

# KIC 011624505

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	$R_{\star}$ ( $R_{\odot}$ )	$T_{\star}$ (K)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011624505-01	OBS	No	352.252058	152.302887	150.2	6.247	7.1	6.2	2.96	6006	4.01	8.62

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011624505-01	OBS	FP	0.01	1	0	0	0	MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

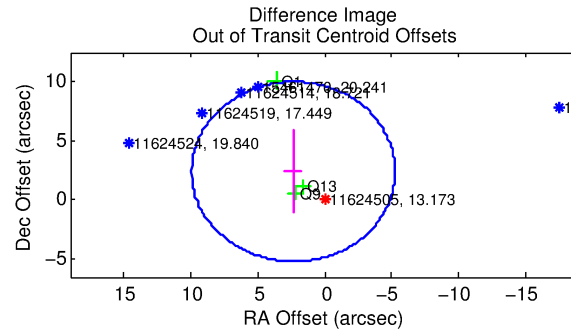
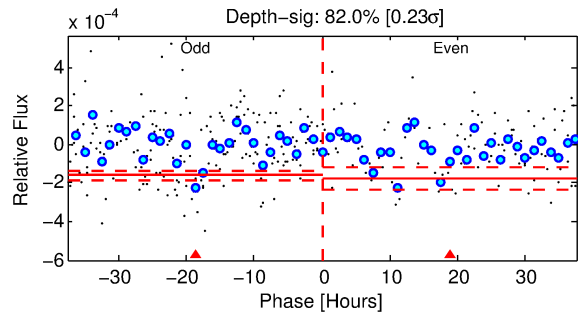
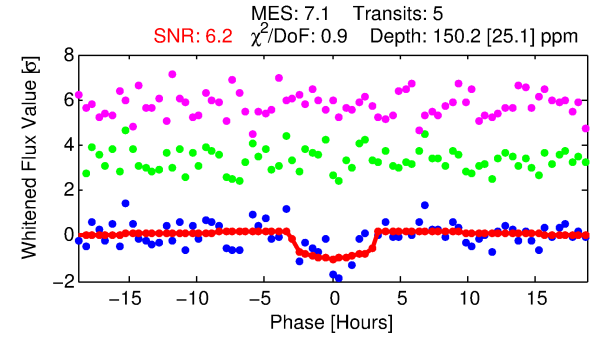
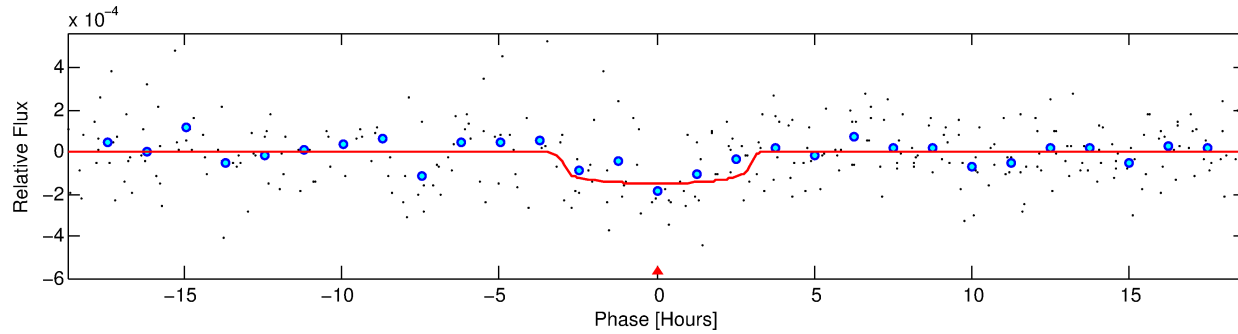
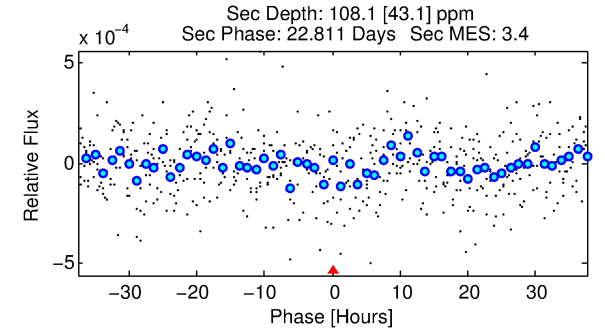
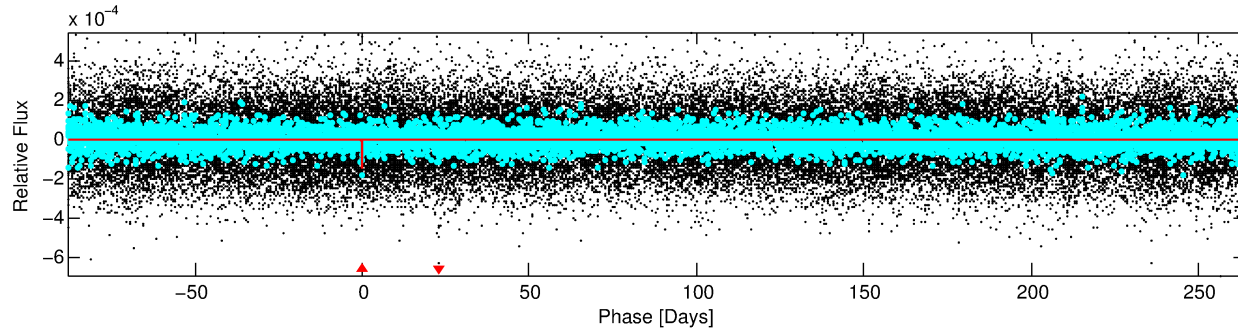
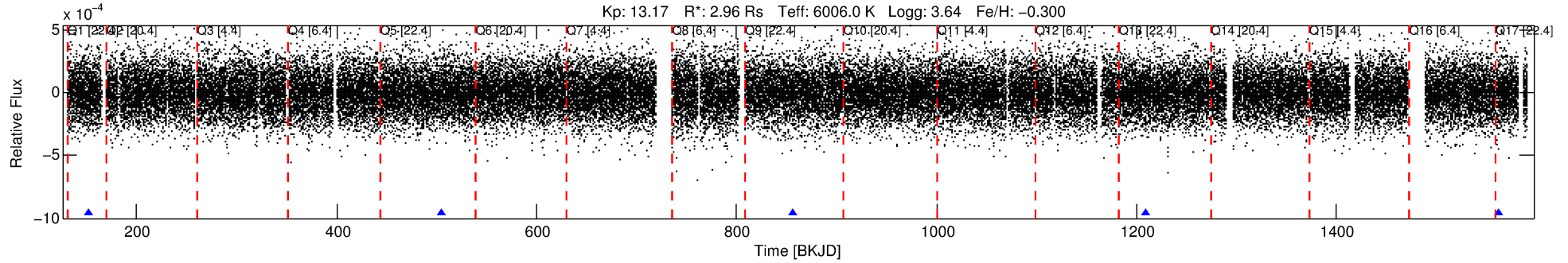
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011624505-01

No Significant Match Found

# DV One-Page Summary

KIC: 11624505 Candidate: 1 of 1 Period: 352.252 d



## DV Fit Results:

Period = 352.25206 [0.00663] d  
Epoch = 152.3029 [0.0194] BKJD  
Rp/R\* = 0.0124 [0.0119]  
a/R\* = 270.47 [1321.96]  
b = 0.79 [2.30]  
Seff = 8.62 [5.27]  
Teq = 437 [67] K  
Rp = 4.01 [4.19] Re  
a = 1.0905 [0.4209] AU  
Ag = 4397.00 [8990.15] [0.49σ]  
Teffp = 5501 [2693] K [1.88σ]

