

Report page ExoTIC-ISM

W17_G102_lc_10334.txt - 190

Input parameters:

Number of systematic models: 50
Wavelength mid point = 10361.351182782098
Wavelength half width = 71.32389609755319

Planet parameters:

$R_p/R^* = 0.12169232$
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:

$C1 = 0.84815492112954$
 $C2 = -0.8019713061897841$
 $C3 = 0.7767202880079614$
 $C4 = -0.27773983642084343$

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 39 43 44 41]
DOF = [40. 39. 39. 38. 41.]
Chi-squared = [104.29950096 103.86641866 104.30002479 103.86640653 106.89063477]
AIC evidence = [287.87871708 287.59525823 287.37845516 287.09526429 287.08315017]
Weights = [0.15752568425227348 0.11864426807893011 0.0955191359796317
0.0719618224033186 0.07109532727176544]
SDNR = [365.78420554 365.00135331 365.7875417 365.00104495 370.13108743]

Top model Noise Statistics:

White noise = 0.0004745792995963124

Red noise = 0.00021424703079685471

Beta = 1.7488293151045744

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.

$R_p/R^* = 0.12112538643437348 \pm 0.00044745509887171185$

Epoch (MJD) = 58021.4804690387 $\pm 0.0004184525672376136$

Inclination (rad) = None \pm None

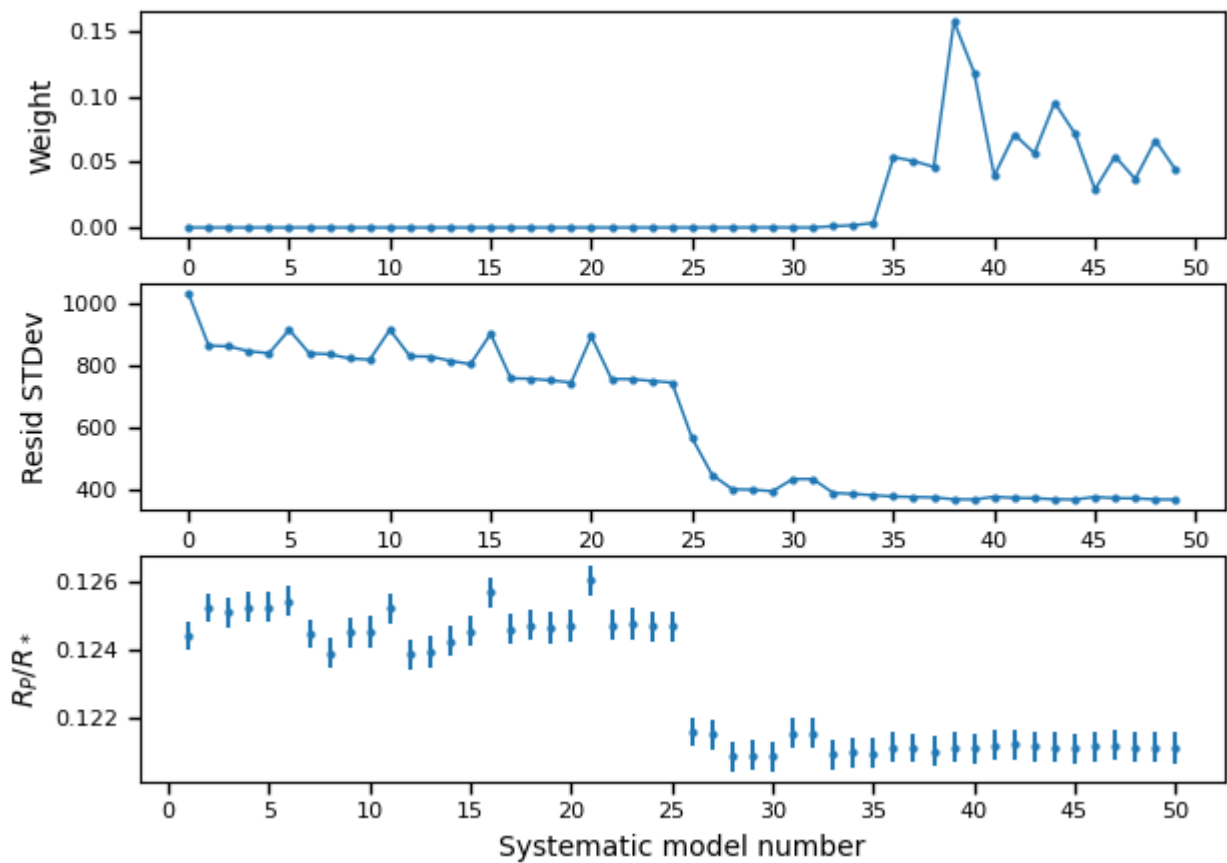
Inclination (deg) = None \pm None

System density ($M_s + M_p/R^3$) = None \pm None

$a/R^* =$ None \pm None

Systematics

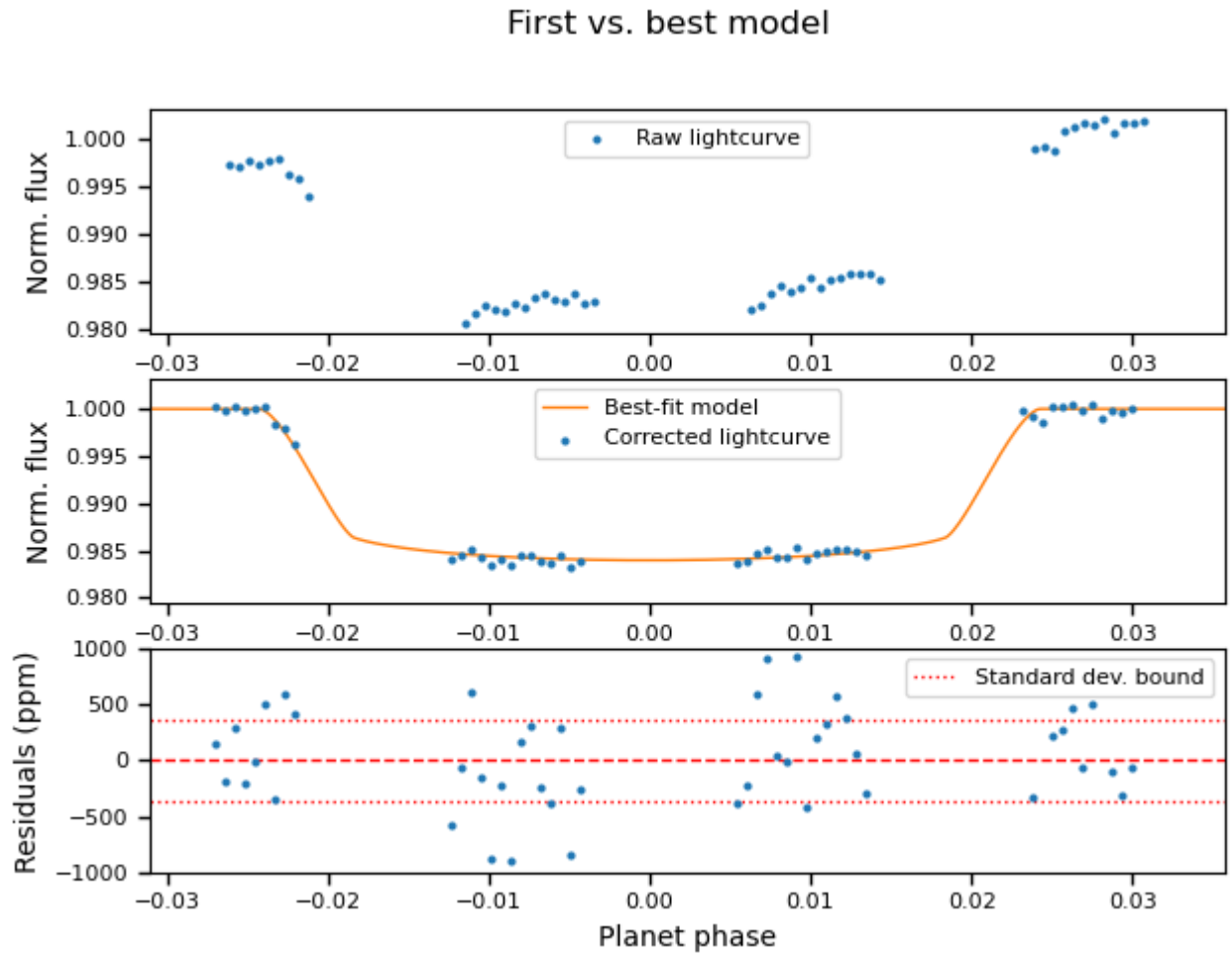
Marginalisation results



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.