



UNITED NATIONS  
Office for Outer Space Affairs



# United Nations/Japan Workshop on Space Weather

“Science and Data Products from ISWI Instruments”

United Nations Office for Outer Space Affairs  
Vienna, Austria

**Fukuoka, Japan, 2-6 March 2015**

# Presentation Overview

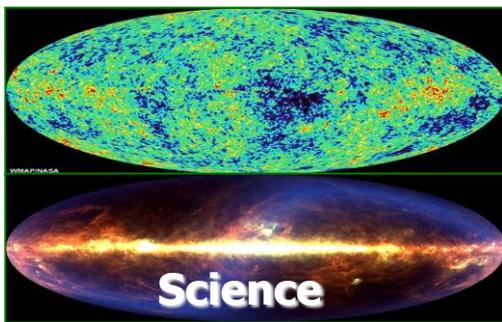
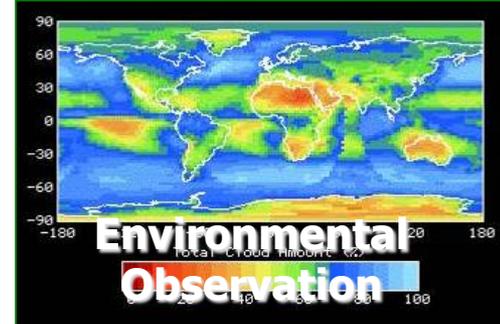
- I. United Nations and Outer Space
- II. United Nations and Space Weather
- III. Workshop Objectives and Programme
- IV. Workshop Report
- V. Organizational Issues

Note: United Nations documents quoted in this paper are available from the website of the Office for Outer Space Affairs at [www.unoosa.org](http://www.unoosa.org) and from the Official Document System of the United Nations at [documents.un.org](http://documents.un.org).

Disclaimer: The views expressed in this paper are purely those of the author and do not necessarily reflect the position of the United Nations and its Office for Outer Space Affairs.

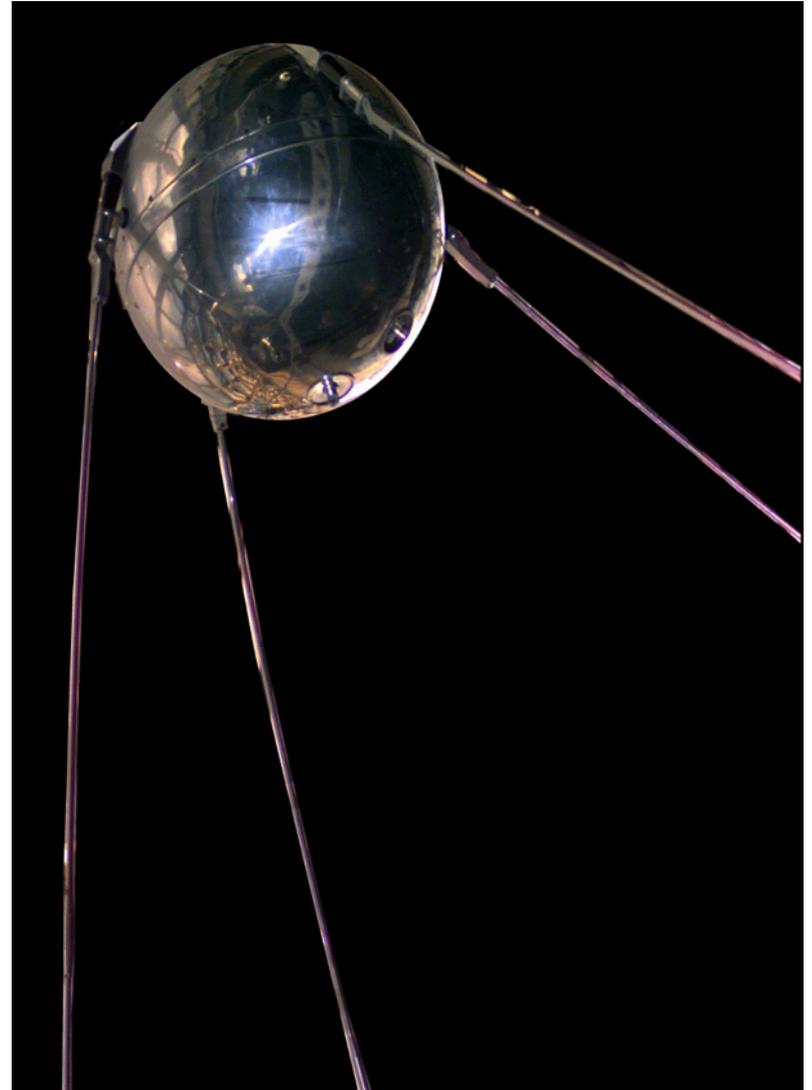


# Benefits from Space Activities



# UN and Outer Space: Early Years

- 4 October 1957: Beginning of the space age with the launch of Sputnik-I
- Raises important questions:
  - What should be the rules and regulations for activities in outer space?
  - How to prevent the extension of the cold war arms race into outer space?
  - How to ensure that space activities benefit all humankind?
- Agreement that the purposes and principles of the United Nations should also apply to activities in outer space



