

# KIC 004372379

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004372379-01	OBS	No	4.535182	133.207763	236.6	10.851	26.0	29.0	1.99	6632	6.01	1850.33

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004372379-01	OBS	FP	0.00	1	0	0	0	LPP_DV

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

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

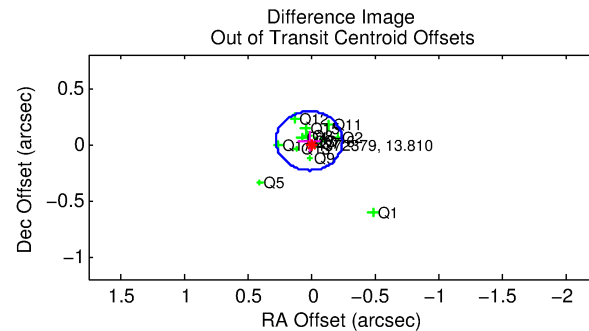
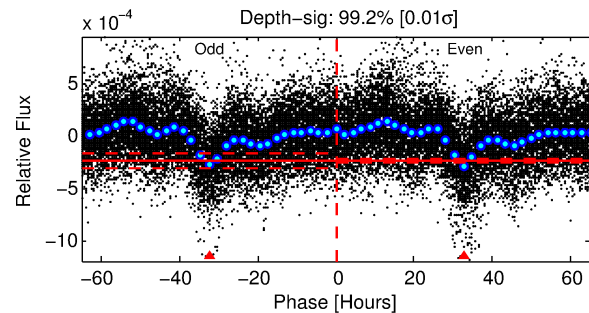
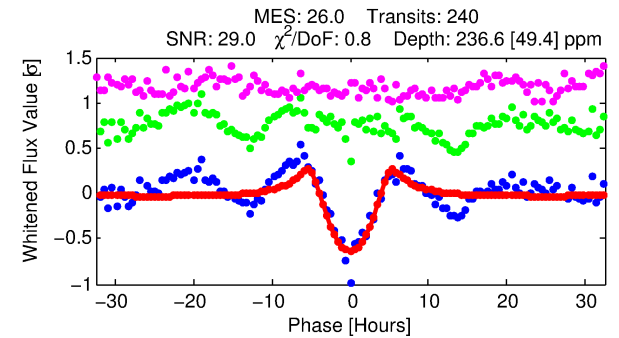
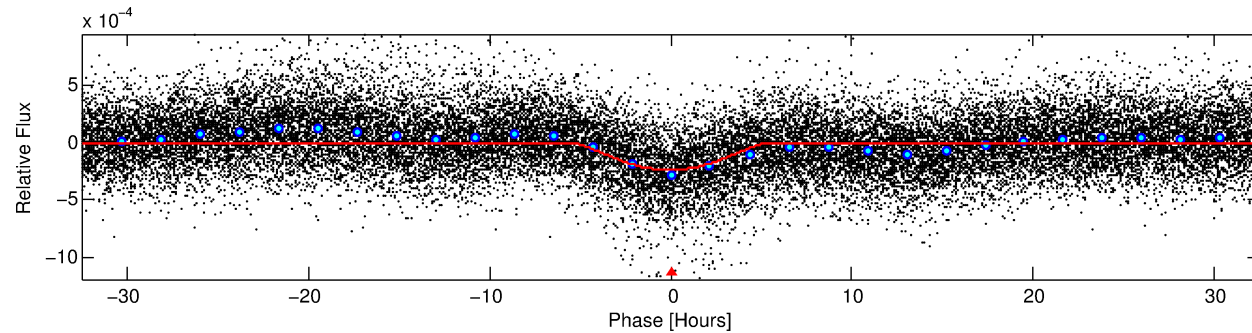
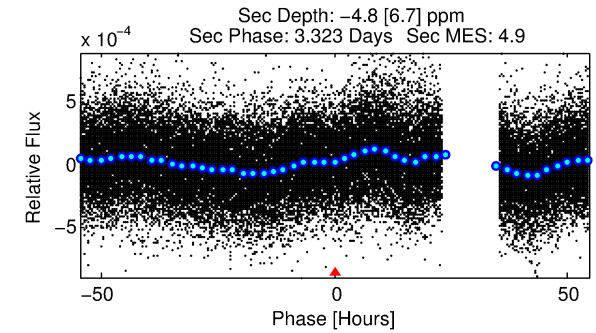
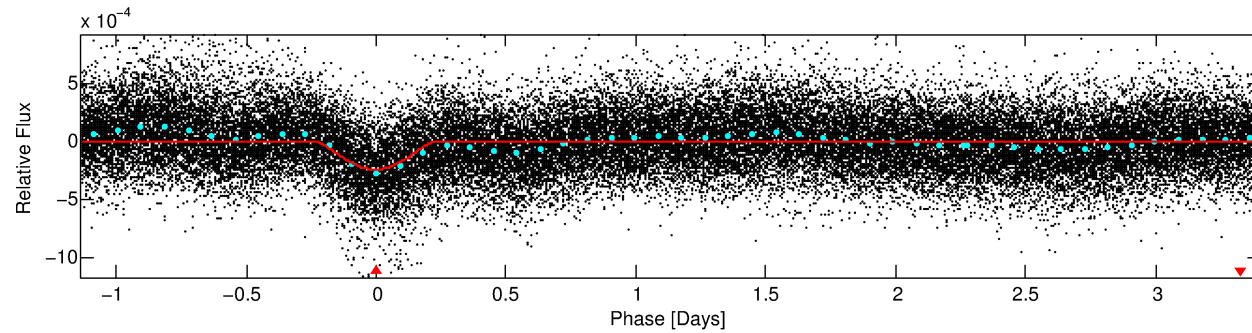
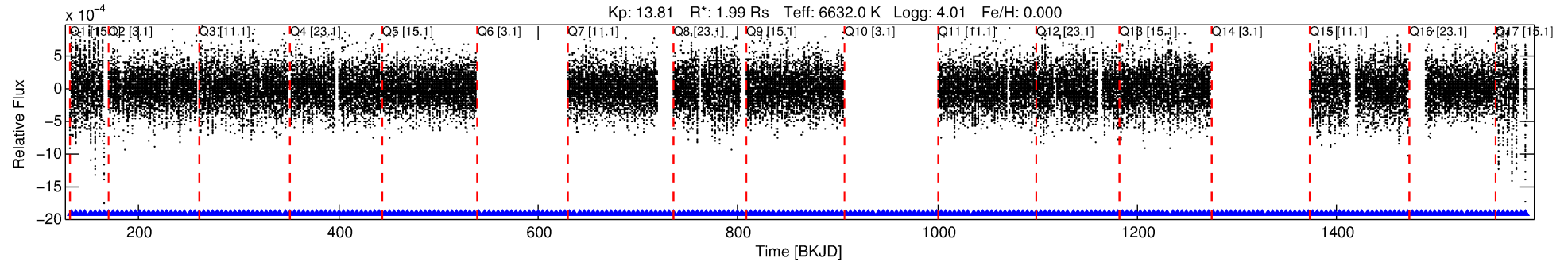
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004372379-01

