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Solar observations with the Atacama Large Aperture Submillimeter Telescope (AtLAST)

The **Atacama Large Aperture Submillimeter Telescope (AtLAST)** is a proposed single-dish full-steerable 50m telescope that would be located at 5100m altitude in the Chilean Andes near ALMA. Among a large range of scientific topics, AtLAST would be able to observe the Sun, probing the thermal and magnetic structure of the **solar chromosphere**, chromospheric heating, flares, prominences, the solar activity cycle, and much more. A truly novel observational aspect would be a fast-scanning mode to construct full-disk maps at multiple frequencies, resulting in high-cadence sequences and daily maps, thus covering the large range of relevant timescales with the same instrument, which would provide data complementary to observations at shorter wavelengths with, e.g., the European Solar Telescope (EST). In addition, AtLAST observations of our host star would have direct implications for stars and their impact on exoplanets in general.

Here we summarise the white paper on solar observations with AtLAST and highlight the need for an instrument with a large number of detector elements covering a wide frequency range.

Primary author: Dr WEDEMEYER, Sven (Rosseland Centre for Solar Physics, University of Oslo, Norway)

Co-authors: ATLAST SOLAR/STELLAR SCIENCE WORKING GROUP; KIRKAUNE, Mats (Rosseland Centre for Solar Physics, University of Oslo)

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