

**PREMOS/PICARD TSI Data Version 2 and New TSI Absolute Value from First-Light of CLARA/NorSat-1**

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PREMOS was a PMOD/WRC experiment on the French PICARD mission, which measured Total Solar Irradiance and spectral irradiance in three selected wavelength bands. Here we discuss the PREMOS TSI measurements, which cover almost 4 years. In Ball et al. (J. Space Weather Space Clim., 6, A32, 2016) we evaluated the stability of the PREMOS measurements between October 2011 and February 2014 to be  $0.02 \text{ W/m}^2$  over 2.3 years, or 6 ppm per year. This makes the PREMOS measurement accurate enough to assess the diverging trends of the TIM/SORCE and VIRGO/SOHO data series over the PREMOS time period, which is of special interest as TIM had an operational gap at the end of this period. We concluded that the PREMOS data support TIM to have a better stability than VIRGO. For that assessment, we used ratios of ratios of head A to head B, which limited the evaluation to the above mentioned 2.3 years. The new PREMOS data version presented here relies on comparison to measurements by three other instruments operational at the beginning of the PREMOS time, i.e. in July and September 2010, to derive a refined sensitivity change of the PREMOS cavities as a function of exposure time. With an improved sensitivity correction, the PREMOS data can now be compared to other data series over the full PREMOS 3.7 years period from July 2010 to March 2014.

The Compact Lightweight Absolute Radiometer (CLARA) is an absolute radiometer built by PMOD/WRC, which has been launched on July 14, 2017 as payload on the Norwegian micro satellite NORSAT-1. CLARA was end-to-end calibrated against the SI traceable cryogenic radiometer of the TSI Radiometer Facility (TRF) in Boulder (Colorado). The measurement uncertainties for the three SI-traceable TSI detectors are 567, 576, and 912 ppm (Walter et al., Metrologia 54, 674, 2017), for heads A to C respectively. From first light on August 25, 2017 we derive a new absolute value of the Total Solar Irradiance and compare it to the values measured by VIRGO/SOHO and TIM/SORCE.