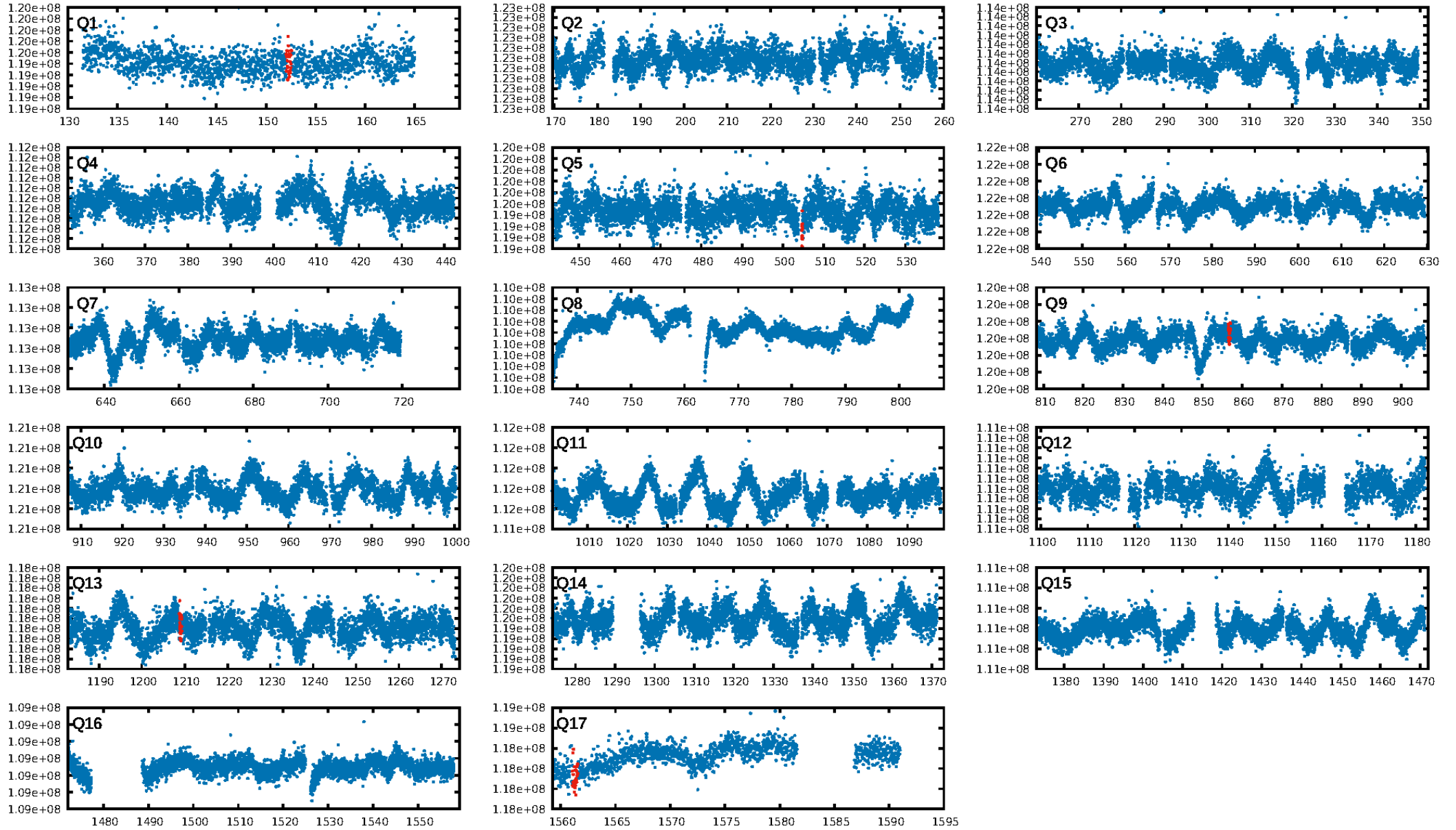
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 4.5%  
ModelChiSquareGof-sig: 99.6%  
Bootstrap-pfa: 2.64e-13  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -1.765  
Centroid-sig: 21.2%  
Centroid-so: 3.661 arcsec [1.50σ]  
OotOffset-rm: 3.350 arcsec [1.32σ]  
KicOffset-rm: 3.281 arcsec [1.32σ]  
OotOffset-st: 0/0/0/3 [3]  
KicOffset-st: 0/0/0/3 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

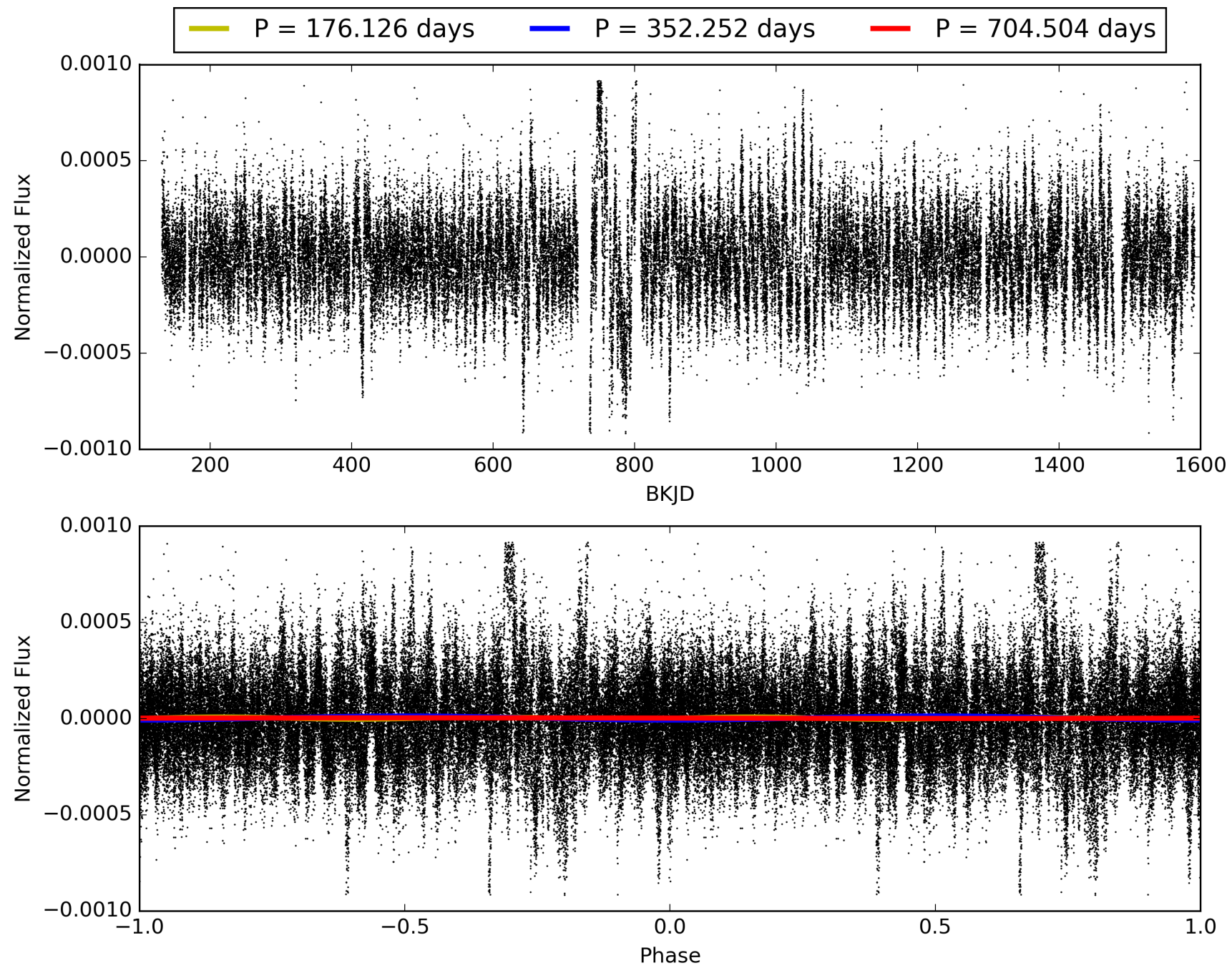
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:47:46 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 011624505-01, PDC Light Curves

