Report page ExoTIC-ISM

W17_G102_lc_10120.txt - 190

Input parameters:

Number of systematic models: 50
Wavelength mid point = 10147.379494489438
Wavelength half width = 95.09852813007092

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 = 0.8609071157062428
C2 = -0.8209638118767815
C3 = 0.7915931417997245
C4 = -0.2862682762743537

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 = [48 49 43 33 32]
DOF = [38. 37. 39. 41. 42.]
Chi-squared = [137.54015909 137.12124159 139.47974865 141.99619577 143.10468594]
AIC evidence = [274.52562918 274.23508793 274.0558344 273.79761084 273.74336575]
Weights = [0.1800932772220574 0.134684320368835 0.11258180802633956 0.08696072515553858 0.08236919314947198]
SDNR = [385.49411032 384.84095091 388.28109356 391.6536206 393.17974767]

Top model Noise Statistics:

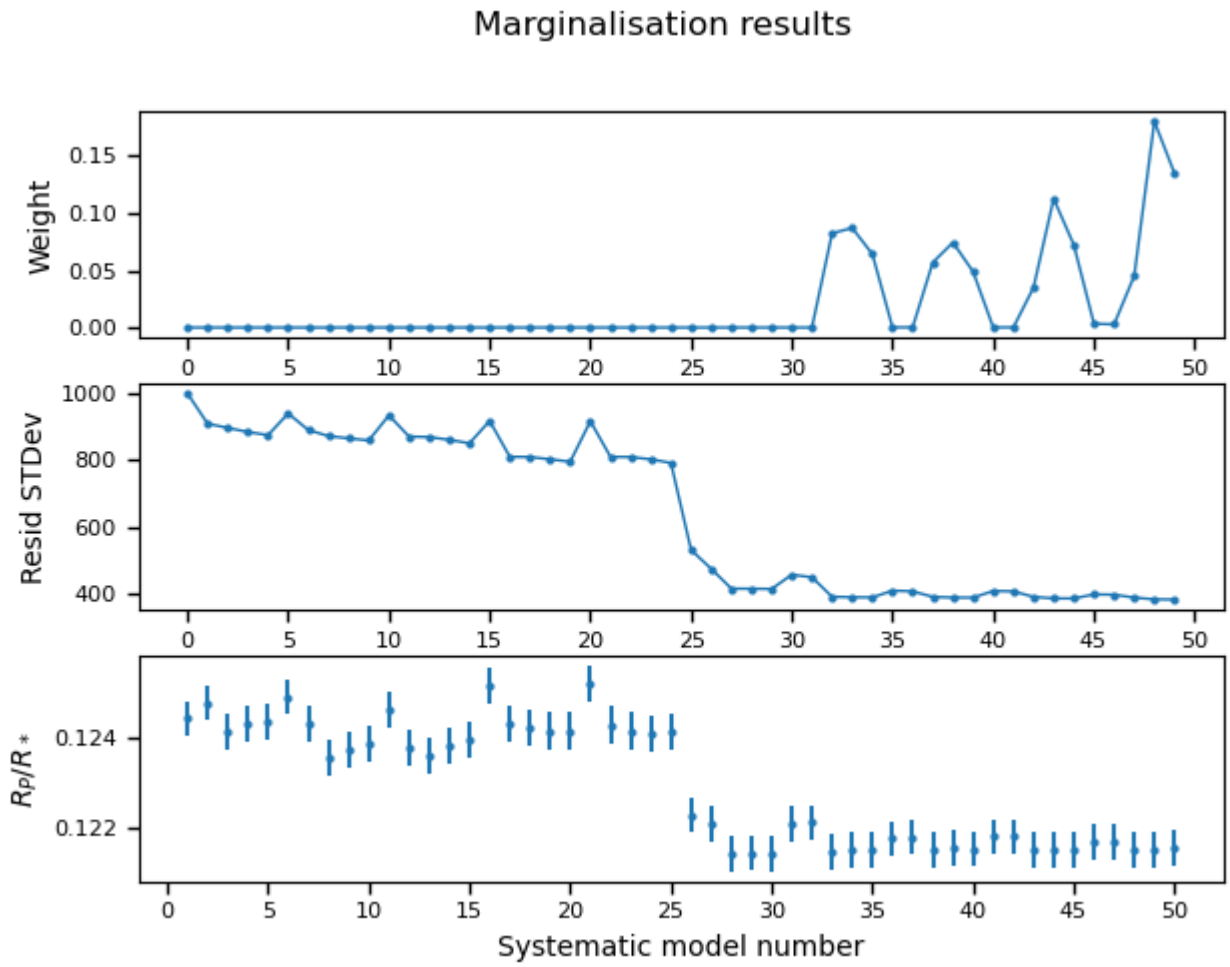
White noise = 0.0004916248663555567
Red noise = 0.0002452492832244098
Beta = 1.851601524094002
If the red-noise is significant it means the data is poorly fit by any of the systematic models. It is recommended that the input lightcurves are checked for additional noise sources.

