

Abstract Submitted
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Implications for Atomic Physics from New Ionization Balance Calculations and Solar Physics Observations¹ PAUL BRYANS, Columbia Astrophysics Laboratory, ENRICO LANDI, Naval Research Laboratory, DANIEL SAVIN, Columbia Astrophysics Laboratory — We have used state-of-the-art electron-ion recombination data for K-shell, L-shell, and Na-like ions of H through Zn to calculate improved collisional ionization equilibrium (CIE) fractional abundances for ions of all these elements. We present the implications of these new CIE results for observations of the solar atmosphere and discuss a number of atomic systems showing puzzling discrepancies between observations and solar models. These discrepancies suggest errors in the underlying atomic data. Based on this, we highlight those atomic processes that require improved theoretical or experimentally-derived rate coefficients.

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