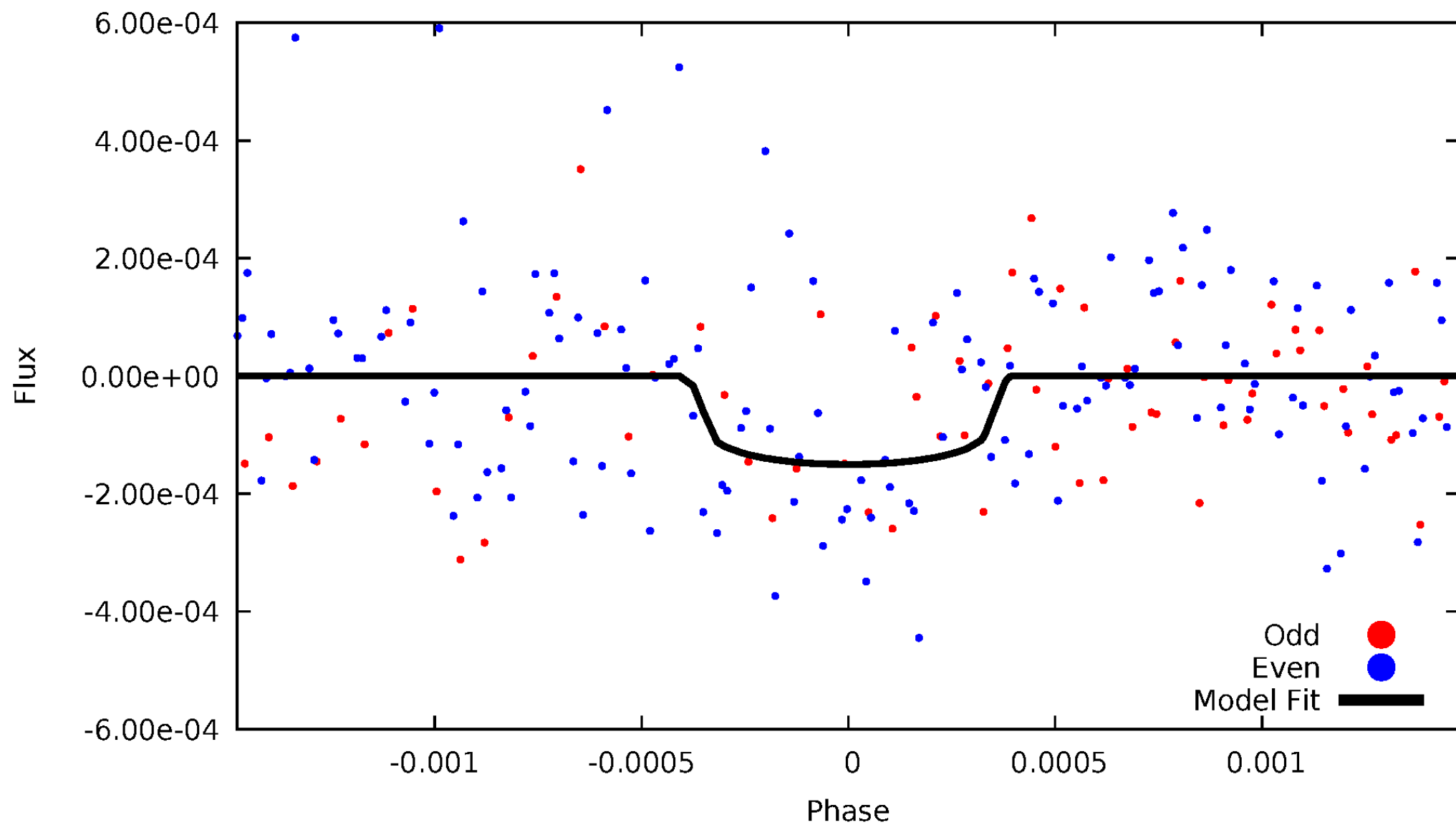


TCE 011624505-01



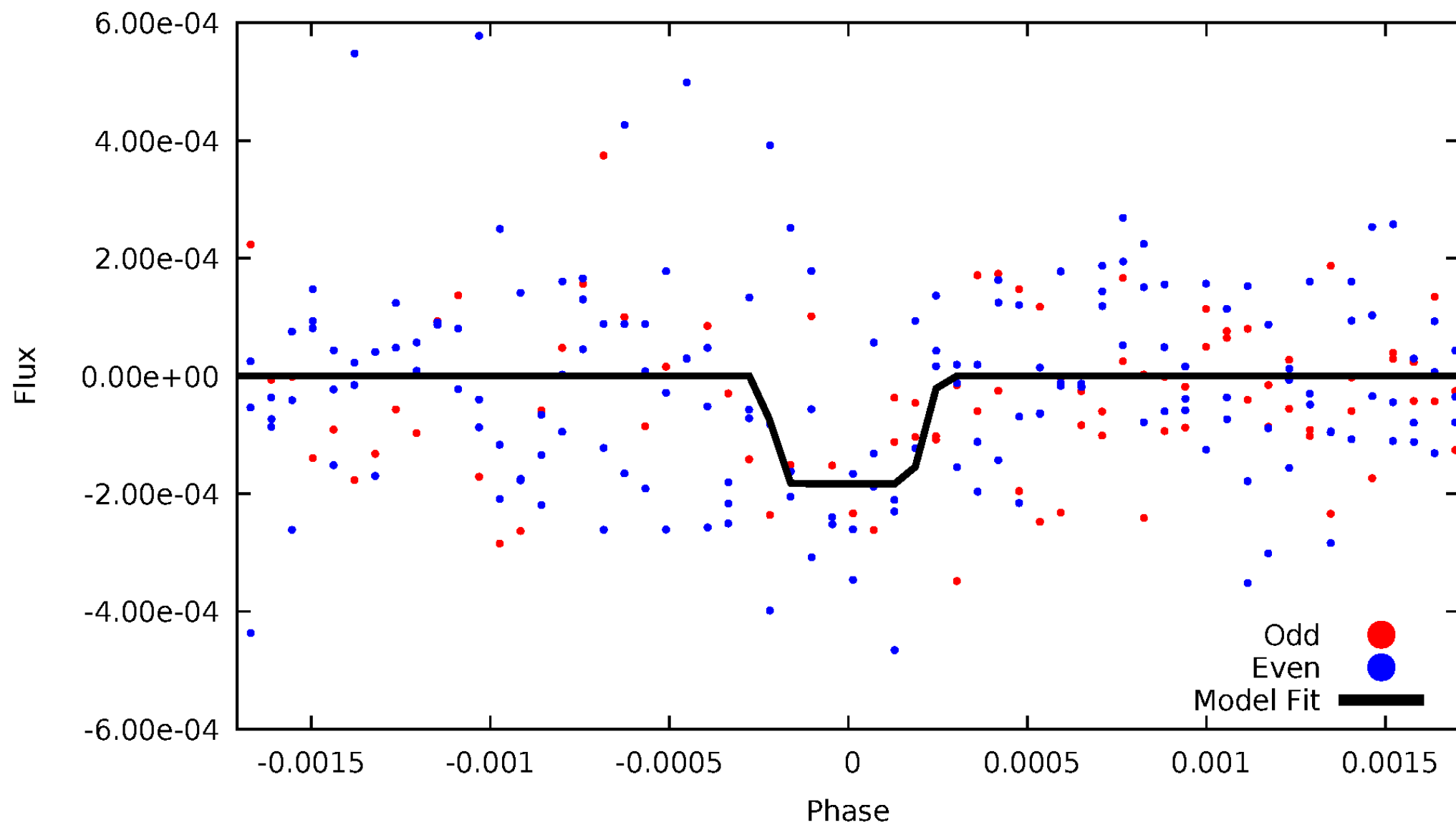
# DV Odd/Even

TCE 011624505-01



# ALT Odd/Even

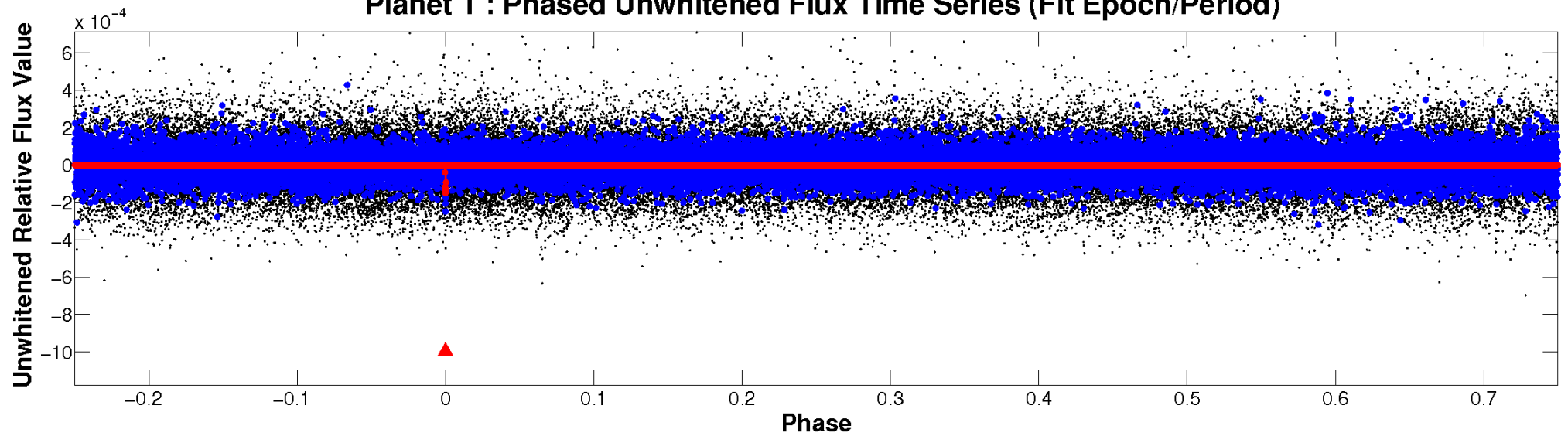
TCE 011624505-01



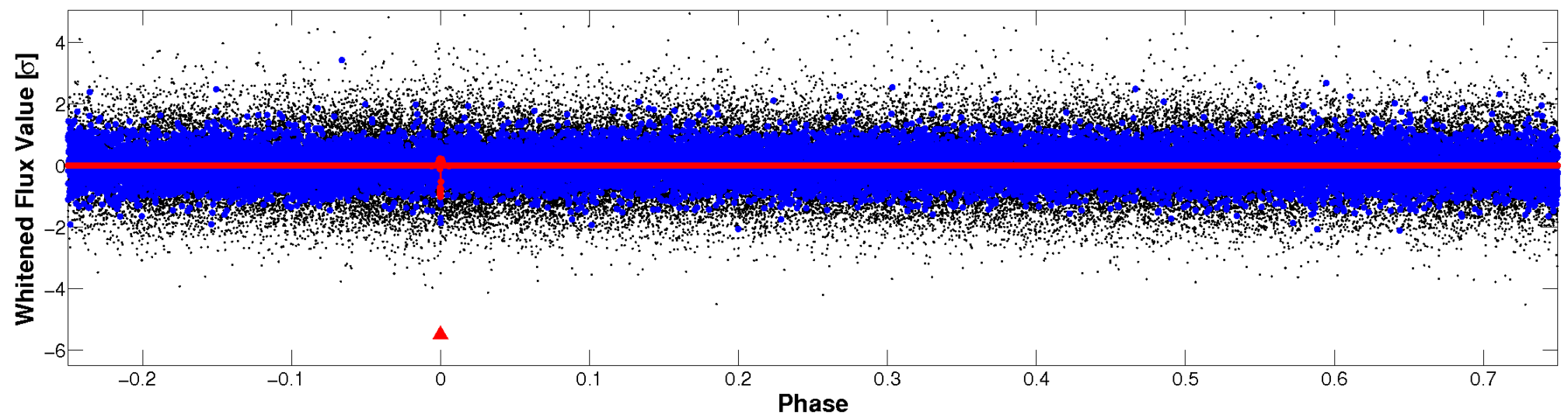


# Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

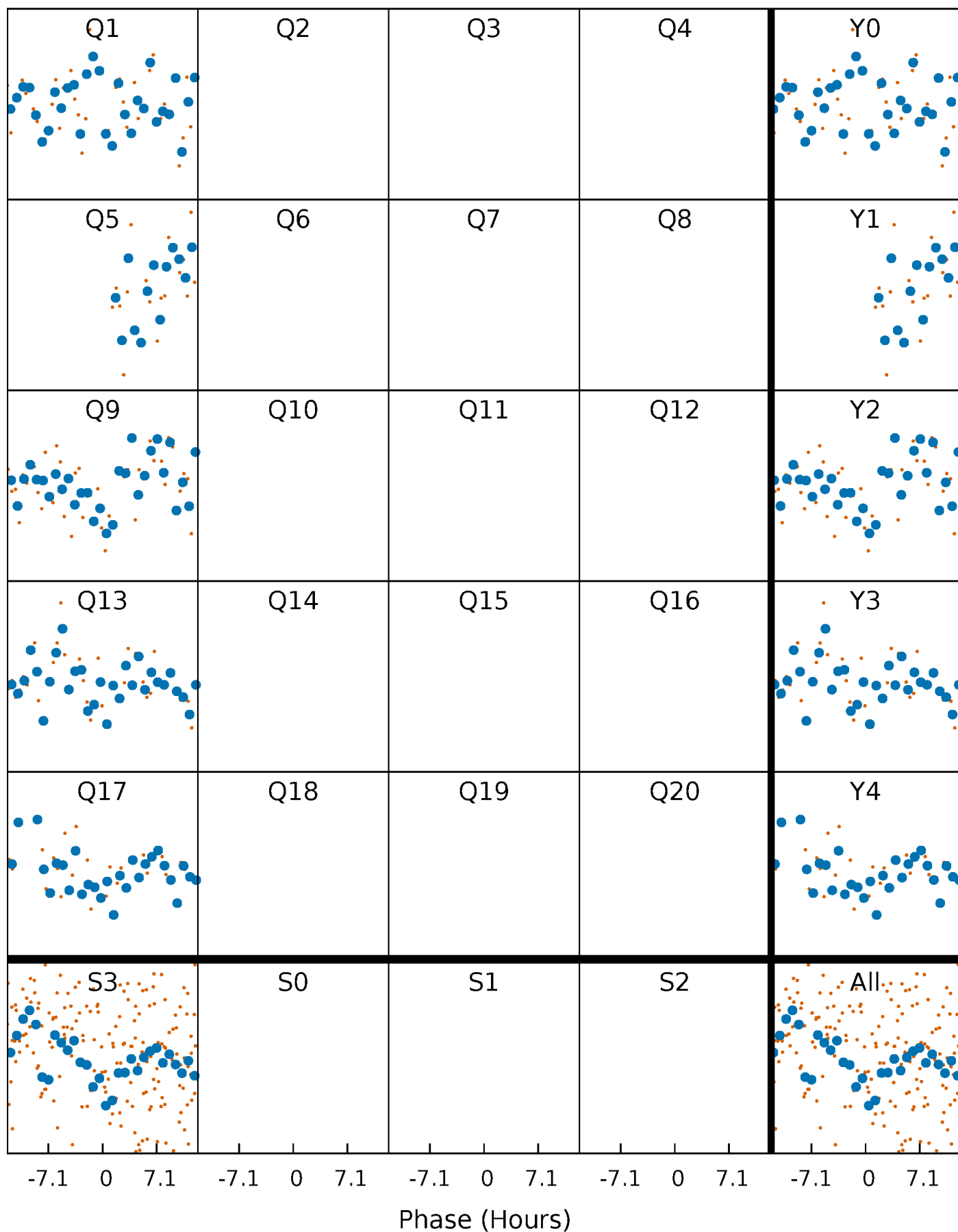


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

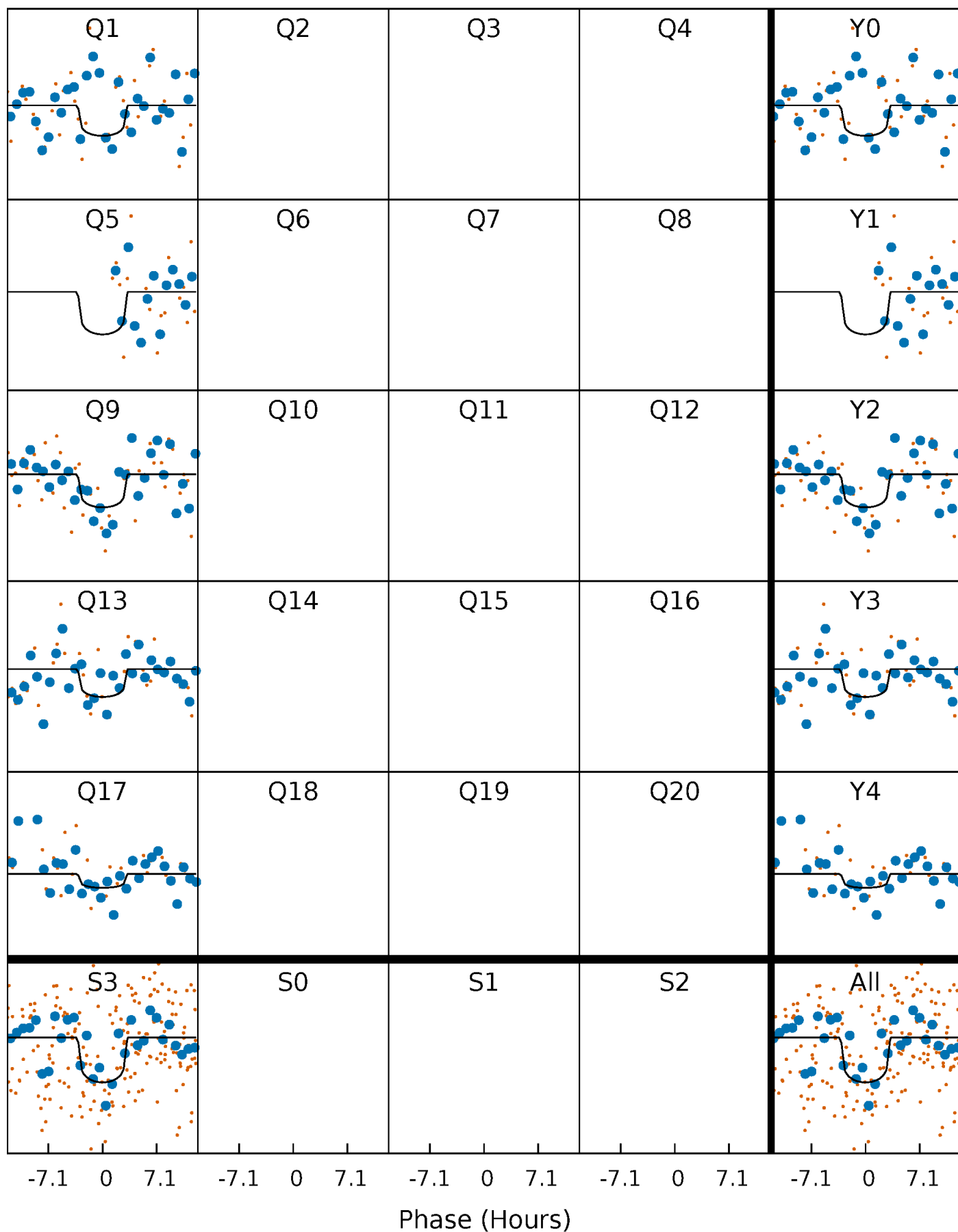
TCE 011624505-01 P=352.252057 Days  $T_0=152.302887$  (BKJD)





