

Report page ExoTIC-ISM

W17_G141_lc_16051.txt - 16051

Input parameters:

Number of systematic models: 50
Wavelength mid point = 16056.664586447883
Wavelength half width = 90.80626964749172

Planet parameters:

$R_p/R^* = 0.1255$
Epoch (MJD) = 57957.97108811848
Inclination (deg) = 86.93051272857655
Eccentricity = 0.0
Omega (deg) = 0.0
Period (days) = 3.7354850226
 $a/R^* = 7.025$

Stellar parameters:

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

Output parameters:

Limb-darkening coefficients:

$C1 = 1.158994192192319$
 $C2 = -1.623639777502824$
 $C3 = 1.4455489274158408$
 $C4 = -0.5016319547505691$

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 = [39 37 47 44 38]
DOF = [44. 46. 44. 43. 45.]
Chi-squared = [60.80776553 62.90554121 61.60750059 60.67069721 62.69974618]
AIC evidence = [328.6244937 328.57560586 328.22462617 328.19302786 328.17850337]
Weights = [0.13387088365813793 0.12748362715089828 0.0897482251079892
0.08695666940217511 0.08570279652910312]
SDNR = [355.54546283 361.60824888 357.81348003 355.2185786 361.00251139]

Top model Noise Statistics:

White noise = 0.000463959681533429

Red noise = 0.0002032812525358971

Beta = 1.6231019822594388

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.

