challenges to be addressed. Gravitational waves will open a new window on the universe as well as, just in their detection, providing a new element in our understanding of basic physics. At the same time, we have only scratched the surface (sometimes literally) of our exploration of the myriad bodies of our solar system. Europe should take a serious part of the exploration ahead. The benefits extend beyond the sphere of science for science's sake or the inspiration to the young; Europe has its part to play in unravelling questions that mankind has pondered for millennia and space addresses no less than some of the key questions.