

ILWS @ BELGIUM

David Berghmans
Royal Observatory of Belgium

ILWS working group meeting
Bremen-DLR 16-17 july 2010



ORB
Royal Observatory
of Belgium



BISA
Belgian Institute for
Space Aeronomy



BRMI
Belgian Royal
Meteorological Institute



CPA
Center for
Plasma Astrophysics
Leuven University



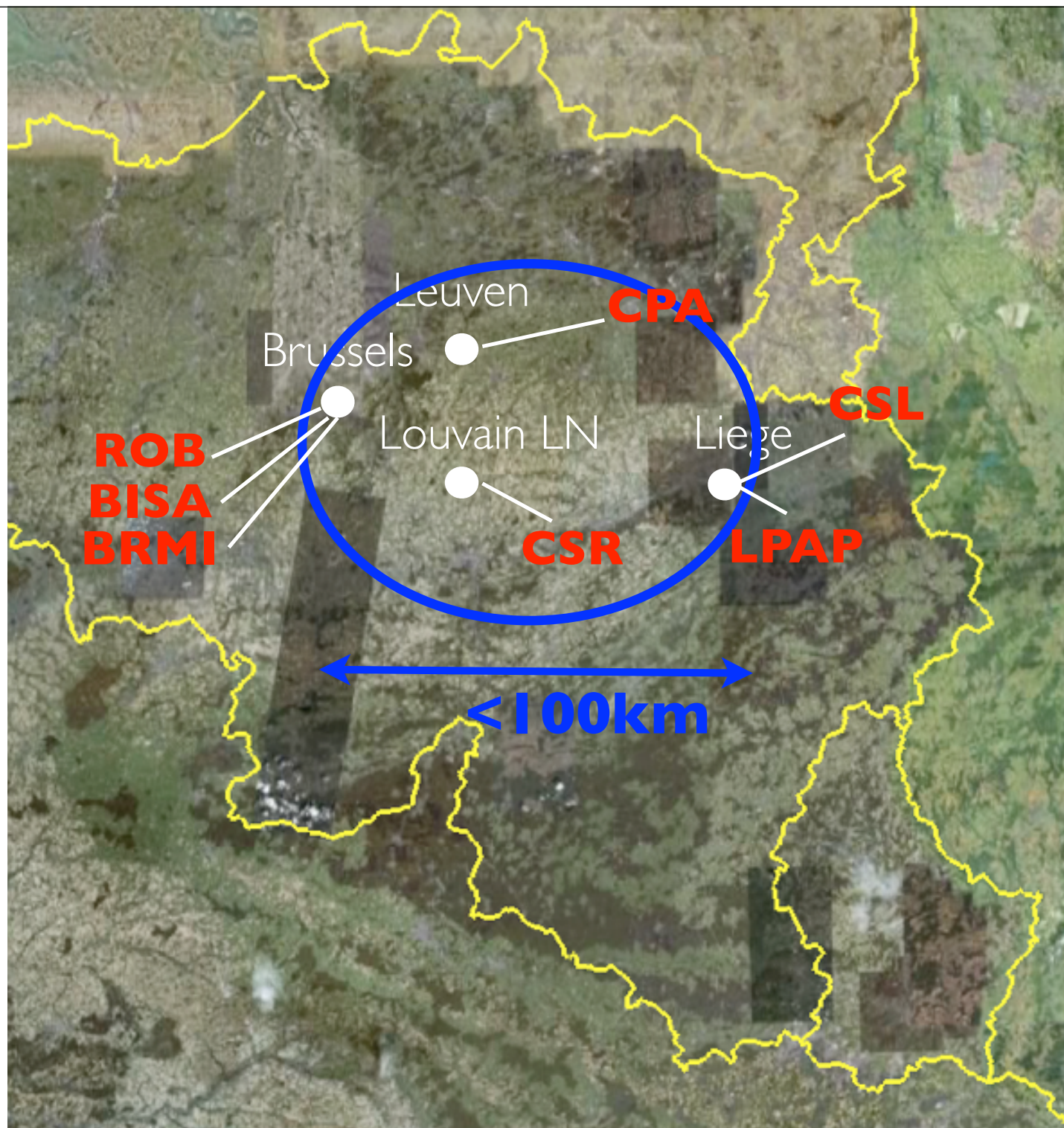
CSR
Center for Space Rad.
Louvain LN University



CSL
Centre Spatial de Liege
Liege University



LPAP
Lab for Planetary and
Atmospheric Physics
Liege University





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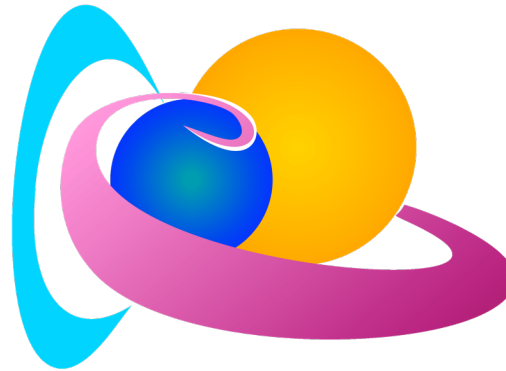
BISA

Belgian Institute for
Space Aeronomy



BRMI

Belgian Royal
Meteorological Institute



STCE

Solar Terrestrial Center of Excellence



CPA

Center for
Plasma Astrophysics
Leuven University



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Selected Highlights

- Solar Orbiter 2017-...
- PROBA3 2014
- Exascience Lab start last June
- PICARD launched June 15
- SDO launched Feb 11
- PROBA2 launched Nov 2 2009
- Ground instruments & networks for ever since