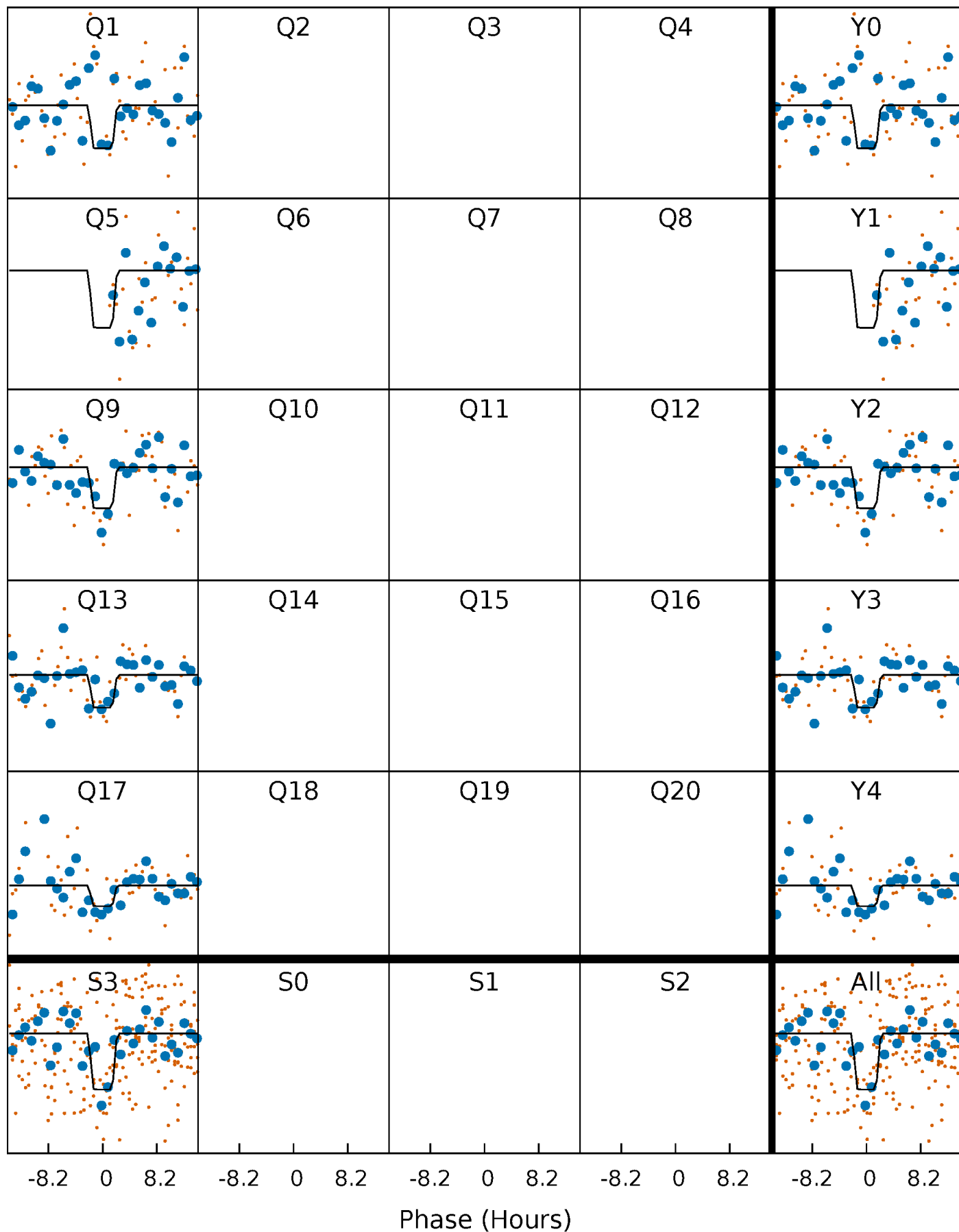
# DV Quarter-Phased Transit Curves

TCE 011624505-01 P=352.252057 Days  $T_0=152.302887$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

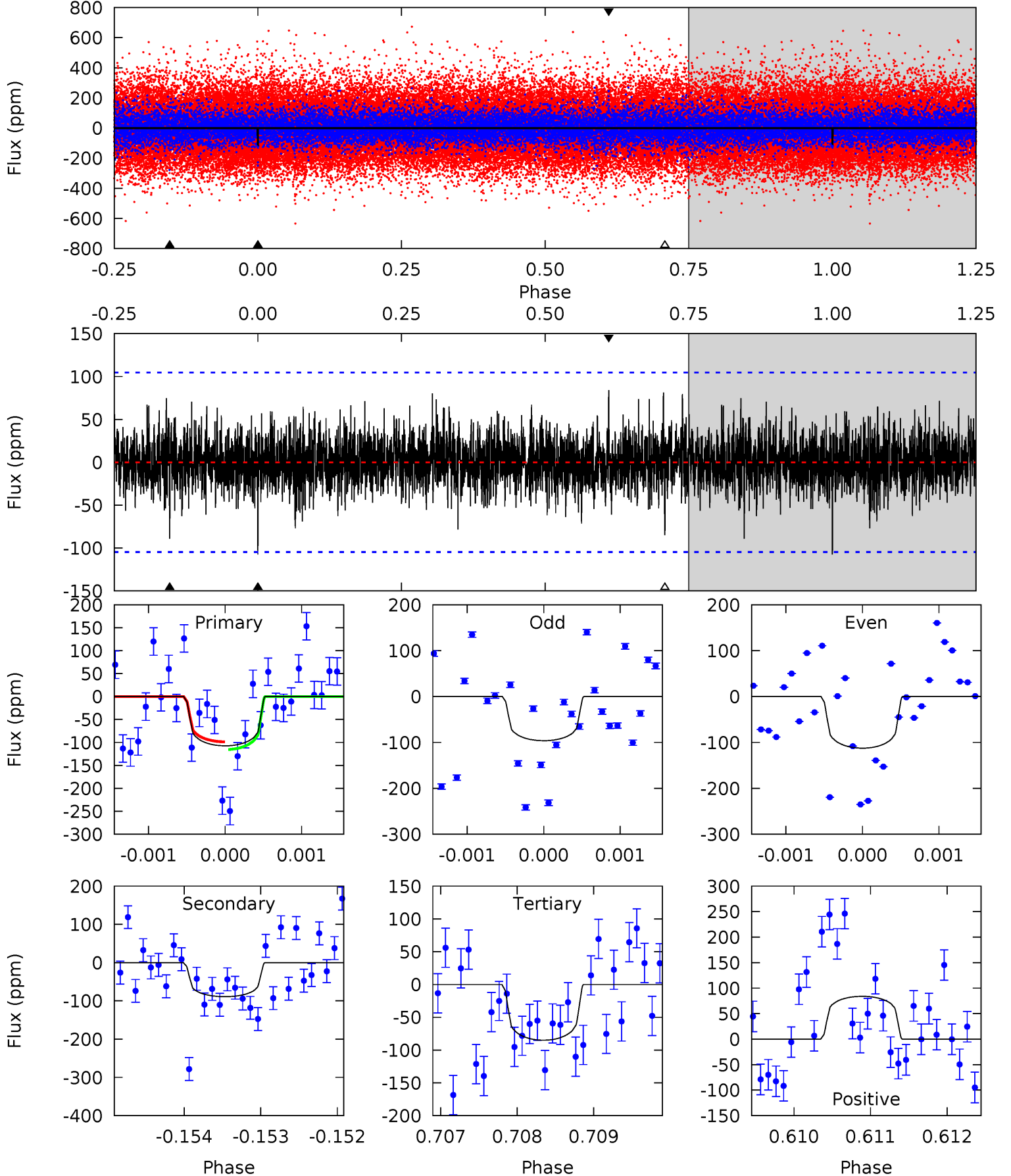
TCE 011624505-01 P=352.254141 Days  $T_0=152.309290$  (BKJD)



