

Title: 'TESTING THE SOLAR PROBE CUP, AN INSTRUMENT DESIGNED TO TOUCH THE SUN'

Solar Probe Plus will be the first, fastest, and closest mission to the sun, providing the first direct sampling of the sub-Alfvénic corona. The Solar Probe Cup (SPC) is a unique re-imagining of the traditional Faraday Cup design and materials for immersion in this high temperature environment. Sending an instrument of this type into a never-seen particle environment requires extensive characterization prior to launch to establish sufficient measurement accuracy and instrument response. To reach this end, a slew of tests for allowing SPC to see ranges of appropriate ions and electrons, as well as a facility that reproduces solar photon spectra and fluxes for this mission. Having already tested the SPC at flight like temperatures with no significant modification of the noise floor, we recently completed a round of particle testing to see if the deviations in Faraday Cup design fundamentally change the operation of the instrument. Results and implications from these tests will be presented, as well as performance comparisons to cousin instruments such as those on the WIND spacecraft.