Report page ExoTIC-ISM

W17_G141_lc_14111.txt - 190

Input parameters:

Number of systematic models: 50
Wavelength mid point = 14149.732923850563
Wavelength half width = 45.40313482374495

Planet parameters:

Rp/R* = 0.12169232
Epoch (MJD) = 57957.97108811848
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 = 1.0004609053189426
C2 = -1.1399915631039457
C3 = 0.9721393140062538
C4 = -0.3278356542206665

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 = [38 37 39 42 43]
DOF = [40. 41. 39. 40. 39.]
Chi-squared = [68.66307291 69.96119603 68.17381002 69.2622077 68.3748728]
AIC evidence = [299.24963199 299.10057043 298.99426343 298.95006459 298.89373204]
Weights = [0.1652607289560052 0.1423747752545828 0.12801607527751468
0.12248113340116193 0.11577219898093168]
SDNR = [337.63667817 340.86723037 336.43695103 339.2293507 336.97977517]

Top model Noise Statistics:

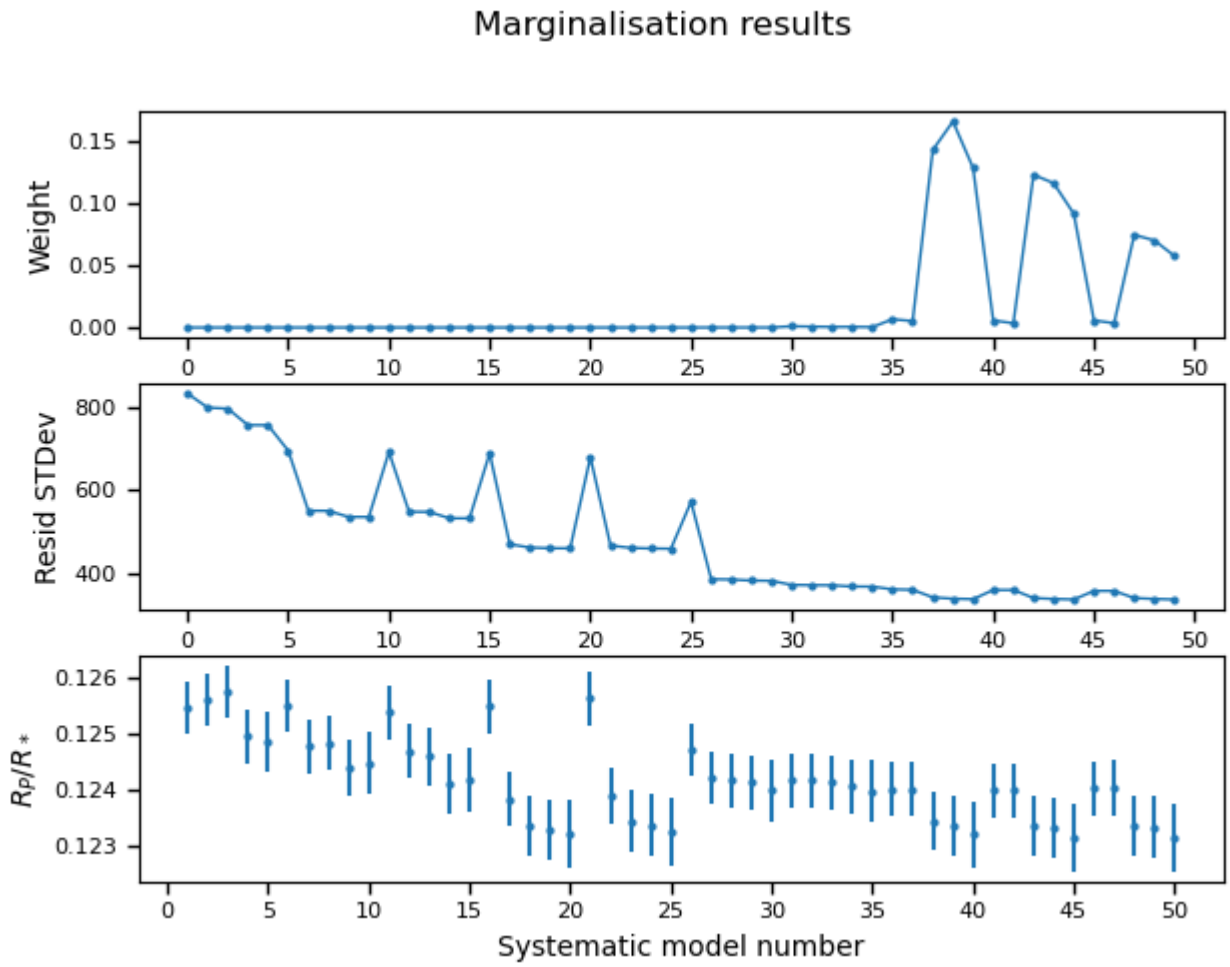
White noise = 0.00046193945839035396
Red noise = 0.0001258032979218002
Beta = 1.3538768937053023
If the red-noise is significant it means the data is poorly fit by any of the systematic models. It is recommended that the input lightcurves are checked for additional noise sources.

