Werner K. Schmutz
Director PMOD/WRC
Davos, Switzerland
representing
Swiss Space Office, Department of Home Affairs

ILWS meeting Vienna April 24., 2005

PMOD / WRC

Solar Irradiance measurements

present:

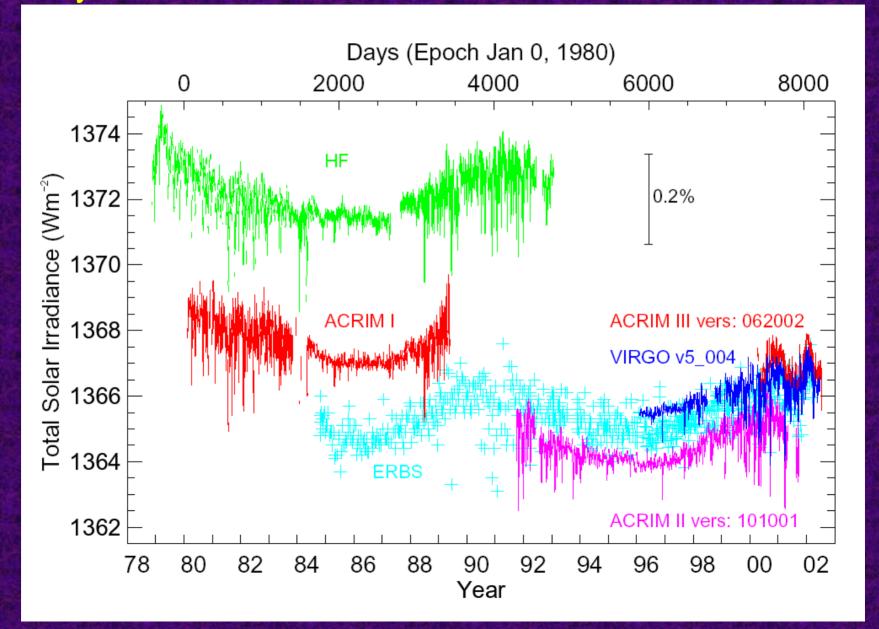
TSI & spectral irradiance in selected optical/near-IR wavelength bands:

VIRGO on SoHO (since 1996)
ACRIM III on ACRIM-sat (since 2000)
TIM on SORCE (since 2003)
ERBE on ERBS (since 1984)

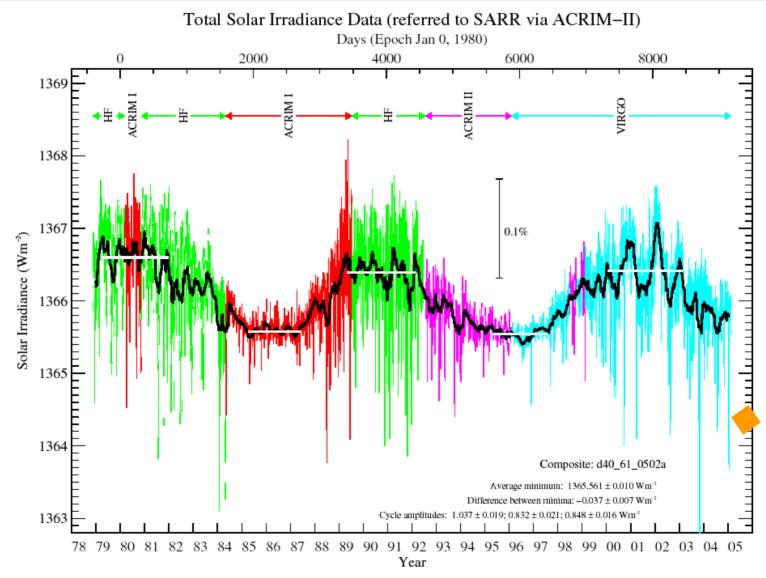
future:

TSI:
 SOVIM (CH/B experiment on ISS 2006)
 PREMOS-TSI (CH experiment on PICARD 2008)
 SOVAP (B experiment on PICARD 2008)

Absolutely calibrated TSI measurements



PMOD composite of the Total Solar Irradiance



from: C. Fröhlich, Space Science Reviews, 94, pp.15-24, 2000, with composite (vers d40_61_0502a), ACRIM-II/III (vers II:101001) and VIRGO 6_001_0502a data (Mar 19, 2005)

present:

TSI & spectral irradiance in selected optical/near-IR wavelength bands:

VIRGO on SoHO (since 1996)

future:

PMOD / WRC

UV irradiance:

LYRA (B/CH contribution to PROBA2 2006/7-2008)
PREMOS (CH experiment on PICARD 2008-2010)

TSI:

SOVIM (CH/B experiment on ISS 2006-2007)
PREMOS-TSI (CH experiment on PICARD 2008)
SOVAP (B experiment on PICARD 2008)

TSI observations between 2006 and 2012

ACRIM III 2000 - ?

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VIRGO/SOHO 1996 - 2007 - ?

TIM/SORCE 2003 - 2008 (?)

SOVIM/ISS 2006 - 07 - ?

PREMOS-TSI/PICARD 2008 - 2010

(SDO 2008-2012 has no TSI instrument)

NPOESS 2011
National Polar Orbiting Operational Environmental Satellit

National Polar Orbiting Operational Environmental Satellite System may have TSI instrument – but are planned to start not earlier than 2009 (?), more likely as late as 2011 or 2012

TSI observations between 2006 and 2012

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2008 (?)

SOVIM/ISS 2006 - 07 - ?

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(SDO 2008-2012 has no TSI instrument)

NPOESS

PMOD/WR

National Polar Orbiting Operational Environmental System may have TSI instrument – but are plannearlier than 2009 (?), more likely as late as 2011

2011 atellite to start not 2012

Solar Irradiance – outlook

- TSI on Solar Orbiter (2014 ?)
 orbit out of ecliptic allows to address the fundamental question:
 - > Irradiance versus luminosity!

Conclusion

- TSI observations are most likely continues until about 2010
- So far nothing certain beyond 2010
 continued TSI observations are still needed!
 - → future of TSI observations should be planned now