# UN and Outer Space: Early Years

- GA resolution 1348(XIII) (1958) establishes the ad-hoc Committee on the Peaceful Uses of Outer Space (COPUOS) to discuss international space cooperation
- GA resolution 1472 (XIV) (1959) reaffirms the role of COPUOS and establishes it as a permanent Committee of the General Assembly (GA)



# COPUOS Today

- Establishment of two Subcommittees in 1961:
  - Scientific and Technical Subcommittee (STSC)
  - Legal Subcommittee (LSC)
- 77 Member States and >30 organizations with permanent observer status
- Reports to the General Assembly
- Adopts an annual resolution on “International cooperation in the peaceful uses of outer space”



# COPUOS Annual Meeting Schedule

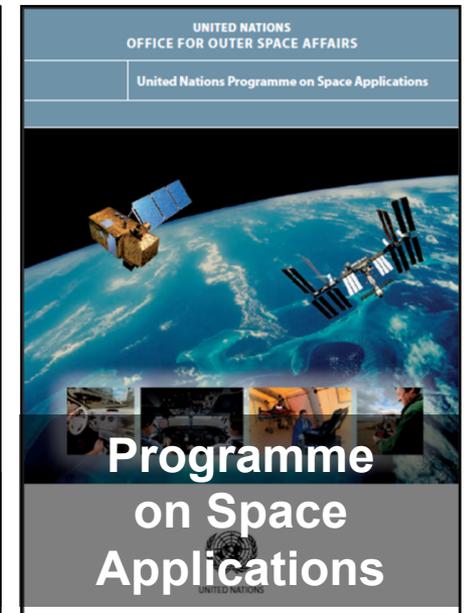
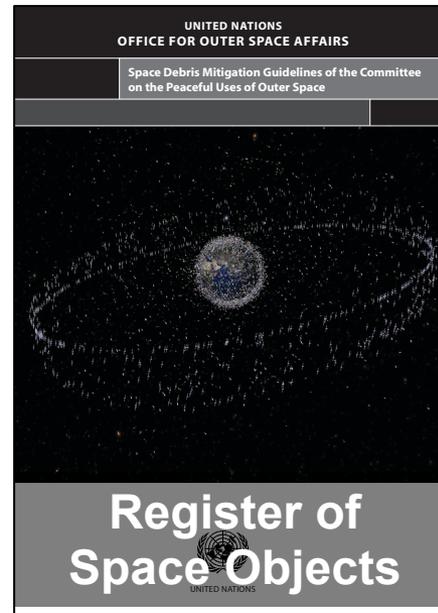
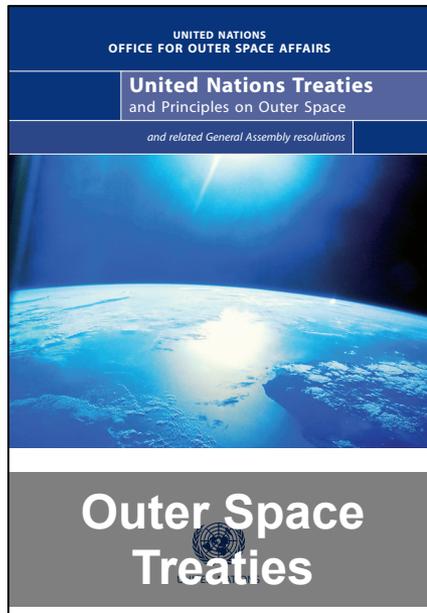
Date	Organ	Duration
February	Scientific and Technical Subcommittee	10 Days
March/April	Legal Subcommittee	10 Days
June	COPUOS Main Committee	8 Days
October/ November	General Assembly Special Political and Decolonization Committee (Fourth Committee)	2 Days

