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ERRATUM: "*CHANDRA* HETGS MULTIPHASE SPECTROSCOPY OF THE YOUNG MAGNETIC O STAR θ^1 ORIONIS C" (ApJ, 628, 986 [2005])

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Figure 13 of our paper shows the dependence of the forbidden-to-intercombination line ratio on formation radius and electron density for two He-like ions, Mg XI and S XV, assuming a 45,000 K photosphere. In calculating the PRISMSPECT line ratios, we neglected to include the flux from the upper $^3P_2 \rightarrow {}^1S_0$ transition. For lower-Z ions such as Mg XI, the intercombination doublet is dominated by flux from the lower transition. But for higher-Z elements, this omission led us to underestimate the intercombination line strength from our model.

In addition, comparing the spectral type and luminosity of θ^1 Ori C with the recent calibrations of P. Massey et al. (ApJ, 627, 477 [2005]) and F. Martins et al. (A&A, 436, 1049 [2005]) suggests that θ^1 Ori C is an O5.5 V star with radius $R \approx 10.6\ R_\odot$ and effective temperature $T_{\rm eff} \approx 40{,}000$ K. This new calibration makes θ^1 Ori C larger and cooler than both the "hot" and "cool" models in Table 3 of our original paper.

In the revised Figure 13 below, we show the corrected PRISMSPECT line ratios for Mg XI, Si XIII, and S XV as a function of $u = R_\star/R$ for $T_{\rm eff} = 40{,}000$ K. Also shown are the predictions from the analytic parametrization of G. R. Blumenthal et al. (ApJ, 172, 205 [1972]). For Mg XI and Si XIII, we further show the predictions based on the R_0 values of D. Porquet et al. (A&A, 376, 1113 [2001]). The hatched regions in Figure 13 represent the 1 σ upper and lower bounds on f/i from the HETG data and $u = R_\star/R$ from the PRISMSPECT model. Although the three f/i ratios yield different bounds on the formation radius, there is a range of radii, $1.7 < R/R_\star < 2.1$, that is consistent with all three measured f/i ratios. Using G. R. Blumenthal et al. (ApJ, 172, 205 [1972]) (Fig. 13, *solid lines*), the range of radii is $1.6 < R/R_\star < 2.0$. The net effect of the corrected model and lower effective temperature is to place the X-ray–emitting plasma at a slightly larger radius than reported originally.

Figure 5*c* added here is a gray-scale image of emission measure per unit volume from the 375 ks snapshot of the MHD simulation shown in the upper and lower panels of Figure 5 of the original paper. Overlaid on the emission-measure map is a $T = 10^6$ K contour. The new Figure 5*c* shows that the X-rays in the magnetically channeled wind shock (MCWS) model are formed over a range of radii, with an effective emission radius $R \approx 2R_\star$, consistent with the revised f/i ratio calculations.

Thus, the only remaining discrepancy between the HETG data and the MCWS model is the overall X-ray variability, $1 - L_{\rm X}^{\rm min}/L_{\rm X}^{\rm max} \approx 0.33$. If the X-rays are produced, on average, at $R \approx 2R_\star$, then occultation of an X-ray torus by the photosphere would produce a $\sim$17% dip in visible X-ray luminosity at phase 0.5, only about half the observed drop. We suggest that the remaining absorption must occur in the dense gas in the magnetic equatorial plane. To test this idea, future absorption models will need to properly account for the ionization of the outflowing circumstellar plasma.

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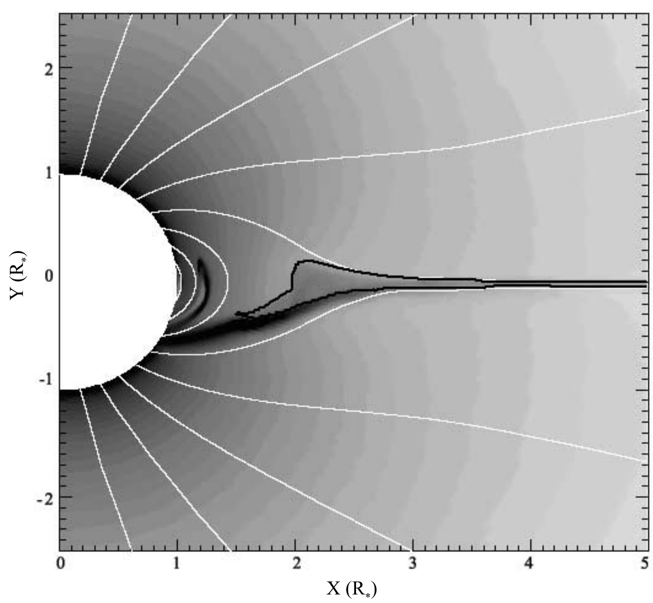

Fig. 5.—(*c*, *new panel*) Gray-scale snapshot of emission measure per unit volume from the 500 ks, slow-wind, two-dimensional MHD simulation of θ^1 Ori C. This snapshot was obtained at a typical simulation time $t = 375$ ks, when dense gas in the magnetic equatorial plane is falling back onto the photosphere. The dark $T = 10^6$ K contour suggests that, on average, the X-rays are produced at $R \approx 2R_\star$.

