

HI and Mighty: How Heliospheric Imagers from Parker Solar Probe and Solar Orbiter are Improving our Understanding of the Heliosphere

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Since the launch of the Parker Solar Probe in 2018, a new generation of heliospheric imager (HI) instruments located well inside 1 AU has begun. With the Wide Field Imager for Solar Probe (WISPR) onboard Parker Solar Probe, and since 2021, the Solar Orbiter Heliospheric Imager (SoloHI) onboard the Solar Orbiter spacecraft, we now have unprecedented observations of the solar atmosphere. While nearly all remote sensing observations of the corona and heliosphere were taken from 1 AU, the Parker orbit takes it to a closest approach of 0.04 AU and Solar Orbiter will reach 0.28 AU. By viewing from these heights, we can study the important transition from the corona to the solar wind with an unprecedented ability to resolve smaller-scale structure. This talk will provide a basic introduction to these instruments and demonstrate the improvements they offer. Some of the main science highlights unlocked by these images will also be discussed, including those related to the study of coronal mass ejections (CMEs), the solar dust environment, as well as an unexpected ability to view the surface of Venus.