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Erratum: "The Evolution of NGC 7465 as Revealed by Its Molecular Gas Properties" (2021, ApJ, 909, 98)

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In Table 3 of the published article we presented calculations for the dynamical and molecular masses of the unidentified spectral line source behind NGC 7465. However, we made errors in the calculation of the line width and the line flux, and those errors propagated through to the dynamical masses, line luminosities, molecular masses, and molecular/dynamical mass ratios. Hogg (1999) and Bourne et al. (2019) give brief explanations of some issues involved in estimating line widths at high redshift. Following their methods, the line width of the unidentified object (0.14 GHz at an observed frequency of 97.67 GHz) corresponds to a velocity width in the object's rest frame of 430 km s^{-1}. Its integrated line flux is then 0.89 ± 0.09 Jy km s^{-1}. We present updated values for the other parameters in Table 3. Because the molecular-to-dynamical mass ratios are smaller than in the previous version, the plausibility of the source having a redshift $z > 1$ is larger, but none of the conclusions of the published article are changed.

Table 3
Flux, Luminosity, and Mass Estimates for the Unidentified Source

Line ID	z	Diameter (kpc)	$M_{\rm dyn}$ ($M_\odot$)	$L'_{\rm line}$ (K km s^{-1} pc^2)	$M_{\rm mol}$ ($M_\odot$)	$M_{\rm mol}/M_{\rm dyn}$
^{12}CO (1−0)	0.1802	1.06	$5.7 \times 10^9/\sin^2 i$	1.4×10^9	5.1×10^9	$0.89 \sin^2 i$
^{12}CO (2−1)	1.3604	2.94	$1.6 \times 10^9/\sin^2 i$	2.2×10^{10}	1.0×10^{11}	$6.5 \sin^2 i$
^{12}CO (3−2)	2.5404	2.81	$1.5 \times 10^9/\sin^2 i$	3.0×10^{10}	1.1×10^{11}	$7.0 \sin^2 i$

Note. Calculations are made assuming a flat universe with $H_0 = 70$ km s^{-1} Mpc^{-1}, $\Omega_m = 0.3$, and $\Omega_\Lambda = 0.7$. The linear diameter is estimated from the emission centroids in the outermost channels. The line luminosity $L'_{\rm line}$ is calculated as in Carilli & Walter (2013). Estimated luminosity conversions from $J = 2-1$ or $J = 3-2$ to $J = 1-0$ are made using assumed excitations as in Boogaard et al. (2019), and the molecular mass (with He) is then estimated from the inferred ^{12}CO (1−0) luminosity using a conversion factor $\alpha = 3.6\ M_\odot$ (K km s^{-1} pc^2)$^{-1}$ (Boogaard et al. 2019).

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