# Office for Outer Space Affairs

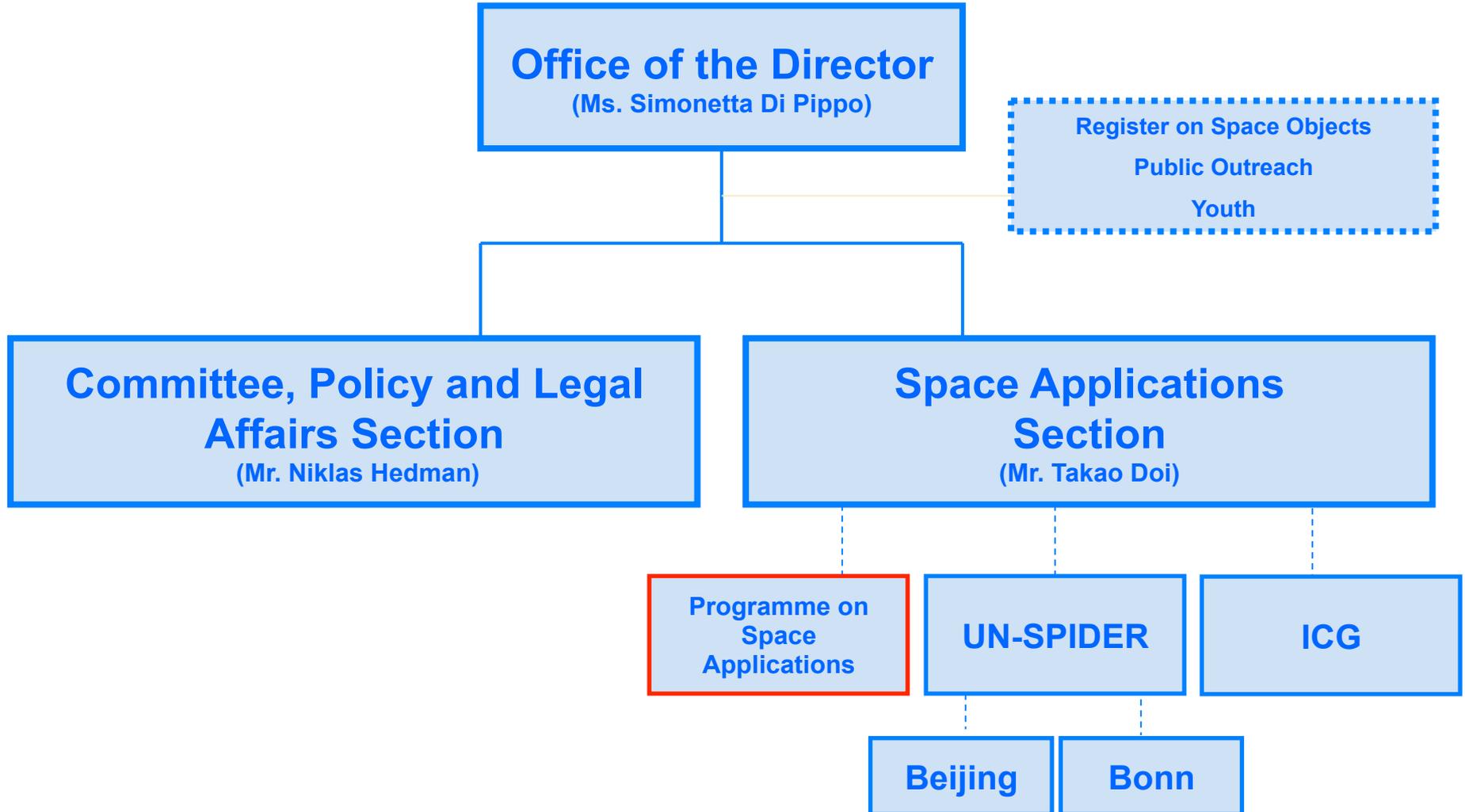


- Originated as a small expert unit in the UN Secretariat to service the Ad Hoc COPUOS meeting
- Eventually transformed into the United Nations Office for Outer Space Affairs (UNOOSA)
- Relocated from New York to the UN Office at Vienna (UNOV) in 1993
- 25 staff members (scientists, lawyers, political scientists), plus several seconded staff and interns
- Offices in Bonn, Germany and Beijing, China (UN-SPIDER Programme)

# United Nations Office for Outer Space Affairs



# Office for Outer Space Affairs



# United Nations Programme on Space Applications



- Established in response to recommendations of the first UNISPACE conference in 1968
- Became operational in 1971
- Implemented by UNOOSA
- United Nations Expert on Space Applications
- UNISPACE'82 in 1982, and UNISPACE III in 1999, further expanded the mandate of the Programme

<http://www.unoosa.org/oosa/en/SAP/history.html>

# Programme Mandate

International  
Cooperation

Capacity Building

Dissemination of  
Information

Technical Advisory  
Services

United Nations General Assembly Resolution 37/90 (§7), <http://www.unoosa.org/oosa/en/SAP/mandate.html>

# Programme Implementation

## Basic Space Science Initiative (BSSI)

Basic Space Technology Initiative (BSTI)

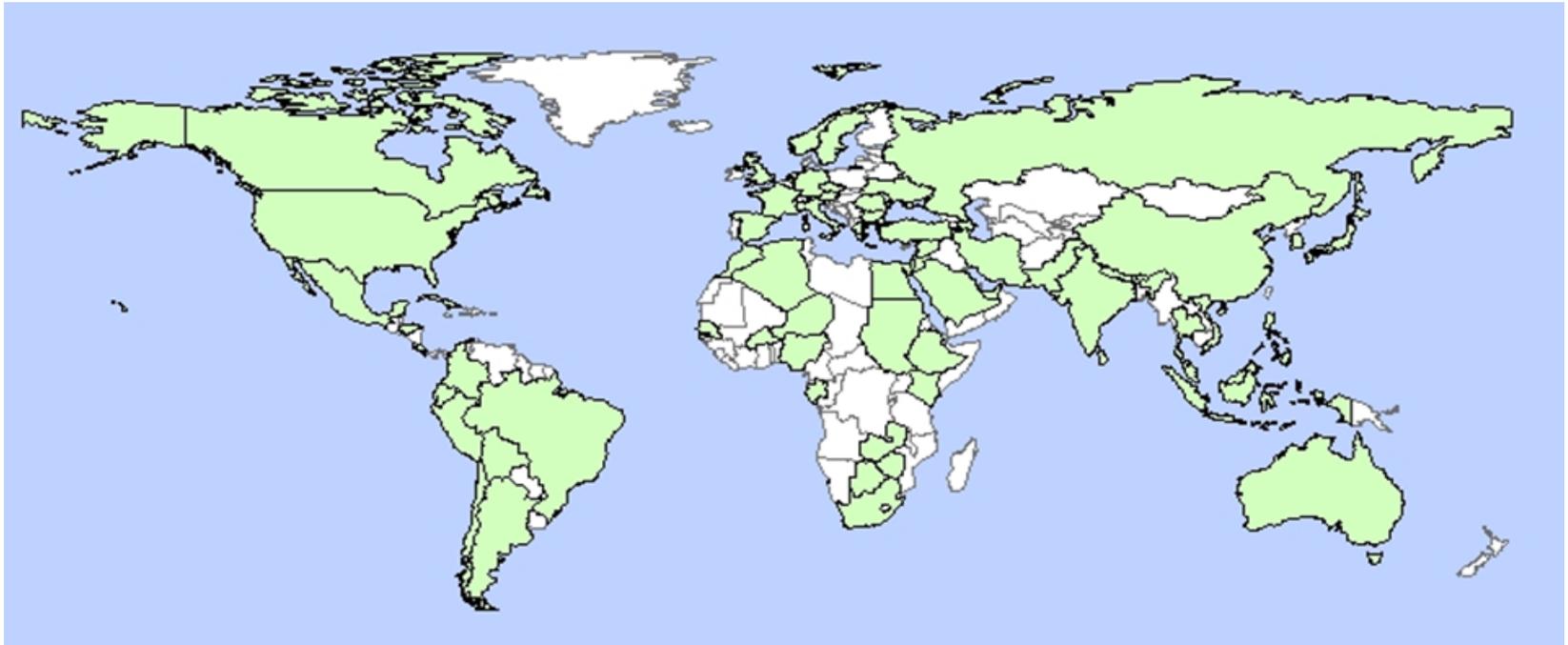
Human Space Technology Initiative (HSTI)

