

ILWS Related Activities in Germany (Update)

Bremen, July 16 -17, 2010



Overview

- Update is based on previous ILWS Presentations

- Focus on recent developments and achievements
 - SOL-ACES
 - Sunrise
 - Solar Orbiter

- List of further German contributions to Missions on Solar Research



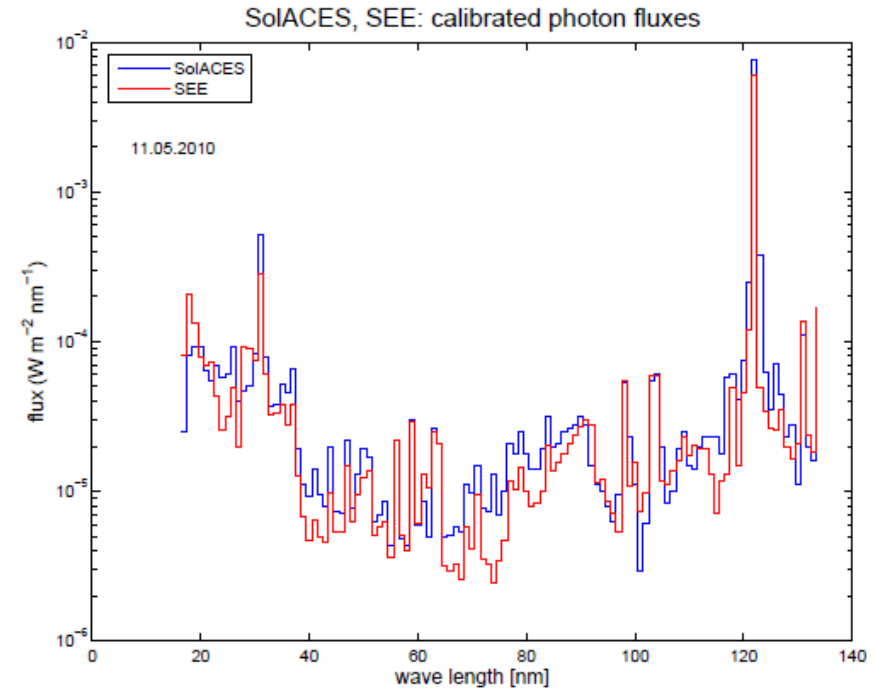
SolACES: Current Status

- **SolACES** successfully obtaining science measurements (UV spectra) since 2008
- **Restriction: failure of longwave channel (> 135 nm);** gap between residual range (17...135 nm) and SOLSPEC (180...3000 nm) closed with TIMED/SEE data
- **SolACES data reduction** chain established
- **SOLAR mission extension** confirmed until end 2013

SOLAR with SolACES on the Columbus external platform (© NASA)



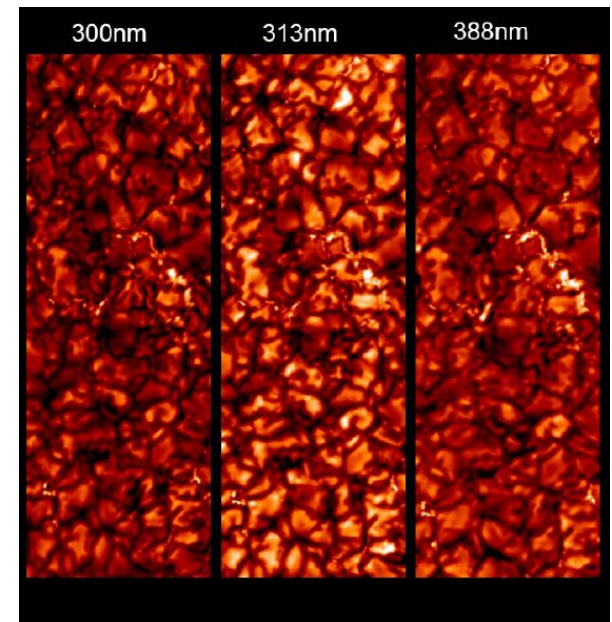
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Comparison of SolACES with TIMED/SEE observations

Sunrise – results

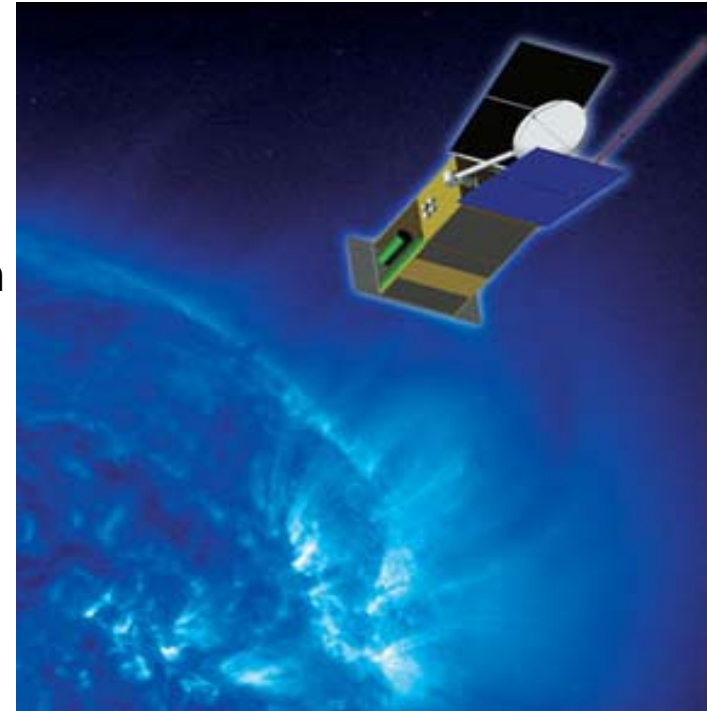
- Preparation of technology for Solar Orbiter high-precision polarimetric measurements, extreme stability, handling of thermal input from the Sun
- Unique science objective: magneto-convection
- Launch in Esrange (Sweden) on June 9, 2009
- Landing near Resolute Bay (Canada) after 5,5 days of successful balloon flight
- Data and equipment were safely recovered
- Data quality is excellent and some exciting results are already found
- The Sun was extremely quiet therefore no information on solar activity



Reconstructed pictures of the UV-Imager SUFI
(© MPS)

Solar Orbiter

- Objectives: Observation of the Sun from the photosphere to the solar wind
- Launch scheduled for January 2017
- Operations till mid 2024 (incl. transfer)
- As close to the Sun as 0,28 AU, up to 35 ° inclination
- Payload suite consisting of 10 remote-sensing and in-situ-instruments
- Selected German Instrumentation:
 - Polarimetric and Helioseismic Imager (PHI, MPS)
 - parts of Energetic Particle Detector (EPD, Univ. Kiel)
 - parts of EUV-Imager, EUV-Spectrometer, Coronagraph (EUI, SPICE, METIS ; all MPS)
 - parts of Spectrometer Telescope Imaging X-rays (STIX, AIP)



(© ESA)



Further German contributions to Solar Missions

- On-Going participation to missions in Orbit
 - SOHO (several instruments)
 - Cluster (several instruments)
 - STEREO (instrument parts)
 - SDO (local data center)
 - Themis/Artemis (magnetometers)

- Instrument development and mission preparation
 - BepiColombo (magnetometer)

- In the planning phase
 - Proposals for instrument parts of Solar Probe Plus