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## The STIX Aspect System: instrument design, operations, and first results

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The Spectrometer/Telescope for Imaging X-rays (STIX) on board Solar Orbiter has been acquiring data since April 2020. Because only flaring regions are visible in hard X-rays, no other solar features that are conventionally used for co-alignment (e.g. the solar limb) can be used to assess the pointing. Moreover, thermoelastic deformation of the spacecraft or STIX mechanical structures can change the relative direction of the STIX optical axis in the spacecraft reference frame, so that relying on the spacecraft aspect solution alone does not provide the required accuracy to place STIX images in the context of data acquired at other wavelengths. Therefore, a dedicated optical system, the STIX Aspect System (SAS), was specifically designed to measure the pointing direction of STIX with respect to the Sun. Here we provide a description of the SAS, its limitation, and an overview of the results obtained during the first year of operations. We conclude by showing how the SAS measurements can help improving the pointing stability of Solar Orbiter over the course of the mission.

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