Report page ExoTIC-ISM

W17_G141_lc_16051.txt - 190

Input parameters:

Number of systematic models: 50
Wavelength mid point = 16102.06772127163
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 = 1.1457197025606518
C2 = -1.6299323177498097
C3 = 1.458590206823696
C4 = -0.5052003043399684

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 = [39 44 49 47 37]
DOF = [39. 38. 37. 39. 41.]
Chi-squared = [56.71463369 56.56040641 55.93547882 58.43408709 61.09106781]
AIC evidence = [296.98143171 296.55854536 296.37100915 296.12170501 295.79321466]
Weights = [0.20139868044385703 0.131946966040948 0.10938391639869062 0.08524757996565091 0.06137909908396375]
SDNR = [360.07494553 359.64103953 357.52428849 365.25677139 373.6300368]

Top model Noise Statistics:

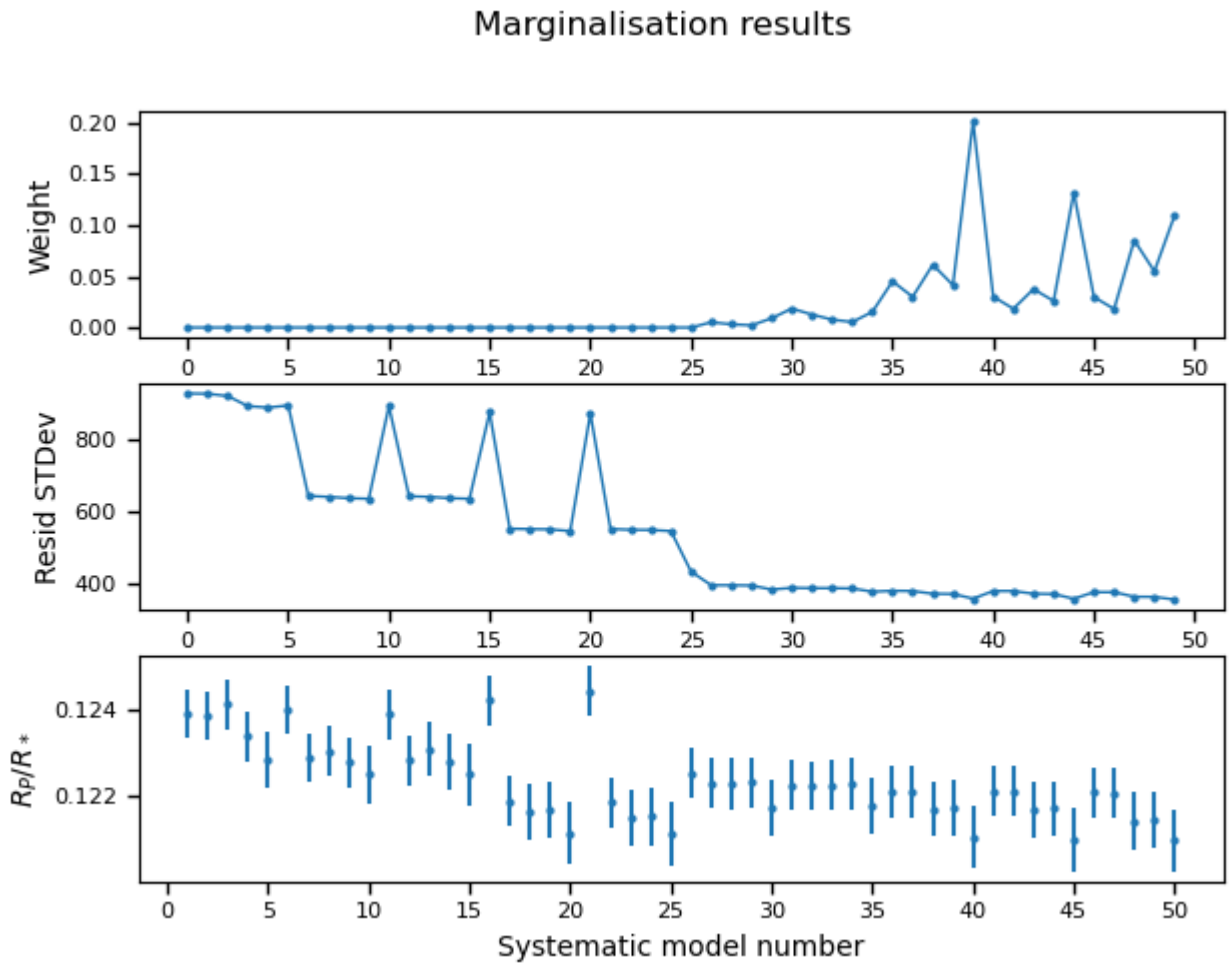
White noise = 0.00045678177097172935
Red noise = 0.0002342650531612098
Beta = 1.8814054210457918
If the red-noise is significant it means the data is poorly fit by any of the systematic models. It is recommended that the input lightcurves are checked for additional noise sources.

