What is the purpose of the TSIS mission?
The TSIS mission will acquire measurements of total and spectral solar irradiance (TSI and SSI, respectively). TSI is required for establishing Earth’s total energy input while SSI is needed to understand how the atmosphere responds to changes in the sun’s output. Solar irradiance is one of the longest and most fundamental of all climate data records derived from space-based observations. Highly accurate, stable, and continuous observations of solar irradiance are critical to understanding the present climate epoch and for predicting future climate.

What do the TIM and SIM instruments measure?
The Total Irradiance Monitor (TIM) measures the TSI that is incident at the outer boundaries of the atmosphere; and the Spectral Irradiance Monitor (SIM) measures the SSI from 200 nm to 2400 nm (96 percent of the TSI). The TSIS TIM and SIM are heritage instruments to those on the SORCE satellite. Both were selected as part of the TSIS mission because of their unprecedented measurement accuracy and stability, and because both measurements are essential to constraining the energy input to the climate system and interpreting the response of climate to external forcing.

What will the results of TSIS indicate?
TSIS has been identified as providing critical data in determining the natural forcings of the climate system and will ensure the continuity of the solar irradiance Climate Data Record (CDR).

To read more about the TSIS mission, visit: http://lasp.colorado.edu/home/missions-projects/quick-facts-tsis.