



**THE INTERNATIONAL SPACE STATION:
MAXIMIZING THE RETURN
FROM EXTENDED OPERATIONS**

First Announcement and Call for Papers
15TH ISU ANNUAL INTERNATIONAL SYMPOSIUM
Strasbourg, Tuesday 15th - Thursday 17th February 2011



Scope of the Symposium

Each year, the International Space University (ISU) organizes a three day symposium addressing a topical theme from an interdisciplinary and international perspective. These symposia attract an audience of around 200 members of the space sector from agencies, industry and academia worldwide.

Our next symposium, the fifteenth in a series, will address the opportunities and possibilities offered by extending operation of the International Space Station (ISS) to at least 2020. A Closing Keynote will address possible future directions for human spaceflight beyond that time.

Following the announcement in April this year of the revised US plan for space exploration, and the continuing debate that this has sparked, these are clearly very timely subjects. The new US commitment to long-term ISS operation and utilization is, in many people's view, a major event in human space flight that offers new and challenging opportunities for research and technology development, as well as for commercial activity and international cooperation. By early 2011, when the symposium is scheduled, revised plans and new initiatives for extended ISS utilization within NASA and among its international partners should be taking shape.

The proposed scope of the symposium includes not just the central theme of how to make best use of the extended ISS life but also related issues of commerciali-

sation both in its resupply and its operation. The commercial connection links well with the revised NASA approach and will, we hope, attract contributions from the 'Newspace' sector as well as from the agencies, industries and academic institutions already deeply involved in ISS construction and operation. We are also keen to hear of other, non-partner nation's ambitions, either to join ISS activities in the coming years or to develop alternative human spaceflight projects for low Earth orbit and beyond.

Six half day sessions, all of them held in plenary, will address the following main themes:

1. *The ISS in the Context of Long-term Human Spaceflight Plans*
2. *Current Concepts and Approved Programs for ISS Utilization*
3. *New Prospects and Problems for Extended ISS Life*
4. *Economic Aspects of ISS Extended Operations – New Concepts and Keys to Success*
5. *Legal, Policy and Ethical Issues*
6. *Future Directions*

Further details are provided on the page at right in the form of lists of suggested topics in each session. The final program may differ somewhat depending on acceptances relating to invited papers and selection from abstracts received in particular areas of interest.

interactions by participants. A Poster Session will be held on the first evening in conjunction with the Symposium Reception and posters will then be displayed prominently throughout the following two days.

All sessions will be held in plenary and will take place in ISU's Boeing Auditorium which has a seating capacity for up to 250 participants. English will be the working language of the symposium.

Symposium Structure

Following the Welcome and Keynote Address on the first morning there will be six half-day sessions in which each speaker will have 15 minutes to present followed by 5 minutes for brief questions and answers.

At the end of each session attention will be drawn to the associated Posters and a Panel Discussion will provide further opportunities for questions and for



KEY DATES

◆ **CALL FOR PAPERS**
FRIDAY 23RD JULY 2010

◆ **DEADLINE FOR ABSTRACTS**
FRIDAY 8TH OCTOBER 2010

◆ **NOTIFICATION TO AUTHORS**
Friday 3rd November 2010

◆ **PRELIMINARY PROGRAM ISSUE**
FRIDAY 4TH DECEMBER 2010

◆ **EARLY REGISTRATION DEADLINE**
Friday 21st January 2011

◆ **SYMPOSIUM**
Tuesday 15th - Thursday 17th
February 2011

Program Outline and Call for Papers

Abstracts of around 300 words are now invited and must reach symposium15@isu.isunet.edu by 8th October clearly indicating the title, authors' names, affiliations and contact addresses. Please also tell us for which session(s) you are submitting your contribution. We will let you know by 3rd November if your contribution has been selected for session presentation or as a poster. Further instructions will be provided to contributors when the preliminary program is issued in early December.

In addition to those presentations selected from the abstracts received, we will invite papers on key themes from leading experts in government, industry, academia and professional bodies describing how they view the status, future needs and likely developments in human spaceflight, particularly the ISS.

We list here the key topics considered most appropriate for inclusion. This does not exclude other ideas that fit within the overall symposium theme.

■ DAY 1: TUESDAY 15 FEBRUARY

TUESDAY MORNING (0900 START)

WELCOME AND INTRODUCTION

KEYNOTE ADDRESS:

HUMAN SPACEFLIGHT: THE FLAGSHIP OF INTERNATIONAL COOPERATION

SESSION 1: THE ISS IN THE CONTEXT OF LONG-TERM HUMAN SPACEFLIGHT PLANS

The majority of papers in this session are likely to be invited from experts but abstracts are still welcome on:

- Living in space.
- Agency road maps for human spaceflight.
- ISS: the story so far, successes and failures, lessons learned.
- ISS as a source for innovation and future inspiration.

