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Comparing emission- and absorption-based gas-phase metallicities in GRB host galaxies at $z = 2-4$ using JWST

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


















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Correction to: Comparing emission- and absorption-based gas-phase metallicities in GRB host galaxies at $z = 2–4$ using JWST

by P. Schady ¹★, R. M. Yates ², L. Christensen ^{3,4}, A. De Cia ^{5,6}, A. Rossi ⁷, V. D’Elia ^{8,9},
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N. R. Tanvir ¹⁴, C. C. Thöne ¹⁵, S. Vergani ^{16,17}, K. Wiersema ², M. Arabsalmani ^{18,19}, H.-W. Chen ²⁰,
M. De Pasquale ²¹, A. Fruchter ²², J. P. U. Fynbo ^{3,4}, R. García-Benito ²³, B. Gompertz ^{24,25},
D. Hartmann ²⁶, C. Kouveliotou ²⁷, B. Milvang-Jensen ^{3,4}, E. Palazzi ⁷, D. A. Perley ²⁸,
S. Piranomonte ⁹, G. Pugliese ²⁹, S. Savaglio ^{7,30,31}, B. Sbarufatti ³², S. Schulze ³³, G. Tagliaferri ³²,
A. de Ugarte Postigo ³⁴, D. Watson ^{3,4} and P. Wiseman ³⁵

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Key words: errata, addenda – gamma-ray burst: general – ISM: abundances – galaxies: abundances – galaxies: high-redshift – galaxies: ISM – quasars: absorption lines.

This is a correction to: P. Schady and others, Comparing emission- and absorption-based gas-phase metallicities in GRB host galaxies at $z = 2–4$ using JWST, Monthly Notices of the Royal Astronomical Society, Volume 529, Issue 3, April 2024, Pages 2807–2831, <https://doi.org/10.1093/mnras/stae677>.

We found a mistake in our abstract where we accidentally wrote that the host galaxy of GRB 090323 was at $z = 4.7$ whereas it is in fact at redshift $z = 3.58$ based on the NIRSPEC emission line spectrum of the host galaxy. The redshift of this GRB host

galaxy is correctly reported in the rest of the paper. We also found a bug in our code that produces the [O III] $\lambda 5007$ surface brightness maps of the host galaxies of GRB 050820A and GRB 150403A (figs 1 and 2 of the original paper) that caused the labelled physical pixel scale to be too small by a factor of ~ 1.4 . This error only affected the axes shown in the figures and has no implications for the rest of the paper. The corresponding pixel-to-kpc conversions have now been corrected and the updated maps are shown in Figs 1 and 2.

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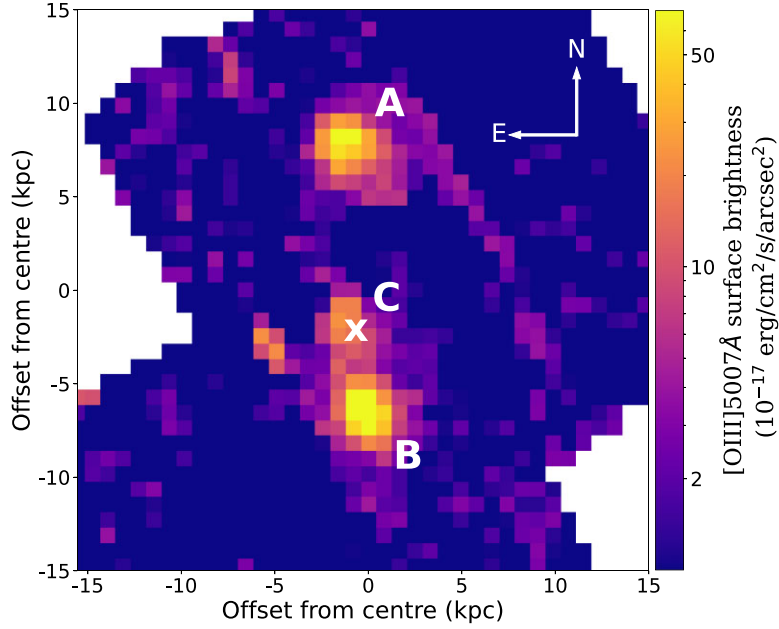


Figure 1. Surface brightness (SB) map of the G140M/L100LP NIRSpc IFS observations of the host galaxy of GRB 050820A at $z_{\text{abs}} = 2.615$ centred on [O III] $\lambda 5007$. A number of resolved emission regions are detected, including components A and B identified in Chen (2012) and in the image above. The position of the GRB afterglow is indicated with an ‘X’, which lies close to a third emission component, labelled here as C. Additional emission can also be seen to the left of region C, which is only detected at $1.79\mu\text{m}$, consistent with [O III] $\lambda 5007$ at $z = 2.615$. However no corresponding emission from [O III] $\lambda 4959$ or H α at this same redshift is detected at this location. The image is orientated with north up and east left. The pixel scale of the image is $0''.1$, corresponding to 819 pc, and the offset from the image centre in kpc is indicated along the axes. Observations were taken with a two-point dither, which is why the shape of the field of view comprises two overlapping squares.

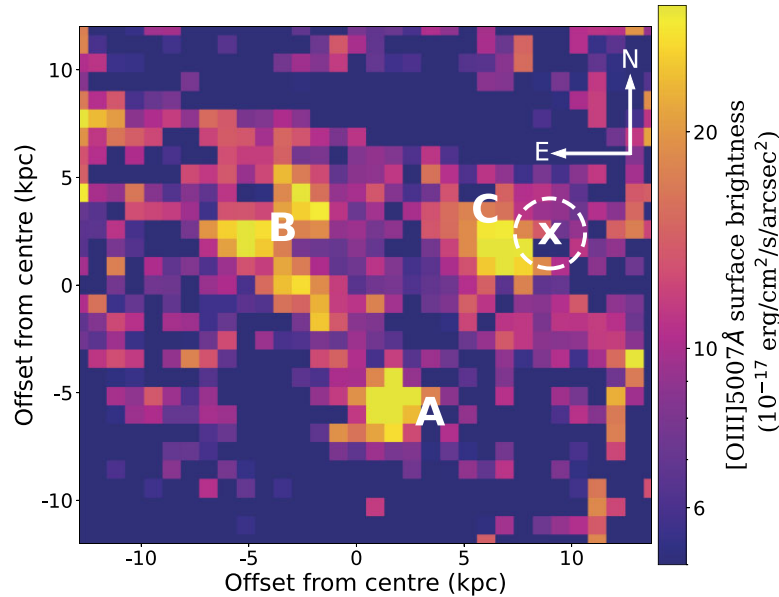


Figure 2. Surface brightness (SB) map of the G140M/L100LP IFS observations of the host galaxy of GRB 150403A centred on [O III] $\lambda 5007$ at $z = 2.057$. A number of resolved emission regions are detected, and the labels A, B, and C indicate the regions where stacked spectra have been extracted. Region B is itself resolved into multiple components. The position of the GRB afterglow is just west of component C, marked with a ‘X’, and the corresponding 1σ positional uncertainty is indicated with the white dashed circle. Note that no background subtraction has been applied and the colour bar thus does not go down to zero. The image is orientated with north up and east left. The pixel scale of the image is $0''.1$, corresponding to 857 pc, and the offset from the image centre in kpc is indicated along the axes.

REFERENCE

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