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Spectroscopic measurements from Solar Orbiter Full Disk Mosaic

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One crucial objective of Solar Orbiter is to explore the connection between the solar surface and the heliosphere. Since March 2022, several Solar Orbiter Observing Plans (SOOP) have been run to address this goal, ranging from Connection Mosaic to Slow Solar Wind. None of these SOOPs gave a global view of the Sun. A dedicated SOOP, led by the Extreme Ultraviolet Imager, has been designed to scan the full disk using 25 pointings. Each pointing lasted 5-6 minutes, allowing the Spectral Imaging of the Coronal Environment (SPICE) instrument to use only its wider 30" slit to take images, for assembling into the full disk mosaic.

We decided to add a new flavour optimised for SPICE with each pointing lasting 22 minutes. This allowed us to provide proper monochromatic images of the full disk, using the 6" narrow slit, taken in nine spectral lines formed between 10,000K and 1,000,000K.

This SOOP ran twice at a solar distance of 0.7AU, which added the benefit of joint observations with the coronagraph Metis. This allows a thorough view of the spectroscopic features of the full disk, and the preliminary tracking off limb into the heliosphere.

Here we focus on the SPICE spectroscopic measurements, providing intensity maps for the full Sun using selected transition region and coronal lines, and building up basic composition maps to be traced into the heliosphere. This work is ongoing in preparation for the next run (October 2024), and for the first comprehensive polar view from high latitude foreseen for 2025.

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