Report page ExoTIC-ISM

W17_G102_lc_8990.txt - 8990_clipped

Input parameters:

Number of systematic models: 50
Wavelength mid point = 8994.309840912327
Wavelength half width = 106.98584414633024

Planet parameters:

$Rp/R* = 0.1255$
Epoch (MJD) = 58021.48064883803
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 = 0.8722836232264777
C2 = -0.8134349486107093
C3 = 0.805308602142135
C4 = -0.29451898510466196

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 = [43 44 49 48 18]
DOF = [43. 42. 41. 42. 44.]
Chi-squared = [44.90035807 44.1027207 43.68504153 44.90015768 48.69660562]
AIC evidence = [340.55219508 340.45101376 340.15985335 340.05229527 339.1540713]
Weights = [0.24536421420360627 0.2217526069713151 0.16573696200599008
0.14883583044249488 0.060619699850259445]
SDNR = [252.26733685 250.02510849 248.87006848 252.26761514 262.65180514]

Top model Noise Statistics:

White noise = 0.00034259046435582174
Red noise = 0.00010440465625009975
Beta = 1.3625056911741815
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* = 0.12149824171534859 +/- 0.00044981342656244224
Epoch (MJD) = 58021.4781074043 +/- 0.00048799569887044363
Inclination (rad) = None +/- None
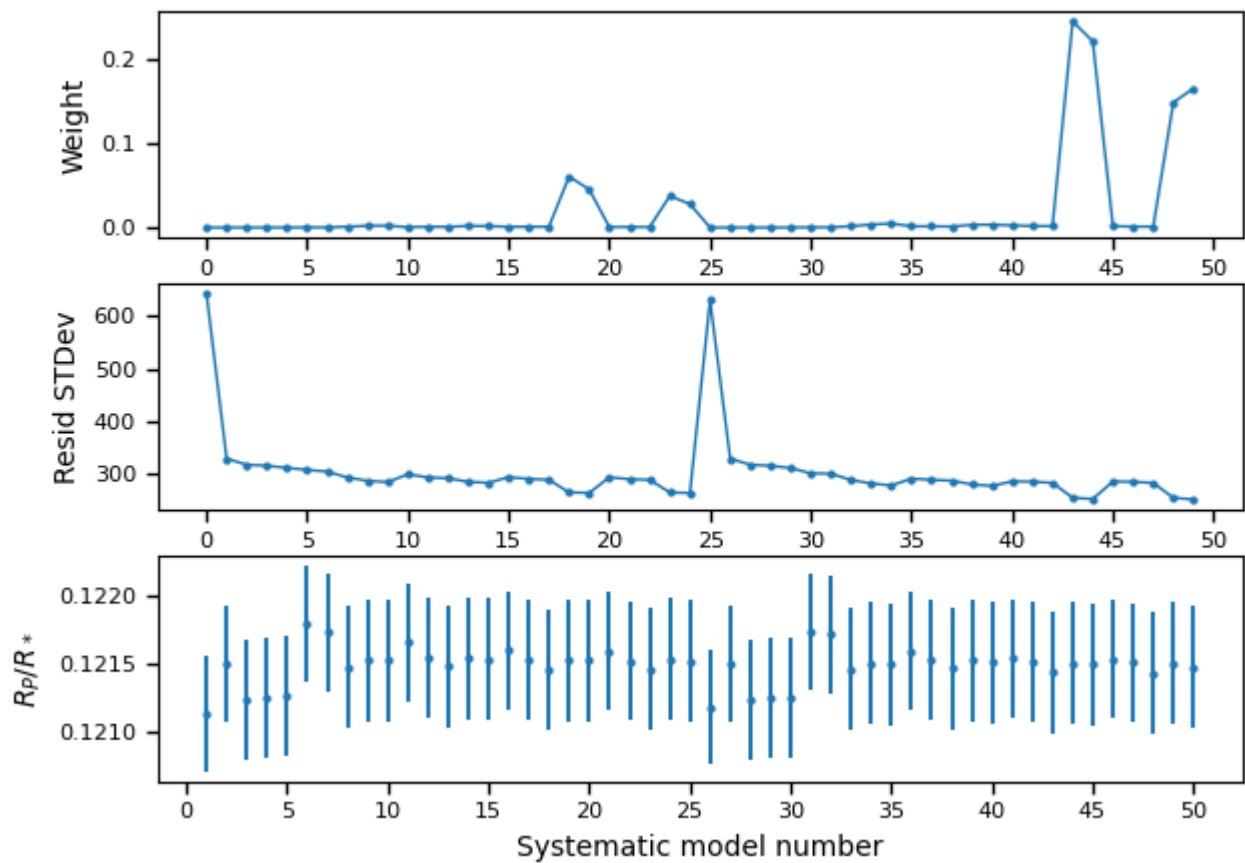Inclination (deg) = None +/- None
System density (Ms+Mp/R^3) = None +/- None
a/R* = None +/- None

