Recent Excitation, Charge Exchange, and Lifetime Results in Highly Charged Ions Relevant to Stellar, Interstellar, Solar, and Comet Collision Phenomena

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Abstract

Recent results from the JPL Atomic and Molecular Physics Group will be presented in the following areas relevant to a range of stellar, interstellar, solar, and cometary phenomena: (a) measurement of absolute collisional excitation cross sections in highly-charged ions (HCIs) for stellar, solar, and interstellar plasma modeling, (b) measurement of absolute HCI-neutral charge exchange cross sections with neutral species that are present in cometary atmospheres, (c) measurements of lifetimes of metastable levels in highly- charged Fe ions, and (d) measurement of X-ray emission phenomena following HCI-neutral collisions, and HCI-mineral (olivine, augite, quartz) collisions.

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