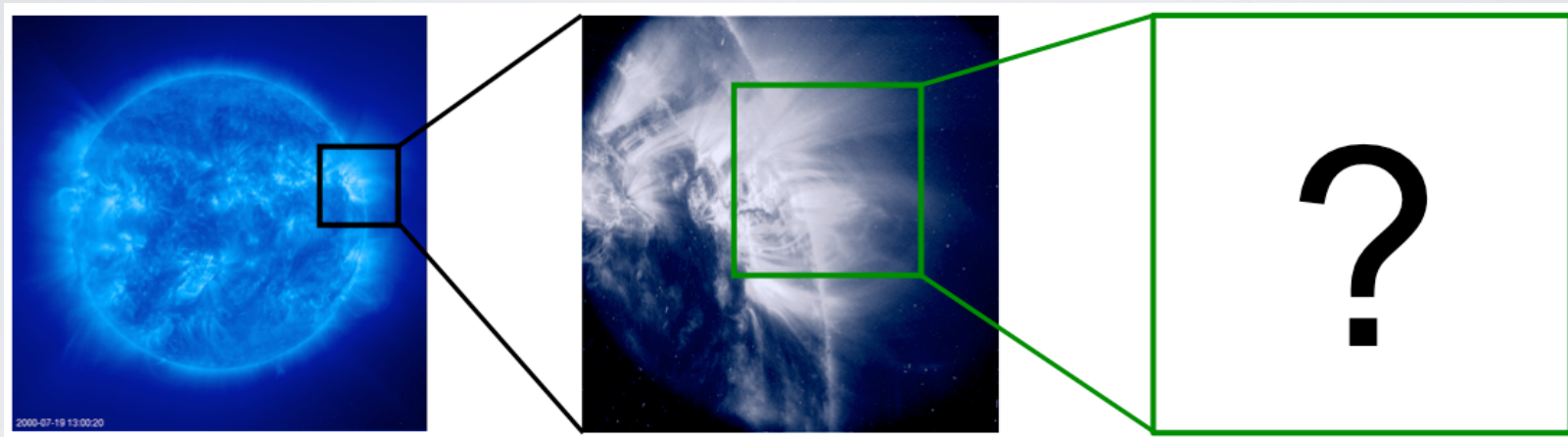


EUI ON SOLAR ORBITER

EIT

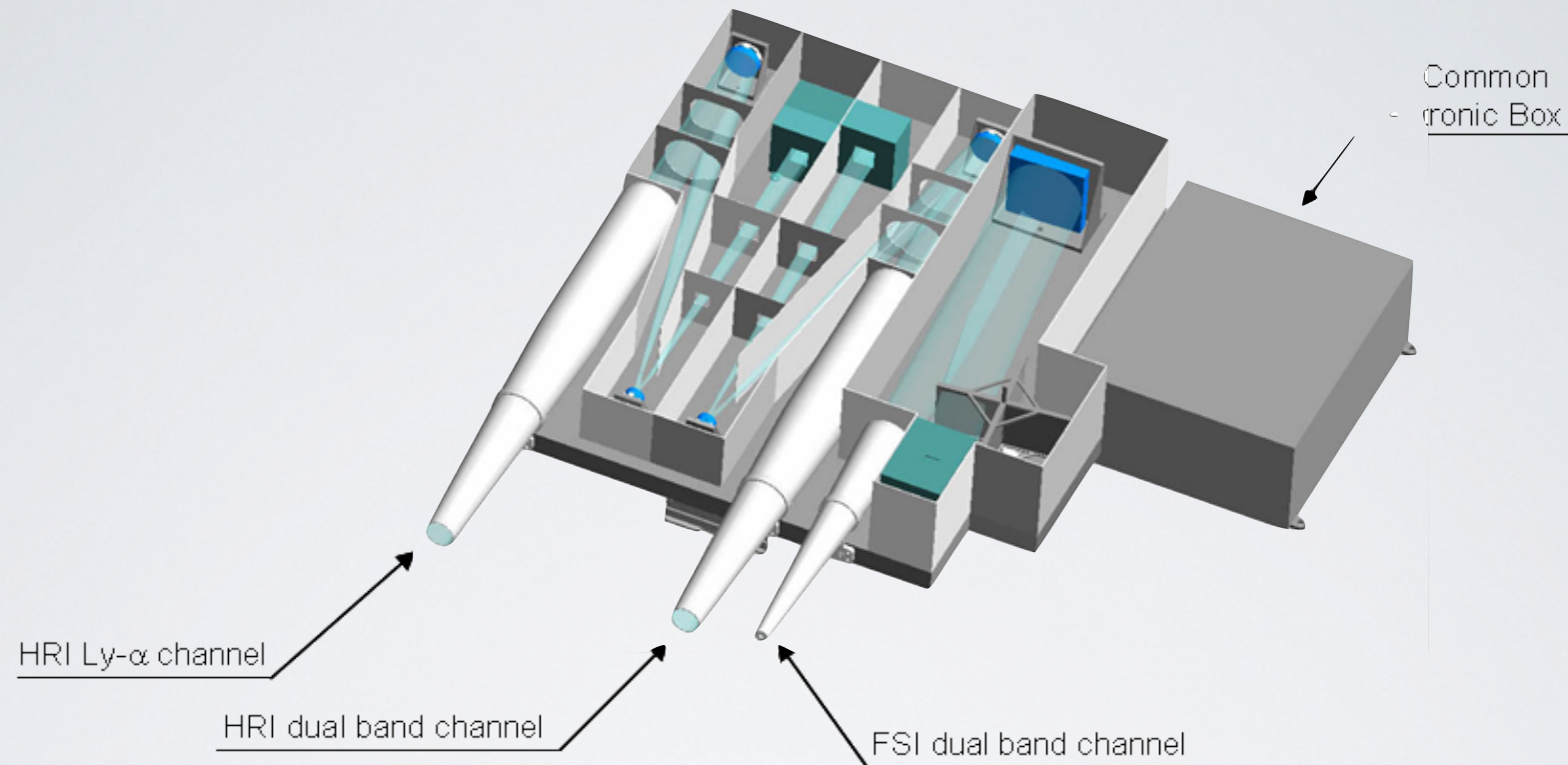
TRACE

EUI





EUI ON SOLAR ORBITER



CSL - Centre Spatial de Liège

IAS - Institut d'Astrophysique Spatiale

IO - Institut d'Optique

MPS - Max Planck Institute for Solar System Research

MSSL - Mullard Space Science Laboratory

ROB - Royal Observatory of Belgium

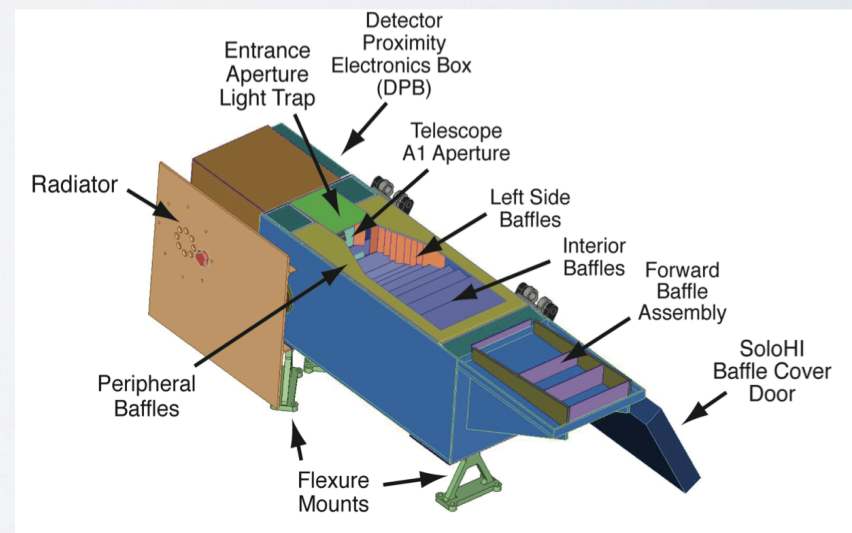
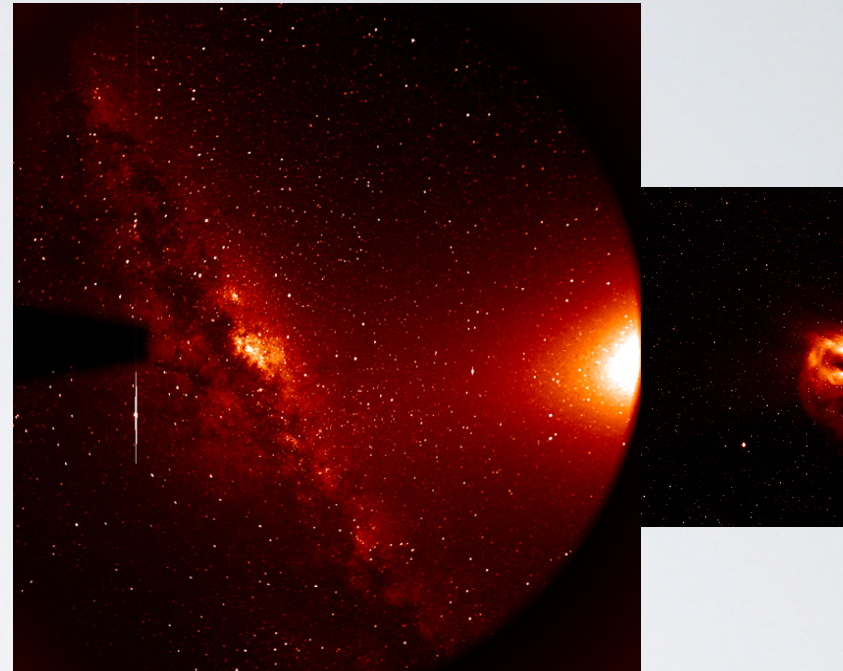
PI: Pierre Rochus

