Report page ExoTIC-ISM

W17_G141_lc_15857.txt - 190

Input parameters:

Number of systematic models: 50
Wavelength mid point = 15897.753614564774
Wavelength half width = 68.10470223561788

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 = 1.0478299219087088
C2 = -1.3360324205087017
C3 = 1.151968166456169
C4 = -0.39022302855472396

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 = [49 44 39 47 48]
DOF = [37. 38. 39. 39. 38.]
Chi-squared = [48.99331139 50.87087023 52.53355369 53.26746597 52.91035146]
AIC evidence = [305.39989672 304.9611173 304.62977557 304.26281943 303.94137669]
Weights = [0.3634888186321029 0.23438594956505976 0.16827968502836316 0.11659090246762281 0.08454031338364915]
SDNR = [298.70148888 304.42575048 309.16859969 311.39133717 310.42685565]

Top model Noise Statistics:

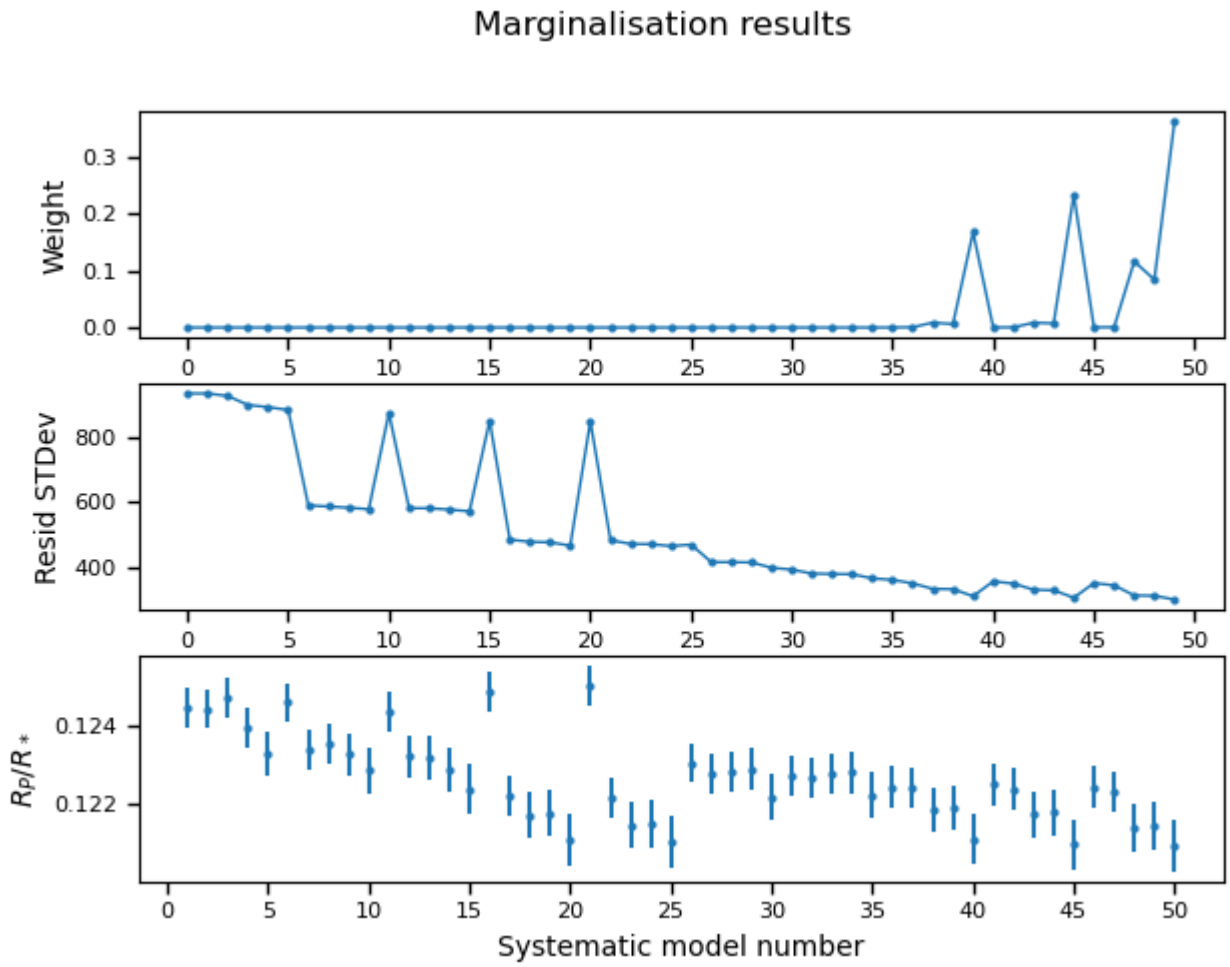
White noise = 0.00041918070188697905
Red noise = 5.4427000281279725e-05
Beta = 1.0950823615988459
If the red-noise is significant it means the data is poorly fit by any of the systematic models. It is recommended that the input lightcurves are checked for additional noise sources.

