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J/A+A/578/A11 Spectrum of QSO XMMC 2028 (Brusa+, 2015)

Evidence for feedback in action from the molecular gas content in the $z \sim 1.6$ outflowing QSO XID2028.

Brusa M., Feruglio C., Cresci G., Mainieri V., Sargent M.T., Perna M., Santini P., Vito F., Marconi A., Merloni A., Lutz D., Piconcelli E., Lanzuisi G., Maiolino R., Rosario D., Daddi E., Bongiorno A., Fiore F., Lusso E.

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ADC_Keywords: QSOs ; Spectroscopy

Keywords: galaxies: active - galaxies: star formation - quasars: individual: XID2028 - galaxies: ISM

Abstract:

Gas outflows are believed to play a pivotal role in shaping galaxies, as they regulate both star formation and black hole growth. Despite their ubiquitous presence, the origin and the acceleration mechanism of such powerful and extended winds is not yet understood. Direct observations of the cold gas component in objects with detected outflows at other wavelengths are needed to assess the impact of the outflow on the host galaxy interstellar medium (ISM).

We observed with the Plateau de Bure Interferometer an obscured quasar at z

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We observed with the Plateau de Bure Interferometer an obscured quasar at $z \sim 1.5$, XID2028, for which the presence of an ionised outflow has been unambiguously signalled by NIR spectroscopy. The detection of $^{12}\text{CO}(3-2)$ emission in this source allows us to infer the molecular gas content and compare it to the ISM mass derived from the dust emission. We then analyze the results in the context of recent insights on scaling relations, which describe the gas content of the overall population of star-forming galaxies at a similar redshifts.

Description:

Observations of the CO(3-2) transition of XID2028, redshifted to 2mm, obtained with the PdBI Interferometer.

Dates of observations: 31-May, 1, 6, June 2014.

XID2028 was observed with receivers tuned to a frequency of 133.37GHz, corresponding to the expected frequency of the CO(3-2) emission line, with the PdBI array in the (D) configuration. The continuum is not detected with a 3 σ upper limit on its flux of 0.3mJy.

Objects:

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RA   (2000)  DE      Designation(s)
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10 02 11.27 +01 37 06.6  XID 2028 = XMMC 2028
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File Summary:

FileName	Lrecl	Records	Explanations
ReadMe	80	.	This file
table1.dat	32	90	XID2028 spectrum in the CO(3-2) transition

Byte-by-byte Description of file: [table1.dat](#)

Bytes	Format	Units	Label	Explanations
1- 10	F10.6	GHz	Freq	[132/135] Frequency
13- 21	F9.6	mJy	S	[-2.2/2.4] Flux density
25- 32	F8.6	mJy	e_S	[0.9/1.9] Error Flux density

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(End) M. Brusa [DIFA, Univ. di Bologna], Patricia Vannier [CDS] 16-Mar-2015

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