HI ON SOLAR ORBITER

PI: R. Howard (NRL)

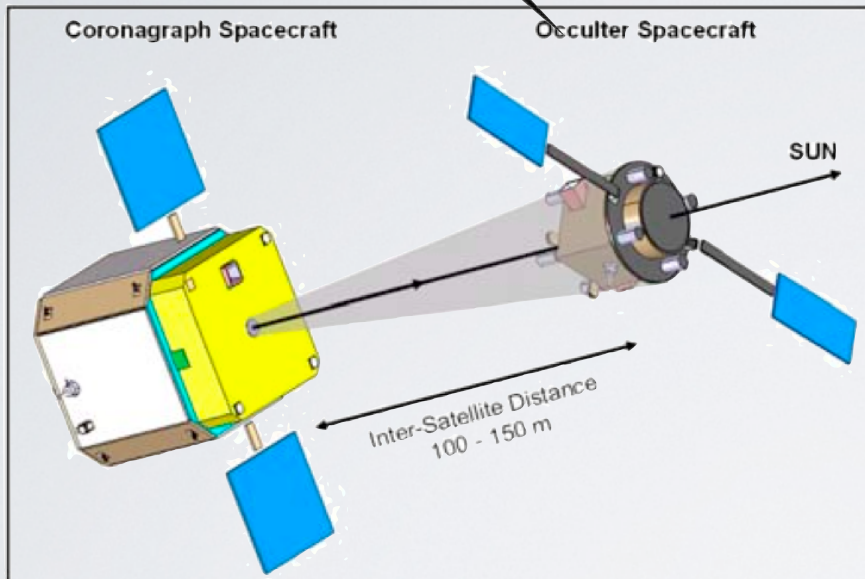
Belgium involvement

- CSL participation (JP Halain) to instrument design and test (with NRL)
- Science return by BIRA (Vivianne Pierrard)



ASPIICS ONBOARD PROBA3

Formation Flying Coronagraph



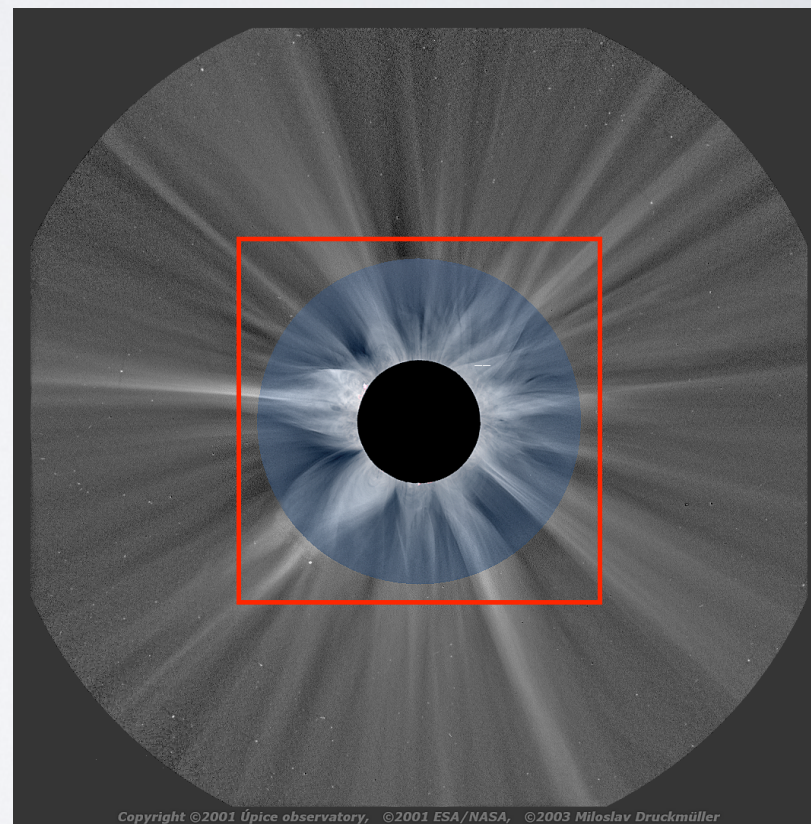
Team:

PI: Philippe Lamy (LAM, France)