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

First vs. best model
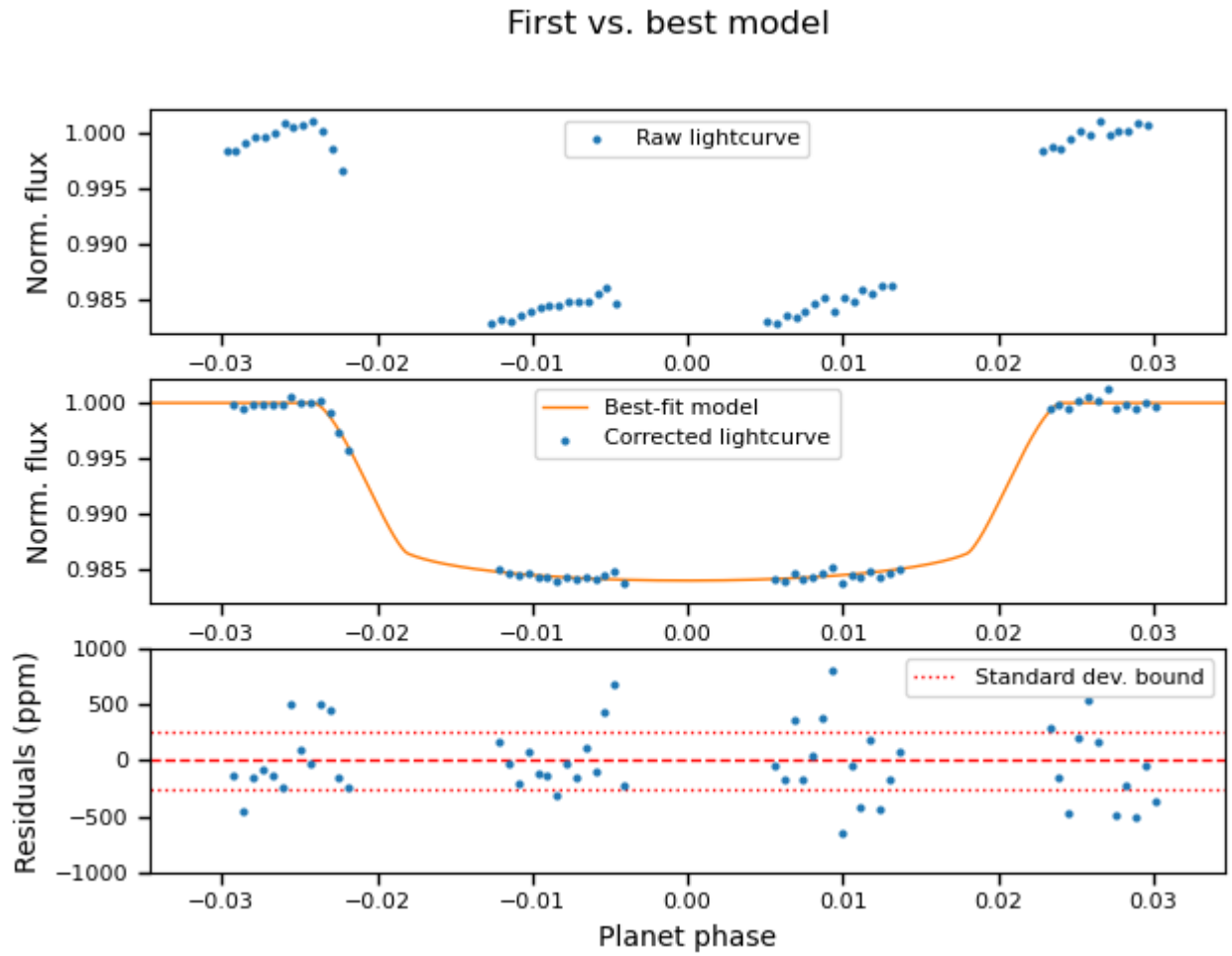
Top: Input lightcurve with no systematic model correction applied. *Middle:* Lightcurve corrected by highest weight systematic model plotted with the smooth planetary transit model centred on the mid-transit time. *Bottom:* Residuals and uncertainties associated with the middle panel lightcurve. The upper and lower standard deviation bounds are shown in dotted lines relative to zero.