

MW Observations of AO 0235+164

Telecon Meetings

December 3rd, 2008 - 9 AM (Pacific Time)

- Welcome
- MW Data Update
 - Fermi [pdf](#)
 - GASP [pdf](#)
 - Swift XRT [pdf](#)
 - OVRO 40m [pdf](#)
- End of campaign? (discussion)
- Analysis tasks and signup
 - Cross correlation
 - SED (average SED, snapshots, etc.)
 - Issues arising from microlensing by the intervening galaxy
- Timeline [pdf](#)
- Logistics
 - Password protected webpage for reduced data and analysis
- Minutes [pdf](#)

October 23rd, 2008 - 9 AM (Pacific Time)

- Welcome
- Available MW data:
 - [OVRO summary](#) - Joey Richards
 - [GASP summary](#) - Gino Tosti (on behalf of Massimo Villata)
 - [XTE](#) - Gianpiero
 - [Fermi summary](#) - Luis Reyes
 - [VERITAS summary](#) - David Steele
 - [F-GAMMA radio cm/mm/sub-mm](#) - Lars Fuhrmann
 - [Other MW data](#)
- Discussion about Future plans
- Meeting minutes [pdf](#)

Source Information

- Very interesting source, it is a BL Lac-type object, with weak emission lines at $z=0.94$, but also with strong absorption lines at $z=0.524$ (and a weak one at $z=0.852$), where the absorption at $z=0.524$ is also seen in H I in radio
- The last result indicates there is a galaxy in the line of sight, and it is seen as a "damped Ly alpha" absorption system of hydrogen (Hubble opt/UV spectroscopy); definitive info on absorption in paper by Junkkarinen (2004, ApJ, 614, 658)
- Presence of galaxy in the line of sight might be suggestive of explanation of variability as microlensing events
- Strong gamma-ray emitter reported by EGRET (Hunter et al. 1993), but variable - observations in 1994 (Madejski et al. 1996) showed much fainter gamma flux
- Rapidly variable X-ray emitter, studied by ROSAT and Asca (also Madejski et al. 1996)
- X-ray data clearly show excess absorption (due to intervening galaxy); in conjunction with H I and H Ly alpha data, yield metallicity of the intervening absorber
- For important and relevant papers - especially containing gamma-ray data - I'd add Hunter et al. 1993 (A&A 272, 59) and Madejski et al. 1996 (ApJ, 459, 156)
- This is the NED entry http://nedwww.ipac.caltech.edu/cgi-bin/nph-objsearch?objname=0235%2B164&extend=no&out_csys=Equatorial&out_equinox=J2000.0&obj_sort=RA+or+Longitude&of=pre_text&zv_breaker=30000.0&list_limit=5&img_stamp=YES

Name	RA	DEC	Redshift	L	B
0235+164	39.66	16.62	0.940	156.77	-39.11

Important Papers

Paper	Authors	Title
2008A&A...480..339R	Raiteri, C. M. et al.	Radio-to-UV monitoring of AO 0235+164 by the WEBT and Swift during the 2006-2007 outburst
2007A&A...464..871R	Raiteri, C. M. et al.	Spectroscopic monitoring of the BL Lac object AO 0235+164
2006ApJ...650..749L	LIU, F. K.; ZHA	HARMONIC QPOS AND THICK ACCRETION DISK OSCILLATIONS IN THE BL LACERTAE OBJECT AO 0235+164

2006A&A...459..731R	Raiteri, C. M. et al.	Multifrequency variability of the blazar AO 0235+164. The WEBT campaign in 2004-2005 and long-term SED analysis
2006A&A...452..845R	Raiteri, C. M. et al.	X-ray emission from the blazar AO 0235+16: the XMM-Newton and Chandra point of view
2005A&A...438...39R	Raiteri, C. M. et al.	The WEBT campaign to observe AO 0235+16 in the 2003-2004 observing season. Results from radio-to-optical monitoring and XMM-Newton observations
2001A&A...377..396R	Raiteri, C. M. et al.	Optical and radio variability of the BL Lacertae object AO 0235+16: A possible 5-6 year periodicity
2001A&A...376...69C	CHEN, Y., JIANG	THE SPECTRAL ENERGY DISTRIBUTION OF AO 0235+164 DURING TWO ACTIVE OPTICAL PHASES
2000AJ....120...41W	WEBB, J., HOWARD	THE 1997 OUTBURST OF AO 0235+164: EVIDENCE FOR A MICROLENSING EVENT?
1996AJ....112.2533B	BURBIDGE, E. M	AO 0235+164 AND SURROUNDING FIELD: SURPRISING HST RESULTS