

Abstract Submitted
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Auroral Charged Particle Precipitation and Acceleration at Jupiter, Saturn, and Titan¹ THOMAS CRAVENS, University of Kansas, NATALY OZAK, Weizmann Institute of Science — A brief review of energetic ion interaction with the upper atmospheres of Jupiter, Saturn, and Titan will be given. Jupiter's aurora is a powerful source of radio, infra-red, visible, ultraviolet (UV), and x-ray emission. X-ray emissions with a total power of about 1 GW were observed by the Einstein Observatory, the Roentgen satellite (ROSAT), Chandra X-ray Observatory (CXO), and XMM-Newton Observatory. Most of the x-ray power is in soft x-ray emission from the polar caps, but some harder x-ray emission from the main auroral oval was also observed by the XMM Newton X-ray observatory and is probably due to electron bremsstrahlung emission. Jovian x-ray emission provides the main evidence that auroral energetic ion acceleration and precipitation is taking place at Jupiter. X-ray emission also comes from lower latitudes but is not due to particle precipitation. An ultraviolet aurora has also been observed at Saturn, due to electron precipitation. No x-ray aurora has been observed although one was expected. Saturn's satellite Titan is also subject to energy deposition from energetic electrons and ions from Saturn's magnetosphere and this will also be discussed.

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Thomas Cravens
University of Kansas

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