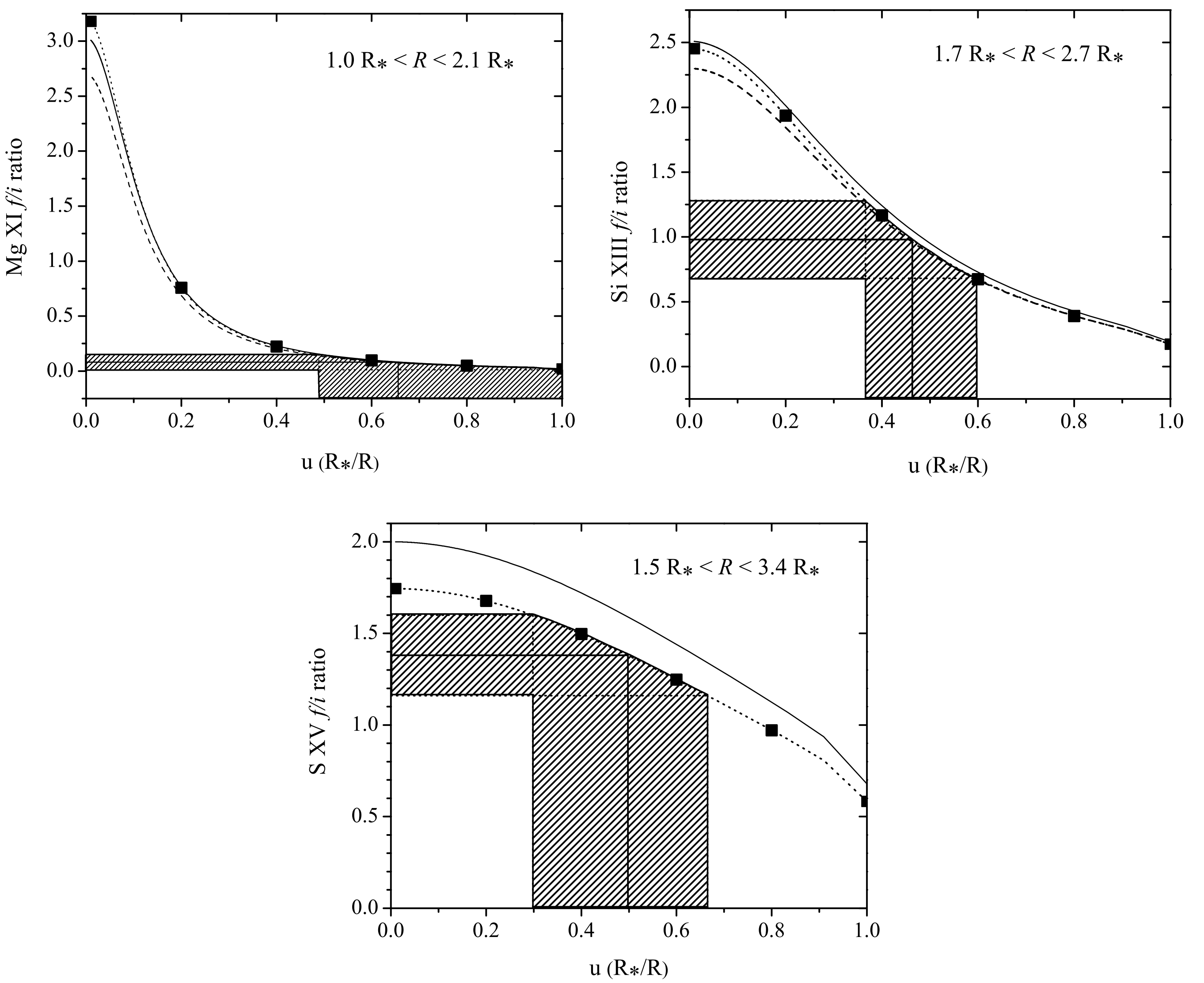

FIG. 13.—Forbidden-to-intercombination line f/i ratios vs. $u = R_\star/R$ for three He-like ions: Mg XI, Si XIII, and S XV, assuming a photospheric temperature $T_{\rm eff} = 40{,}000$ K. The hatched regions represent the 1 σ upper and lower bounds on the observed f/i ratios and the corresponding bounds on $u = R_\star/R$ from the PRISMSPECT model (*dotted line and filled squares*), G. R. Blumenthal et al. (ApJ, 172, 205 [1972]; *solid line*), and D. Porquet et al. (A&A, 376, 1113 [2001]; *dashed line*).