Report page ExoTIC-ISM

W17_G141_lc_12559.txt - 190

Input parameters:

Number of systematic models: 50
Wavelength mid point = 12606.026339843205
Wavelength half width = 45.40313482374586

Planet parameters:

Rp/R* = 0.12169232
Epoch (MJD) = 57957.97108811848
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 = 0.8727164381274302
C2 = -0.8690317453311966
C3 = 0.7737607044466395
C4 = -0.26976298850203656

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 49 44 34 48]
DOF = [39. 37. 38. 40. 38.]
Chi-squared = [39.54977184 38.10320065 39.39192669 41.4502739 39.48439548]
AIC evidence = [315.16616591 314.8894515 314.74508848 314.71591487 314.69885409]
Weights = [0.1458956604370879 0.11062845176288007 0.09575705305741404
0.09300383031738588 0.09143057048869195]
SDNR = [246.64977324 242.10040918 246.20265019 252.56585218 246.45625513]

Top model Noise Statistics:

White noise = 0.00032586476545304484
Red noise = 0.00012951742772143358
Beta = 1.6292395320707185
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* = 0.12080157998643672 +/- 0.000603610351439597
Epoch (MJD) = 57957.97070905332 +/- 0.0005022906610704719
Inclination (rad) = None +/- None
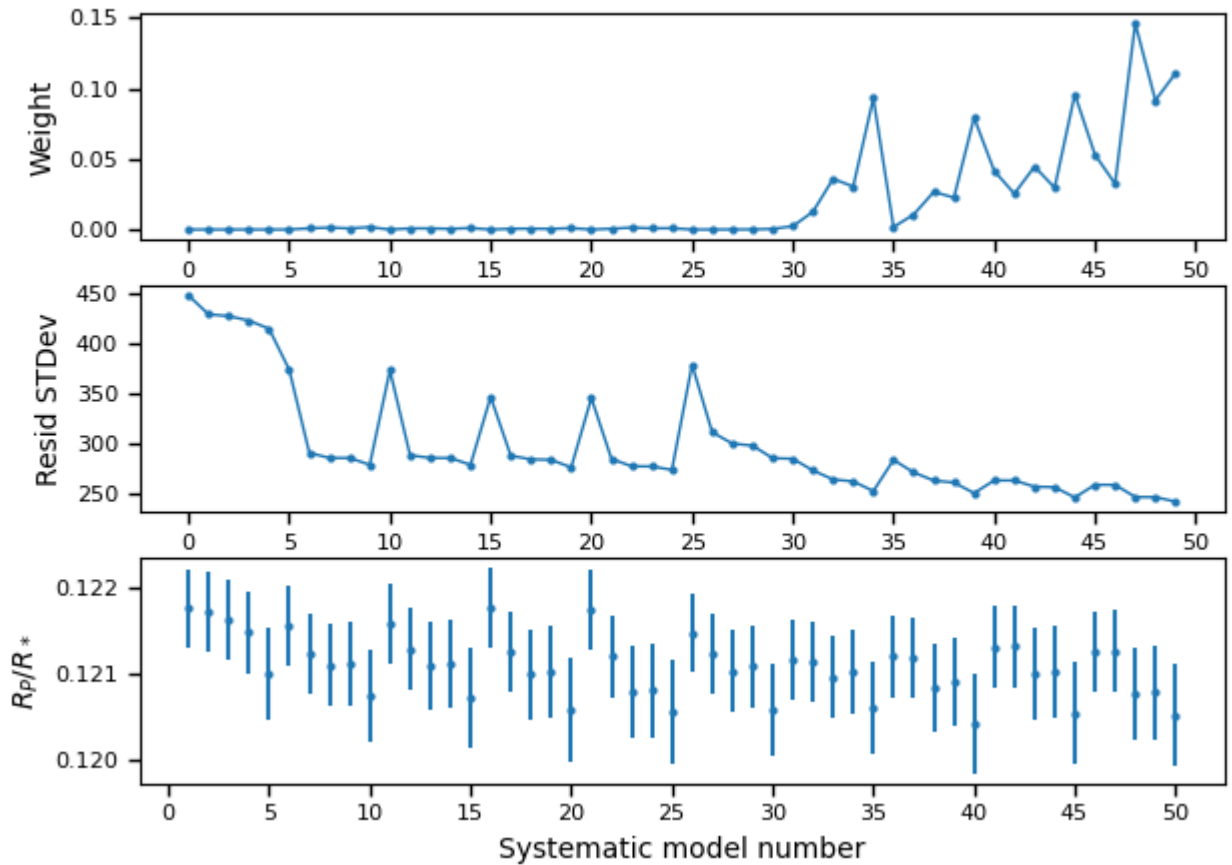Inclination (deg) = None +/- None
System density (Ms+Mp/R^3) = None +/- None
a/R* = None +/- None

