

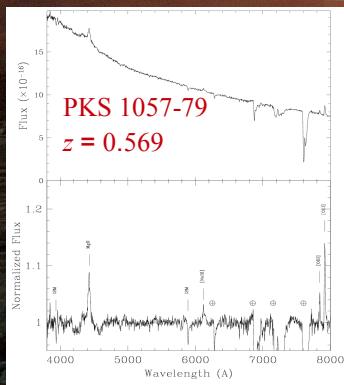
ESO VLT optical spectroscopy of BL Lac objects



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The Flux is measured in erg/s/cm²/Å.

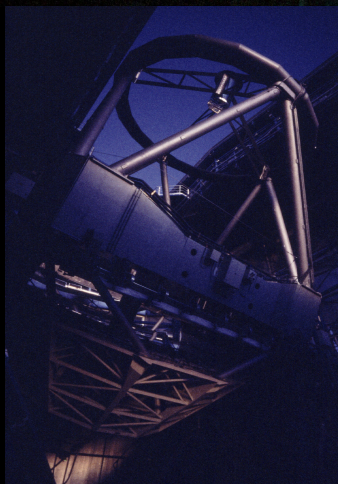
BL Lacs are a main component of the extragalactic sky from MeV to TeV energies. The knowledge of the distance is mandatory in order to build emission mechanisms, and to estimate absorption by photon-photon interaction in the Extragalactic Background Light.

<http://www.oapd.inaf.it/zbllac/>

Line spectroscopy of BL Lac objects is hardous because, by definition of the class, the lines should be weak. Line detection is of fundamental importance for constraining physical condition at the nucleus, for classifying the host galaxy, for probing the intergalactic medium and for determining the redshift.

Object name	redshift
PKS 0019+058	$z > 0.35$
GC 0109+224	$z > 0.23$
RBS 0231	$z > 0.41$
OM 280	$z > 0.17$
OQ 012	$z > 0.46$
PMNJ 1539-0658	$z > 0.84$
PKS 1830-589	$z > 0.47$
1RXS J235730.1-171801	$z > 0.60$

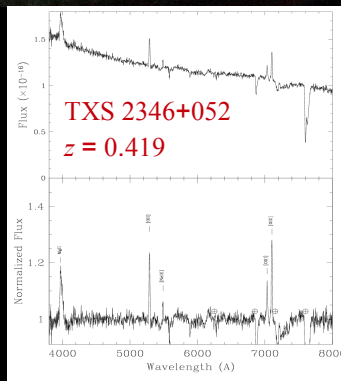
Photo Courtesy of ESO: VLT Paranal



UT2 Kueyen at VLT Paranal, courtesy of ESO

The redshift determination in most cases requires very large telescopes. We are engaged in a program for optical spectroscopy of BL Lacs at the ESO VLT observing in non optimal seeing conditions.

In 2003-2004 periods 42 BL Lacs were studied and the redshift of 18 were determined (Sbarufatti et al, 2005, 2006).



For the remaining objects lower limits to the redshift were proposed using a technique designed for the project, based on the assumption of a "standard" host galaxy, on the observed limit of absorption features, and on the value of the continuum.

Results

Here we report results on the 2006 campaign. Of 12 BL Lacs observed, for 4 redshifts have been measured, which are reported with the spectra. The lower limit for the redshift of the remaining 8 objects are given in the table.

References

Sbarufatti, B., Treves, A., Falomo, R., et al. 2005, AJ, 129, 559
 Sbarufatti, B., Treves, A., Falomo, R., et al. 2006, AJ, 132, 1

