

Preview

Please use your browser's *Back* button to return to the form.
If you do not see your changes, please *Reload/Refresh* this page.

Cassini, Galileo, and Ground-Based Observations of Jupiter's Thermal Emission During the Joint Spacecraft Encounter

Glenn Orton¹ (818-354-2460; go@orton.jpl.nasa.gov)

Brendan

Fisher¹

(818-354-2785; brendan@arp0.jpl.nasa.gov); Drake Deming² (301-286-6519; drake@tecate.gsfc.nasa.gov); Joseph Harrington³ (607-255-5913; jh@oobleck.tn.cornell.edu); The Cassini CIRS Team; The Galileo PPR Team

¹Jet Propulsion Laboratory, MS 169-237 4800 Oak Grove Drive, Pasadena, CA 91109, United States

²NASA/Goddard Space Flight Center, Code 693, Greenbelt, MD 20771, United States

³Cornell University, Space Science Center, Ithaca, NY 14853, United States

The temperature structure and the distribution of clouds and minor constituents in Jupiter's atmosphere can be derived from its thermal spectrum. Data from both Galileo's Photopolarimeter-Radiometer (PPR) at 27 μm , Cassini's Composite Infrared Spectrometer (CIRS) between 7 and 16 μm , and ground-based imaging from the NASA Infrared Telescope Facility (IRTF) between 5 and 24 μm provide information on temperature structure, the distribution of minor and trace constituents and the NH_3 condensate cloud field. Targets for the three sets of data included the Great Red Spot (GRS), the merged white oval "BA" and 5- μm hot spots. In addition, the IRTF data provided contextual information for planetary-scale phenomena, such as thermal waves, and regional properties (*e.g.* polar phenomena), as well as a longitudinal study of the evolution of various phenomena. The GRS remains the coldest location in Jupiter's upper troposphere and is consistent with an upwelling cyclonic vortex. A warm region remains semi-permanently associated with it to the south. Little thermal variability is detectable that can be associated with the 5- μm hot spots. Jupiter exhibits seasonal variability in its stratosphere, and the "quasi-quadrennial oscillation" of the last 12 years dominates the meridional organization of the stratosphere. This work was supported by NASA grants to JPL, GSFC and Cornell, as well as the Galileo and Cassini projects.

American Geophysical Union Abstract Form

Reference # 0000

1. 2001 Spring Meeting
2. AGU-30025754
3. (a) Joseph Harrington
Cornell University, Space
Science Center
Ithaca, NY 14853
United States
(b) 607-255-5913
(c) 607-255-9002
(d) jh@oobleck.tn.cornell.edu
4. P
5. (a) P01
(b) 5700, 5704, 5707
(c)
6. N/A
7. 30% European Geophysical Society,
Nice
8. \$50
XXXX XXXX XXXX 5700, 5704, 5707
9. C
10. No special instructions
11. Regular author

Date received: March 7, 2001
Date formatted: March 7, 2001
Form version: 1.5