Report page ExoTIC-ISM

W17_G141_lc_11395.txt - 190

Input parameters:

Number of systematic models: 50
Wavelength mid point = 11425.544834425815
Wavelength half width = 45.40313482374586

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 = 0.8529826676459834
C2 = -0.8253767327960433
C3 = 0.7629686458065699
C4 = -0.2660921532485909

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 = [18 43 38 19 23]
DOF = [40. 39. 40. 39. 39.]
Chi-squared = [53.61471182 53.20704908 54.30081099 53.61177691 53.61284394]
AIC evidence = [306.05084231 305.75467368 305.70779272 305.55230976 305.55177625]
Weights = [0.10463359453435175 0.07781202986616498 0.07424831528246903 0.06355668135764364 0.06352278201604564]
SDNR = [302.50181707 301.34561397 304.40530768 302.49212106 302.49603422]

Top model Noise Statistics:

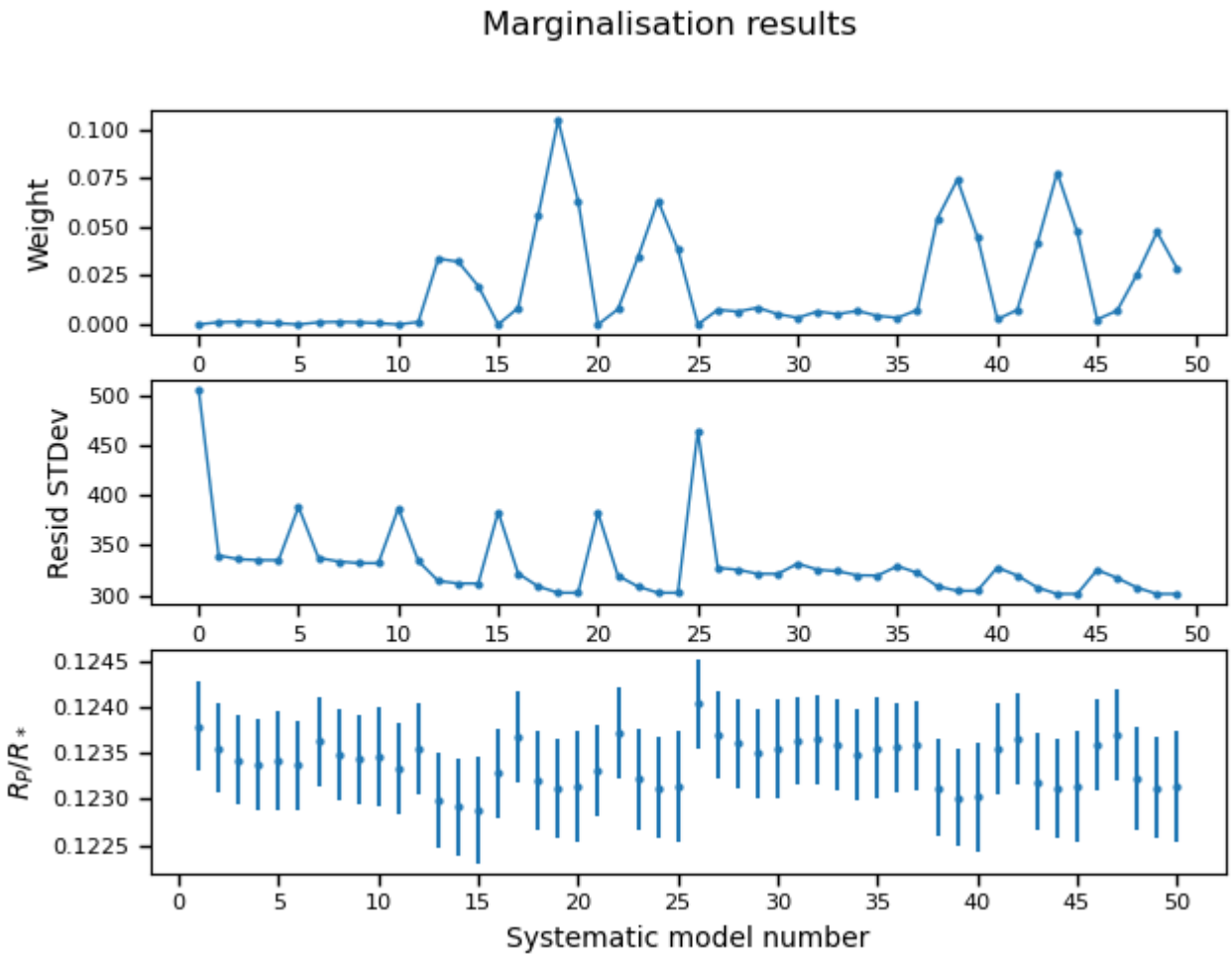
White noise = 0.0004242038681314129
Red noise = 5.763373280774773e-05
Beta = 1.1035374972237921
If the red-noise is significant it means the data is poorly fit by any of the systematic models. It is recommended that the input lightcurves are checked for additional noise sources.

