Report page ExoTIC-ISM

W17_G102_lc_9767.txt - 190

Input parameters:

Number of systematic models: 50
Wavelength mid point = 9790.760014001671
Wavelength half width = 47.54926406503546

Planet parameters:

Rp/R* = 0.12169232
Epoch (MJD) = 58021.48064883803
Inclination (deg) = 87.34635
Eccentricity = 0.0
Omega (deg) = 0.0
Period (days) = 3.73548535
a/R* = 7.0780354

Stellar parameters:

FeH (dex) = -0.25
Teff (K) = 6550.0
log(g) (cgs) = 4.2

Output parameters:

Limb-darkening coefficients:

C1 = 0.8415637679577853
C2 = -0.77477809617471
C3 = 0.7642736400144927
C4 = -0.2723699531856223

Top five systematic models by their weight

Check the chi-squared values and the AIC evidence for reasonable fits.
If the chi-squared values far exceed the DOF then it is likely that the input data contains additional noise, double check the spectral extraction.
Model numbers = [49 33 48 34 38]
DOF = [37. 41. 38. 40. 40.]
Chi-squared = [62.20638157 66.24899051 64.09004163 66.19654204 66.23485303]
AIC evidence = [300.6999937 300.67868923 300.25816367 300.20491347 300.18575797]
Weights = [0.1604866373483308 0.15710371854115535 0.103170262214426 0.09782013653986274 0.09596417606978436]
SDNR = [323.99757649 334.58837968 329.01548816 334.45203009 334.55086544]

Top model Noise Statistics:

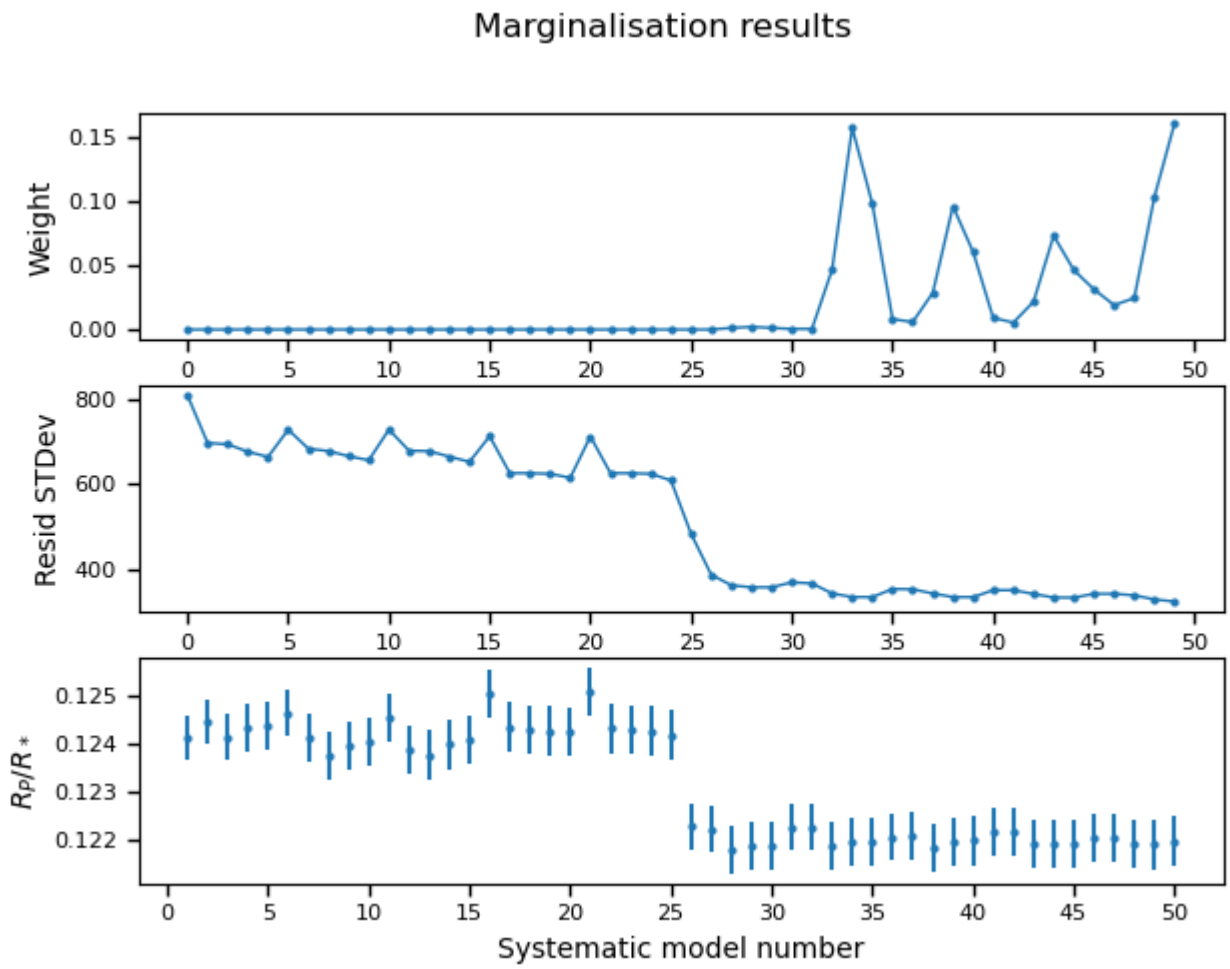
White noise = 0.0004325595846312743
Red noise = 0.0001573039469066824
Beta = 1.5538073845322495
If the red-noise is significant it means the data is poorly fit by any of the systematic models. It is recommended that the input lightcurves are checked for additional noise sources.