Conferences and Workshops on specific space applications

Regional Centres for Space Science and Technology Education, affiliated to the United Nations

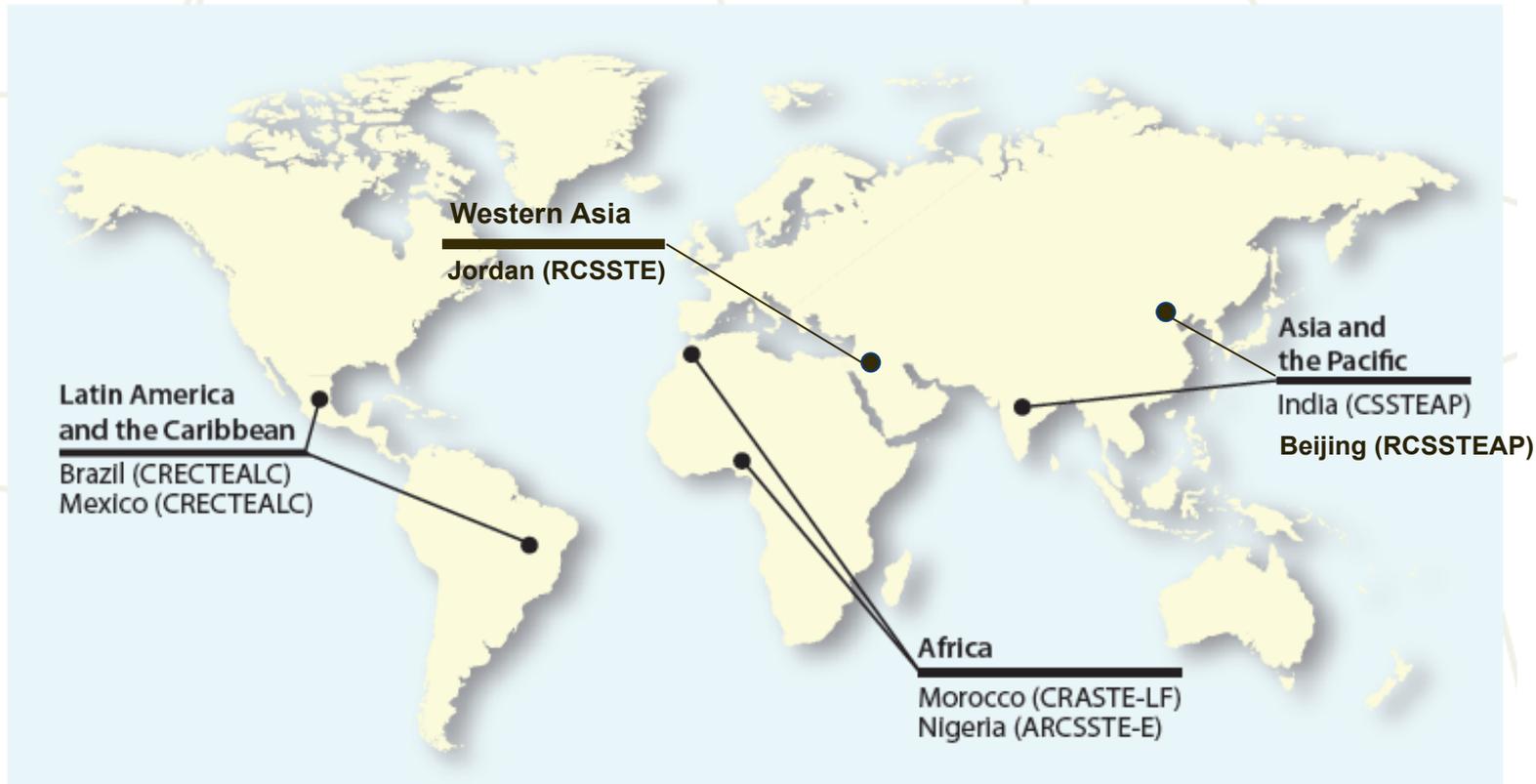
Fellowship Programmes

# Programme Activities 1971-2012



- 288 Expert Meetings/Seminars/Workshops/Conferences
- 69 countries, 20000 participants
- Topics covered: COSPAS/SARSAT, Environmental Monitoring, Global Navigation Satellite Systems, Mountain Regions, Natural Resources Management, Socio-Economic Benefit, Space Law, Space Science and Technology, Tele-Health/Tele-Medicine