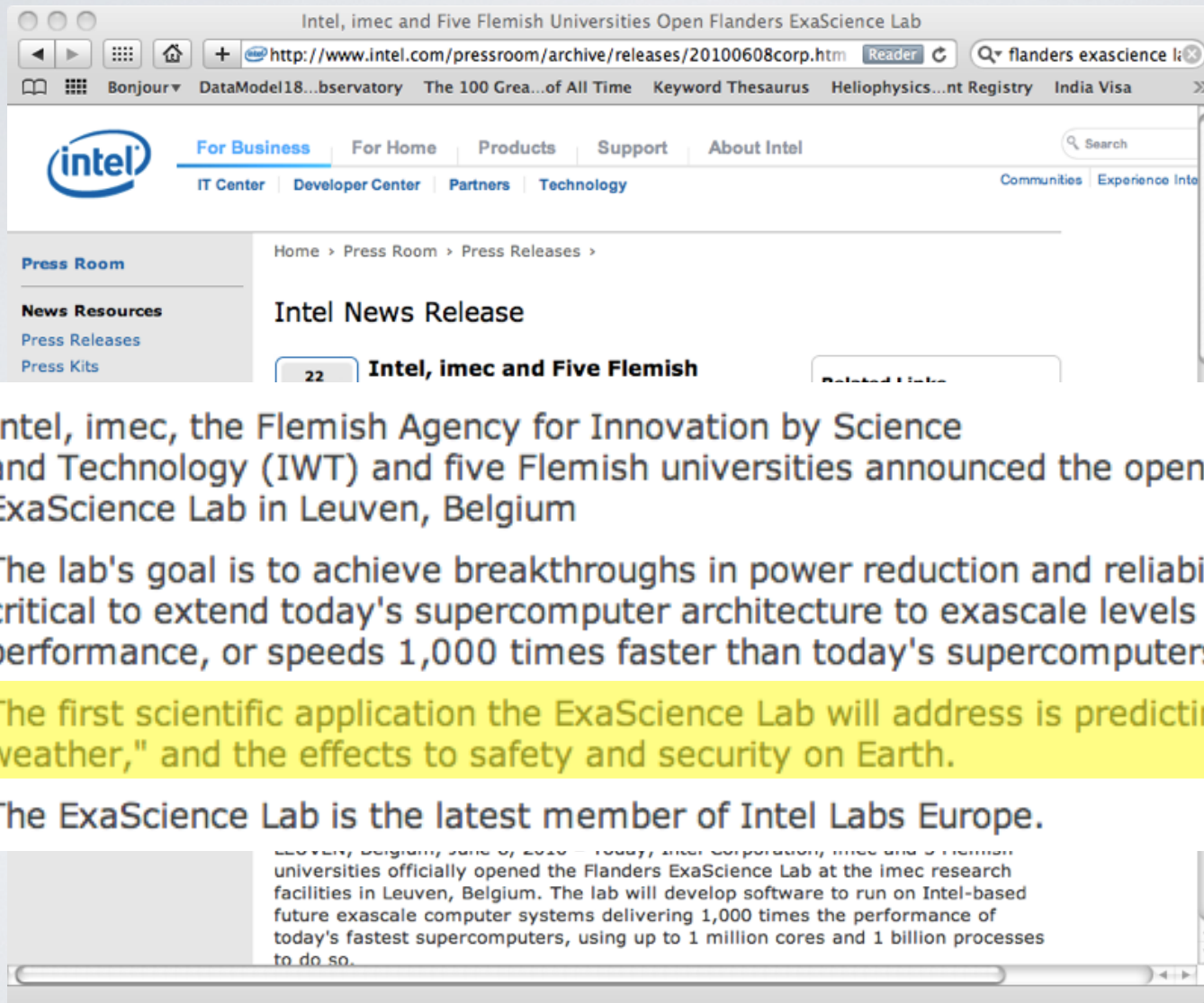
ROB Science Management (Andrei Zhukov)

CSL technical support (JM Defise, P Rochus, Y. Stockmans)

- ASPIICS (Association de Satellites Pour l'Imagerie et l'Interférométrie de la Couronne Solaire) is the solar space coronagraph onboard PROBA-3 (formation flying demonstration mission).
- ASPIICS consists of two satellites. One carries the coronagraph optical assembly, the other one serves as the coronagraph occulter.
- ASPIICS will provide us with images of the inner corona (1.04 – 3 solar radii) in several modes:
 - white-light photometry and polarimetry;
 - in the Fe XIV and He I D3 emission lines;
 - two-dimensional spectrophotometry of the Fe XIV line.



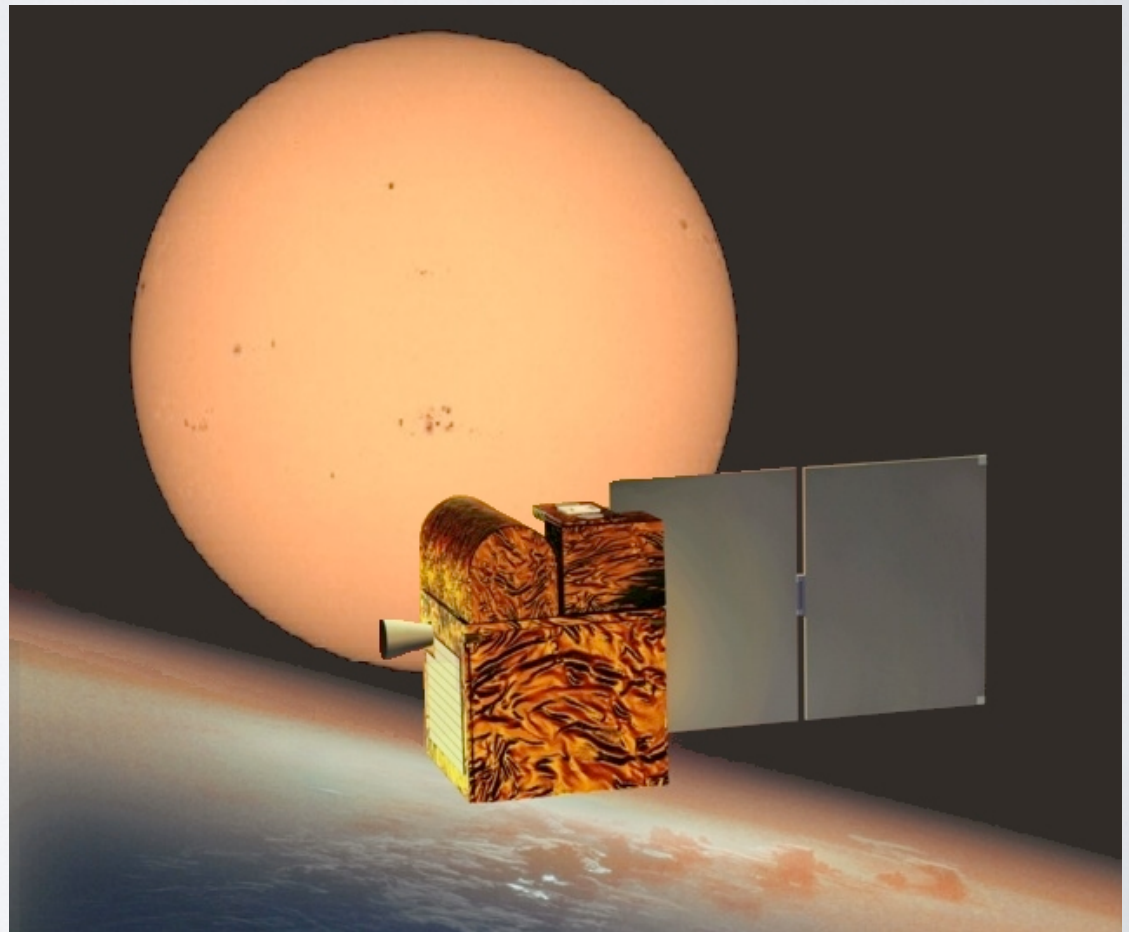
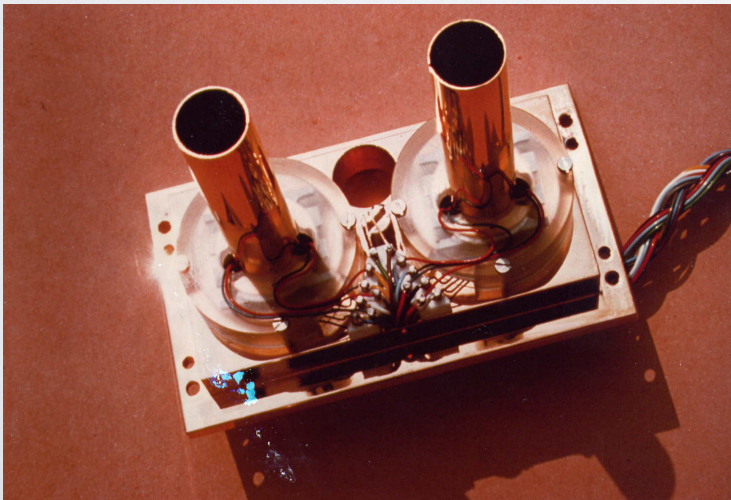
FLANDERS EXASCIENCE LAB



