Report page ExoTIC-ISM

W17_G141_lc_12365.txt - 190

Input parameters:

Number of systematic models: 50
Wavelength mid point = 12424.413800548222
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 = 0.8711605915626359
C2 = -0.8686238154300515
C3 = 0.7861494770519176
C4 = -0.27752274302233765

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 = [33 34 32 36 35]
DOF = [41. 40. 42. 42. 43.]
Chi-squared = [43.2071327 42.38447749 44.60473919 44.62209244 45.68244393]
AIC evidence = [314.36873764 314.28006525 314.1699344 314.16125777 314.13108203]
Weights = [0.06335158918326021 0.057975911139277844 0.05193000457602041 0.05148137665205649 0.049951092509310284]
SDNR = [257.90353652 255.43961295 262.15919045 262.13348622 265.24056359]

Top model Noise Statistics:

White noise = 0.00034277659498347464
Red noise = 0.0001297192896498685
Beta = 1.586791993487842
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* = 0.12158988427776447 +/- 0.0005325070704661709
Epoch (MJD) = 57957.971131218175 +/- 0.0005352117208632167
Inclination (rad) = None +/- None
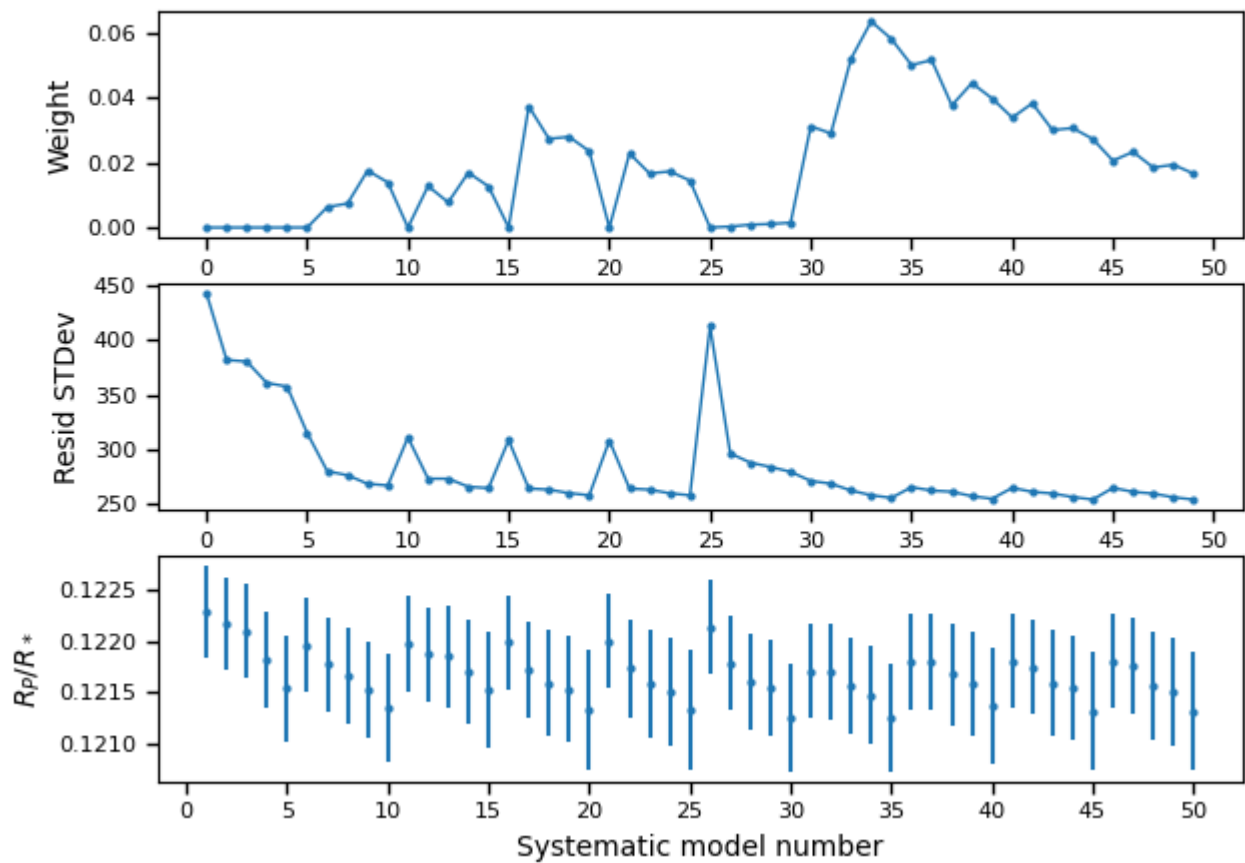Inclination (deg) = None +/- None
System density (Ms+Mp/R^3) = None +/- None
a/R* = None +/- None

