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Erratum: Evolution of star formation in the UKIDSS Ultra Deep Survey Field – I. Luminosity functions and cosmic star formation rate out to $z = 1.6$

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Key words: errata, addenda – surveys – galaxies: evolution – galaxies: formation – galaxies: high-redshift – cosmology: observations.

This is an erratum to the paper 'Evolution of star formation in the UKIDSS Ultra Deep Survey Field – I. Luminosity functions and cosmic star formation rate out to $z = 1.6$' published in MNRAS, 433, 796 (2013).

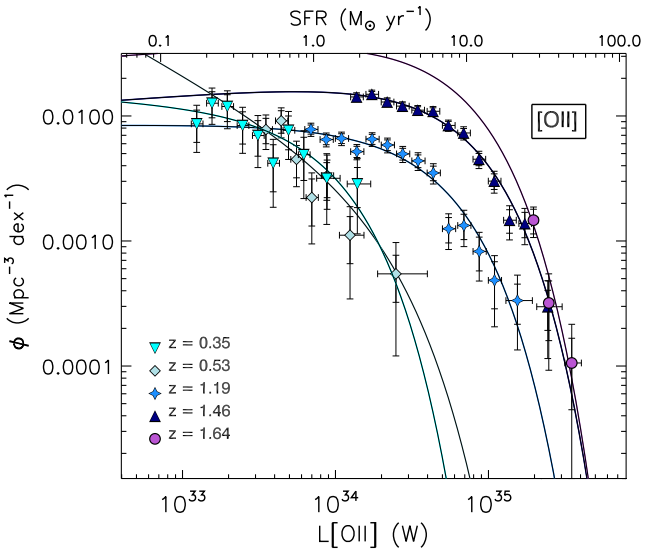

Figure 1. Corrected Fig. 9(e). Graphic representation of our best-fitting [O II] luminosity functions (Gaussian prior on α for LF at $z = 1.63$). The smaller of the two error bars on each point are Poissonian, larger error bars have the 1σ variation as estimated by our jackknifing technique added in quadrature. The upper SFR scale on these plots gives an indication of the raw SFR values for these LFs, these numbers have not been corrected for dust extinction.

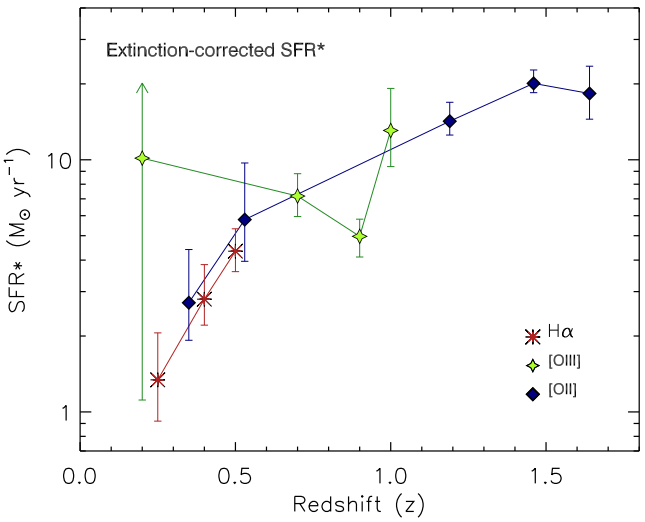

Figure 2. Corrected Fig. 10(a). Extinction-corrected characteristic star formation rate (SFR*) determined in each redshift slice, error bars corresponding to the 1σ error on L^*. Colours reference the emission line used to derive the SFR.

In the original manuscript, the number of excess objects and those remaining after star–galaxy separation listed in Table 2 were in error. The numbers quoted are from an early analysis before we had refined our detection method and selection criteria. They do not contribute further to the analysis. The numbers are respectively, NB503 418 and 418, NB570 268 and 268, NB816 2698 and 2484 and NB921 3656 and 3614.

