Erratum: “Spiral Arms in Disks: Planets or Gravitational Instability?” (2018, ApJ, 862, 103)

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This Erratum is to clarify a potential confusion regarding Equation (2) in the Appendix B in Dong et al. (2018). The factor of 0.5 in 0.5 $R_{mm}$ is an approximate correction factor meant to identify the radius where the dust temperature is the global average in a disk whose size is $R_{mm}$. This is to account for the fact that dust at different radii has different temperature. If the surface density follows a $\Sigma \sim 1/R$ radial profile and the disk extends from $R = 0$ to $R = R_{mm}$, 0.5 $R_{mm}$ is the half-mass radius, i.e., the radius inside which half of the disk mass is enclosed. Equation (2) in the Appendix B is a fit to simulations to give the specific temperature at $R = 0.5R_{mm}$, not $R_{mm}$, in a disk; this temperature is considered as a proxy for the average dust temperature in a disk whose outer edge is at $R_{mm}$.

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References

Dong, R., Najita, J. R., & Brittain, S. 2018, ApJ, 862, 103