8th IAA SYMPOSIUM ON THE FUTURE OF SPACE EXPLORATION: TOWARDS THE STARS

A Summit Follow-on Symposium

July 03-05, 2013

Turin, Italy

CALL FOR PAPERS
Papers are solicited in priority on:
In order to prepare input for the IAA Heads of Space Agencies Summit to be held in January 2014 in Washington DC, USA, a particular focus will be made on the Summit follow-on priorities of the Academy in:

Planetary Robotic Exploration:
• Priority 1 Extend Human Spaceflight Exploration via Robotic Exploration
Seek ways to apply robotic explorers to further pave the way for expanded human exploration through attainment of critical knowledge of relevant destinations and/or validation of technologies required for human exploration
• Priority 2 Develop Opportunities for International Collaboration
Expand efforts to work together to achieve the next leap in understanding of our Solar System and to pave the way for human exploration
• Priority 3 Develop Opportunities for International Collaboration
Strive to make available opportunities for international collaboration such as through shared science teams and science instruments, in ways that do not compromise the host agency’s primary goals for their individual space missions

Human Space Exploration:
• Priority 1 Support Human Space Exploration in Low Earth Orbit
Acknowledge the need of maintaining human space exploration in Low Earth Orbit (LEO) and of extending it in a stepwise approach to those destinations where humans may one day live and work, e.g. Moon, Near Earth Objects… through building on a carefully planned series of robotic precursor missions.
• Priority 2 Develop Enabling Technologies to Support Grand Challenges
Welcome the development of enabling technologies required to achieve exploration goals, while recognizing the fact that these technologies can also be used in supporting pathways to assist in resolving some of the grand challenges the world is facing, such as energy and environmental issues.
• Priority 3 Strengthen Cooperation between New and Emerging Space Faring Nations
Invite new and emerging space faring nations to cooperate in Human Spaceflight activities in view of the benefits involved and in order to ensure that this becomes a global endeavor

Papers are also solicited in the following areas

• Technology
  Propulsion systems
  Trajectory design
  Navigation, guidance and control
  Sensors, detectors and lens systems
  Nanotechnology and robotics
  Mission design
  Power generation
  Attitude dynamics
  Very deep space telecommunications
  Precursor interstellar missions
  Innovative concepts

• Science
  Scientific objectives and payload requirements
  Biosignatures from space
  Hybernation
  Present outgoing scientific missions
  Medical problems of very long range spaceflight

• Programatics
  Cooperation schemes
  Funding aspects
  Reporting of the ongoing IAA Study Groups
  Roadmaps
  Economic sustainability
  Role of the ISS in space exploration

• Motivations
  Motivations and human aspects
  Ideas from science fiction to technology
  Space resources exploitation
  Policy and international cooperation
  Space mineral resources

• Ethics
  Ethical aspects of long range exploration
  Ethical aspects of terraforming
  Adaptation of humans to new environments
  From exploration to colonization
  Robot ethics
  Experience after 10 years of ISS permanent activity

• Cultural
  Multicultural aspects of human space exploration
  Space emerging countries access to space exploration
  Outreach aspects of Space Exploration
Study Groups of the IAA related to the conference themes are encouraged to present and discuss the status of their activities in view of the upcoming Heads of space agencies to be held in January 2014.

**SYMPOSIUM DATES AND LOCATION**

An International Symposium on the future of Space Exploration will be organized by the International Academy of Astronautics and Politecnico di Torino on 3 – 5 July 2013 in Torino.

**SYMPOSIUM GOALS**

The goals of this new symposium on the human and robotic exploration beyond the Moon are more ambitious than ever. Thanks to a renewed commitment of the International Academy of Astronautics, the areas of interest have been widened and a larger attendance is expected. To allow all authors to present their papers at ease, the possibility of presenting some papers in parallel sessions is considered.

The aim is to promote an exchange of ideas and experiences among those interested in the various scientific, technological, human and ethical aspects of outer solar system and interstellar exploration and to propose new missions.

Papers regarding the motivations and human aspects of deep space exploration are welcome, and papers dealing with advanced concepts and new ideas are encouraged. The lessons learned and role of the International Space Station as a stepping stone to space exploration is also warmly solicited.

Results from this symposium will be presented to the next Heads of Space Agencies Summit organized by the IAA in January 2014 in Washington DC.

**INDUSTRIAL PARTICIPATIONS**

Industrial participants are solicited in view of the short term benefits of the technologies developed for deep space exploration.

**SUPPORT TO PARTICIPANTS**

The International Academy of Astronautics will provide a number of scholarships, covering mainly registration fees and luncheons for participants and speakers who have financial difficulties in attending such as for instance attendees from African countries.

**SPONSORS**

Department of Mechanical and Aerospace Engineering of the Politecnico di Torino

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Giuseppe Reibaldi  
Yuichi Tsuda  
Wu Meirong

**LOCAL ORGANIZATION**

Giancarlo Genta
PAPERS FOR PRESENTATION

Abstracts of Papers intended for Presentation at the Symposium must be written in English on a single A4 page with the title, author's name affiliation and complete address. Authors are encouraged to send abstracts by e-mail. Abstracts must be mailed to:

Prof. Giancarlo Genta
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Corso Duca degli Abruzzi 24, I-10129 Torino (TO), ITALY
Phone: 39 011 090 6922  Fax: 39 011 090 6999
E-mail: iaspacemissions@iaamail.org
www.iaaconferences.org/spacemissions2013

All intended papers will be examined by an International Scientific Committee.

DEADLINES

Submission of abstract                      March 15, 2013
Notification of acceptance                April 15, 2013
Submission of camera-ready texts     May 31, 2013

SYMPOSIUM FEE

The Symposium Fee is 500 €, entitling to receive a copy of the Symposium Proceedings (expected to be available at the symposium). For payments received after May 30, 2013 a surcharge of € 80 will apply.

Official language of the Symposium will be English.

A Program for Accompanying Parties will be arranged, if the number of participants is sufficient.

VENUE

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