

INTERNATIONAL LIVING WITH A STAR (ILWS)

Steering Committee

ESA
H. Opgenoorth (Chair)
R. Marsden

CSA
W. Liu (Vice-Chair)


NASA
M. Guhathakurta
D. Silbeck (Exec. Secr.)
(G. Withbroe - Sen. Adv.)

ISAS
T. Kosugi

IKI- RSA
L. Zeleny

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 bi-lateral and multi-lateral 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**

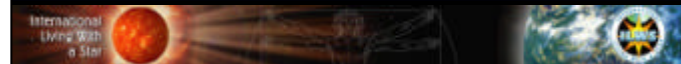
→ **at strategic locations in the entire system**

(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

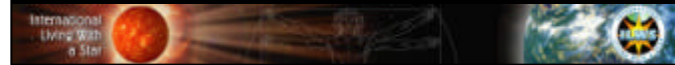
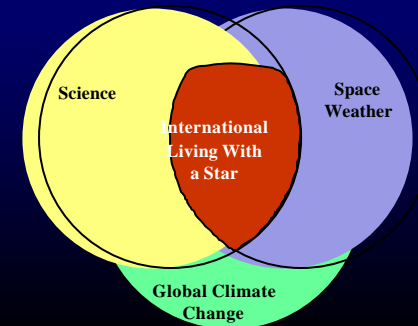


Charter of the ILWS-WG III ILWS-WG Membership

- 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



International Living With A Star



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, 11 ESA M-S, CRL, 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)

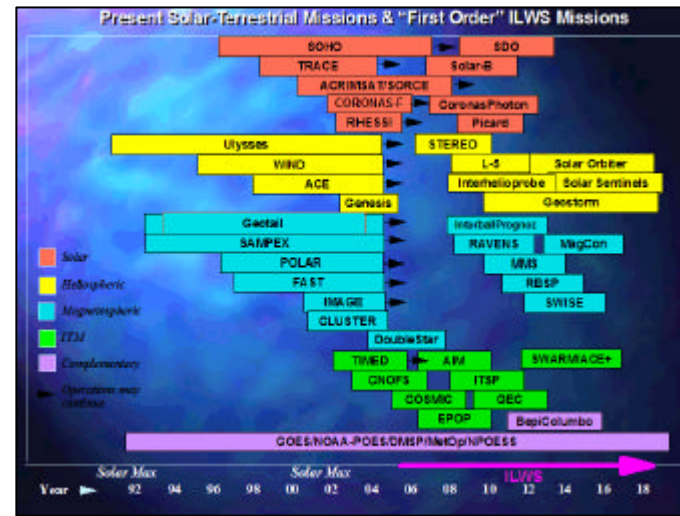
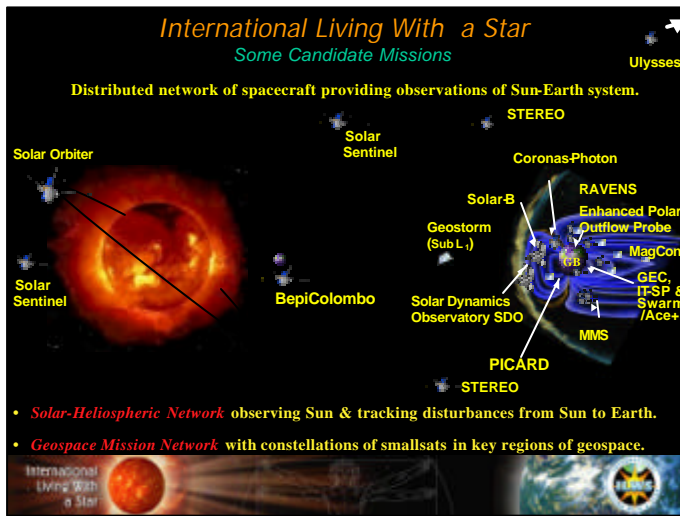


First ILWS Working Group Meeting Nice, April 14-15, 2003 (cont.)

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 (SF/F), SWISE (China), E^{PPP} (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, coordinated and timely agency planning, combined with a community formulation of ILWS strategy, priority and balance
 --> recent European ILWS meeting discussed a European Priority

International Living With a Star

European ILWS Strategy in an Overview

	Major ESA Support or ESA-led	Modest ESA Support	Strong ESA endorsement
1 Sun and Solar Wind Energy Source	Spho & Ulysses ext. Solar Orbiter BC-MMO Solar-Sent.	Stereo ground. stat. Solar-B grnd. stat.	LI mission(s) Proba-2
2a Ionosphere - Thermosphere Energy deposition	Swarm - Ace+ (IT)	To be identified	Compass Demeter Ravens
2b Magnetosphere Energy conversion	Cluster / Double Star extension → Themis M ³ development	NLM's candidates tbi	Frisbee Heracles Aur. Quartet, etc.
3 Sun and Climate End-to-End Observat.	-	TSI MoO SDO/C-Ph Picard & Earthshine	-
4 Data Exploitation Analysis & Models	Cluster Active Archive	SDO DB or EN-SVO Stereo/Solar-B GrStat	Model and theory Space Weather & GB

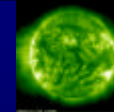
esa SCIENCE

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



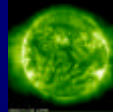
Conclusions



- 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



Chair, ILWS Steering Committee
Hermann J. Opgenoorth, ESA

e-mail: hermann.opgenoorth@rssd.esa.int

Chair, ILWS Working Group

Designated by agency hosting WG meeting:

in Nice 2003: J. Y. Prado, CNES

e-mail: Jean-Yves.Prado@cnec.fr

Next WG meeting in Canada

ILWS Executive Secretary

David Sibbeck, NASA

e-mail: dsibbeck@hq.nasa.gov

