Constraining planetary mass-loss rates by simulating Parker wind profiles with Cloudy (Corrigendum)

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In Sect. 4.3, we assumed a normally distributed prior and likelihood but erroneously used \( p \)-values derived from the survival function instead of from the probability density function of the normal distribution. We gave the example of a temperature difference of \( T_{\text{He}} - T_0 = 2\sigma T \), which we considered a 2\( \sigma \) discrepancy and thus translated to a prior \( p \)-value of \( \sim 0.05 \) (rounded from 0.0455, equal to two times the survival function evaluated at 2\( \sigma \)). Instead, we should have used a \( p \)-value of 0.0540, equal to the probability density function evaluated at 2\( \sigma \). This error has only a minimal effect on the posteriors we derived. Figures 1, 2, and 3 show corrected versions of Figs. 4, 5, and A.1 from the paper, respectively. Table 1 gives the corrected values for the constrained temperatures and mass-loss rates of Table 1 from the paper. All main findings and conclusions remain unaffected.

### Table 1. Corrected values for the constrained temperatures and mass-loss rates for the investigated exoplanets.

| Planet      | \( T \) (K) | \( \log_{10}(\dot{M}) \) (log\( _{10} \) (g s\(^{-1}\))) |
|-------------|-------------|------------------------------------------------------|
| HD 209458 b | 8200\(^{+1300}_{-1200}\) | 9.84\(^{+0.27}_{-0.30}\) |
| WASP-69 b   | 5300\(^{+1400}_{-300}\) (\( u \)) | 9.91\(^{+0.19}_{-0.13}\) (\( u \)) |
| WASP-52 b   | 9000\(^{+1900}_{-1600}\) | 11.06\(^{+0.28}_{-0.29}\) |
| HAT-P-11 b  | 4500\(^{+1300}_{-1200}\) | 9.70\(^{+0.30}_{-0.17}\) |
| HAT-P-18 b  | 5400\(^{+1400}_{-1300}\) (\( u \)) | 10.33\(^{+0.30}_{-0.27}\) (\( u \)) |
| WASP-107 b  | 3400\(^{+1500}_{-400}\) (\( u \)) | 9.96\(^{+0.24}_{-0.23}\) (\( u \)) |
Fig. 1. Corrected Fig. 4. Only the posteriors in the bottom-right panel have changed, and only slightly.
Fig. 2. Corrected Fig. 5. The only difference is a slight change in the posteriors.
Fig. 3. Corrected Fig. A.1. The only difference is a slight change in the posteriors.