Inspirator: Prof. Stefaan Poedts (KULeuven/CPA)

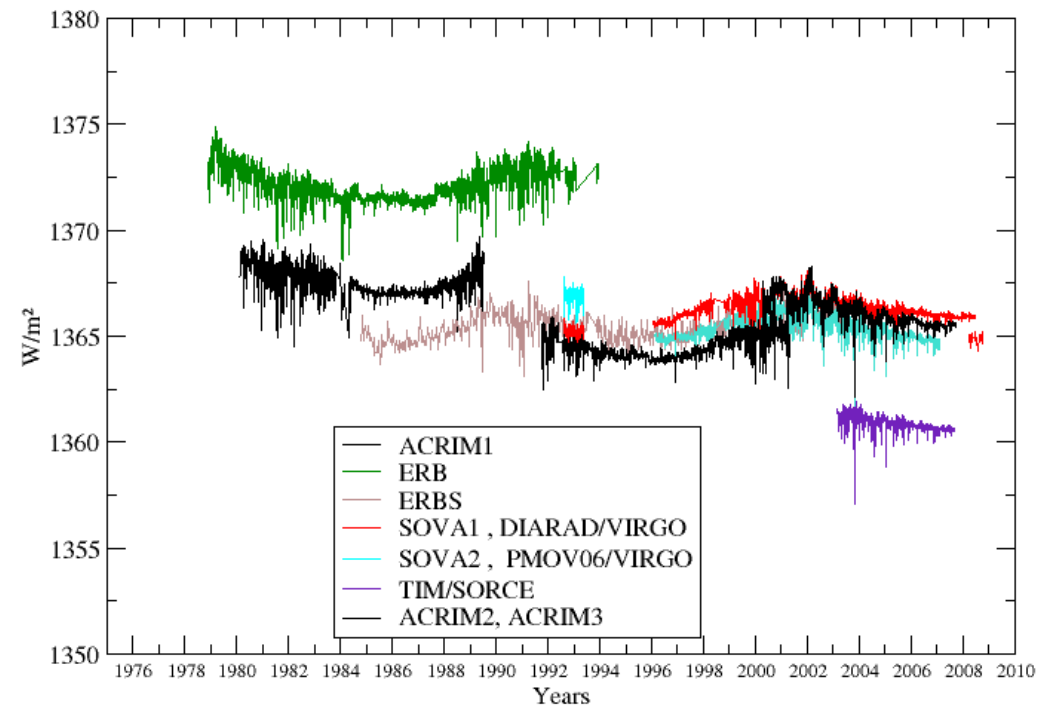
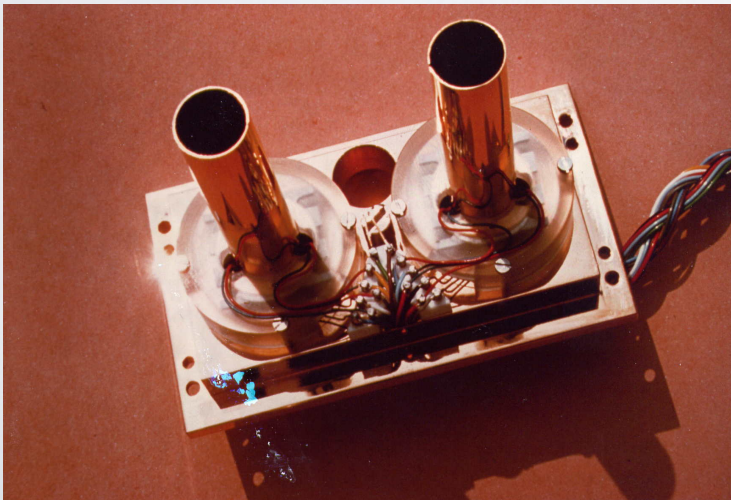
PICARD

- BISA/B.USOC Scientific mission center
(Didier Moureau)
- SOVAP (Steven Dewitte)