Marginalised parameters:

If None, parameter was not fit for.

Rp/R* = 0.12112298872644572 +/- 0.0006703917399673256
Epoch (MJD) = 57957.97115549764 +/- 0.0005780849608105523
Inclination (rad) = None +/- None
Inclination (deg) = None +/- None
System density (Ms+Mp/R^3) = None +/- None
a/R* = None +/- None

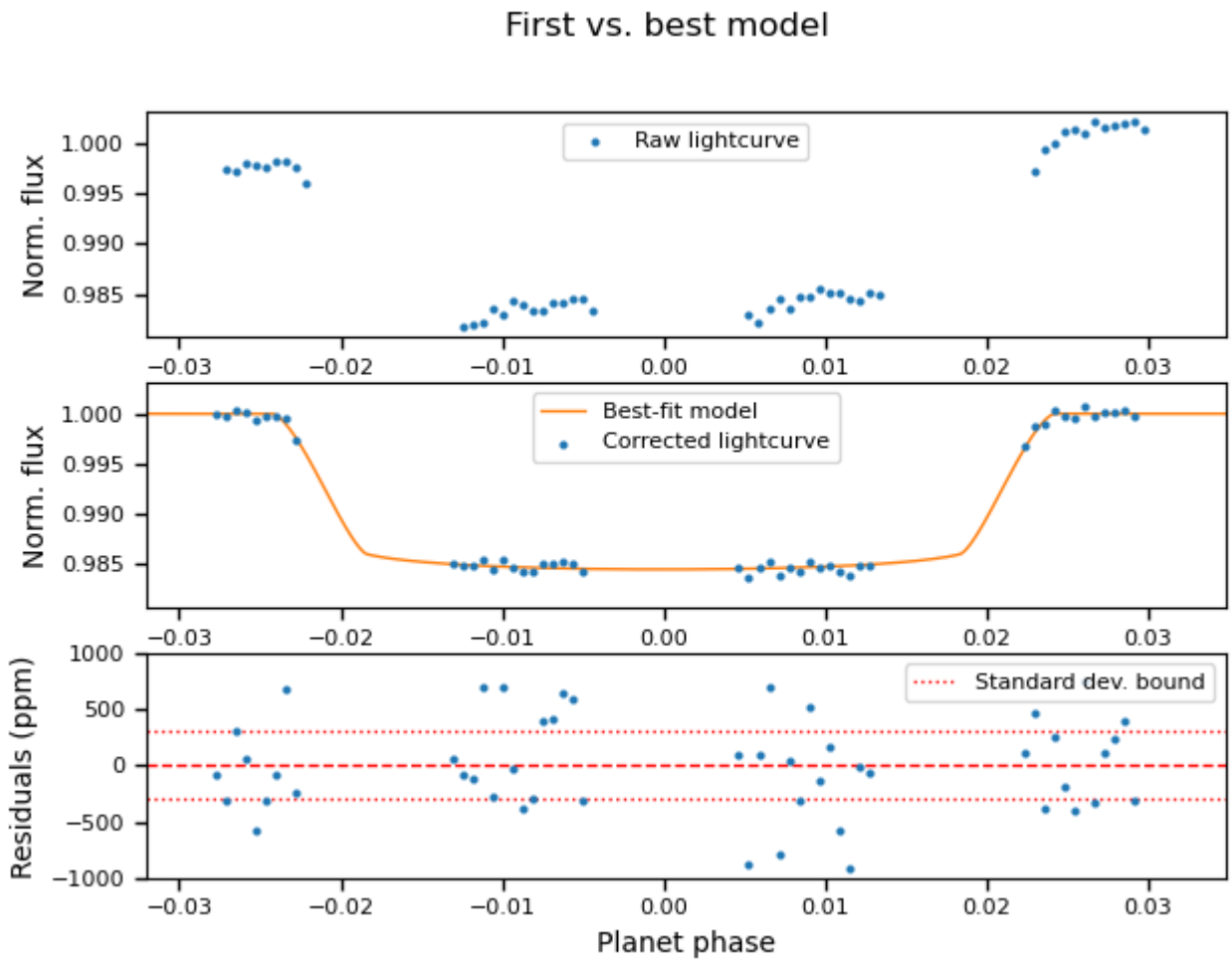
Systematics



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.