

# **Frontier full field spectro-imaging with the SOLARNET 3-telescope interferometric breadboard**

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The SOLARNET breadboard consists in 3 small objectives of diameter 60 mm on a 165 mm baseline. As such, fed by a large siderostat acting as the satellite platform, it mimics the SOLARNET space mission using 3 larger (35 cm) telescopes on a 1 meter equivalent interferometric baseline. Because of its compact design and of an appropriate imaging spectrometer in the focal plane, instantaneous imaging in narrow spectral bands is possible.

The 3-telescopes interferometer design results of an extensive laboratory demonstration program of interferometric imaging of extended objects started 10 years ago. The principles of the interferometric compact recombination of the SOLARNET Space Mission, capable of large field instantaneous spectro-imaging, have been demonstrated in laboratory since 2000. Over the last 5 years, the breadboard was completed with active fine pointing and spectro-imaging capabilities to directly observe the Sun and the breadboard was moved to the "Grand Sidérost de Foucault" at Meudon Observatory. Ultimate refinements in the global three telescopes phase measure, by active spatial filtering centering of the cophasing reference field of view, have recently been implemented to guarantee cophasing even on a moving/changing reference field of view.

Design and concepts will be explicated and the first interferometric images of the Sun obtained at Meudon Observatory with the breadboard will be presented, validating the concept retained for the SOLARNET space mission.