

Report page ExoTIC-ISM

W17_G141_lc_15663.txt - 15663

Input parameters:

Number of systematic models: 50
Wavelength mid point = 15648.036373034172
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:

$C1 = 1.119823902524444$
 $C2 = -1.4797904671394944$
 $C3 = 1.2859929446856704$
 $C4 = -0.4352449036608141$

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 = [42 47 43 48 49]
DOF = [45. 44. 44. 43. 42.]
Chi-squared = [44.44633414 43.63703193 43.66150102 42.75907127 42.46323019]
AIC evidence = [339.71932173 339.62397283 339.61173829 339.56295317 339.2108737]
Weights = [0.16130137940891806 0.14663194051421338 0.14484889524565958
0.1379520240376797 0.09701120726849481]
SDNR = [291.5695362 288.85482207 288.90653516 285.84656198 284.86078862]

Top model Noise Statistics:

White noise = 0.0003735528703400466

Red noise = 0.000183118380675513

Beta = 1.7240048120902363

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.

$R_p/R^* = 0.1208040291169639 \pm 0.0005498656370650524$

Epoch (MJD) = 57957.97033435293 $\pm 0.0006727189008566885$

Inclination (rad) = None \pm None

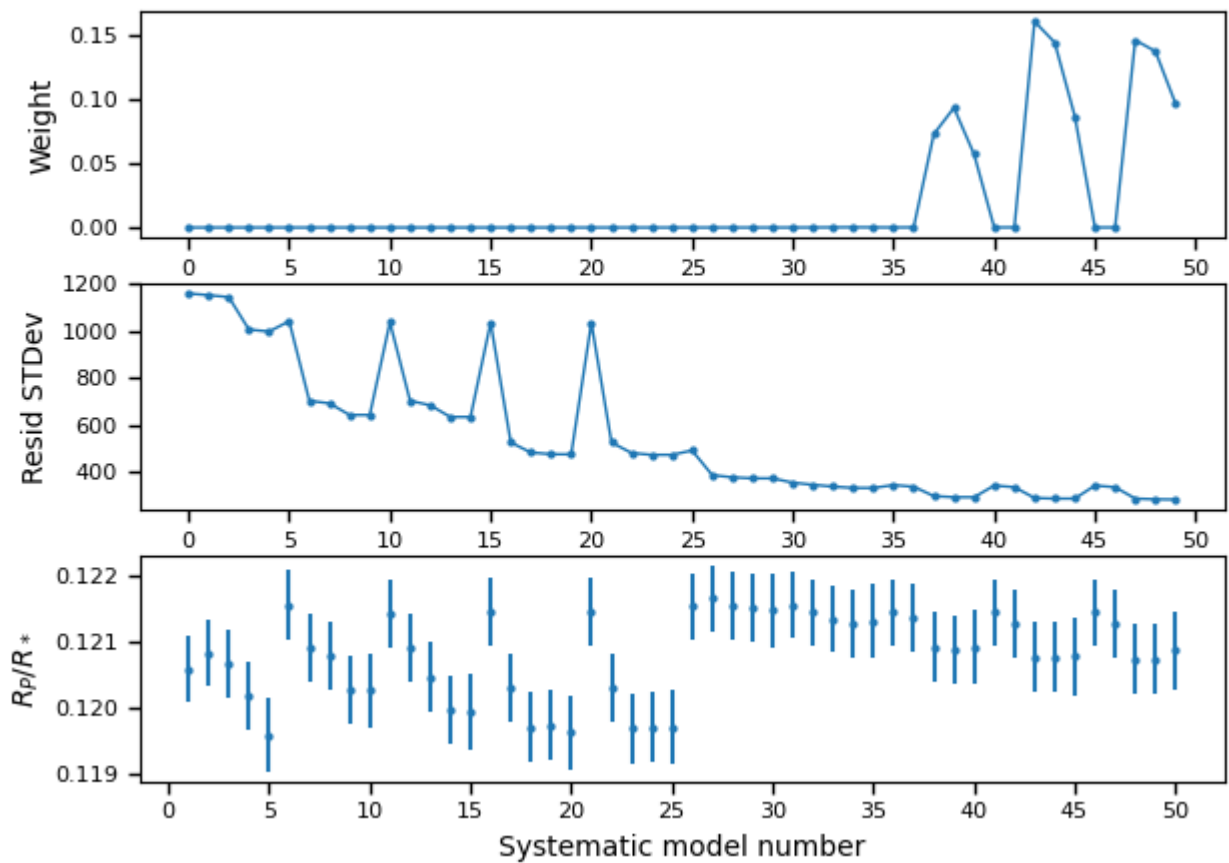
Inclination (deg) = None \pm None

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

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

Systematics

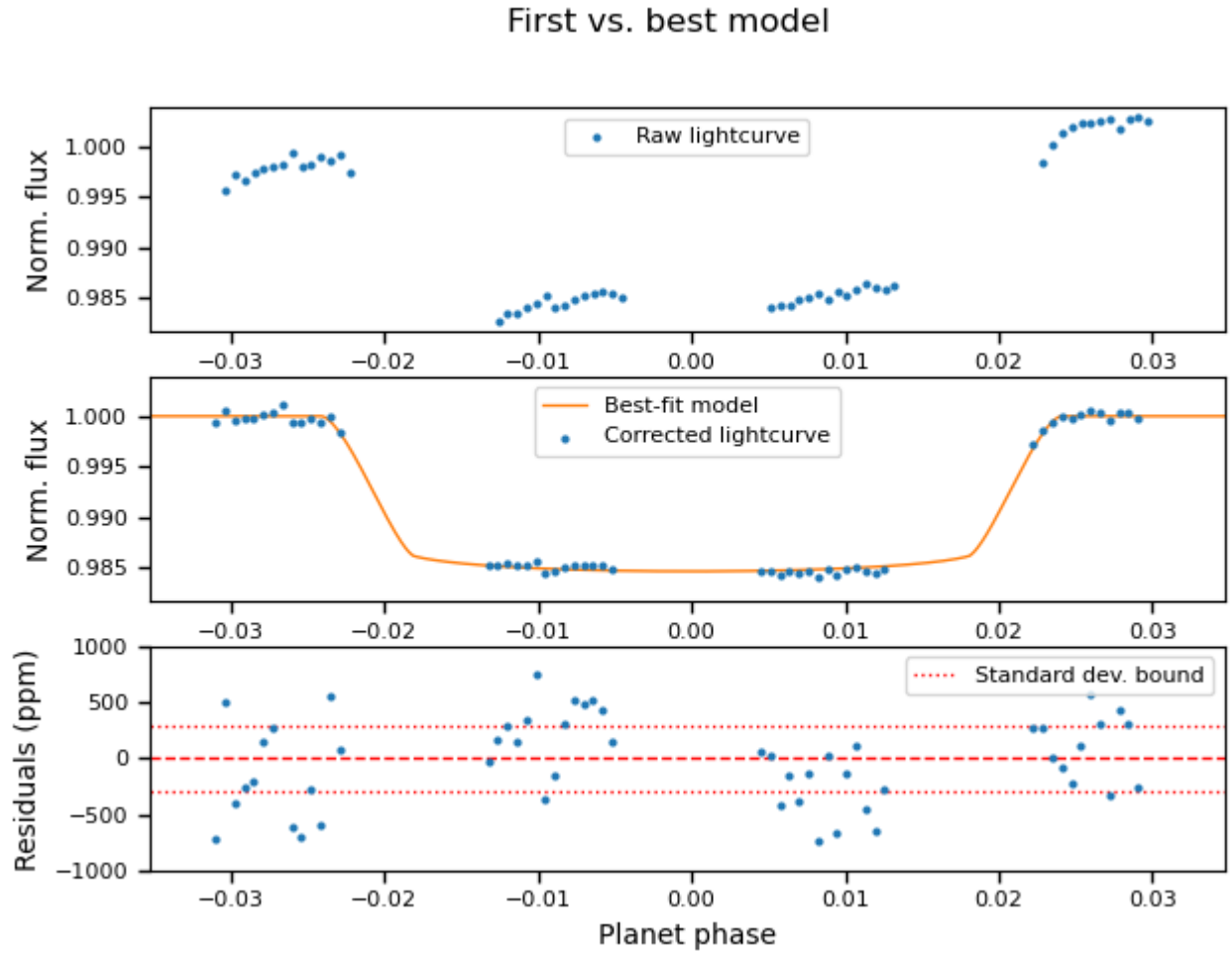
Marginalisation results



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.