

CMSUC/Department of Applied Mathematics & Theoretical Physics, University of Cambridge



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The Cambridge (DAMTP) node consists of Helen Mason (HEM) and Giulio Del Zanna (GDZ). GDZ and HEM are members of the international CHIANTI team. CHIANTI, first released in 1997, is a well-established atomic database (with over 1000 citations) for ions of astrophysical importance. Combined with IDL spectroscopic diagnostic programs, it is used in the analysis of optically thin collisionally-ionised plasmas (it is the reference database in solar physics). The CHIANTI package contains atomic structure data (experimental and calculated wavelengths and radiative data), and rates for electron and proton collisions. The data are obtained from published literature, sometimes supplemented by our own calculations. They are regularly assessed and updated every year or so. References to the original sources are supplied and each version is described in a journal paper. The latest version (6) of CHIANTI, has just been released, it contains new rates for ionization and recombination, which allows the treatment of non-equilibrium plasmas. The CHIANTI data and programs are distributed via SolarSoft to the solar community, but are also available on the web (www.damtp.cam.ac.uk/user/astro/chianti/) as a large number of ascii files. CHIANTI atomic data are now also included in many other databases and spectral codes used to study astrophysical plasmas. To make them more accessible, some of the basic atomic data and calculated ones (line emissivities) were imported (VOTADA) into a MySQL database accessible from the Astrogrid Workbench.

The VAMDC project will enable CHIANTI to be more widely used by the astrophysics and plasma physics communities.

Key persons :

Dr H.E. Mason, Assistant Director of Research

Expertise: atomic physics, database management

Role in VAMDC project: deployment of CHIANTI (SA1), dissemination (NA2)

Dr. Giulio Del Zanna, STFC advanced fellow at DAMTP, University of Cambridge

Expertise : atomic physics, database management, tools for astrophysics

Role in VAMDC project : deployment of CHIANTI (SA1), dissemination (NA2)

[Back to CMSUC](#)