

## THE ARIADNA NEWS LETTERS

Spacecraft navigation based on signal from pulsars, human hibernation, biologically inspired solutions for robotic surface mobility and the use of libration points of the sun and the interstellar medium for interstellar travel. These are some of the first call for proposals managed by the ESA Advanced Concepts Team (<http://www.esa.int/gsp/ACT/index.html>) and released the 13/10/03 in the frame of Ariadna.

With Ariadna, ESA intends to strengthen the bond between Academia and ESA by providing opportunities to work in partnerships and making up-to-date information available on on-going ESA studies and advanced space technology news relevant to the Academic World.

## SPACE TECHNOLOGY NEWS

This section contains links to studies and contracts related to ESA and advanced space technology and of relevance to Academia.

### **Assessment of the use of an electric propulsion plasma as an antenna for interplanetary missions.**

In case there are electric thrusters on board, it may be possible to use the plasma beam in a modulated way to produce a signal that will help to detect the spacecraft position. Tender Status: Issued ESA ITT. Open Date: 29/10/2003. Closing Date: 03/12/2003. More information at: [http://emits.esa.int/emits/owa/emits\\_online.showa\\_o?actref=03.123.01&type=mail](http://emits.esa.int/emits/owa/emits_online.showa_o?actref=03.123.01&type=mail)

### **Coupled electrodynamic/electrostatic propulsion system study.**

The invention of a novel space propulsion system combining Electric Propulsion (EP) and propulsion from Electrodynamic Tethers (ET). Tender Status: Issued ESA ITT. Open Date: 17/11/2003. Closing Date: 12/01/2004. More information at: [http://emits.esa.int/emits/owa/emits\\_online.showa\\_o?actref=03.123.13&type=mail](http://emits.esa.int/emits/owa/emits_online.showa_o?actref=03.123.13&type=mail)

### **Verification of quantum mechanics and new applications of quantum technologies and methods in space.**

The aim of this activity is to provide a roadmap for future European developments in the field of quantum technology applications and verification

experiments. Tender Status: Issued ESA ITT. Open Date: 20/11/2003. Closing Date: 14/01/2004. More information at:

[http://emits.esa.int/emits/owa/emits\\_online.showa\\_o?actref=03.1EM.06&type=mail](http://emits.esa.int/emits/owa/emits_online.showa_o?actref=03.1EM.06&type=mail)

### **Electrodynamic tether based microsattellites at the giant planets.**

A major obstacle to the exploration of the giant planets is power generation. With their strong magnetic fields, the planets Jupiter and Saturn offer the possibility to use electrodynamic tethers or booms to generate power. This represents an interesting alternative to the utilization of NPS. Tender Status: Intended ESA ITT. More information at:

[http://emits.esa.int/emits/owa/emits\\_iitt.show\\_iitt?actref=03.1EM.04&user=Anonymous](http://emits.esa.int/emits/owa/emits_iitt.show_iitt?actref=03.1EM.04&user=Anonymous)

## SPACE TECHNOLOGY CONFERENCES

### **SPS'04 conference (including WPT 5). Solar Power from Space.**

This event will be held together with the 5th Wireless Power Transmission Conference WPT 5. Date: 30 June - 2 July 2004. Location Granada, Spain. More information at: <http://www.congrex.nl/04c15/> and <http://www.esa.int/gsp/ACT/sps04>

### **6th International Conference on Dynamics and Control of Systems and Structures in Space 2004**

18- 22 July 2004 Riomaggiore, Cinque Terre, Liguria, Italy. More information contact: E-mail: [e.anstee@cranfield.ac.uk](mailto:e.anstee@cranfield.ac.uk).

### **Titan – From discovery to Encounter**

International Conference on the occasion of the 375th birthday of Christiaan Huygens, (born 14 April 1629). 13 to 17 April 2004 ESTEC, Noordwijk, The Netherlands. More information at: <http://sci2.esa.int/huygens/conference/first.html>

## FEED BACK FROM ACADEMIA

Since Ariadna is a new initiative we are interested in receiving your first opinions and welcome any comments you might have. In particular, we would like to know how the programme relates to your work, if you have suggestions on how to improve the initiative and if you like the proposed studies?

To make sure that you are receiving the most up-to-date information we advise you to fill in the ACT Contact Form. This you can find at:

[http://www.esa.int/gsp/ACT/ariadna\\_contact.html](http://www.esa.int/gsp/ACT/ariadna_contact.html)

Then, we can let you know when the specific Call for proposal/Call for ideas and additional information apply to your field of research.

If you are not interested in receiving more information about Ariadna and wish to be removed from the email list simply send an email to [ACT@esa.int](mailto:ACT@esa.int) with "unsubscribe" in the subject field.

## ARIADNA IN SHORT

Ariadna is managed by the ESA Advanced Concepts Team (ACT) at the European Space Research and Technology Centre (ESTEC) in the Netherlands and is a new initiative to strengthen the existing links between ESA and the European academic community.

Ariadna will be devoted to short, inexpensive studies involving research into radical new space technologies. The main categories of interest will be:

- Fundamental Physics. Focus on gravitational physics and quantum mechanics.
- Advanced power systems: Research beyond photovoltaic systems.
- Advanced propulsion: Innovative in-space and access-to-orbit propulsion systems.
- Mission analysis and design: Development of trajectory design strategies and novel mission concepts.
- Mathematics and Informatics: Research into advanced computing systems and mathematical tools.
- Biomimicry: Developing technology by imitating biology.

Small ESA contracts will be awarded to a team consisting of a Ph.D. student (or a recent Post. Doc) and a professor of a research institution to

perform work directly related to the objectives of the ACT.

The best way to get more information on Ariadna is to check the web page of Ariadna at <http://www.esa.int/gsp/ACT/ariadna.html>.

## ARIADNA CLARIFICATIONS AND EXPLANATIONS

In the first call for proposals we received a lot of additional questions about the Ariadna initiative – questions that were not described thoroughly enough in the Ariadna Statement of Work (the statement of work can be downloaded from our web page). These clarifications are updated and can be found at the FAQ page of our Ariadna web page. This information can among other things help to clarify the distinctions between Call for ideas and Call for proposals.