Radiant Energy Budgets and Internal Heat of Giant Planets and Their Moons

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- The Cassini long-term multi-instrument observations are helping us better understand the radiant energy budgets and internal heat of Jupiter, Saturn, and Saturn's moons (e.g., Titan and Enceladus) (Li et al., 2010, 2011, 2012, 2015a, 2015b, 2018; Creecy et al., 2019).
- The Cassini investigations suggest that the coverage of wavelength and viewing angle is critical for the required observations for studying the radiant energy budgets and internal heat of planets and moons. In addition, the temporal variations of radiant energies (i.e., the absorbed solar energy and the emitted thermal energy) must be considered in the investigations of the radiant energy budgets and internal heat of planets and moons.
- There are limitations in the previous observations and studies of the radiant energy budgets and internal heat of Uranus and Neptune, so we propose an instrument to better explore the radiant energy budgets and internal heat of Uranus and Neptune. Such an instrument also works for better measuring the radiant energy budgets and internal heat of some moons (e.g., Europa and Enceladus).

Proposed Instrument for Measuring the Radiant Energy Budgets and Internal Heat Of Uranus and Neptune