

ERRATUM: “THE EFFECTS OF METALLICITY AND GRAIN SIZE ON GRAVITATIONAL INSTABILITIES  
 IN PROTOPLANETARY DISKS” (ApJ 636, L149 [2006])

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We have found that the total cumulative radiative energy losses shown in Figure 2 of the above-mentioned Letter were computed for only half the disk. This caused the final global cooling times  $t_{\text{cool}}$  in the eighth column of the original Table 1 to be too large by a factor of 2. Proper values of  $t_{\text{cool}}$  are given in the revised Table 1 below. To be more consistent with what the Letter states, we now use instantaneous values for both the total internal energy and the final total net cooling rates to compute final  $t_{\text{cool}}$ ’s, instead of averaging the loss rates over an interval of time at the end of the calculations before dividing, as was done in the Letter. We also take this opportunity to make a few other inconsequential corrections to the fourth column of the table. In addition to the changes to Table 1, the approximate initial  $t_{\text{cool}}$  relation in the fourth paragraph of § 3.2 becomes  $t_{\text{cool}} \sim Z/Z_{\odot}$  to within tens of percent. Despite the corrections, our conclusions in the Letter remain unchanged. Most importantly, the final  $t_{\text{cool}}$ ’s vary with metallicity and are still too long for disk fragmentation to occur with our equation of state over the range of  $Z$  examined. We regret any inconvenience our errors may have caused.

TABLE 1  
 SIMULATION RESULTS

Case	$f_x$	$a_{\text{max}}$	Duration <sup>a</sup>	$t_1^a$	$t_2^a$	$\langle A \rangle$	$t_{\text{cool}}^a$	Thin (%)
1/4 $Z_{\odot}$ .....	1/4	1 $\mu\text{m}$	3.8 <sup>b</sup>	...	...	1.29	2.1	99
1/2 $Z_{\odot}$ .....	1/2	1 $\mu\text{m}$	15.6	4.0	10	1.09	2.9	98
$Z_{\odot}$ .....	1.0	1 $\mu\text{m}$	15.7	5.0	10	1.10	3.2	94
2 $Z_{\odot}$ .....	2.0	1 $\mu\text{m}$	16.5	5.0	10	0.72	3.7	86
1 mm .....	1.0	1 mm	17.2	7.0	11	0.88	4.5	44

<sup>a</sup> All times are given in units of ORPs.

<sup>b</sup> From 13.0 to 16.8 (ORPs).