Marginalised parameters:

If None, parameter was not fit for.

Rp/R* = 0.12316171889157257 +/- 0.0005734455552778211
Epoch (MJD) = 57957.971586391584 +/- 0.0005908610520533399
Inclination (rad) = None +/- None
Inclination (deg) = None +/- None
System density (Ms+Mp/R^3) = None +/- None
a/R* = None +/- None

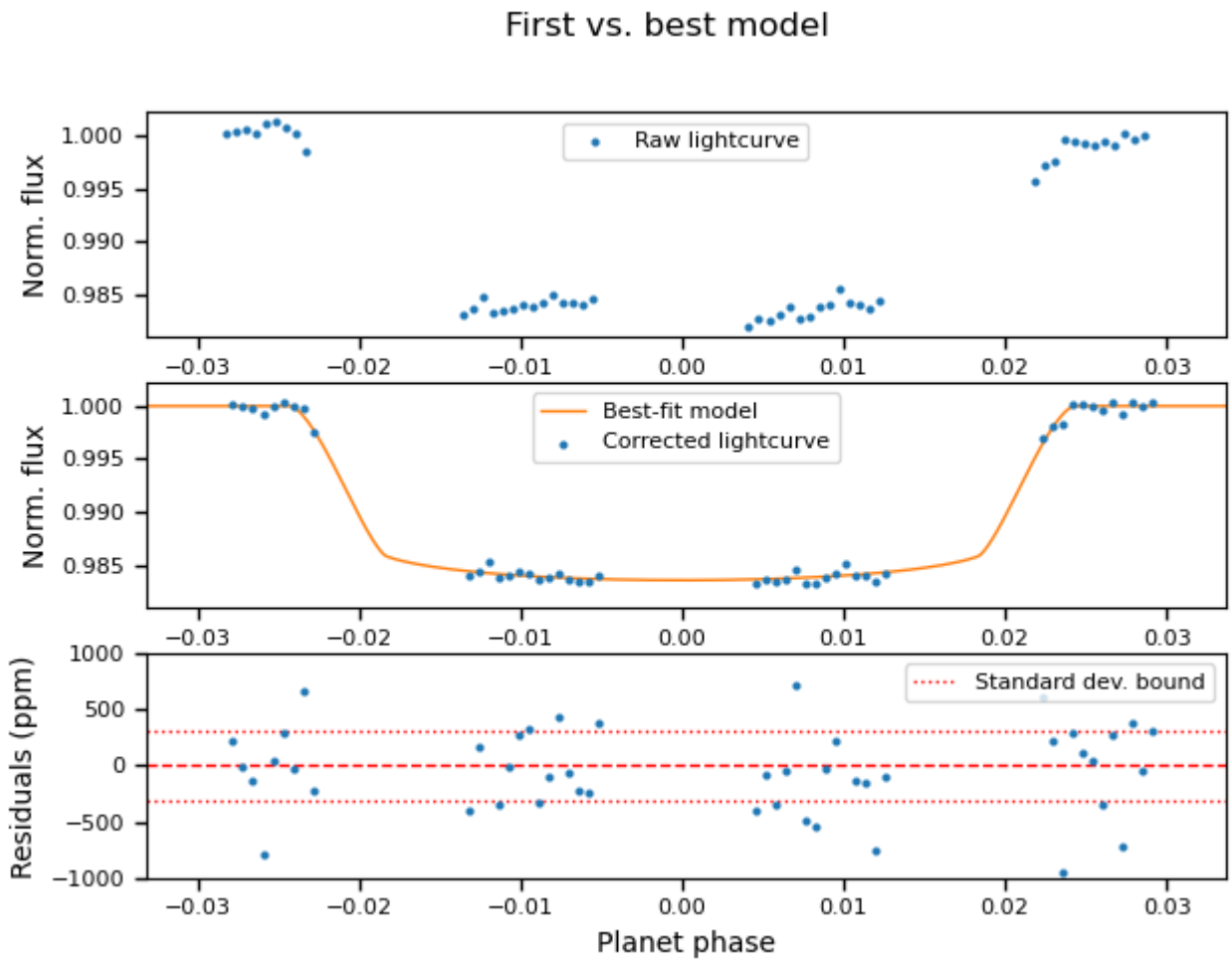
Systematics



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.