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Solar Orbiter: The Sun up close

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The ESA/NASA Solar Orbiter mission performed its first close solar encounters at 0.32 au in March 2022 and at 0.29 au in October 2022. By combining high-resolution imaging and spectroscopy of the Sun with detailed in-situ measurements of the surrounding heliosphere, Solar Orbiter enables us to study the Sun's corona in unprecedented detail, and determine the linkage between observed solar wind streams and their source regions on the Sun. Its science return will be enhanced significantly by coordinated observations with other space missions, e.g. Parker Solar Probe, as well as new ground-based telescopes like DKIST. Over the course of the 10-year mission, Solar Orbiter's highly elliptical orbit will get progressively more inclined to the ecliptic plane. Thanks to this new perspective, Solar Orbiter will deliver images and comprehensive data of the unexplored Sun's polar regions and the Sun's far side. This talk will provide a status update of the mission and the science operations performed during the first two science perihelia, and summarise early science results.

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