

CHARGE EXCHANGE PROCESSES AND X-RAY EMISSION OF PLANETS AND COMETS IN SOLAR SYSTEM

Y. N. Gnedin

Central Astronomical Observatory of RAS, Russia

A surprising observation was made in 1996 of X-ray emissions from the comet Hyukatake using the ROSAT satellite. One of the mechanisms believed to be contributing to this surprisingly strong emission is the interaction of highly charged solar wind ions with planet atmospheres and comet gases. My lecture will present the review of total absolute charge and normalized line-emission (X-ray) cross-sections for collisions of high-charge state ions with planetary and comet species. The importance of applying accurate cross-sections, including double charge exchange, to obtain absolute line emission intensities is emphasized.

I shall discuss the situation with the current and projected launch of X-ray satellites which provide higher resolution observations.