# DV Model-Shift Uniqueness Test

011624505-01, P = 352.252057 Days, E = 152.302887 Days

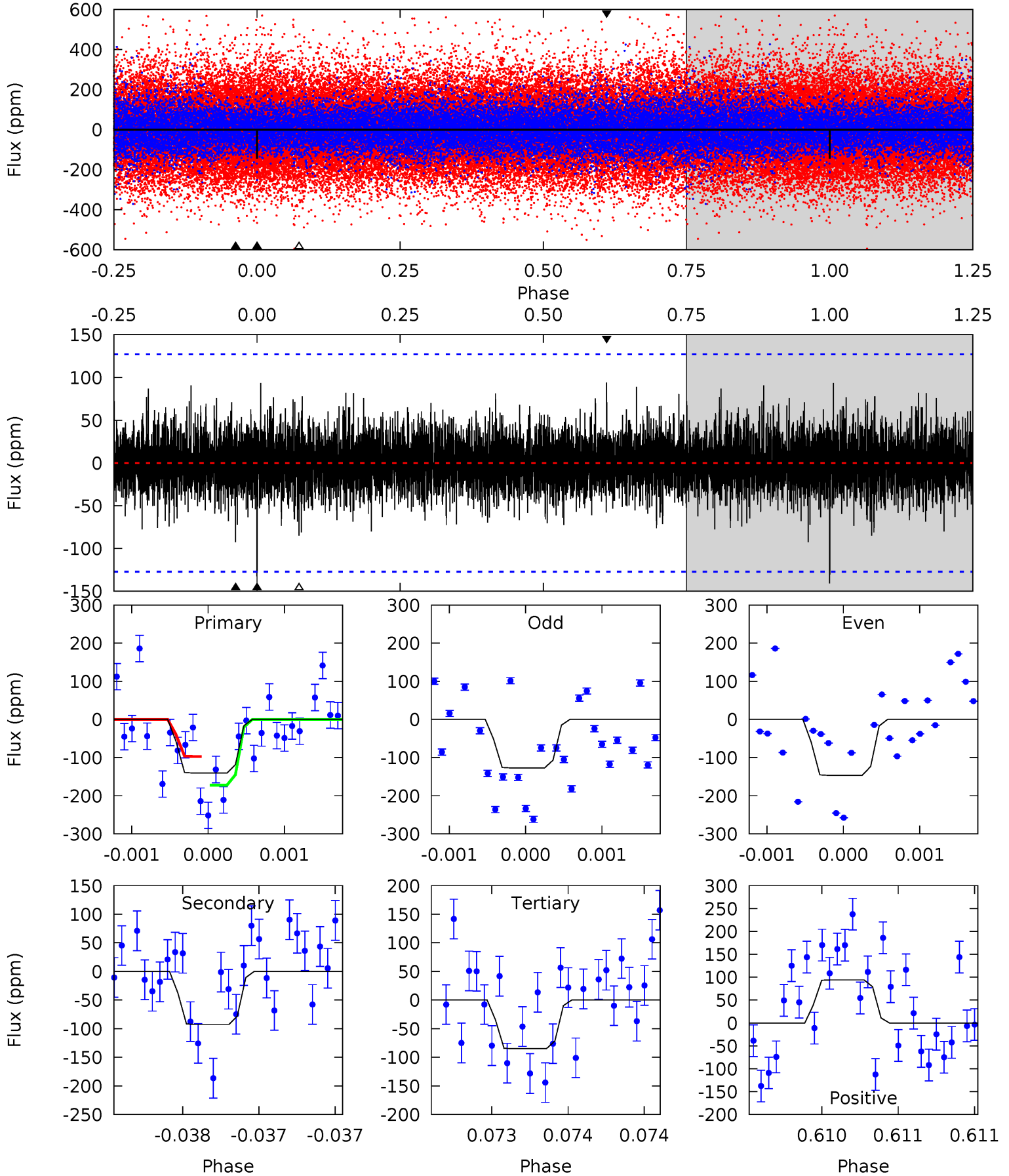
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.64	4.68	4.47	4.41	5.50	3.37	1.15	1.18	1.23	0.21	0.27	0.41	0.73	0.44	0.44



# Alt Model-Shift Uniqueness Test

011624505-01, P = 352.254141 Days, E = 152.309290 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.15	4.05	3.72	4.11	5.57	3.47	1.00	2.43	2.04	0.33	-0.06	0.41	0.96	0.40	1.60



### Stellar Parameters For KIC 011624505

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$\rho_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6006^{+179}_{-161}$	$3.638^{+0.345}_{-0.115}$	$-0.300^{+0.350}_{-0.300}$	$2.965^{+0.535}_{-1.249}$	$1.395^{+0.200}_{-0.342}$	$0.075^{+0.215}_{-0.028}$
	+3%/-3%	+9%/-3%	+117%/-100%	+18%/-42%	+14%/-25%	+285%/-37%
Source	PHO1	FLK73	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 011624505-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-89 \pm 19$	$4.56^{+3.31}_{-2.85}$	$603^{+37}_{-62}$	$4839^{+2588}_{-898}$	$2737^{+16962}_{-1817}$
Alt.	$-93 \pm 23$	$4.54^{+3.61}_{-2.71}$	$601^{+40}_{-57}$	$4891^{+2676}_{-930}$	$2842^{+15657}_{-1956}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

$T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{\text{obs}}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{\text{obs}} \gg T_{\text{max}}$  AND  $A_{\text{obs}} \gg 1.0$

## DV Centroid Data

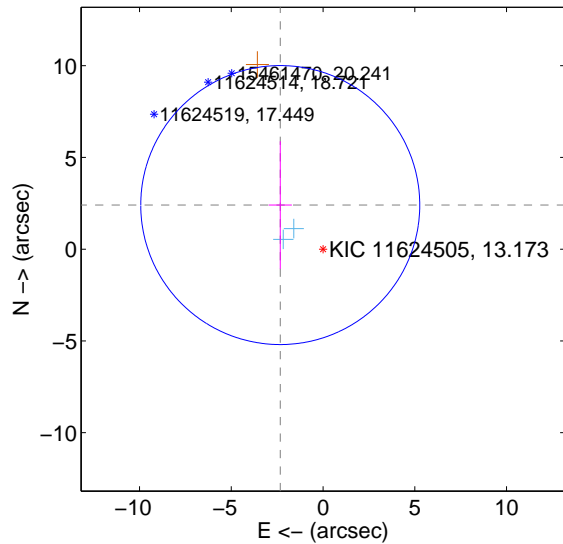
Supplemental centroid analysis for 011624505-01. Kepler magnitude: 13.17. Transit SNR 6.17

There are 2 quarters with good PRF difference image offsets

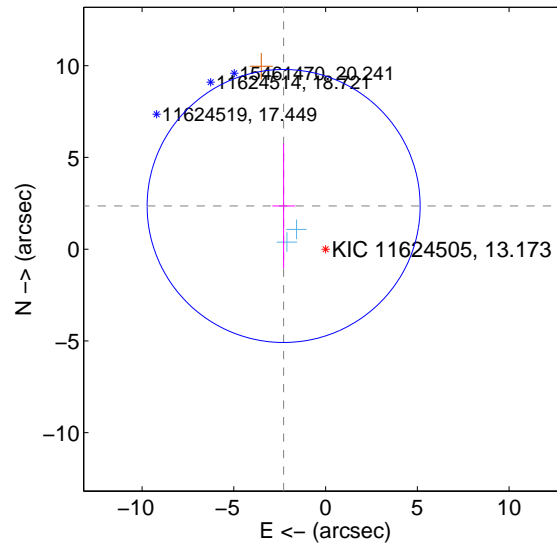
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.350 \pm 2.535$	1.32	$2.332 \pm 0.630$	$2.404 \pm 3.478$
PRF-fit source offset from KIC position	$3.281 \pm 2.480$	1.32	$2.286 \pm 0.614$	$2.354 \pm 3.405$
photometric centroid source offset	$3.66 \pm 2.44$	1.50	$2.98 \pm 2.30$	$2.13 \pm 2.71$