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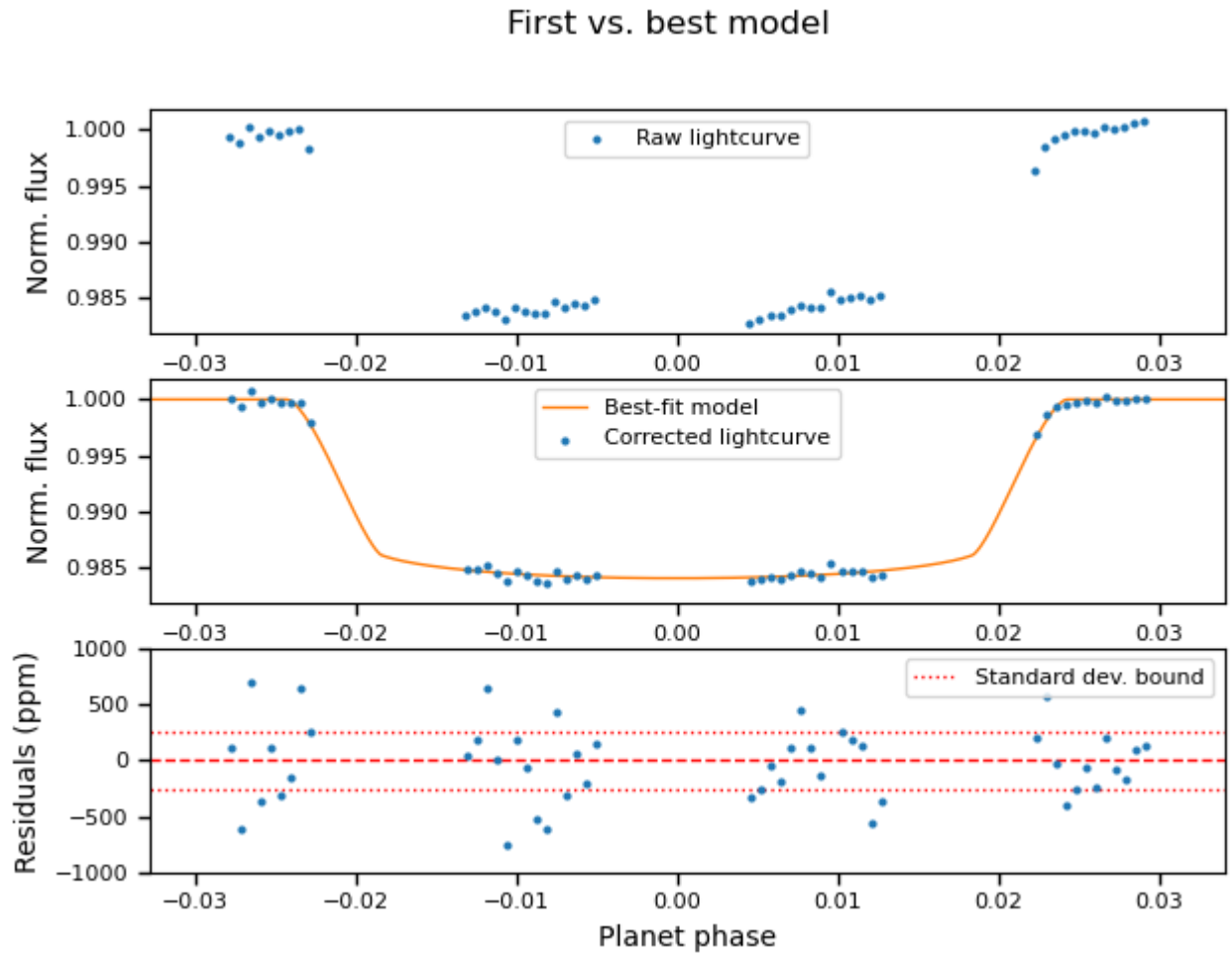
Top: Input lightcurve with no systematic model correction applied. *Middle:* Lightcurve corrected by highest weight systematic model plotted with the smooth planetary transit model centred on the mid-transit time. *Bottom:* Residuals and uncertainties associated with the middle panel lightcurve. The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