# Regional Centres, affiliated to the United Nations



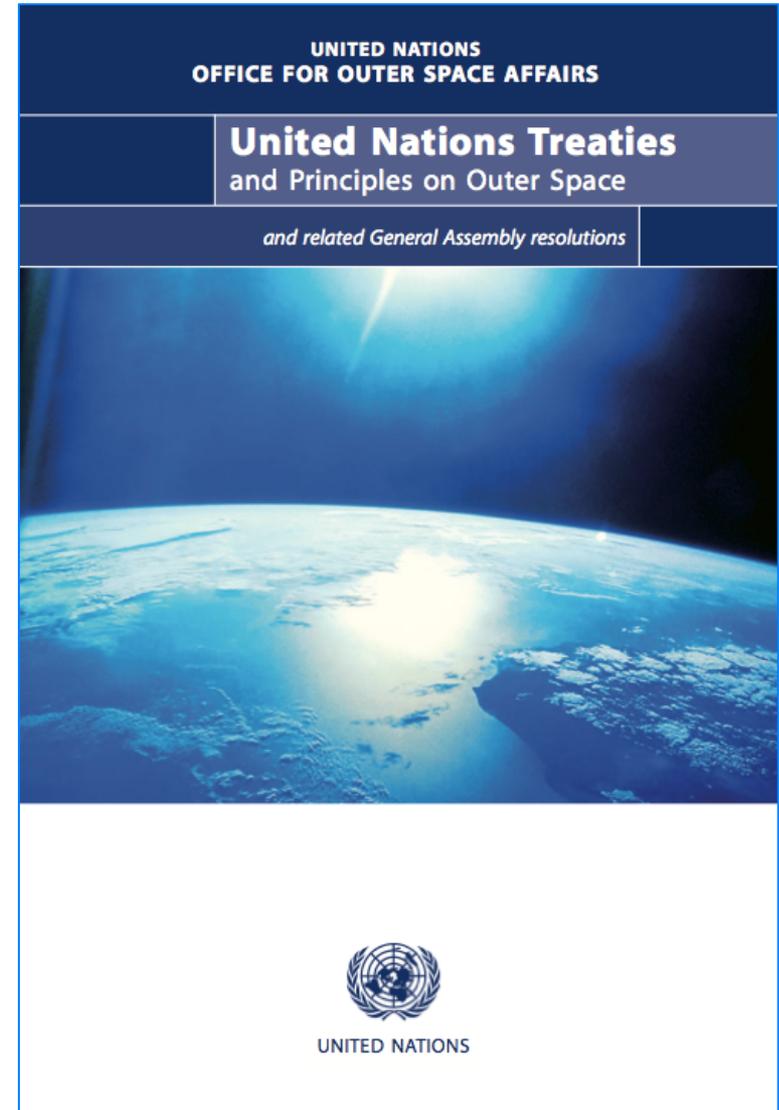
# Programme Activities in 2015

Activity	Location, Date
UN/Japan Workshop on Space Weather "Science and Data Products from ISWI Instruments"	2-6 March 2015 Fukuoka, Japan
UN/Russian Federation Workshop on the Applications of Global Navigation Satellite Systems	18-22 May 2015 Krasnoyarsk, Russian Federation
UN/Austria Symposium on Integrated Space Technology Applications for Sustainable Development in Mountain Regions	7-10 September 2015 Graz, Austria
UN/Islamic Republic of Iran Workshop on the Use of Space Technology for Dust Storm and Drought Monitoring in Middle East Region	26-30 September 2015 Tehran, Islamic Republic of Iran
UN/South Africa Symposium on Basic Space Technology	September 2015 Cape Town, South Africa
UN/International Astronautical Federation Workshop on Space Technology for Socio-Economic Benefits	9-11 October 2015 Jerusalem, Israel
UN/Costa Rica Workshop on Human Space Technology	9-13 November 2015 San Jose, Costa Rica
UN/Kenya Workshop on Space Technology and Applications for Wildlife Management and Protecting Biodiversity	November 2015 Kenya
UN/United Arab Emirates High Level Forum: Space as a Driver for Socio-Economic Sustainable Development	15-17 November 2015 Dubai, United Arab Emirates
UN/International Meeting on Global Navigation Satellite Systems	14-18 December 2015 Vienna, Austria

See <http://www.unoosa.org/oosa/en/SAP/sched/index.html>

# United Nations and Outer Space

- What should be the rules and regulations for activities in outer space?
  - Outer Space Treaties
- How to prevent the extension of the cold war arms race into outer space?
  - Principle of the Peaceful Uses of Outer Space
- How to ensure that space activities benefit all humankind?
  - International Cooperation
  - United Nations Programme on Space Applications