Marginalised parameters:

If None, parameter was not fit for.

Rp/R* = 0.12152714059699832 +/- 0.0003978403190022333
Epoch (MJD) = 58021.48188089246 +/- 0.0003839063107241023
Inclination (rad) = None +/- None
Inclination (deg) = None +/- None
System density (Ms+Mp/R^3) = None +/- None
a/R* = None +/- None

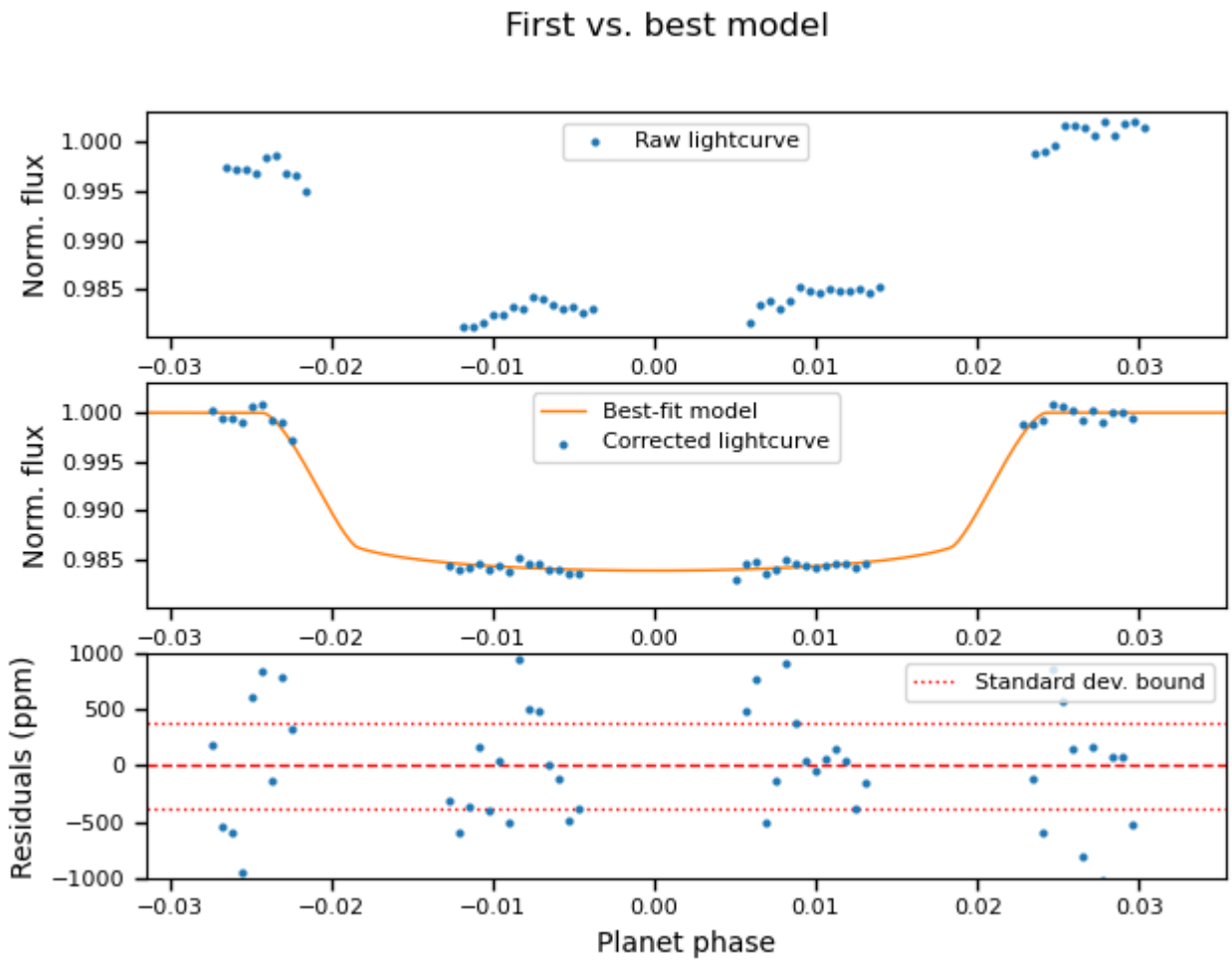
Systematics



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.