

SORCE – Important Factors of Concept and Development

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Among other topics this Science Meeting celebrates the many accomplishments of the SORCE Mission since launch in 2003 — scientific discoveries and new insights into the Sun as documented in papers and meeting proceedings. This particular talk will harken all the way back to 1988 and LASP's original proposal to NASA's Earth Observing System (EOS) to provide a spectrometer to measure the solar ultraviolet irradiance. That proposed instrument would be the second Solar Stellar Irradiance Comparison Experiment, SOLSTICE. The first having not yet flown was being prepared for NASA's Upper Atmosphere Research Satellite UARS, and would launch 3 years later in 1991.

The EOS SOLSTICE as proposed in 1988 would languish on the ground 15 years until finally being launched on SORCE in 2003. (Fortunately the UARS Mission was extended and the two versions of SOLSTICE did have two years of overlap). Meanwhile besides SOLSTICE the SORCE carried two additional spectral instruments that measured not only the solar ultraviolet irradiance but almost all wavelengths from the shortest X-rays all the way to the far infrared, and in addition a third, new instrument concept to revolutionize the measurement of total solar irradiance, TSI. What transpired in those years from 1988 to 2003 to advance and evolve the single EOS SOLSTICE to this complement of functionality? Such new devices didn't materialize overnight but were a slow and directed evolution and extension. While SOLSTICE delayed there were many twists and turns of fate, some surprises and some planned that expanded SORCE to its full capability. In this talk we describe and detail the impact of these most favorable occurrences and thereby connect some of the dots.