Chandra HRC Observations of X-rays from Jupiter's Aurora

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[Contributed talk, 15min.]

Abstract

In support of the Cassini flyby of Jupiter, the Chandra HRC was used to observe the Jovian system for 10 hours on December 18, 2000, from 10–20 UT. Analysis of the data has yielded the following results: 1) a strong, high-latitude northern auroral "hot spot," which is relatively fixed near 60–70° north latitude and 160–180° system III longitude, and which pulsates with a period of about 40 minutes and has an average emitted power of about 2 GW; 2) relatively uniform low-latitude emissions, with a total power output of about 5 GW; 3) a southern aurora which shows both high-latitude emissions and lower-latitude emissions originating in the L=8–12 region just outside the Io Plasma Torus, with an emitted power of about 1 GW. These power estimates are based on an assumed emission wavelength of 574 eV (corresponding to a bright emission line of OVII ions), and are subject to revision as Chandra ACIS spectra of Jupiter are analyzed further. We will present these and other results from this unique data set.

CATEGORY: SOLAR SYSTEM AND MISC