

## Solar Evolution and Extrema (SEE) under VarSITI Scientific Program

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Following the recent unusual solar activities, the next SCOSTEP international scientific program 'Variability of the Sun and Its Terrestrial Impact (VarSITI)' was launched as a 5 years program covering 2014-2018. It will focus on the unusual solar activities and their consequences on Earth, for various times scales from the order of thousands years to milliseconds, and for various locations and their connections from the solar interior to the Earth's atmosphere.

The program consists of four elements:

(1) Solar Evolution and Extrema (SEE), (2) International Study of Earth-Affecting Solar Transients (ISEST/Minimax24), (3) Specification and Prediction of the Coupled Inner-Magnetospheric Environment (SPeCIMEN), and (4) Role Of the Sun and the Middle atmosphere/thermosphere/ionosphere In Climate (ROSMIC).

Among these elements, SEE will address, by promoting coordination of various projects between the Sun and the Earth, the following scientific questions:

(a) Are we at the verge of a new grand minimum? If not, what is the expectation for cycle 25? (b) Does our current best understanding of the evolution of solar irradiance and mass loss resolve the "Faint Young Sun" problem? What are the alternative solutions? (c) What is the largest solar eruption/flare possible? What is the expectation for periods with absence of activity?

An overview of SEE element will be presented.

Keywords: VarSITI Program, SEE Element, SCOSTEP, solar evolution, extreme solar events