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## **II. United Nations and Space Weather**

# Programme on Space Applications

## Basic Space Science Initiative (BSSI)

Basic Space Technology Initiative (BSTI)

Human Space Technology Initiative (HSTI)

Conferences and Workshops on specific space applications

Regional Centres for Space Science and Technology Education, affiliated to the United Nations

Fellowship Programmes

# Basic Space Science Initiative (BSSI)

## Mission

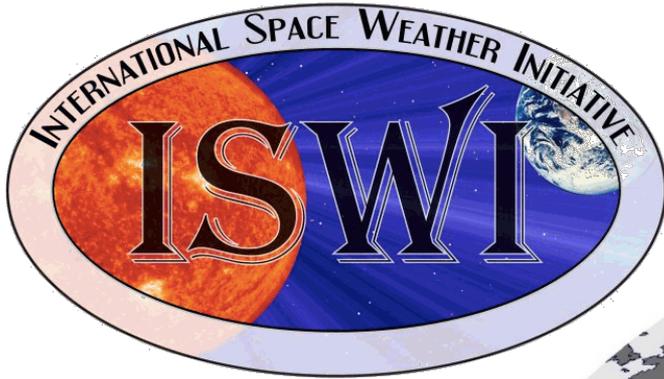
Support the growth of small research groups in universities and research institutions in the developing countries in the fields of astronomy and space science.

Basic Space  
Science  
Workshops  
(1991-2004)

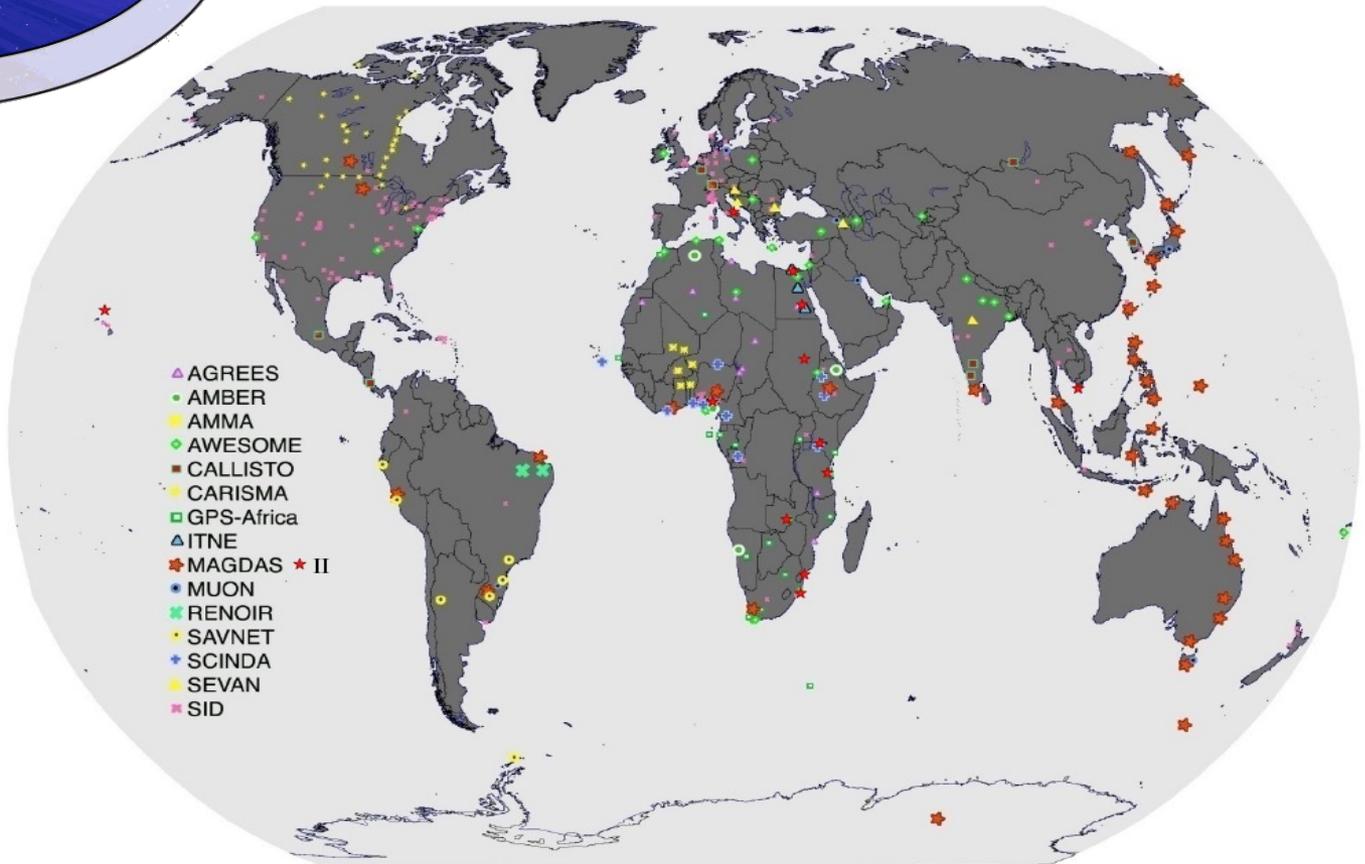
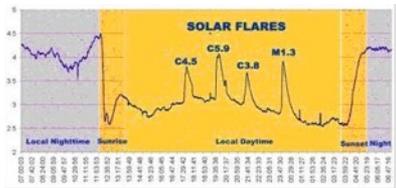
International  
Heliophysical  
Year 2007  
(2005-2008)

