

Invited lecture

**GLOBULAR CLUSTERS OF THE MILKY WAY:
THEIR FATE AND CHEMICAL COMPOSITION**

SLOBODAN NINKOVIĆ

*Astronomical Observatory, Volgina 7, 11160 Belgrade, Serbia
E-mail: sninkovic@aob.bg.ac.yu*

It is very well known that in the framework of the Milky Way there are about 150 globular clusters. In this review one presents and discusses the basic data on them. A special attention is paid to their chemical composition.

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LINE SHAPES FOR THE SPECTRA OF BROWN DWARFS

GILLIAN PEACH¹, D'ARCY F.T. MULLAMPHY², VANESSA VENTURI² and

IAN B. WHITTINGHAM²

¹*Department of Physics and Astronomy, University
College London, London WC1E 6BT, United Kingdom*

²*School of Mathematical and Physical Sciences, James
Cook University, Townsville, Australia, 4811*

E-mail: g.peach@ucl.ac.uk

Accurate pressure broadened profiles of alkali resonance doublets perturbed by H₂ and He are of crucial importance for the modelling of atmospheres of late M, L and T type brown dwarfs and for generating their synthetic spectra in the region 600 - 900 nm. The dominant lines are the Na I 589.0/589.6 nm and K I 766.5/769.9 nm doublets but there can also be significant contributions from less abundant alkalis such as Li, Rb and Cs, and from subordinate doublets such as Na I 818.3/819.5 nm. The non-Lorentzian profiles of the strongly broadened Na I and K I doublets have been recently studied by Burrows and Volobuyev and Allard *et al*, with the emphasis on approximate or unified semiclassical models that can describe the far wings of the profiles. However highly accurate calculations of the central Lorentzian cores are needed (Pavlenko, private communication) in order to estimate the effects of dust in brown dwarf atmospheres. We will report results for the Lorentzian alkali line profiles broadened by helium perturbers. They are based on a fully quantum-mechanical close-coupling description of the colliding atoms, the Baranger theory of lineshapes and new *ab initio* potentials for the alkali-rare gas interaction.