Marginalised parameters:

If None, parameter was not fit for.

Rp/R* = 0.12332692354656409 +/- 0.0005743537959692022
Epoch (MJD) = 57957.97108974202 +/- 0.0005327556241223755
Inclination (rad) = None +/- None
Inclination (deg) = None +/- None
System density (Ms+Mp/R^3) = None +/- None
a/R* = None +/- None

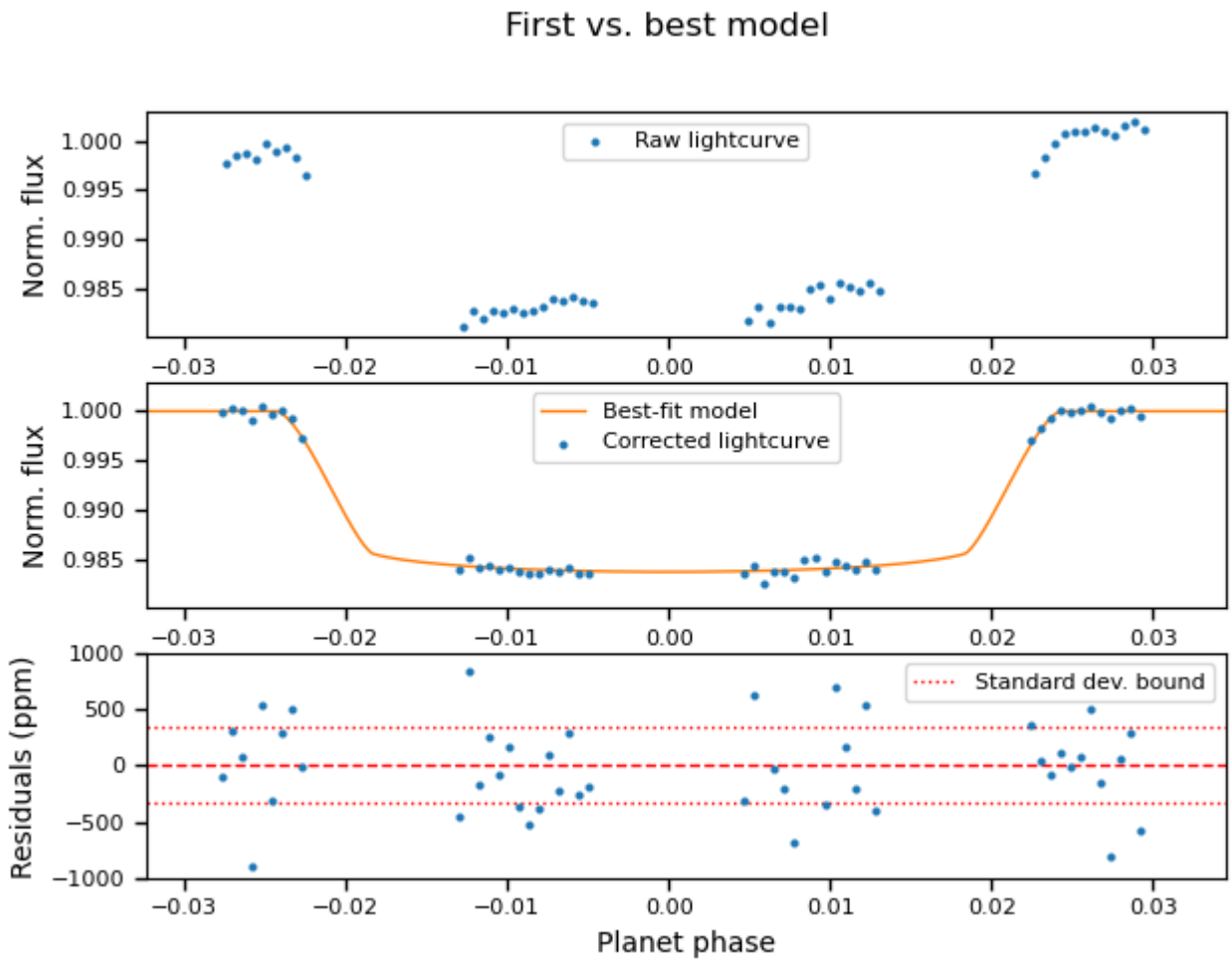
Systematics



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.