International  
Space  
Weather  
Initiative  
(2009-2013)

# International Space Weather Initiative (ISWI)



- Int. Space Weather Initiative (2010-2012)
- Deployment and operation of 17 ground-based, world-wide instrument arrays
- <http://www.unoosa.org/oosa/en/SAP/bss/index.html>



# ISWI Workshops held under the BSSI

- UN/NASA/JAXA Workshop on the International Space Weather Initiative (ISWI)
  - Held in Helwan, Egypt, 6-10 November 2010
  - Report A/AC.105/994
  - Established list of ISWI national and area coordinators
  - Reviewed list of ISWI instrument arrays and distribution by country
- United Nations/Nigeria Workshop on the International Space Weather Initiative (ISWI)
  - Held in Abuja, Nigeria, 17-21 October 2011
  - Report A/AC.105/1018
  - Establishment of ISWI-Secretariat website
  - Establishment of ISWI Newsletter
  - Abuja ISWI Resolution: Establishment of ICSWSE

# ISWI Workshops held under the BSSI

- United Nations/Ecuador Workshop on the International Space Weather Initiative (ISWI)
  - Held in Quito, Ecuador, 8 - 12 October 2012
  - Report A/AC.105/1030
  - ISWI beyond 2012: ISWI to be continued as part of the COPUOS STSC “Space Weather” agenda item
  - Continued deployment and operation of ISWI instrument arrays, data sharing and use, capacity building (space science schools)
- United Nations/Austria Symposium on Space Weather Data, Instruments and Models: Looking Beyond the International Space Weather Initiative (ISWI)
  - Held in Graz, Austria, 16-18 September 2013
  - Report A/AC.105/1051
  - Improve data sharing, calibration
  - Interlink ISWI with other relevant activities

# UN/Japan Workshop on Space Weather



- Hosted by the International Center for Space Weather Science and Education (ICSWSE) of Kyushu University, on behalf of the Government of Japan
- Workshop Webpage: <http://www.unoosa.org/oosa/en/SAP/act2015/japan/index.html>

# STSC COPUOS Agenda Item “Space Weather”

- New agenda item from 2013 onwards
- To support efforts to close existing gaps in the space weather research field (A/AC.105/1001, para. 226):
  - a) To provide benchmark measurements of the responses of the magnetosphere, the ionosphere, the lower atmosphere and the Earth’s surface in order to identify global processes and drivers that affected the terrestrial environment and climate;
  - b) To further the global study of the Sun-Earth system in order to understand the external and historical drivers of geophysical change;
  - c) To foster international scientific cooperation in the study of current and future space weather phenomena;
  - d) To communicate the unique scientific results of space weather research and societal impacts to interested members of the scientific community and to the general public.

# UN/Japan Workshop and COPUOS

- Linking the Workshop and its observations and recommendations to the Space Weather agenda item in COPUOS STSC
- Linking the Workshop to the activities taking place in:
  - Workshop on Space Weather Services to Build Global Resilience (3 February 2015)
    - See <http://www.unoosa.org/oosa/en/SAP/gnss/icg/iswi.html>
  - United Nations Space Weather Expert Group (4 February 2015), continuing the work of Expert Group C established under the Working Group on the Long-term sustainability of outer space activities
    - See [http://www.unoosa.org/pdf/limited/c1/AC105\\_C1\\_2015\\_CRP27E.pdf](http://www.unoosa.org/pdf/limited/c1/AC105_C1_2015_CRP27E.pdf)

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# **III. Workshop Objectives and Programme**

# Workshop Objectives

- Assess the status of space weather instruments (in-situ, space-borne), space weather data access, availability and collection and modeling efforts
- Support the continued the deployment of ground-based ISWI instrument arrays and data exploitation
- Continue efforts in space weather capacity building and education
- Discuss standardization, sharing and wider, timely use of space weather data, including for operational purposes
- Review international cooperation activities towards global space-weather monitoring capabilities

# Workshop Programme – Thematic Sessions

- Session 1: Space Weather Instrumentation
- Session 2: Solar Weather/National Activities
- Session 3: Weak Solar Activity
- Session 4: Coupling Processes
- Session 5: Magnetosphere, Ionosphere and Atmosphere
- Session 6: Space Weather Impact and Awareness
- Session 7: Sun to Earth Space Weather Modelling
- Session 8: Hands-On Workshop organized by ICSWSE
- Session 9: Observations, Recommendations and the Way Forward

# Workshop Programme

- Full Day Workshop on Solar-Terrestrial Environment Data Analysis (Wednesday)
- Poster Presentations (Wednesday-Friday)
- Panel Discussions on the following topics:
  - ISWI Instrument Network and Future of ISWI (Monday)
  - International Cooperation in Space Weather (Tuesday)
  - Space Weather Data Utilization and Operational (Thursday)
- Social/cultural events:
  - Ice-Breaker (Monday)
  - Banquet (Wednesday)
  - Excursion/Free Time (Thursday PM)

