Report page ExoTIC-ISM

W17_G102_lc_10528.txt - 190

Input parameters:

Number of systematic models: 50
Wavelength mid point = 10551.54823904224
Wavelength half width = 71.32389609755319

Planet parameters:

Rp/R* = 0.12169232
Epoch (MJD) = 58021.48064883803
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 = 0.8499779552076565
C2 = -0.8197042423828557
C3 = 0.8017082316791319
C4 = -0.2919175802563268

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 = [48 49 47 44 43]
DOF = [38. 37. 39. 38. 39.]
Chi-squared = [83.59320159 83.59209644 88.00278632 89.49335208 92.81619973]
AIC evidence = [296.53851659 296.03906917 294.83372423 293.58844135 292.42701752]
Weights = [0.5336720968994106 0.3238674003622537 0.09702699478074191
0.02793013894361834 0.008743254859819883]
SDNR = [332.88504802 332.88004046 341.41418499 344.70635683 351.0171773]

Top model Noise Statistics:

White noise = 0.00042326973577729704
Red noise = 0.00021449157799325195
Beta = 1.8684362030056132
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.

$Rp/R* = 0.12010724321907577 +/- 0.00044962090622800564$
Epoch (MJD) = 58021.48155799569 +/- 0.0004608905345838071
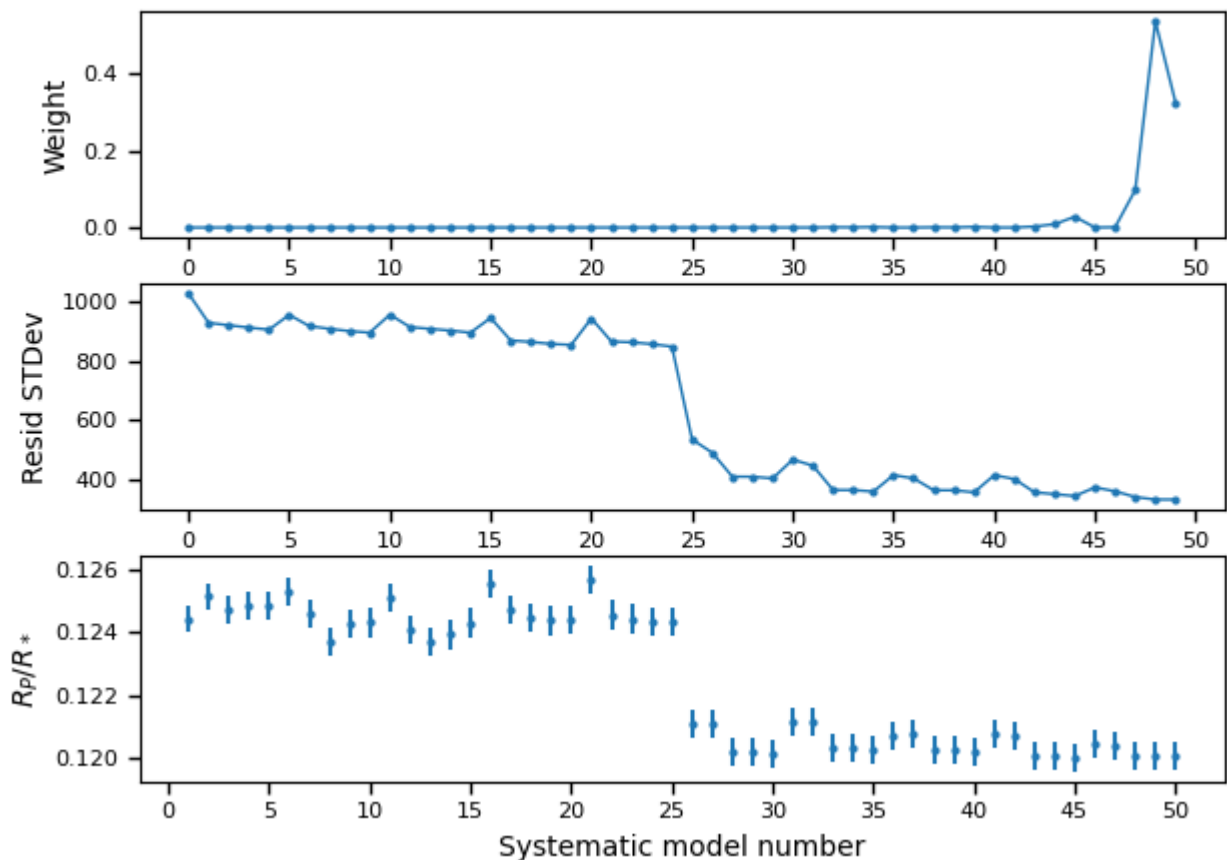Inclination (rad) = None +/- None
Inclination (deg) = None +/- None
System density (Ms+Mp/R^3) = None +/- None
$a/R* =$ None +/- None

