**International Living With a Star (ILWS)**

**Brief History**
- **Fall, 2000:** NASA proposes LWS program which is funded starting fall of 2001
- **IACG establishes Task Group to study prospects for developing an ILWS program**
- **May, 2001:** Task Group meets in Tenerife (in conj. with the ESA Solar Orbiter WS)
- **Task Group includes:** 4 IACG agencies - ESA, ISAS, NASA, RSA and IACG secretary in addition CSA, CRL, & NOAA
- **Task Group concludes:**
  - ILWS program has substantial potential for stimulating and enabling a new international effort in solar-terrestrial research.
  - ILWS will provide an umbrella for forging necessary international coordination, cooperation, and bilateral and multilateral agency collaborations.
- **January 2002:** IACG establishes the ILWS program following TG recommendation

**Charter of the ILWS-WG I**

**ILWS-WG Mission**

Stimulate, strengthen and coordinate space research to understand the governing processes of the connected Sun-Earth system as an integrated entity.

- simultaneous and coordinated observations
- at strategic locations in the entire system
  
  (supported by advanced analysis and model tools)

**Charter of the ILWS-WG II**

**ILWS-WG Objectives**

- To stimulate and facilitate:
  - Study of the Sun Earth connected system and the effects which influence life and society
  - Collaboration among potential partners in solar-terrestrial space missions
  - Synergistic coordination of international research in solar-terrestrial studies, including all relevant data sources as well as theory and modeling.
  - Effective and user driven access to all data, results and value-added products
Charter of the ILWS-WG III
ILWS-WG Membership

- Space organizations committed to contribute to ILWS over the next decade
- Contributions to include any of the following
  - Space Flight Missions
  - Mission payloads or subsystems
  - Mission launch or tracking services
  - Additional data sources supporting flight missions (sounding rockets, balloon, or ground-based)
  - Data dissemination, storage, distribution and value adding systems
  - Supporting theory and modeling

First ILWS Working Group Meeting Nice, April 14-15, 2003

- 22 Space Organizations and 2 representatives of the G-B Community, committed to contribute to ILWS over the next decade
  NASA, ESA, RASA, ISAS, CSA, NOAA, Ily ESA INT S, CPA, Ukraine, Brazil, Hungary, China
  In addition: CAWSES (SCOSTEP, Chair S. Basu) and GB Task Group (Chair E. Donovan)
  Members not attending: Belgium and India (after the meeting Australia joined WG)
- Presentation of National Plans for Missions in the ILWS Realm
- Discussion of Mission Synergies and Potential Coordination
- Three Task Groups established:
  - Ionosphere Thermosphere Coupling (Chair R. Heelis)
  - Magnetosphere (Chair H. Koskinen)
  - Ground-Based Coordination (Chair E. Donovan)
- Two Future Task Groups discussed
  - “Solar Sentinels” (start after completion of Solar Orbiter science definition)
  - “Models and Theory TG” plus “Data Systems and End Users TG” (to be defined later)

First ILWS Working Group Meeting Nice, April 14-15, 2003 (cont.)

Four Main Areas of Mission Synergies / Collaborations identified

- Sun and Heliosphere
  - SOHO, SDO, STEREO, Solar-B, CORONAS-Photon, Picard, …
  - Ulysses, Solar Sentinels (incl. B-C), Solar Orbiter, L5, InterhelioProbe, Sub-L1 mission, …
  - L1 Monitor, …
- Outer Magnetosphere
  - Cluster, MMS, Themis, MagCon, RAVENS (Canada), SWISE (China), SCOPE, ROY, …
- Inner Magnetosphere
  - Radiation Belt Storm Probes, Storms (CSF/F), SWISE (China), E-W (Canada) …
- Ionosphere-Thermosphere
  - Ionosphere Thermosphere Storm Probes, GEC, …
  - SWARM, ACE, …
**Future ILWS Actions**

- IT concepts: Task group and discussion group(s) formed
- Magnetospheric Science: Task group established
- Solar Orbiter: P/L-DT working & SDT second meeting in Sept. 2003
- Solar Sentinel concept, including SO and BC: discussions of a combined ILWS view (to start after Solar Orbiter SDT)
- End User Task Group and Model and Theory Task Group in preparation
- Series of ILWS Science Workshops: ISSI-Bern invitation (RB)

i.e. continued clarification of opportunities and possibilities, prioritization and timely agency planning, combined with a community formulation of ILWS strategy, priority and balance

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**European ILWS Strategy in an Overview**

<table>
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<tr>
<th>Aspect</th>
<th>Major ESA Support</th>
<th>Modest ESA Support</th>
<th>Strong ESA Support</th>
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<tbody>
<tr>
<td>1 Sun and Solar Wind</td>
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<td>Mission duration</td>
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<td>3 Magnetospheric</td>
<td>Cluster / Double Star</td>
<td>NLM’s candidates (H)</td>
<td>Frisbee</td>
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<td>5 Data Exploitation</td>
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**International Living With a Star**

Some Candidate Missions

- Solar-Heliospheric Network: observing Sun & tracking disturbances from Sun to Earth.
- Geospace Mission Network: with constellations of smallsats in key regions of geospace.

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**Present Solar Temporal Missions & “First Order” ILWS Missions**

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**European ILWS Strategy in an Overview**

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Support for Space Weather initiatives by ILWS is mainly indirect

- by providing the infrastructure to consolidate scientific efforts throughout Europe and the World “SPACE WEATHER ENABLING SCIENCE”
- by providing the scientific community with coordinated and simultaneous data, of better quality and larger volume than otherwise achieved
- by actively recommending funding from other sources - EU or national non-spacecraft agencies, providing large-scale international arguments

Conclusions

- ILWS - as a follow-up initiative to ISTP - gives an opportunity for our mature field to further develop and make credible advances – even in the eyes of the public
- In order to meet its Mission Objectives ILWS will require a consolidation and coordination of satellites, ground-based instruments, models and Space Weather initiatives on a Global Scale.
- Comments or advise on how to proceed with the “End-User”, i.e. Space Weather Task Group welcome at this meeting!

ILWS Contacts

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