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# IV. Workshop Report

# Workshop Report

United Nations A/AC.105/1051

 **General Assembly** Distr.: General  
12 November 2013  
Original: English

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**Committee on the Peaceful  
Uses of Outer Space**

**Report on the United Nations/Austria Symposium on Space  
Weather Data, Instruments and Models: Looking Beyond  
the International Space Weather Initiative**  
(Graz, Austria, 16-18 September 2013)

**I. Introduction**

1. The Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III), through its resolution entitled "The Space Millennium: Vienna Declaration on Space and Human Development", recommended that activities of the United Nations Programme on Space Applications should promote collaborative participation among Member States, at both the regional and international levels, in a variety of space science and technology activities, by emphasizing the development and transfer of knowledge and skills to developing countries and countries with economies in transition.<sup>1</sup>

2. At its fifty-fifth session, in 2012, the Committee on the Peaceful Uses of Outer Space endorsed the programme of workshops, training courses, symposiums and expert meetings related to the socioeconomic benefits of space activities, small satellites, basic space technology, human space technology, space weather and global navigation satellite systems (GNSS) to be held in 2013.<sup>2</sup> Subsequently, the General Assembly, in its resolution 67/113, endorsed the report of the Committee on the work of its fifty-fifth session.

3. Pursuant to General Assembly resolution 67/113 and in accordance with the recommendations of UNISPACE III, the United Nations/Austria Symposium on

<sup>1</sup> Report of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space, Vienna, 18-30 July 1999 (United Nations publication, Sales No. E.90.L.3), chap. I, resolution I, sect. I, para. 1 (a)(ii), and chap. II, para. 409 (d)(3).  
<sup>2</sup> Official Records of the General Assembly, Fifty-seventh Session, Supplement No. 20 (A/67/20), para. 39.

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- Official UN document (A/AC.105/xxx) edited and available in the six official UN languages
- Contains summary, observations and recommendations of the Workshop
- Submitted to UN Member States through COPUOS
- Contribution to future considerations on space weather-related activities in the UN framework



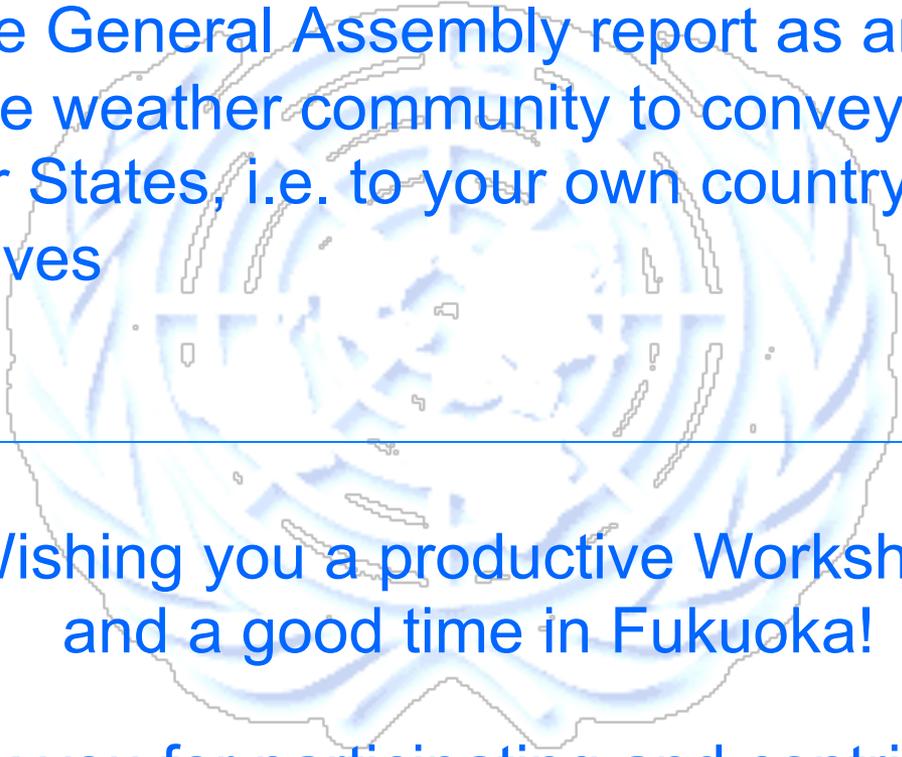
# V. Organizational Issues

# Organizational Issues

- Sessions are chaired by a chairperson, supported by a rapporteur
- Time for presentations is indicated in the programme and includes time for setup, questions and answers
- All oral and poster presentations will be included in the Workshop proceedings (distributed to you on Friday)
- We may be able to schedule ad-hoc presentations during the Workshop
- Panel discussions are the time to raise issues and to discuss observations and recommendations of the Workshop
- Additional organizational matters (Mr. George Maeda)

# Closing Remarks

- Make good use of opportunities to network and to get to know each other
- Consider the General Assembly report as an opportunity for the space weather community to convey a message to UN Member States, i.e. to your own country representatives

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Wishing you a productive Workshop  
and a good time in Fukuoka!

Thank you for participating and contributing!

# Thank you for your attention!

The United Nations logo, featuring a world map surrounded by olive branches, is centered in the background of the slide.

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