TUESDAY AFTERNOON

SESSION 2: CURRENT CONCEPTS AND APPROVED PROGRAMS FOR ISS UTILIZATION

- Near-term programs for ISS completion, resupply, maintenance and utilization.
- Near- to mid-term plans to utilize ISS in major fields of science, technology and application:
 - Physical sciences
 - Life sciences
 - Engineering and technology
 - Satellite applications
 - Space environment studies
- Safety and risk reduction

EVENING: POSTER VIEWING AND SYMPOSIUM RECEPTION

■ DAY 2: WEDNESDAY 16 FEBRUARY

WEDNESDAY MORNING

SESSION 3: NEW PROSPECTS AND PROBLEMS FOR EXTENDING ISS LIFE

- Diversifying ISS utilization among existing and new user communities.
- ISS role in addressing Earth's major global challenges – in areas of health, sustainability, climate change and security.
- The role of ISS in education.
- The role of ISS in entertainment and public outreach.
- ISS for technology development including robotic assistance to human operations in space.
- Equipment wear-out/replacement.
- Failure modes and mitigation.
- Using ISS to prepare for future exploration missions through analog experiments, as a base for construction, or as a transport node.

WEDNESDAY AFTERNOON

SESSION 4: ECONOMIC ASPECTS OF EXTENDED ISS OPERATIONS – NEW CONCEPTS AND KEYS TO SUCCESS

- Commercialization of launch, resupply, servicing and return of cargo and astronauts.
- Product development.
- Technology transfer.
- Entrepreneurial opportunities.
- Space tourism and the ISS.
- Ideas for funding with emphasis on reducing the operating costs.
- Making the case for ISS continued funding with politicians and the public.

EVENING: CONCERT AND DINNER IN STRASBOURG CENTRE

■ DAY 3: THURSDAY 17 FEBRUARY

THURSDAY MORNING

SESSION 5: LEGAL, POLICY AND ETHICAL ISSUES

THURSDAY AFTERNOON

SESSION 6: FUTURE DIRECTIONS

- Potential for expanding ISS involvement to other nations.
- Potential for extending the existing partnership beyond 2020 and/or building upon the foundation for other collaborations in low Earth orbit or beyond.
- ISS as an enabler for human spaceflight beyond 2020.
- End-of-life strategies including options for controlled re-entry, transfer to/preservation in a higher orbit, etc.

CLOSING KEYNOTE:

HUMAN SPACEFLIGHT IN THE NEXT 50 YEARS: LEAVING EARTH

(END AT 1700)

Further Information

REGISTRATION FEE (PRELIMINARY)

Before the deadline of 21st January 2011, the early-bird registration fee will be 600 € with reductions for students and ISU alumni. Details will follow in the Preliminary Program in early December 2010.

The fee includes:

- Access to all conference facilities during the Symposium.
- Transport to/from the city center.
- Welcome reception, lunches and refreshments over the three days.
- Symposium Dinner and Concert.
- Book of abstracts.
- Access to all presented papers.



ISU LOCATION

The ISU Central Campus is located in the Parc d'Innovation at Illkirch-Graffenstaden in the southern part of Strasbourg Urban Community about 30 minutes from the city center by public transport. Full details of how to get to ISU appear at <http://www.isunet.edu/>.



ACCOMMODATION

ISU has negotiated preferential rates and will make block bookings at a number of local hotels as listed at our Web site. For a complete list of Strasbourg hotels, contact the local tourist office:

Tel: +33 (0)3 88 52 28 28

Fax: +33 (0)3 88 52 28 29

Updated Symposium information

will appear in the coming months at <http://www.isunet.edu/> or e-mail the Organizing Team directly at: symposium15@isu.isunet.edu

STRASBOURG AND ITS SURROUNDINGS

There will be an opportunity to sample some of the delights of Strasbourg itself on the second evening when all participants are invited to join us at a short concert in a historic church before enjoying Alsatian cuisine at the Symposium Dinner. The city and surrounding region offer a range of attractions to suit all tastes throughout the year. Those who don't already know the region (and those who do!) may well be tempted to extend their stay into the weekend to discover more of its character and charm.

Historic and cultural opportunities on offer in Strasbourg are well described at the website <http://www.ot-strasbourg.fr/>. There you will find information on the famous cathedral, the 'European district', where many international institutions are based, and many other interesting places to visit while you are here.



PROGRAM COMMITTEE

CHAIR OF PROGRAM COMMITTEE

- ♦ **Walter Peeters,**
ISU Dean

The Program Committee is being established presently.

SYMPOSIUM ORGANIZING TEAM

- ♦ **John Farrow,**
ISU Resident Faculty and Chair of Symposium Organizing Team
- ♦ **Nadia Repussard,**
Symposium Logistics Coordinator
- ♦ **Caroline Schwob,**
Coordinator for External Relations and Development, ISU
- ♦ **Steve Brody,**
Vice-President, ISU North American Operations
- ♦ **Jim Burke,**
The Planetary Society
- ♦ **Gilles Clément**
ISU Resident Faculty
- ♦ **Ian Pryke**
Senior Fellow, CAPR, GMU and Senior Program Officer, Space Studies Board, USA.
- ♦ **Hideto Suzuki**
ISU Resident Faculty/JAXA
- ♦ **Nikolai Tolyarenko**
Director, ISU Master of Space Studies
- ♦ **Chris Welch**
Principal Lecturer in Astronautics, Kingston University, UK
- ♦ **Nicolas Walter**
Science Officer, European Science Foundation, Strasbourg
- ♦ **Vasilis Zervos**
ISU Resident Faculty

*International Space University
Strasbourg Central Campus
1, rue Jean-Dominique Cassini
Parc d'Innovation
67400 Illkirch-Graffenstaden
France*

*Phone: 00 33 3 88 65 54 30
Fax: 00 33 3 88 65 54 47*