THE ASTROPHYSICAL JOURNAL, 914:74 (2pp), 2021 June 10 https://doi.org/10.3847/1538-4357/ac05c3

Erratum: "Detecting and Characterizing Young Quasars. I. Systemic Redshifts and Proximity Zones Measurements" (2020, ApJ, 900, 37)

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Received 2021 May 24; published 2021 June 16

Due to an error in the analysis of the ALMA data, the [C II] line fluxes $F_{\rm line}$ in 6 out of the 13 analyzed quasars were underestimated, and thus also based the inferred star formation rate (SFR) on the [C II] emission. We corrected these values and show the updated measurements for the six affected quasars in the corrected Table 2. The dust continuum estimates and their derived quantities were not affected by the error.

Additionally, the observed peak frequency of the [C II] emission line $\nu_{\rm obs}$ and thus the inferred systemic redshifts of the quasars were mildly offset, causing a shift of $\Delta\nu_{\rm obs} \lesssim 0.02$ GHz and $\Delta z_{\rm sub\text{-}mm} \lesssim 0.0005$. The derived proximity zone sizes were hence affected by $\Delta R_{\rm p} \lesssim 0.04$ pMpc. All updated values are shown in the corrected Tables 2 and 4. These changes did not affect any of the conclusions of the paper, nor did the figures in the paper change in any noticeable way.

Furthermore, since the publication of our paper the offset between the peak of the Mg II emission line and the systemic redshift derived from submillimeter emission lines estimated by Schindler et al. (2020) changed slightly in their published version compared to the preliminary value we had used. Thus we use the now published velocity offset of $\Delta v(\text{Mg II-[C II]}) = -391^{+256}_{-455}$ km s^{-1} to estimate the systemic redshifts of the three quasars in our sample, for which no submillimeter data are available and therefore the redshift estimate is based on the Mg II emission. This resulted in minor changes of $\Delta z \lesssim 0.001$, which are updated in Table 4.

Table 2
Measurements of Submillimeter Properties of the Quasar Sample

Object	Line	$\nu_{\rm obs}$ (GHz)	$z_{\rm sub\text{-}mm}$	FWHM (km s^{-1})	$F_{\rm line}$ (Jy km s^{-1})	$\log L_{\rm line}$ ($L_\odot$)	SFR$_{\rm [C\,II]}$ ($M_\odot$ yr^{-1})
PSO J004+17	[C II]	278.81 ± 0.04	5.8166 ± 0.0004	769 ± 93	1.45 ± 0.03	9.13 ± 0.01	180
PSO J011+09	[C II]	254.44 ± 0.02	6.4695 ± 0.0002	446 ± 65	2.01 ± 0.06	9.34 ± 0.01	320
PSO J056-16	[C II]	272.77 ± 0.03	5.9676 ± 0.0003	353 ± 60	0.25 ± 0.04[a]	8.39 ± 0.07	20
PSO J158-14	[C II]	268.88 ± 0.01	6.0685 ± 0.0001	771 ± 28	11.57 ± 0.13	10.06 ± 0.01	2260
PSO J239-07	[C II]	267.30 ± 0.02	6.1102 ± 0.0002	481 ± 58	1.62 ± 0.06	9.21 ± 0.02	220
PSO J359-06	[C II]	264.99 ± 0.01	6.1722 ± 0.0001	315 ± 11	3.21 ± 0.04	9.52 ± 0.01	510

Notes. The columns show the name of the quasar, the observed submillimeter emission line, its peak frequency, the derived redshift estimate, the FWHM of the observed line, the integrated line flux, the line luminosity, and SFR estimated from the [C II] emission.
[a] This [C II] flux has been estimated within an aperture with 1″.5 radius (instead of 2″), since the data are very noisy and show a negative 2σ flux fluctuation at $\sim 2''$ distance from the quasar (see Figure 1 in the published article), which would underestimate the line emission.

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Table 4
Proximity Zone Measurements

Object	$z(\pm\sigma_{sys})$	z_{line}	M_{1450}	R_p (pMpc)	$R_{p,corr}$ (pMpc)	Notes
PSO J004+17	5.8166 ± 0.0023	[C II]	−26.01	1.16 ± 0.15	1.72 ± 0.22	…
PSO J011+09	6.4695 ± 0.0025	[C II]	−26.85	2.42 ± 0.13	2.56 ± 0.14	…
VDES J0323–4701	$6.250^{+0.011}_{-0.006}$	Mg II	−26.02	$2.26^{+0.62}_{-0.35}$	$3.32^{+0.91}_{-0.51}$	…
VDES J0330–4025	$6.249^{+0.011}_{-0.006}$	Mg II	−26.42	$1.69^{+0.62}_{-0.35}$	$2.12^{+0.78}_{-0.44}$	…
PSO J056-16	5.9676 ± 0.0023	[C II]	−26.72	0.79 ± 0.14	0.88 ± 0.16	pDLA
PSO J158-14	6.0685 ± 0.0024	[C II]	−27.41	1.95 ± 0.14	1.66 ± 0.12	…
PSO J239-07	6.1102 ± 0.0024	[C II]	−27.46	1.32 ± 0.14	1.10 ± 0.12	BAL
PSO J261+19	$6.494^{+0.011}_{-0.006}$	Mg II	−25.69	$3.36^{+0.59}_{-0.33}$	$5.63^{+0.98}_{-0.55}$	…
PSO J359-06	6.1722 ± 0.0024	[C II]	−26.79	2.83 ± 0.14	3.07 ± 0.15	…

Note. The columns show the name of the quasar, its best systemic redshift estimate with its systematic uncertainty, the emission line it is derived from, its absolute magnitude M_{1450}, as well as the size of the proximity zone and its magnitude corrected value. The last column indicates whether the quasar has broad absorption lines (BALs) or associated absorption systems such as a proximate damped Lyα system (pDLA), which might have contaminated the proximity zones.

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Schindler, J.-T., Farina, E. P., Bañados, E., et al. 2020, ApJ, 905, 51