A PROBABLE BL LAC OBJECT WITH ABSORPTION REDSHIFT 1.49

R.W. Hunstead, School of Physics, University of Sydney
J.C. Blades, Anglo-Australian Observatory
H.S. Murdoch, School of Physics, University of Sydney

The radio source 1309-216 is identified with an 18^m stellar object having a steep non-thermal continuum ($\alpha = 2.6$, $f_\nu \propto \nu^{-\alpha}$) with no emission features. High resolution spectra obtained with the AAT reveal strong absorption due to the CIV doublet at redshifts 1.361, 1.489 and 1.491. In the strongest absorption system ($z_a = 1.489$) the SiIV doublet and possibly SiII are also detected. No information on the optical polarization is available but spectrophotometry at several epochs shows evidence for optical variability and the object is therefore classified tentatively as a BL Lac object.

The species found in absorption in 1309-216 are consistent either with ejection from a central source or absorption in the haloes of intervening galaxies. The velocity dispersions and column densities derived for the absorbing regions are comparable to those for gas in the LMC and in the halo of the galaxy.

DISCUSSION

Gaskell: I would like to add another object to Rich's sample of one -- this is PKS 0215+015. It also shows two high ionization absorption redshifts of 1.5489 and 1.6480, and as well as these it also has a lower ionization (MgII, FeII, etc.) system at z = 1.3448 (± 0.0005). This was found as part of the complete luminiosity criterion survey that Joe Wampler reported on yesterday. It also has a steep optical spectrum, is polarized, and has varied -- so it is definitely a BL Lac object.

Weymann: 1. It should be stressed that while CIV absorption may be anomalous in BL Lac objects compared to MgII, it is much more common in QSOs with $Z_e \gtrsim 1.2$, so I interpret your discovery as simply representing one of the few known high-redshift BL Lacs, but having normal absorption.

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2. I believe the SiIV/CIV does not imply anything anomalous about velocity structure, but can be interpreted in terms of normal clouds, and abundances given the lower ionization potential of SiIV. This same phenomenon is present in many QSOs, also.

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