

**Photometric Sunspot Index 1875 to Present, an Update**

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Data sets of sunspot areas and position from the Royal Greenwich Observatory (RGO) from 1874--1976, the NOAA-SEL network (including observations from USAF) from 1976--1981 and the Solar Optical Observing Network (SOON) from 1981-present can be used to calculate the Photometric Sunspot Index (PSI) which represents the sunspot influence on total solar irradiance (TSI). There is a systematic difference of about 40% between the RGO and the NOAA-SEL/SOON data records which needs to be removed. In order to provide more details about these differences the hemispheric and disk areas of the SOON record are compared to those determined by MDI/SOHO, HMI/SDO and the data series from the Debrecen Observatory. These comparison provide detailed information of the corrections needed for the SOON data and confirm the main reason for the difference between the RGO and SOON records - the lack of small spots in the latter. This effect is further amplified by the size dependent contrast of the sunspots. As a side product PSI can be used to determine the times of solar activity minima by comparing the temporal behaviour of the high and low latitude spots which is independent of the minimum values of any activity parameter. Albeit the limitations the almost 150-year-long PSI time series can now be used together with the other components of the proxy model to reconstruct TSI back in time. Moreover, the use of the Debrecen record as a continuation of the RGO will lead to a consistent and reliable record of the sunspot areas and PSI since 1874 which is work in progress.