Additionally, the upper scale on Fig. 9(e) was in error, indicating SFRs lower than the true values. This error arose due to the use of an earlier version of the conversion from [O II] luminosity to SFR. Finally, the extinction-corrected values of L^* listed in Table 4

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Table 1. Corrected part of Table 4. [O II] luminosity functions in five redshift slices. The extinction corrected values use 1 mag of extinction at Hα. Where the raw data did not produce a converging LF, values are absent for SFR* and $\rho_{\rm SFR}$ as these would be non-physical.

Redshift	Objects	Volume (10^4 Mpc^3)	$\log \phi^*_{[\rm O\,II]}$ (Mpc^{-3})	$\log L^*_{[\rm O\,II]}$ (W)	$\alpha_{[\rm O\,II]}$	Extinction-corrected $\log L^*_{[\rm O\,II]}$ (W)	SFR* ($M_\odot$ yr^{-1})	$\rho_{\rm SFR_{[O\,II]}}$ ($M_\odot$ yr^{-1} Mpc^{-3})
0.35	112	2.22	$-2.31^{+0.19}_{-0.29}$	$33.90^{+0.20}_{-0.16}$	$-1.06^{+0.38}_{-0.34}$	$34.29^{+0.20}_{-0.16}$	$2.71^{+0.65}_{-0.34}$	$0.0142^{+0.0010}_{-0.0007}$
0.53	83	3.95	$-5.55^{+1.75}_{-\infty}$	$35.38^{+\infty}_{-0.84}$	$-2.70^{+0.36}_{-0.17}$	–	–	–
0.53[a]	83	3.95	$-2.85^{+0.28}_{-0.41}$	$34.13^{+0.22}_{-0.17}$	$-1.68^{+0.33}_{-0.31}$	$34.62^{+0.22}_{-0.17}$	$5.79^{+1.54}_{-0.76}$	$0.0231^{+0.0080}_{-0.0052}$
1.19	981	19.06	$-2.41^{+0.07}_{-0.09}$	$34.61^{+0.07}_{-0.06}$	$-0.99^{+0.14}_{-0.13}$	$35.01^{+0.06}_{-0.06}$	$14.22^{+1.01}_{-0.74}$	$0.0557^{+0.0025}_{-0.0019}$
1.46	2218	23.09	$-2.03^{+0.04}_{-0.06}$	$34.76^{+0.05}_{-0.04}$	$-0.91^{+0.11}_{-0.11}$	$35.16^{+0.05}_{-0.04}$	$20.09^{+0.99}_{-0.71}$	$0.1796^{+0.0053}_{-0.0055}$
1.64	27	28.31	$-2.98^{+0.79}_{-\infty}$	$35.27^{+\infty}_{-0.31}$	$-3.10^{+1.35}_{-1.15}$	–	–	–
1.64[a]	27	28.31	$-1.68^{+0.50}_{-0.43}$	$34.73^{+0.10}_{-0.11}$	$-0.91^{+0.11}_{-0.10}$	$35.12^{+0.10}_{-0.11}$	$18.32^{+1.93}_{-1.67}$	$0.3711^{+0.5775}_{-0.1951}$

[a]A Gaussian prior on α is applied to these luminosity functions.

are calculated according to the Cardelli, Clayton & Mathis (1989) reddening law assuming 1 mag of extinction at Hα, corresponding to 1.36 mag at [O III] and 1.88 mag at [O II]. To calculate values of SFR* however, one requires an [O II] luminosity corrected for extinction at the wavelength of Hα, due to the manner in which the conversion from [O II] to SFR is calibrated in Kennicutt (1998). This error in the extinction correction has led to a miscalculation in the values of SFR* listed in Table 4 and shown in Fig. 10(a). Values of $\rho_{\rm SFR}$ are not in error, and the main conclusions of the paper are unchanged.

REFERENCES

Cardelli J. A., Clayton G. C., Mathis J. S., 1989, ApJ, 345, 245
Kennicutt R. C., Jr, 1998, ARA&A, 36, 189

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