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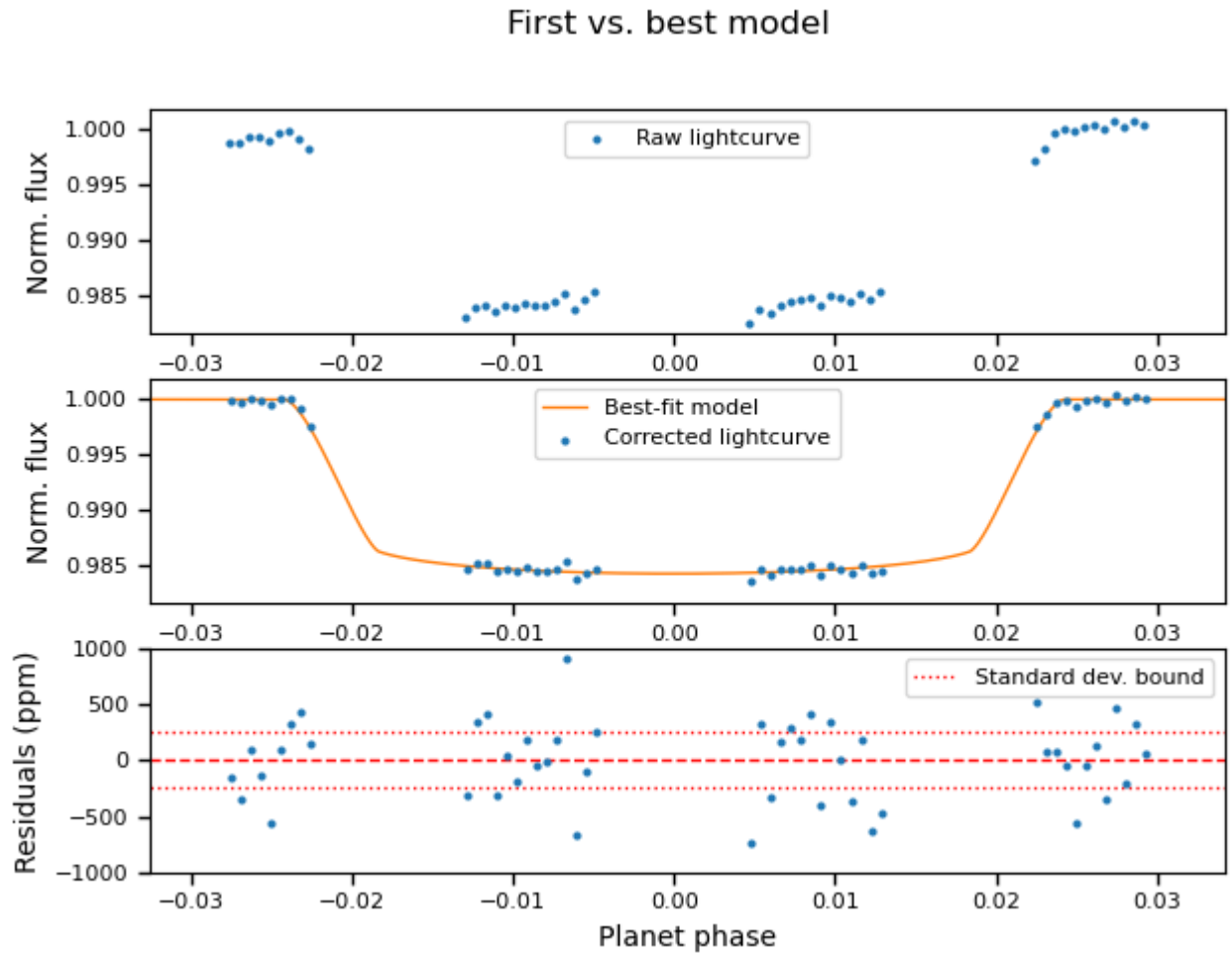
Top: Input lightcurve with no systematic model correction applied. *Middle:* Lightcurve corrected by highest weight systematic model plotted with the smooth planetary transit model centred on the mid-transit time. *Bottom:* Residuals and uncertainties associated with the middle panel lightcurve. The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