

Abstract Submitted  
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**Electron-ion Recombination and Photoionization of Ca XV<sup>1</sup>** SULTANA NAHAR, Ohio State Univ - Columbus — Characteristic features of the inverse processes of photoionization and electron-ion recombination of Ca XV,  $\text{Ca XV} + h\nu \leftrightarrow \text{Ca XVI} + e$ , studied using the unified method of Nahar and Pradhan (1992) will be presented. Particular focus is on the high temperature plasmas where the ion is more available. The study includes excitation to 28 LS states belonging to n=2,3 complex of the core ion. The resonant features arising from core ion excitation to states of n=3 complex are much stronger than those from n=2 complex and introduce a third DR bump at temperature of 1.6 MK enhancing recombination rates at high temperature region. The state-specific features in photoionization and electron recombination of 582 bound states of Ca XV have been obtained. The computations were carried out in the R-matrix method using a 29 term close coupling expansion for the core ion.

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