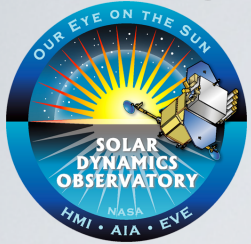


PICARD

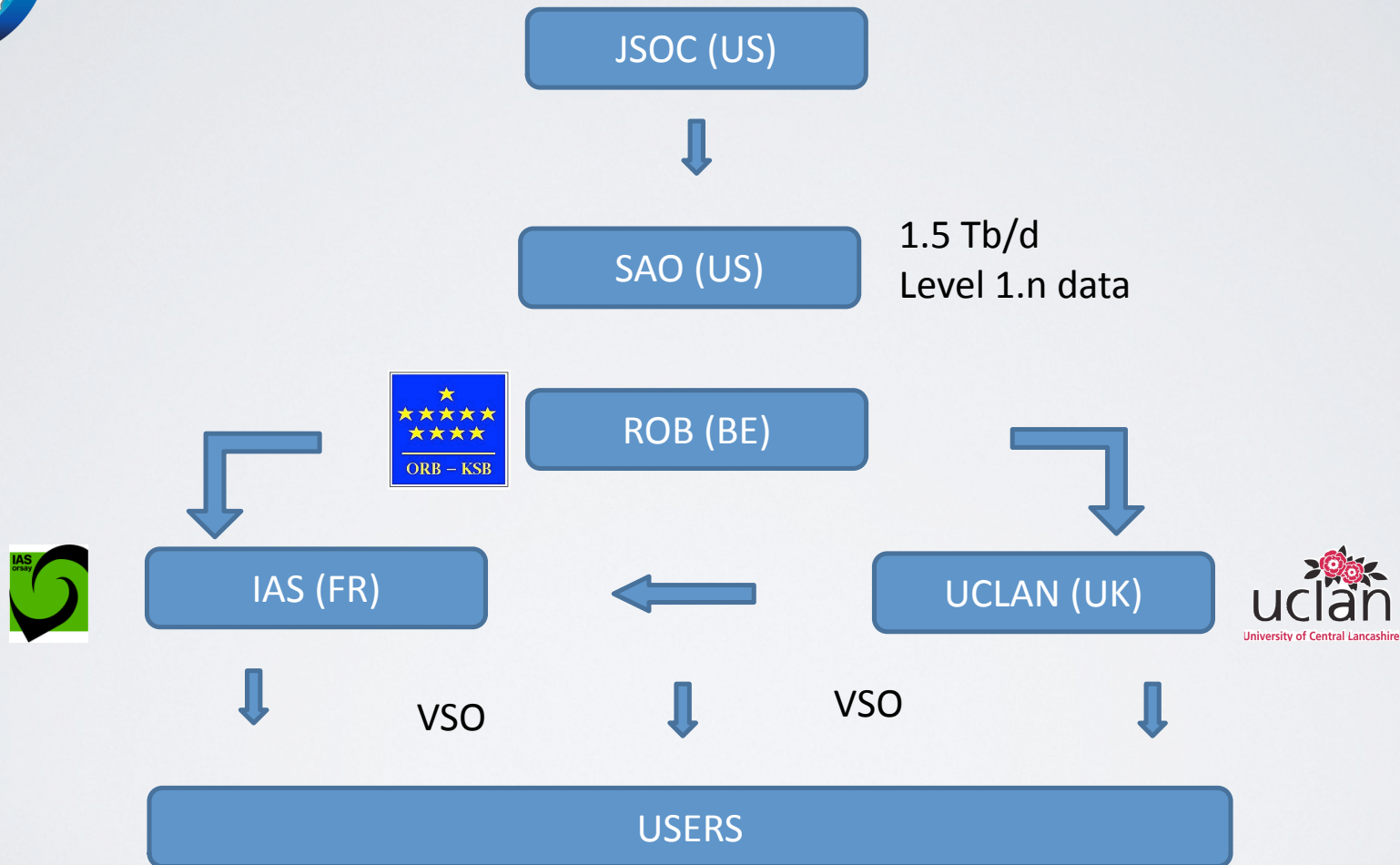
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SDO DATA DISTRIBUTION



Lead: Veronique Delouille (ROB)



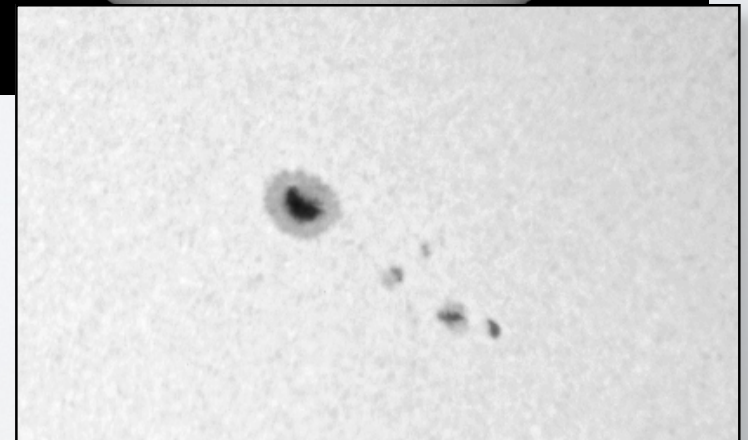
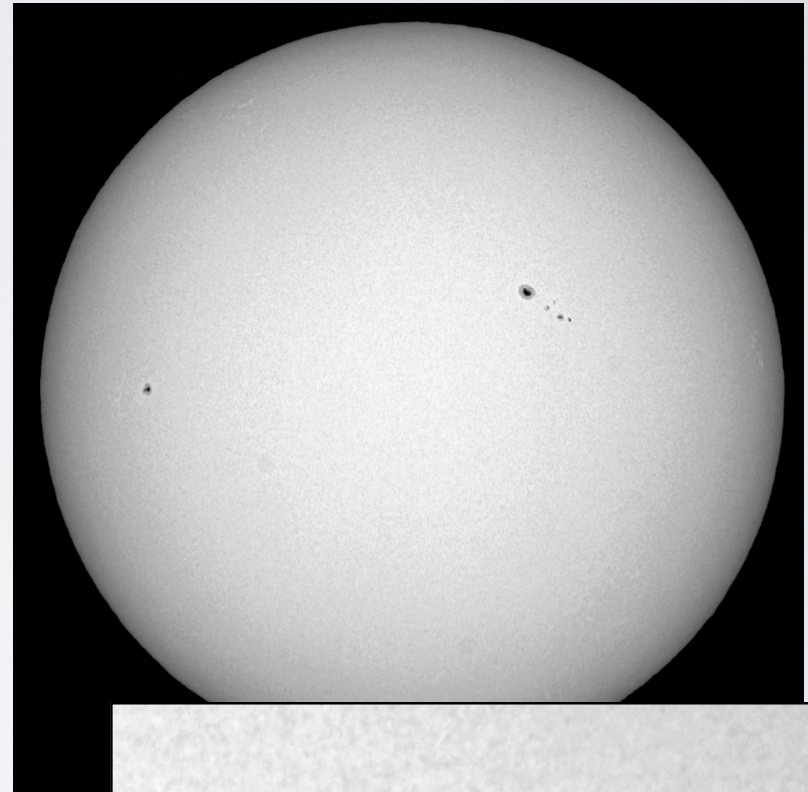
GROUND BASED SOLAR TELESCOPES



PI: Frederic
Clette

3 refracting telescopes (80 to 150 mm aperture)

- visual telescope: sunspot drawings
- white light CCD imaging
- H α CCD imaging
- CAII-K telescope (2011)





SOTERIA

Solar-Terrestrial Investigations and Archives

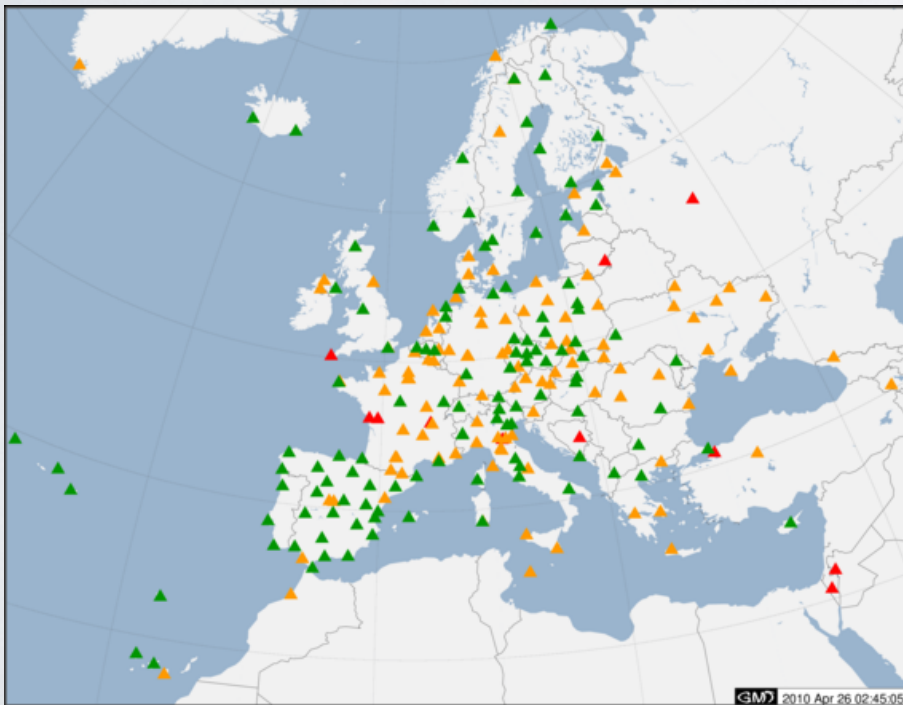
- 16 institutes and observatories
- Lead: KU Leuven/CPA , PI = G. Lapenta
- EU funding (Framework 7) for 3 years, 5 MEuro, kick-off Nov 2009
- make ground- and space- based data for space weather mutually available through **‘VSO’-like network**

