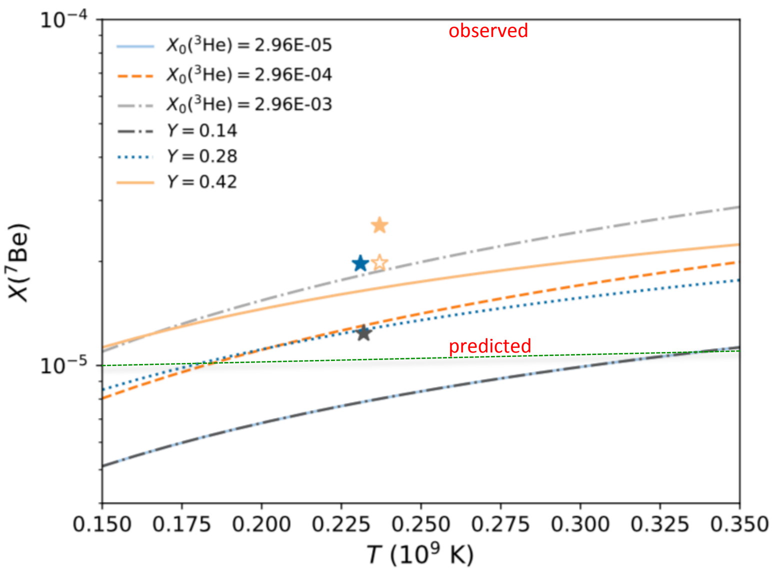
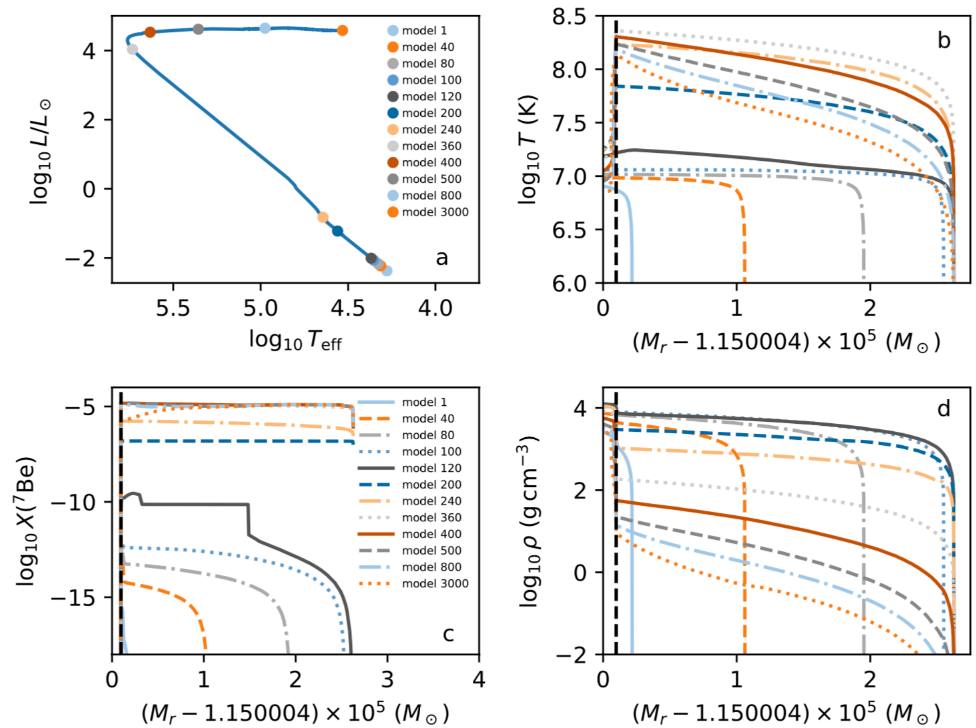
On the discrepancy between the observed and predicted abundances of ^{7}Be in novae





Equations of the ^{7}Be production

$$\frac{dX(^3\mathrm{He})}{dt} = -\frac{1}{3}\lambda_1\rho\left[X(^3\mathrm{He})\right]^2 - \frac{1}{4}\lambda_2\rho X(^3\mathrm{He})Y,$$

$$\frac{dX(^7\mathrm{Be})}{dt} = \frac{7}{12}\lambda_2\rho X(^3\mathrm{He})Y,$$

where λ_1 and λ_2 are T-dependent rates ($\lambda_i \equiv \langle\sigma v\rangle_i N_{\mathrm{A}}$ is the product of the Maxwellian-averaged cross section and Avogadro number) of the reactions $^3\mathrm{He}(^3\mathrm{He},2p)^4\mathrm{He}$ and $^3\mathrm{He}(\alpha,\gamma)^7\mathrm{Be}$, respectively. The analytical solution of these equations is

$$X(^7\mathrm{Be}) = \frac{7}{4}Y\frac{\lambda_2}{\lambda_1}\ln\left[1 + \frac{4}{3}\frac{X_0(^3\mathrm{He})}{Y}\frac{\lambda_1}{\lambda_2}\left(1 - e^{-t/\tau}\right)\right], \quad (1)$$

where $\tau = 4/(\lambda_2\rho Y)$, and $X_0(^3\mathrm{He})$ is the initial mass fraction of ^{3}He.

Gehrz et al., 1998, PASP, **110**, 3			X	Y
QU Vul	1984	17	0.30	0.60
QU Vul	1984	10	0.33	0.26
QU Vul	1984	18	0.36	0.19
V842 Cen	1986	10	0.41	0.23
V827 Her	1987	10	0.36	0.29
QV Vul	1987	10	0.68	0.27
V2214 Oph	1988	10	0.34	0.26
V977 Sco	1989	10	0.51	0.39
V433 Sct	1989	10	0.49	0.45
V351 Pup	1991	19	0.37	0.25
V1974 Cyg	1992	18	0.19	0.32
V1974 Cyg	1992	20	0.30	0.52
V838 Her	1991	11	0.60	0.31