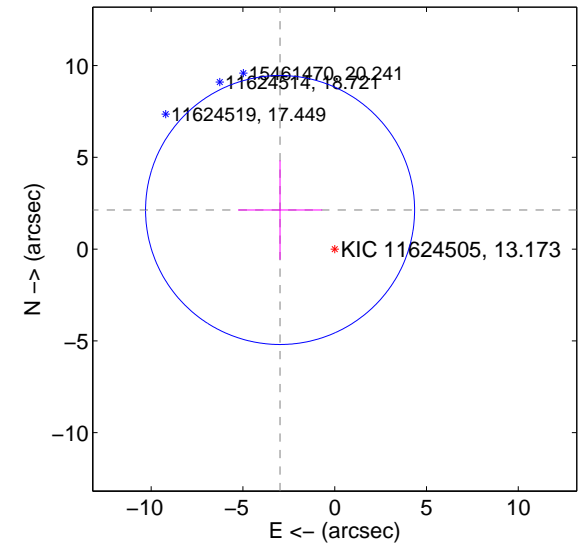
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

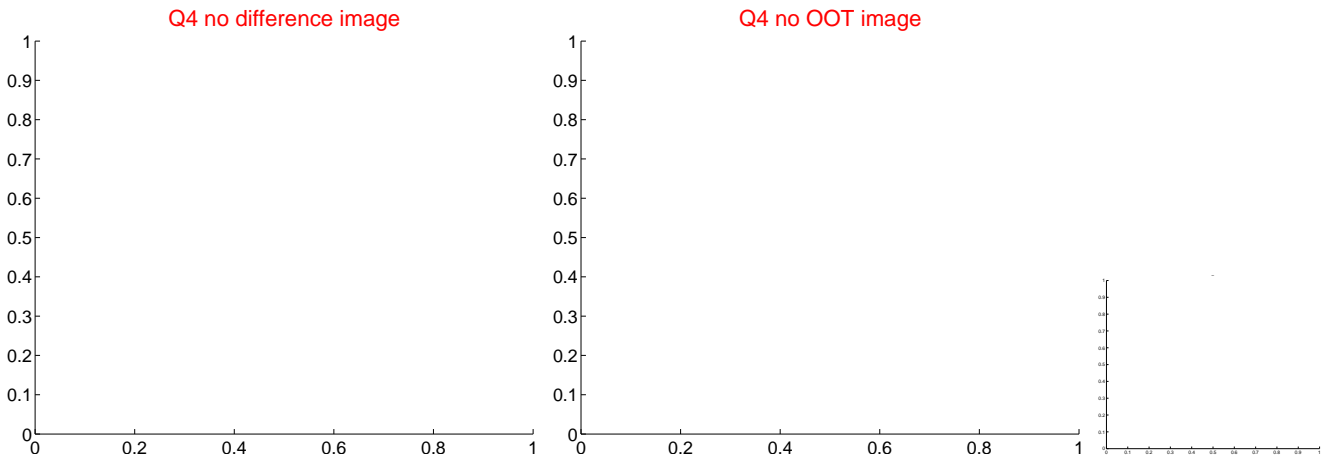
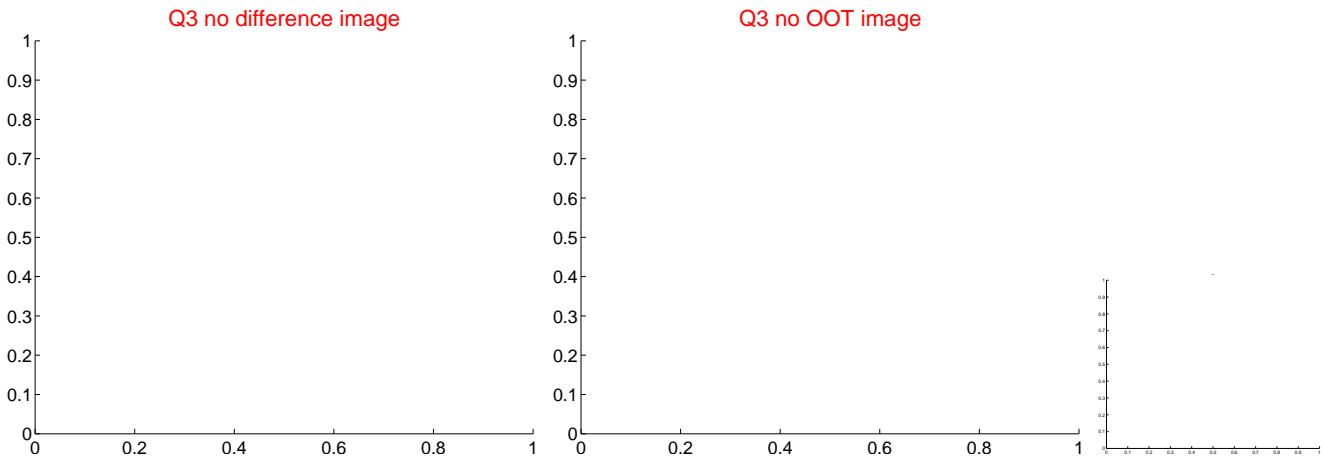
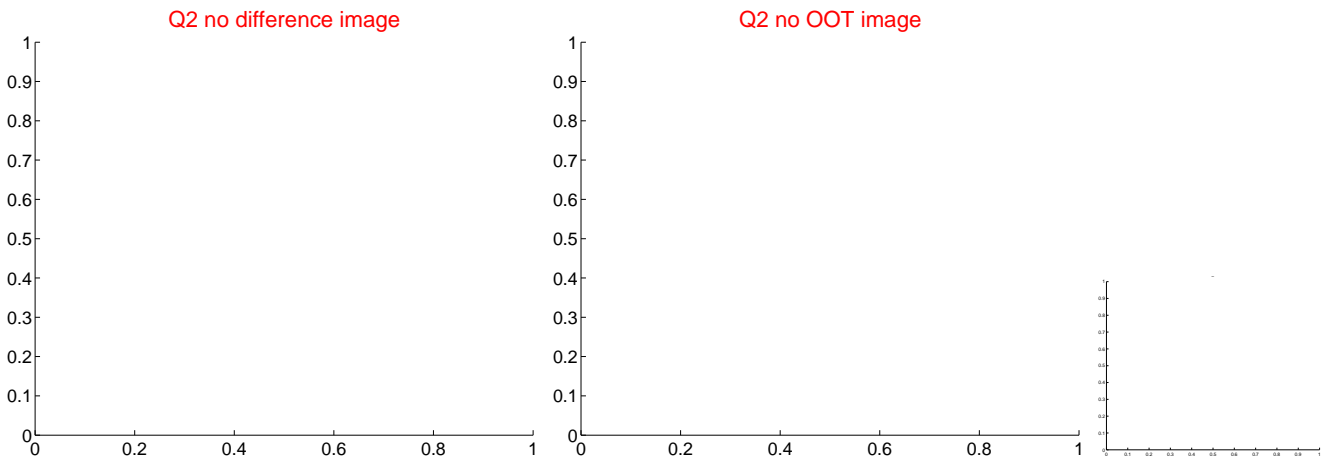
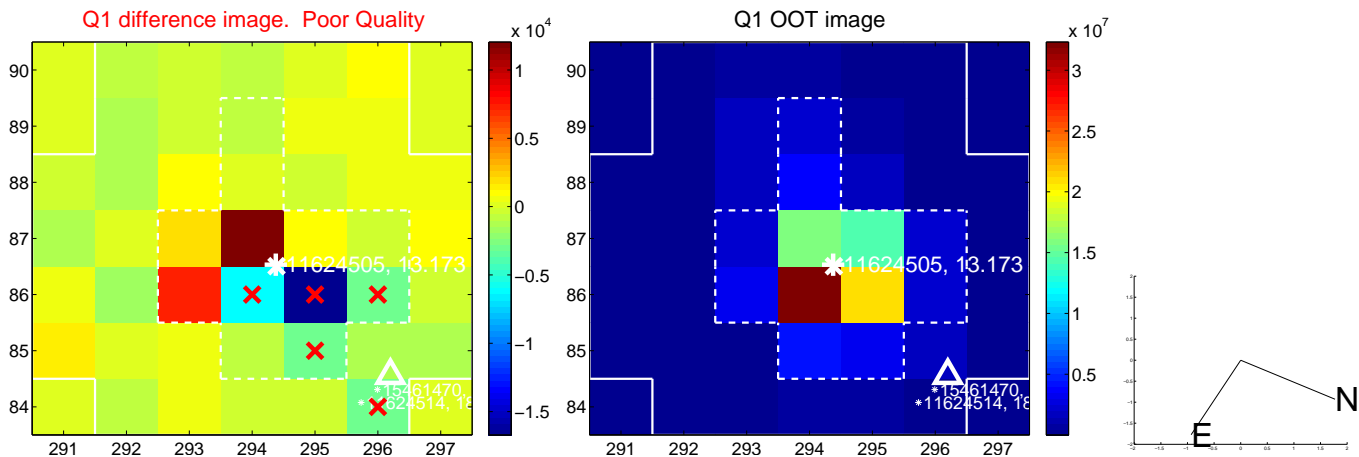


