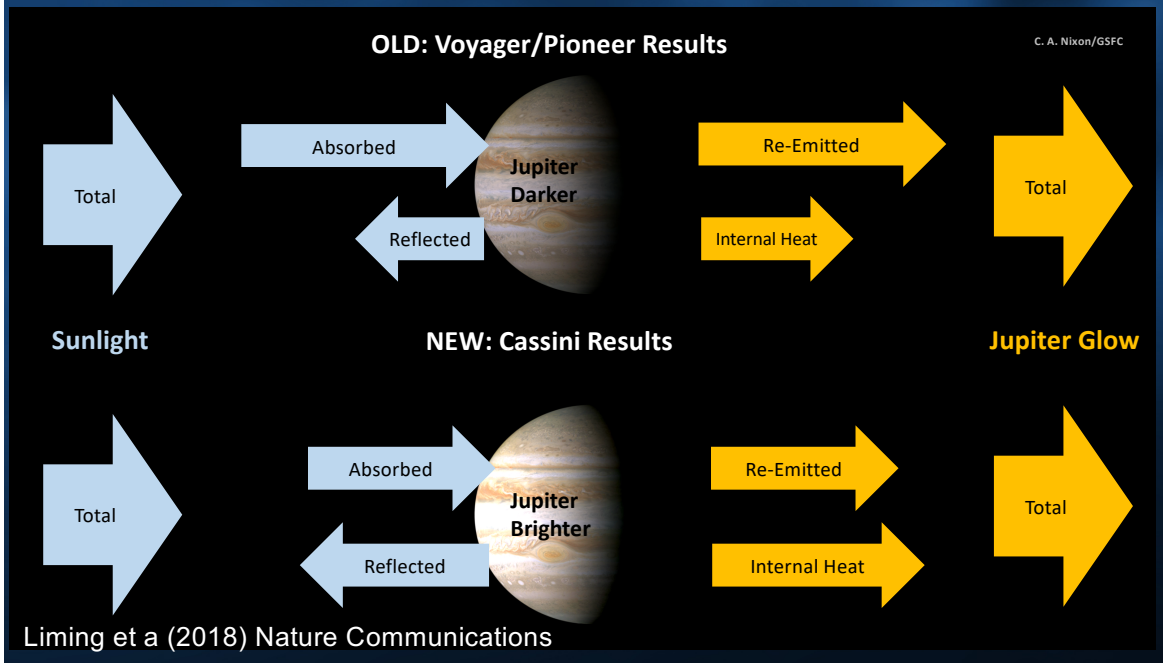
Turning up Jupiter's Thermostat

Data from Cassini has been used to revise and update the radiant energy budget of Jupiter and improving the understanding of the planet's interior.

- Previous measurements of the internal energy that Jupiter is radiating came from measurements made in 1981 using data from Voyager and Pioneer. During the Cassini mission's pass by Jupiter, multi-instrument observations were made of the big planet and analysis of this data shows that Jupiter is emitting 38% more heat than was previously thought.
- This increase is significant, and measuring the heat flow is an important means to learn about a planet's internal structure, as well as evolutionary theories and models for its formation. Since Jupiter is such a significant body in the solar system, it is key to understanding how the whole system evolved, and is a good template for studying exoplanets in other stellar systems.



Liming et a (2018) Nature Communications

(left) The Cassini results determining Jupiter's albedo spectra across wavelength and phase angle, show a brighter, warmer Jupiter than data from previous missions. (below) Multi-instrument observations by Cassini allowed for improved analyses.