Participant short name	Participant organisation name	Country
KU Leuven	Katholieke Universiteit Leuven	Belgium
UNIGRAZ	Universitaet Graz	Austria
PMOD-WRC	Schweizerisches Forschungsinstitut für Hochgebirgsklima und Medizin in Davos	Switzerland
KO	Konkoly Observatory	Hungary
CNRS	Centre National de la Recherche Scientifique	France
ROB	Koninklijke Sterrenwacht van Belgie	Belgium
OBSPARIS	Observatoire de Paris	France
SRC-PAS	Space Research Centre, Polish Academy of Sciences	Poland
MTA-KFKI-RMKI	MTA-KFKI-RMKI Research Institute for Particle and Nuclear Physics	Hungary
DTU	Technical University of Denmark	Denmark
UOulu	University of Oulu	Finland
UGOE	Georg-August-Universität Göttingen Stiftung Öffentlichen Rechts	Germany
HVAR	Hvar Observatory, Faculty of Geodesy, University of Zagreb	Croatia
NOVELTIS	Noveltis Sas	France
FIAN	P.N. Lebedev Physical Institute	Russia
IEEA	Informatique Electromagnetisme Electronique	France

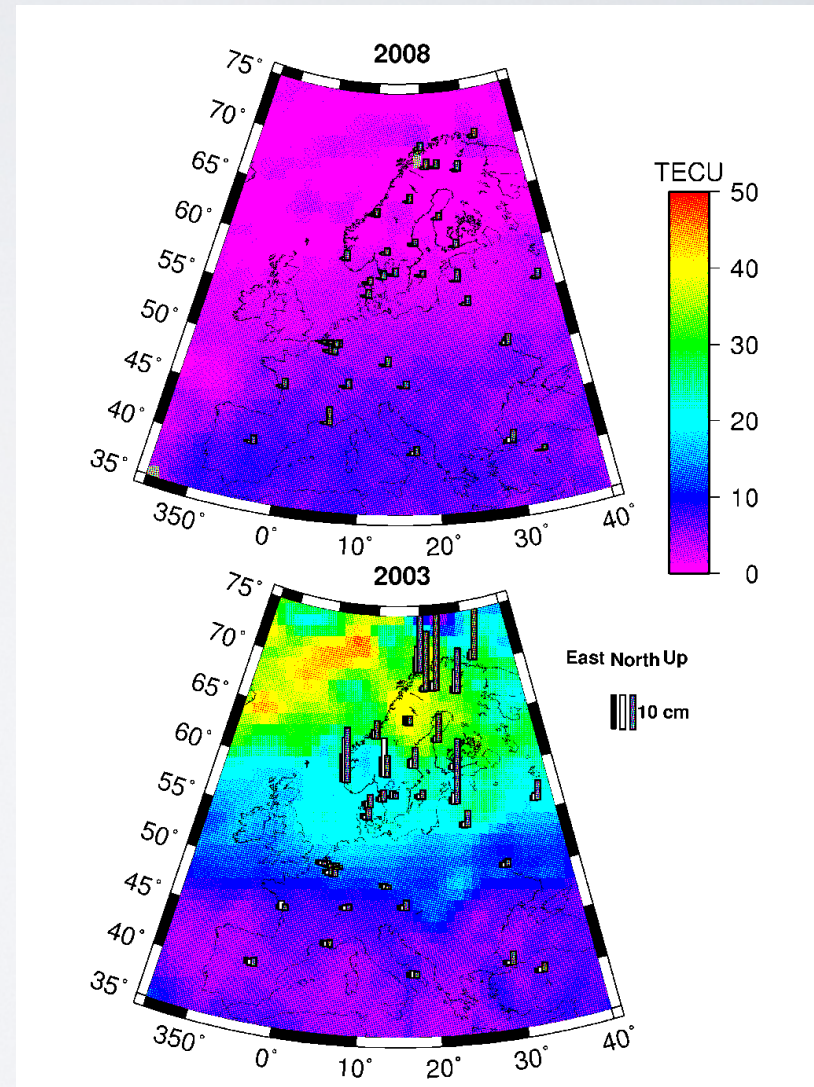
ROB GNSS TEAM

V. Dehant, P. Defraigne, N. Bergerot (<http://www.gnss.be>)

EUREF Permanent Network (EPN)