Marginalised parameters:

If None, parameter was not fit for.

Rp/R* = 0.12147196951625017 +/- 0.0008006931793331334
Epoch (MJD) = 57957.971610553235 +/- 0.0006349240938575501
Inclination (rad) = None +/- None
Inclination (deg) = None +/- None
System density (Ms+Mp/R^3) = None +/- None
a/R* = None +/- None

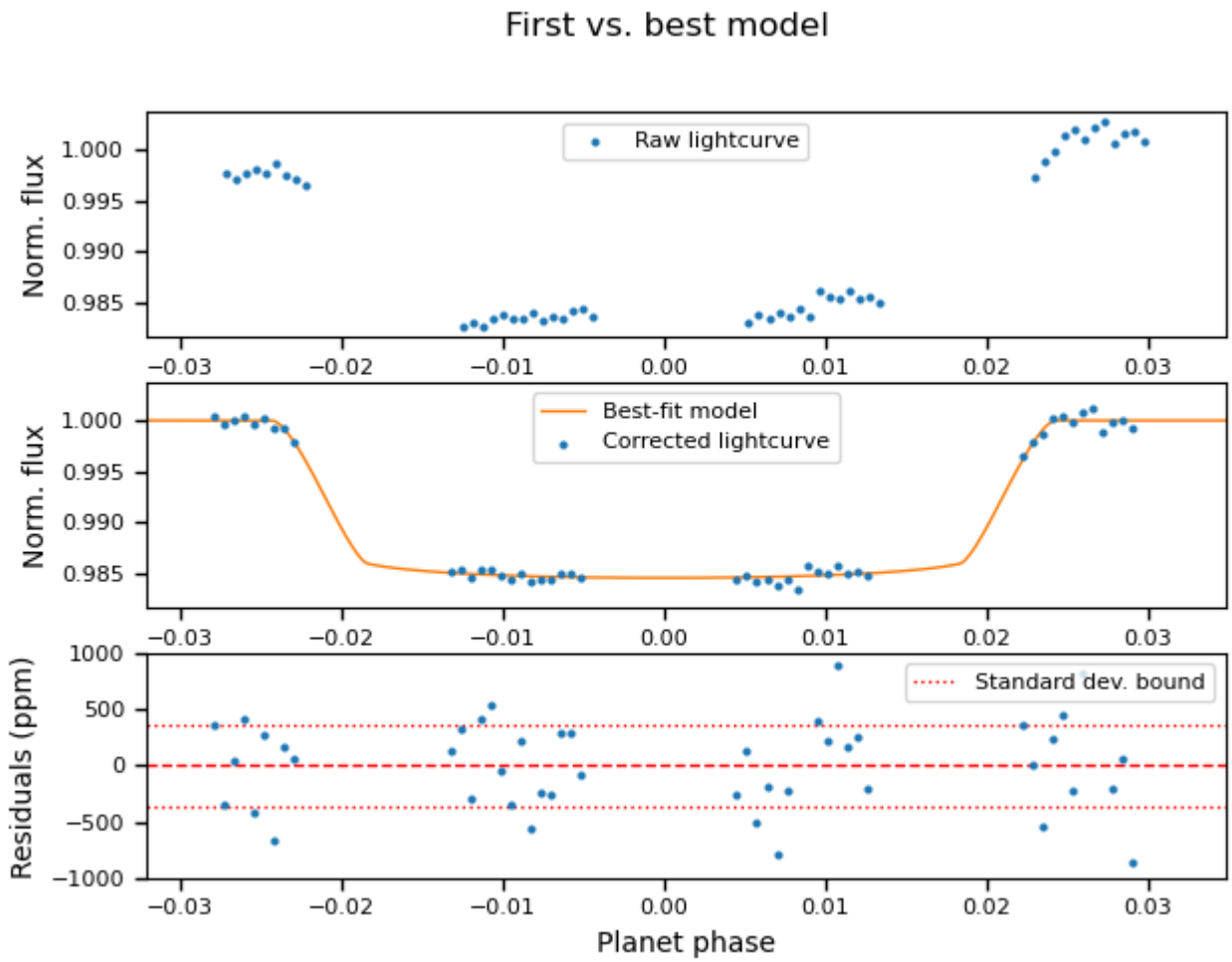
Systematics



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.