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## INCLUDING IONIZATION AND RECOMBINATION IN CHIANTI

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Tables of ion fractions as a function of temperature are vital for interpreting data from electron-ionized plasmas, and compilations such as Arnaud & Rothenflug (1985), Arnaud & Raymond (1992) and Mazzotta et al. (1998) have been much used in astronomy. However, these irregular updates mean that astronomers may not benefit for several years from improved calculations of ionization or recombination rates, simply because they do not have the time or effort to update the ion fraction tables themselves, and so will simply wait for the next compilation.

For 10 years now, the CHIANTI atomic database has successfully provided astronomers with regularly updated and assessed atomic data for the atomic processes within an ion (electron excitation, radiative decay). The next release will extend CHIANTI to include ionization and recombination rates for all ions of all elements up to zinc. In addition, the rates will be used to calculate a new set of ion fractions. The rates will be assessed and updated on the usual CHIANTI update cycle (roughly every 1-2 years).

The data sources and methods will be presented and applications described.