$R_p/R^* = 0.12135796749394145 \pm 0.0005963248589315074$

Epoch (MJD) = 57957.97016457268 $\pm 0.0006354397737358478$

Inclination (rad) = None \pm None

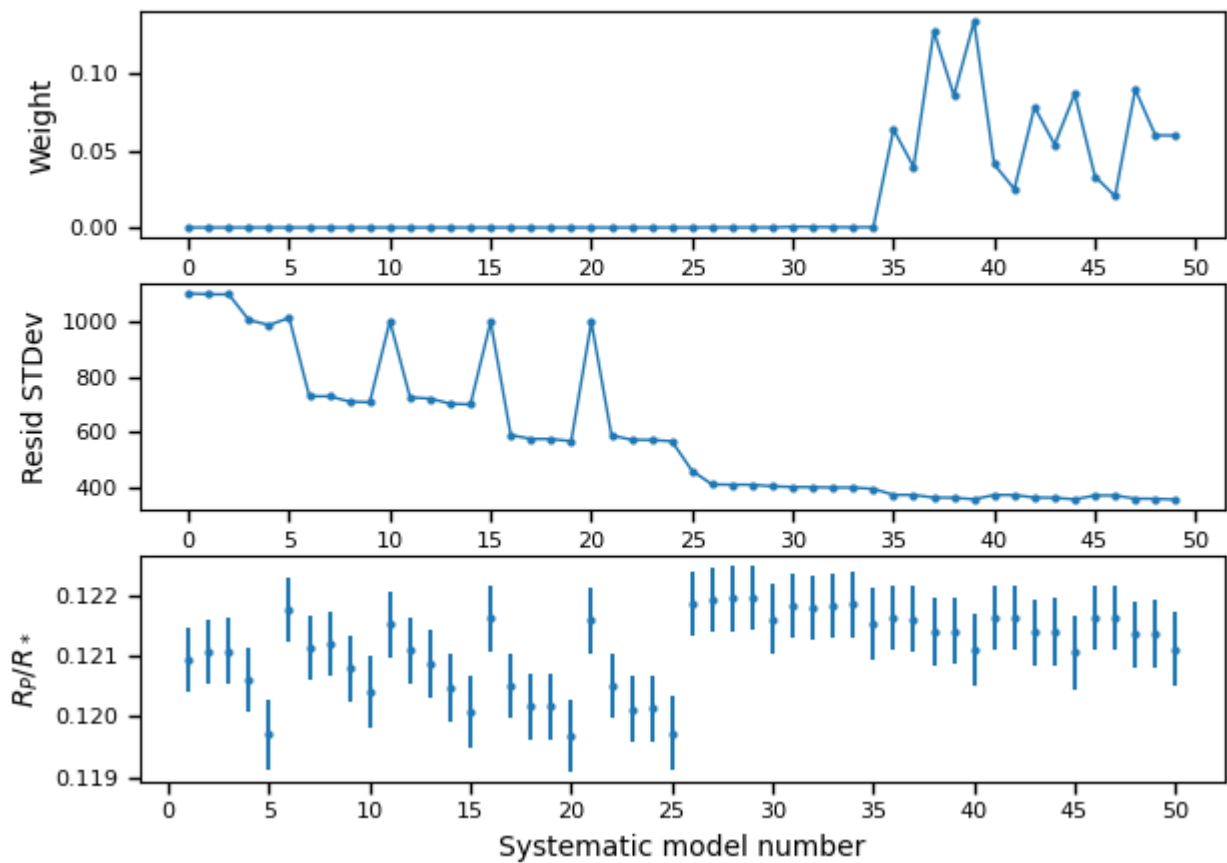
Inclination (deg) = None \pm None

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

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

Systematics

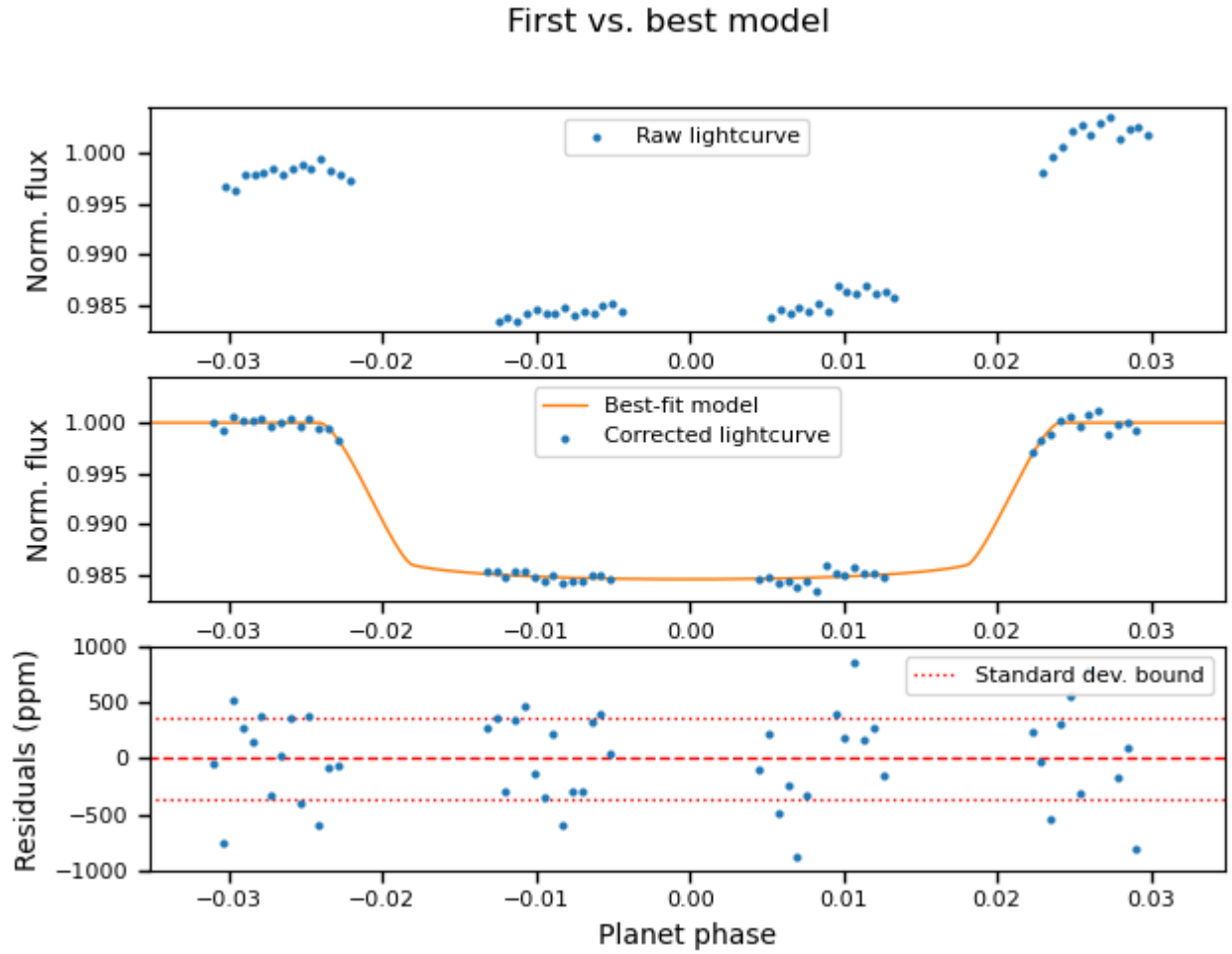
Marginalisation results



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.