offset from photometric centroids



Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

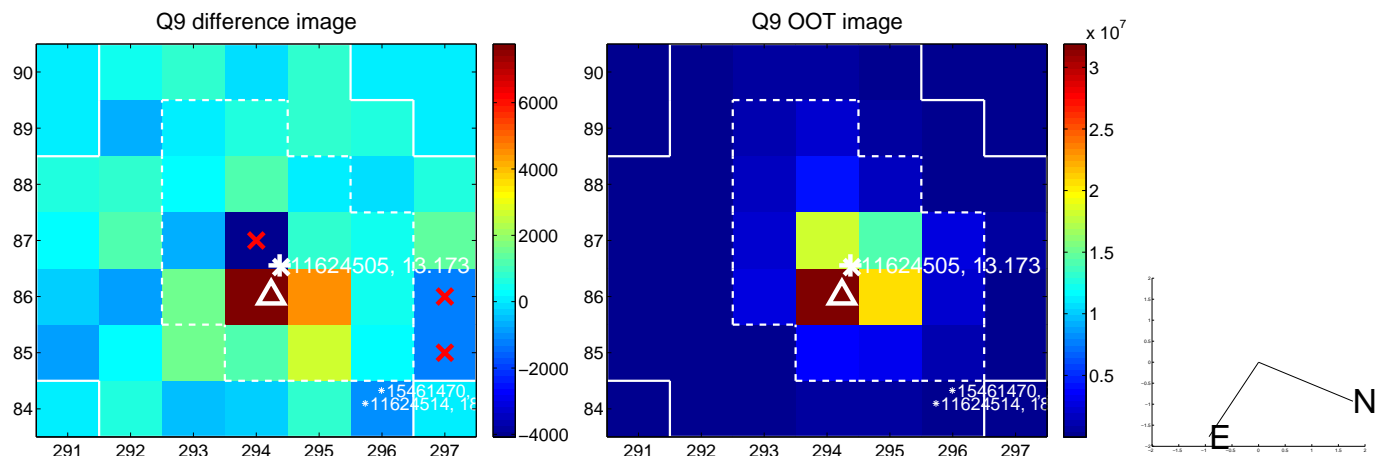




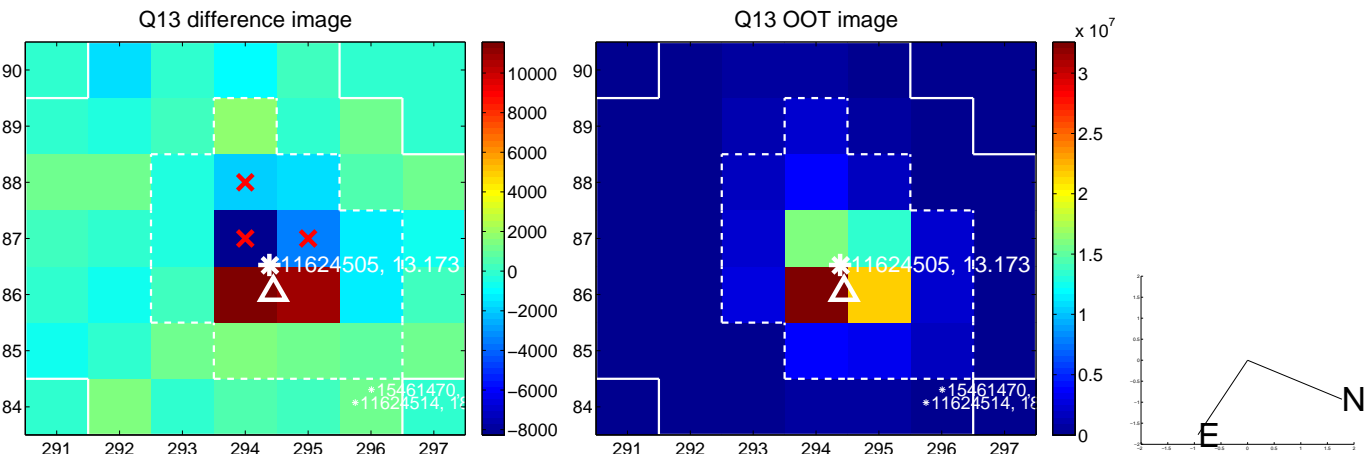
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



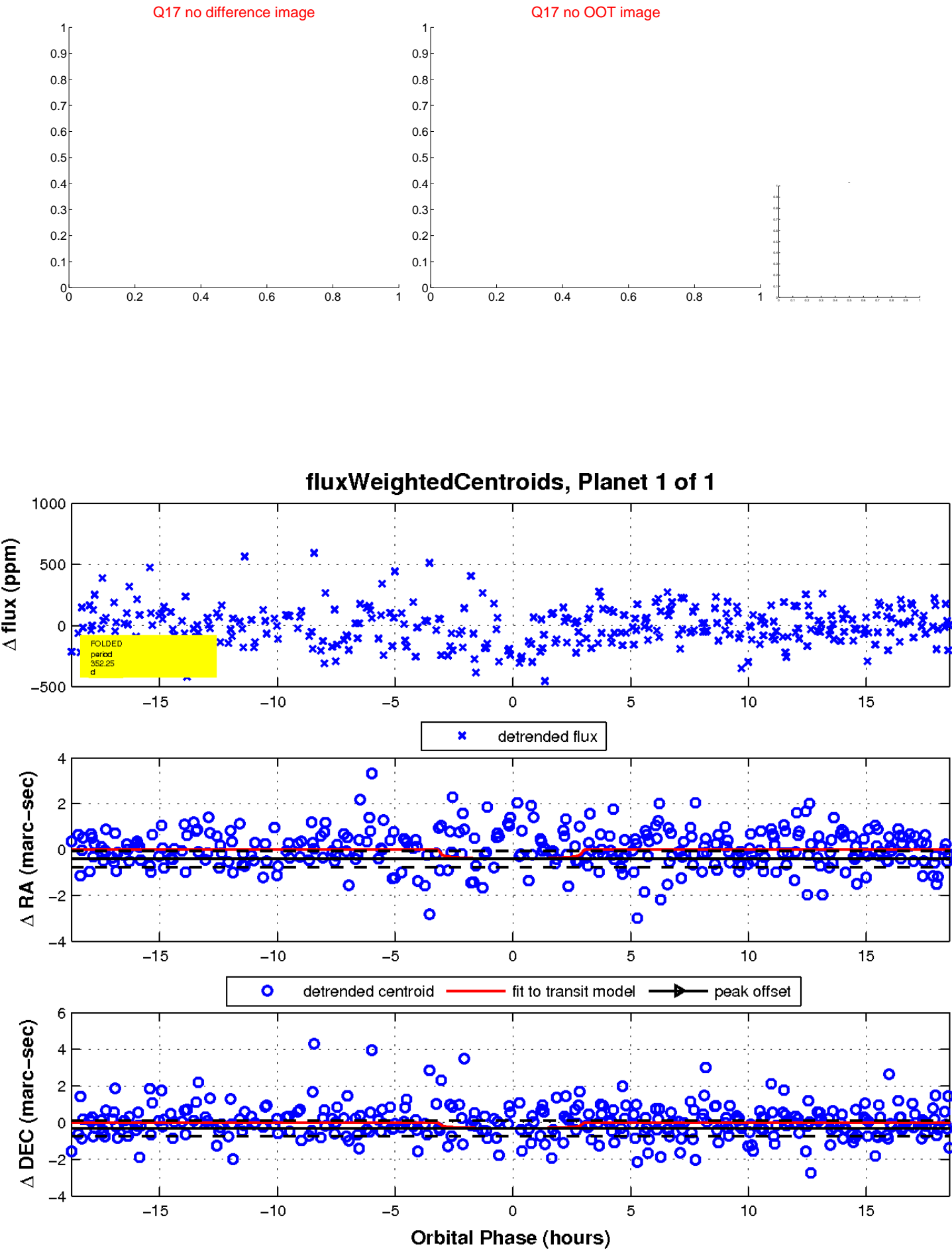
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination

