Report page ExoTIC-ISM

W17_G141_lc_12171.txt - 190

Input parameters:

Number of systematic models: 50
Wavelength mid point = 12220.099693841366
Wavelength half width = 68.10470223561879

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 = 0.8719387821492861
C2 = -0.8629982817387504
C3 = 0.7748979834877336
C4 = -0.2690593902571021

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 = [22 47 23 48 24]
DOF = [40. 39. 39. 38. 38.]
Chi-squared = [47.56187871 47.07120442 47.56060757 47.07103857 47.43210116]
AIC evidence = [315.9573769 315.70271404 315.45801247 315.20279697 315.02226567]
Weights = [0.1625373172522766 0.12599532020624396 0.09864654322995554 0.07642636203386848 0.06380275659195282]
SDNR = [247.98446572 246.6621095 247.98256418 246.66361858 247.63388594]

Top model Noise Statistics:

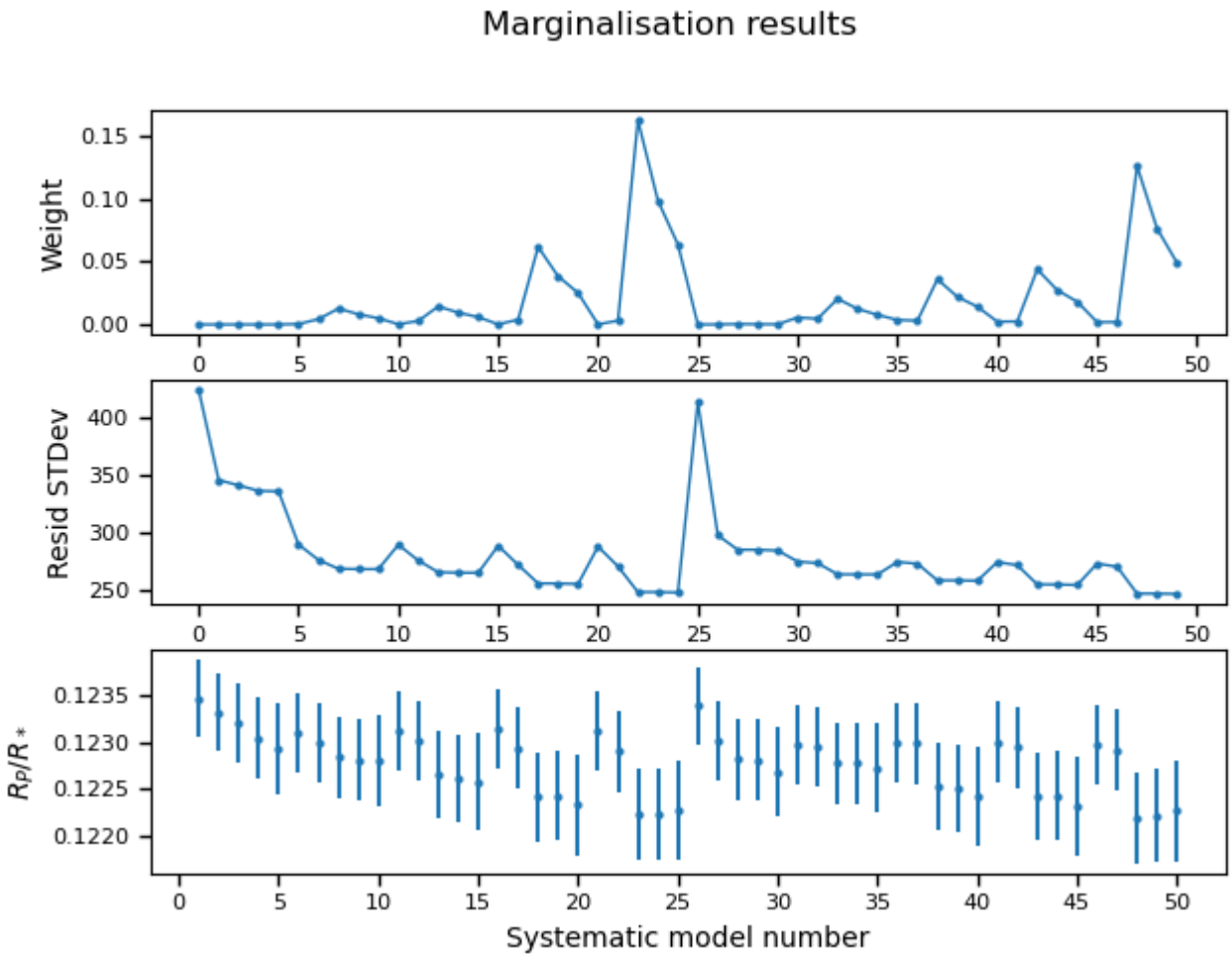
White noise = 0.0
Red noise = 0.0
Beta = 1.0
If the red-noise is significant it means the data is poorly fit by any of the systematic models. It is recommended that the input lightcurves are checked for additional noise sources.

Marginalised parameters:

If None, parameter was not fit for.

Rp/R* = 0.12236535135007641 +/- 0.0005231091134046336
Epoch (MJD) = 57957.971505674555 +/- 0.0004923492066193299
Inclination (rad) = None +/- None
Inclination (deg) = None +/- None
System density (Ms+Mp/R^3) = None +/- None
a/R* = None +/- None

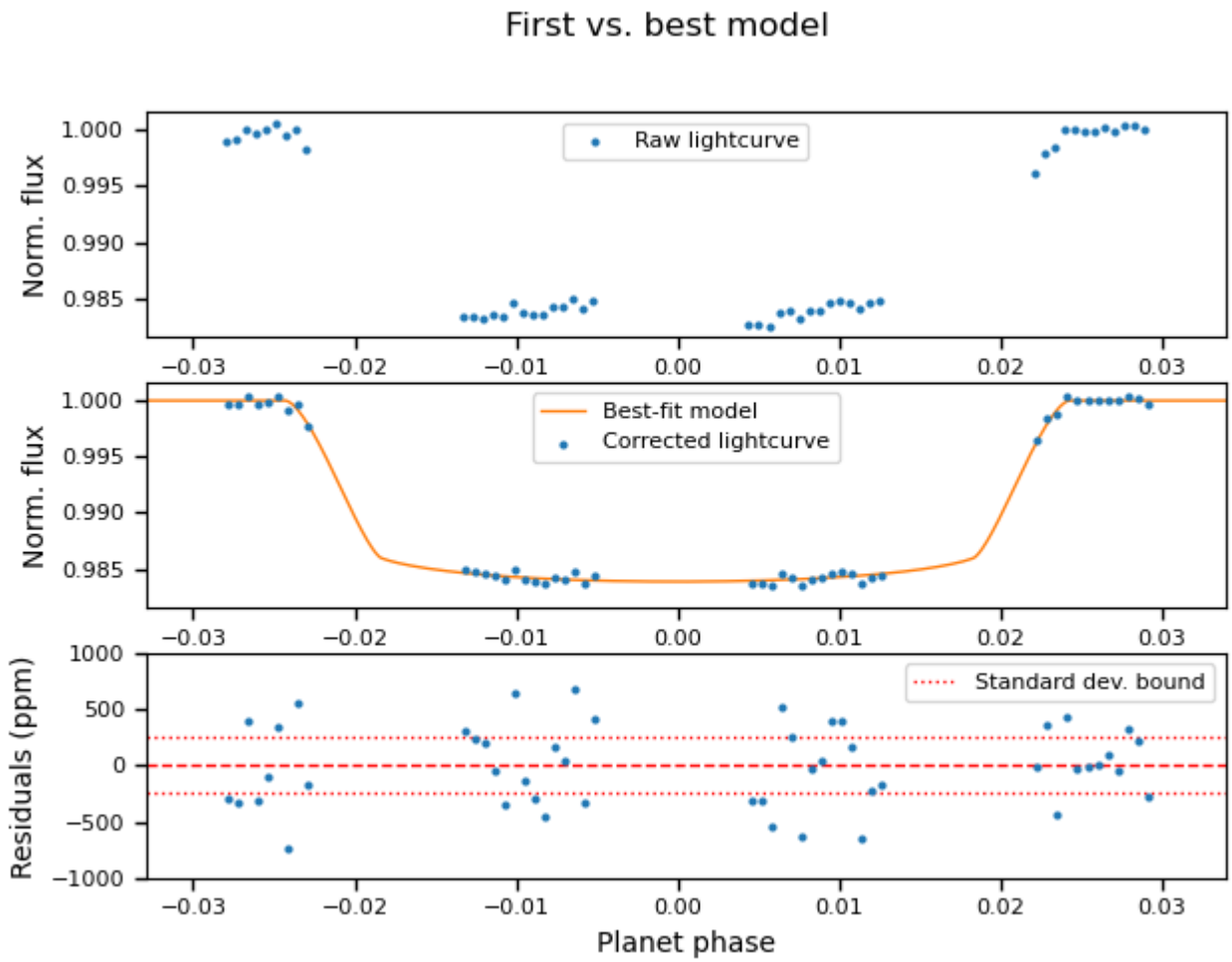
Systematics



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.