Geophysical Research Abstracts
Vol. 16, EGU2014-1242, 2014
EGU General Assembly 2014
© Author(s) 2013. CC Attribution 3.0 License.

Full solar rotations observed by the SOLAR payload on the ISS.

Christian Muller and the B.USOC SOLAR Team
B.USOC, Brussels, Belgium (christian.muller@busoc.be)

Since March 2008, an optical package measuring the sun spectral irradiance operates in space from the ESA COLUMBUS module of the International Space Station. Three instruments compose this package: a total solar irradiance instrument SOVIM, a UV-visible-infrared spectrometer: SOLSPEC and a far UV instrument: SOL-ACES. SOVIM stopped operations due to an electrical problem six months after launch but the two other instruments are still operating and ESA plans on supporting them until 2017. However, the life of the ISS has now been officially extended to 2020 and if the instruments stay in the current condition, a further extension would be possible.
Due to the specificities of the ISS and mechanical limitation of the SOLAR moving platform, continuous operations are not possible and are made in intervals guaranteeing both solar visibility and minimum of contamination. This excludes arrivals of vehicles at the ISS and manoeuvres using chemical propulsion.
In December 2012 and June 2013, NASA and the ISS partners approved a specific attitude, called the “SOLAR Attitude”, allowing the bridging of two solar viewing opportunities and thus providing quasi-continuous observations during a full solar rotation. This process was repeated in December 2013 but the instruments had to be shut down after 25 days due to a temporary power reduction in the ISS. Normal operations are planned to resume in 2014 and would allow again the space agencies to approve new solar attitudes at the solstices.
The completed operations and results already reviewed by the science teams will be presented with a special emphasis on the abnormal minimum of cycle 23. The continuation of these bridging operations and their meaning for space climate studies will also be discussed.