

Report page ExoTIC-ISM

W17_G141_lc_12171.txt - 12171

Input parameters:

Number of systematic models: 50
Wavelength mid point = 12174.696559017619
Wavelength half width = 113.50783705936465

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:

$C1 = 0.8682720099191311$
 $C2 = -0.8581030349933926$
 $C3 = 0.7701865199102762$
 $C4 = -0.26623617780376$

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 = [47 48 49 42 37]
DOF = [44. 43. 42. 45. 46.]
Chi-squared = [56.16993003 56.11849972 55.75764707 59.16475871 60.43160594]
AIC evidence = [346.27400211 345.79971726 345.48014358 345.27658776 345.14316415]
Weights = [0.2535277926162825 0.15777794074903376 0.11461915437885858
0.0935091328385091 0.08182931035088388]
SDNR = [257.12459376 256.99281921 256.15131653 263.8734697 266.58576281]

Top model Noise Statistics:

White noise = 0.00035892773582184946

Red noise = 6.112885215351508e-05

Beta = 1.1325201665321605

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.

$R_p/R_* = 0.12174154254652896 \pm 0.0004271354276671619$

Epoch (MJD) = 57957.9704200298 \pm 0.0005145143349692289

Inclination (rad) = None \pm None

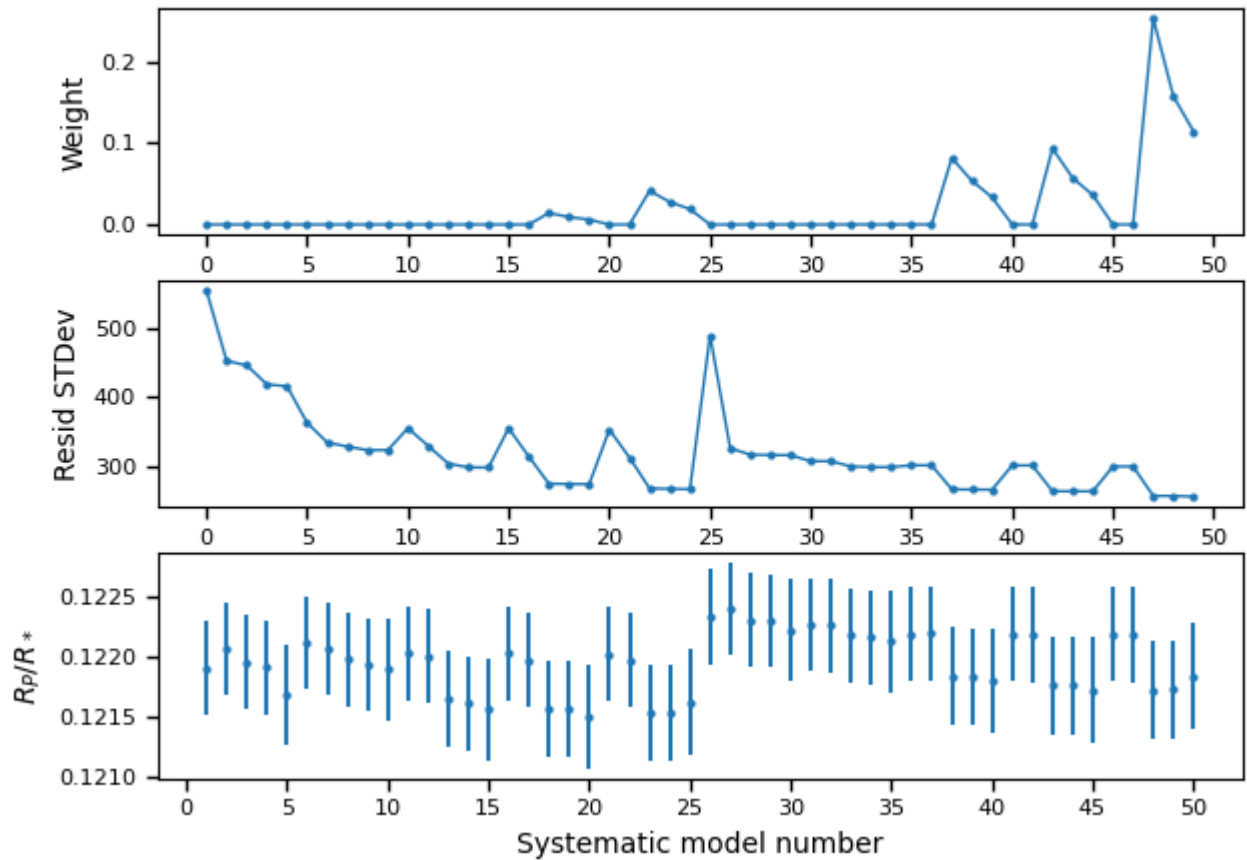
Inclination (deg) = None \pm None

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

a/R_* = None \pm None

Systematics

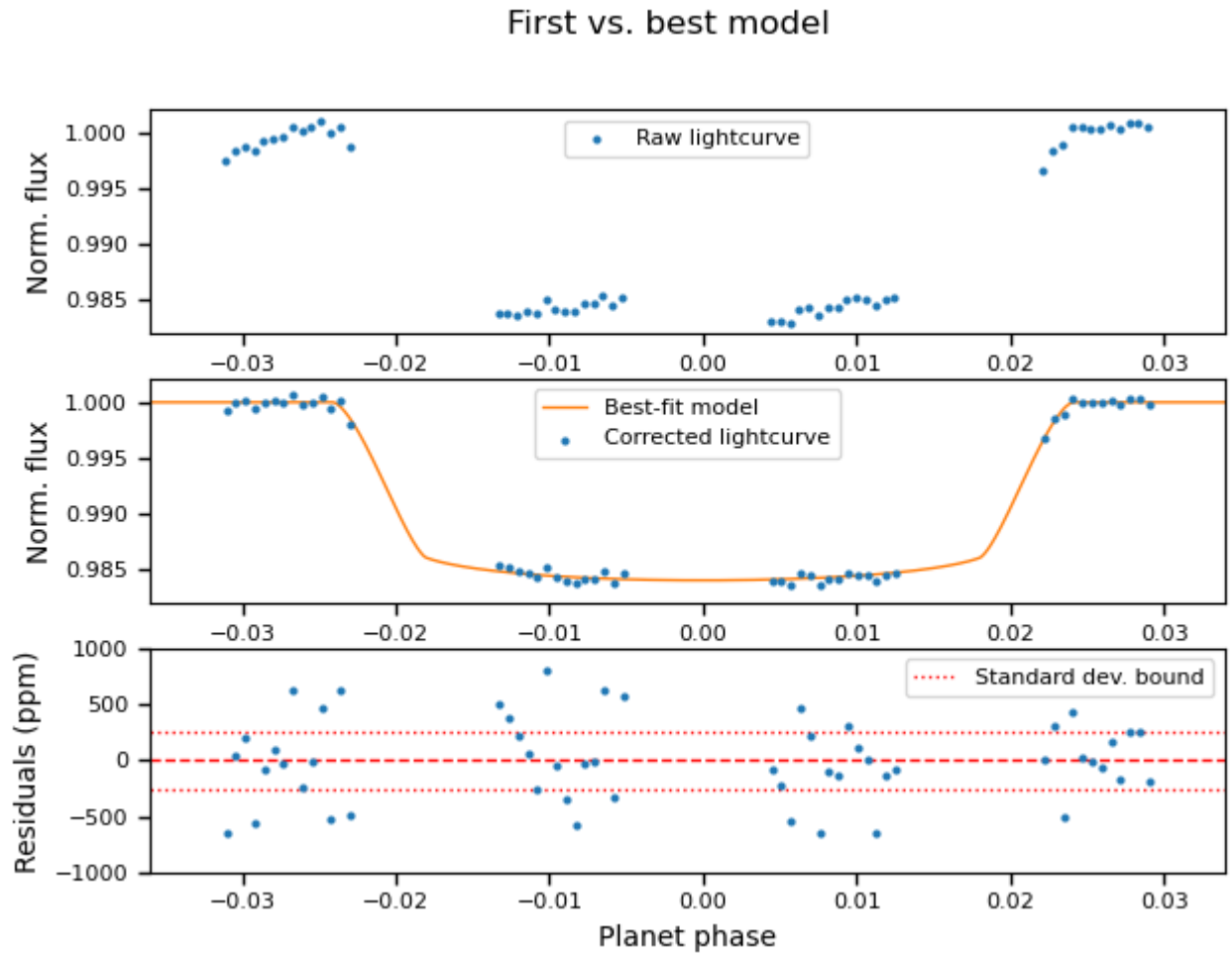
Marginalisation results



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.