Marginalised parameters:

If None, parameter was not fit for.

Rp/R* = 0.12194133562743689 +/- 0.0005087135828749463
Epoch (MJD) = 58021.48059049986 +/- 0.0004746041160765899 6
Inclination (rad) = None +/- None
Inclination (deg) = None +/- None
System density (Ms+Mp/R^3) = None +/- None
a/R* = None +/- None

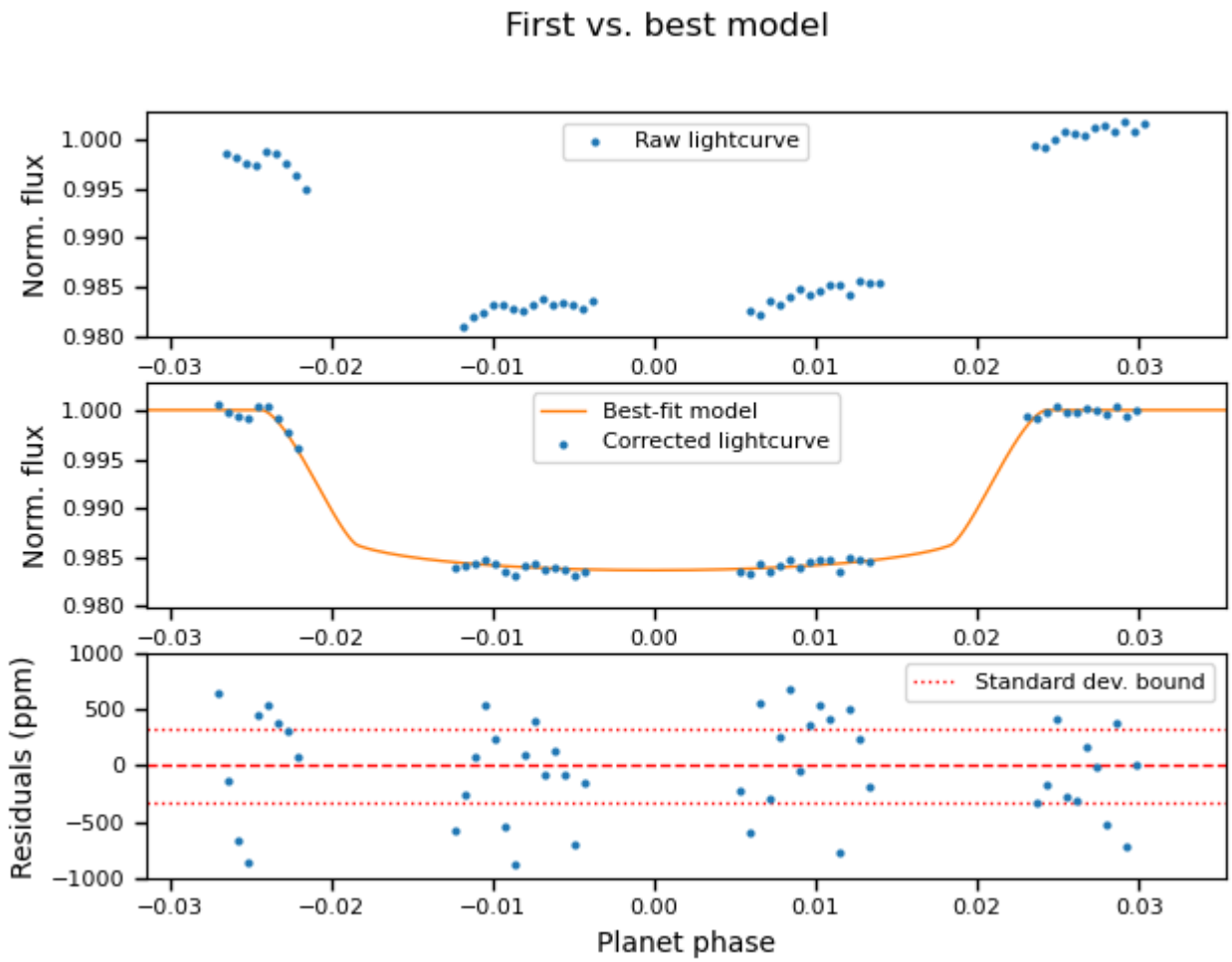
Systematics



Top: Evidence-based weight associated with each systematic model when fit with the data. *Middle:* Standard deviation of the residuals after correcting for each systematic model. *Bottom:* Radius ratio

measured from the transit depth when the light curve has been corrected using each systematic model. *If present, grey crosses mark discarded systematic models (poor AIC evidence).*

Lightcurves



Top: Input lightcurve with no systematic model correction applied. *Middle:* Lightcurve corrected by highest weight systematic model plotted with the smooth planetary transit model centred on the mid-transit time. *Bottom:* Residuals and uncertainties associated with the middle panel lightcurve. The upper and lower standard deviation bounds are shown in dotted lines relative to zero.