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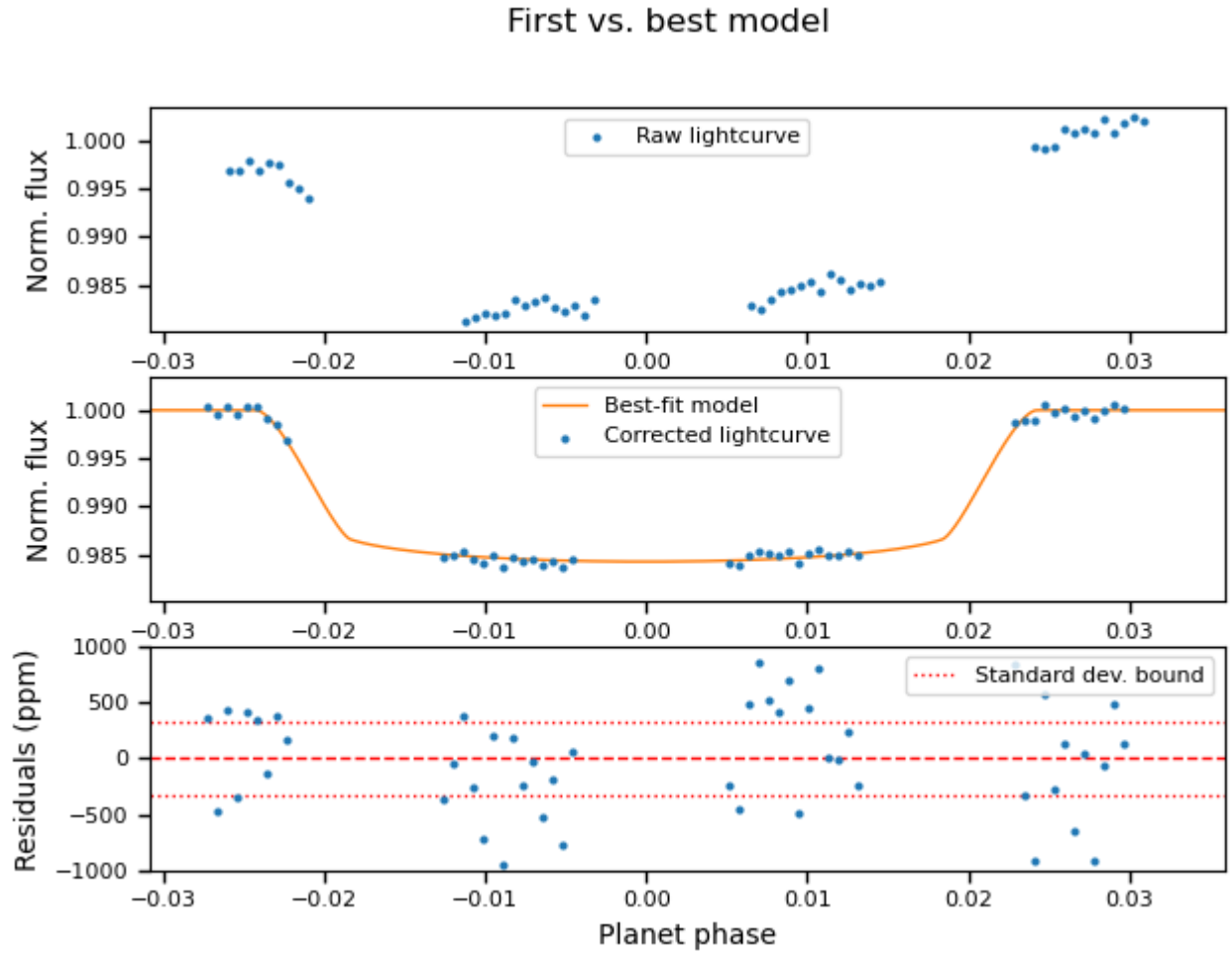
Top: Input lightcurve with no systematic model correction applied. *Middle:* Lightcurve corrected by highest weight systematic model plotted with the smooth planetary transit model centred on the mid-transit time. *Bottom:* Residuals and uncertainties associated with the middle panel lightcurve. The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