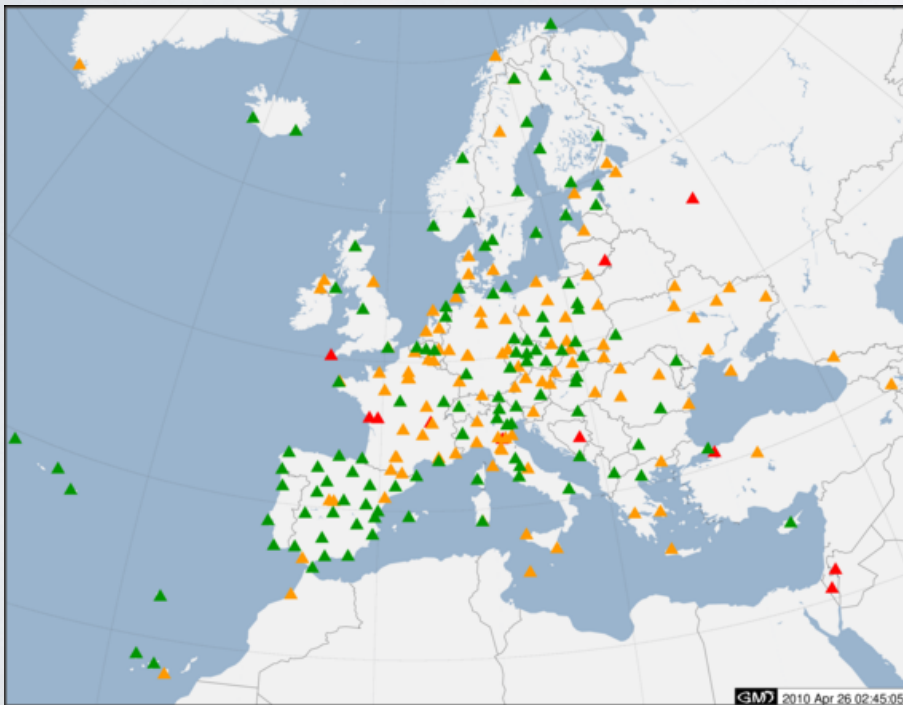
+ national networks



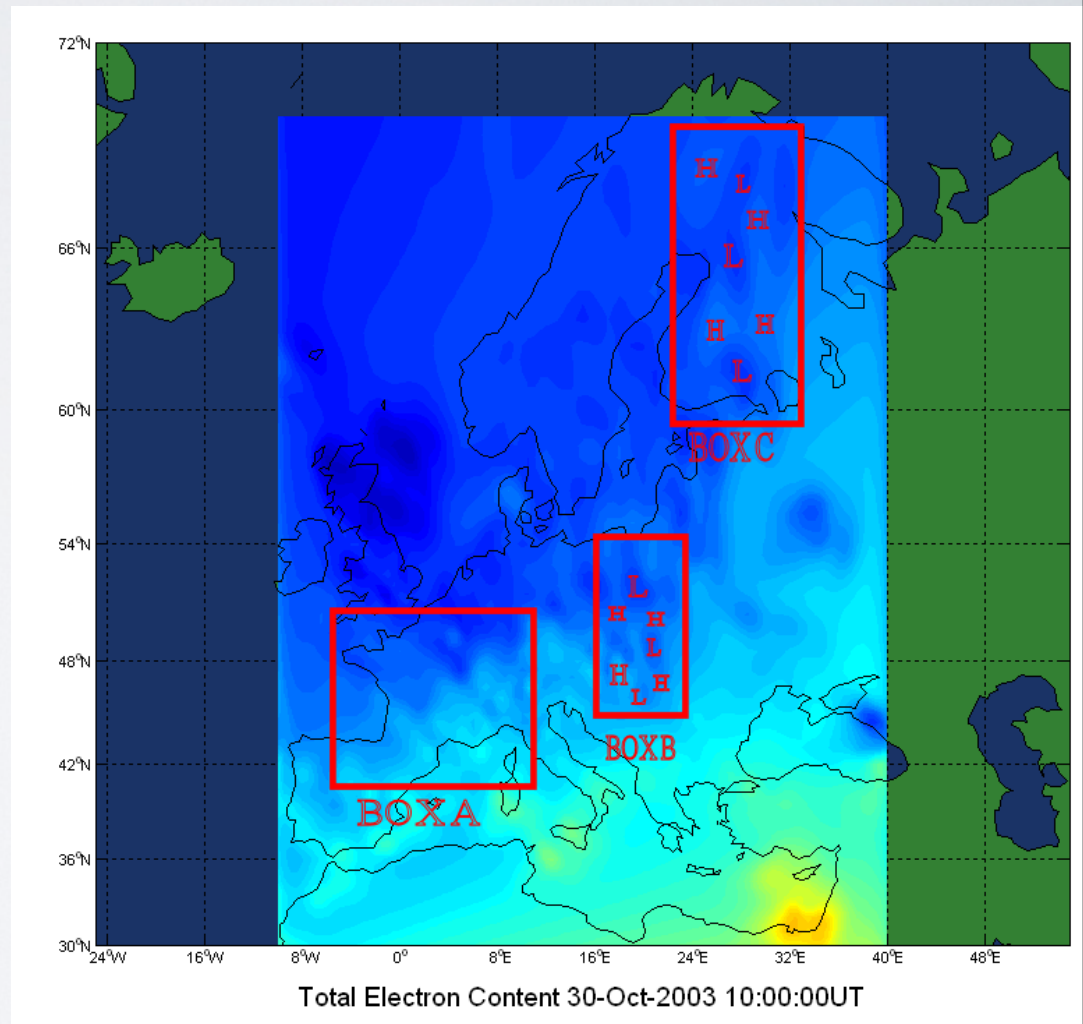
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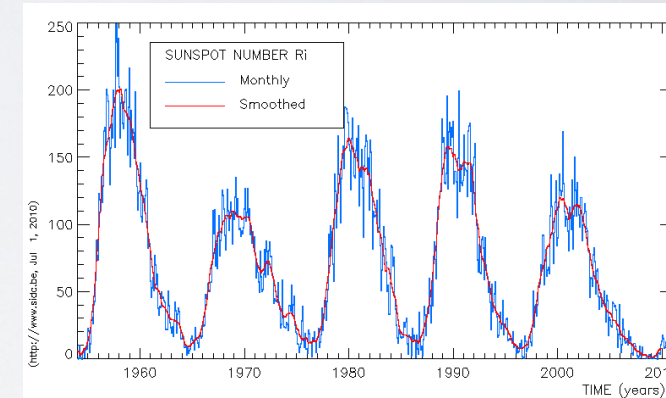
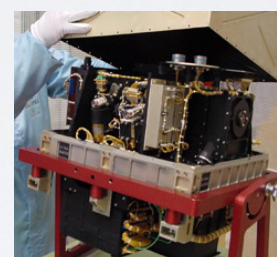
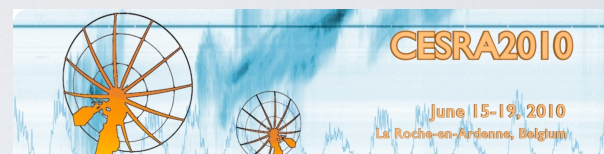
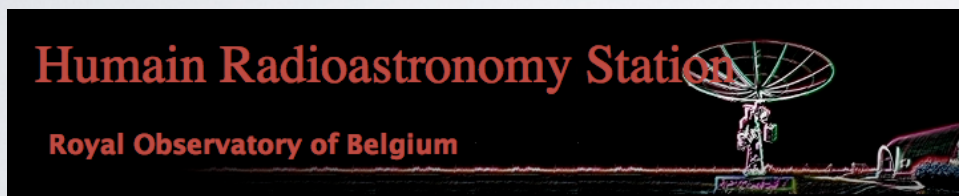
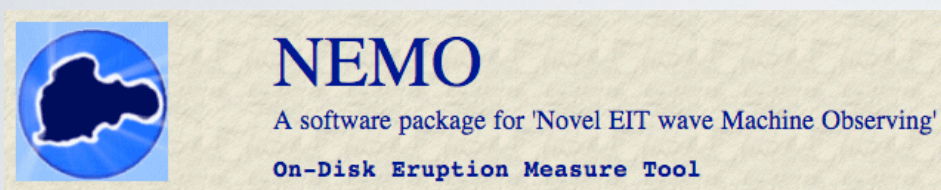
SPACE WEATHER OPERATIONS

- ISES: International Space Environment Service
- ESA SSA: Space Situational Awareness
- European space weather week (COST, ESA)
(Nov 2006,2007,2008: Brussels // Nov 2009, 2010: Bruges)



Seventh European Space Weather Week

15-19 November, 2010 - Brugge, Belgium



Kuafu-A