No Significant Match Found

# DV One-Page Summary

KIC: 4372379 Candidate: 1 of 1 Period: 4.535 d



## DV Fit Results:

Period = 4.53518 [0.00003] d  
Epoch = 133.2078 [0.0056] BKJD  
Rp/R\* = 0.0277 [0.0175]  
a/R\* = 1.26 [0.06]  
b = 1.00 [0.02]  
Seff = 1850.33 [592.30]  
Teff = 1672 [134] K  
Rp = 6.01 [4.05] Re  
a = 0.0609 [0.0126] AU  
Ag = N/A  
Teffp = N/A

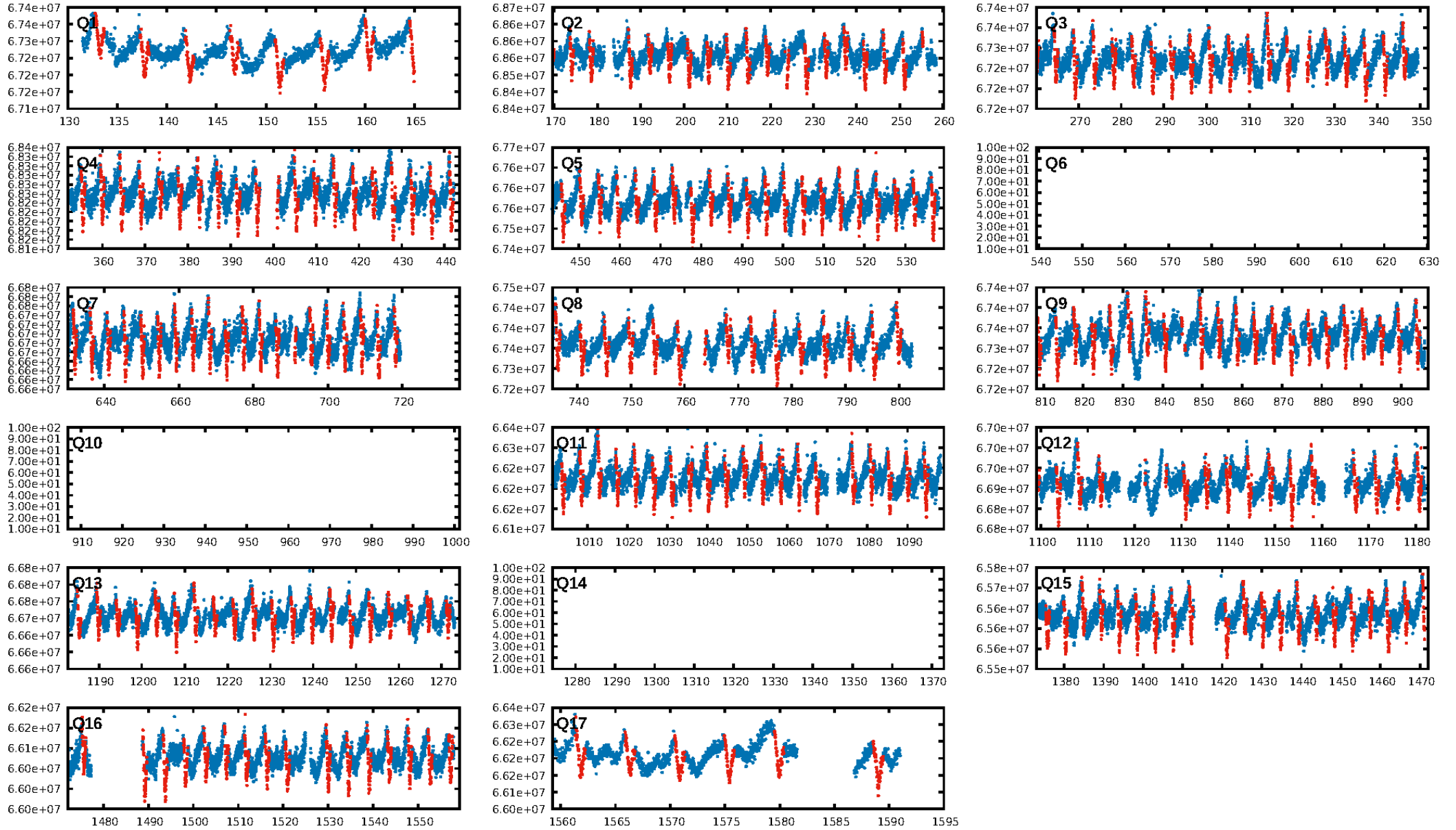
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.10e-114  
RollingBand-fgt: 1.00 [226/226]  
GhostDiagnostic-chr: 1.342  
Centroid-sig: 0.0%  
Centroid-so: 0.762 arcsec [2.95σ]  
OotOffset-rm: 0.031 arcsec [0.36σ]  
KicOffset-rm: 0.008 arcsec [0.08σ]  
OotOffset-st: 1/4/4/5 [14]  
KicOffset-st: 1/4/4/5 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 1.00 [14/14]

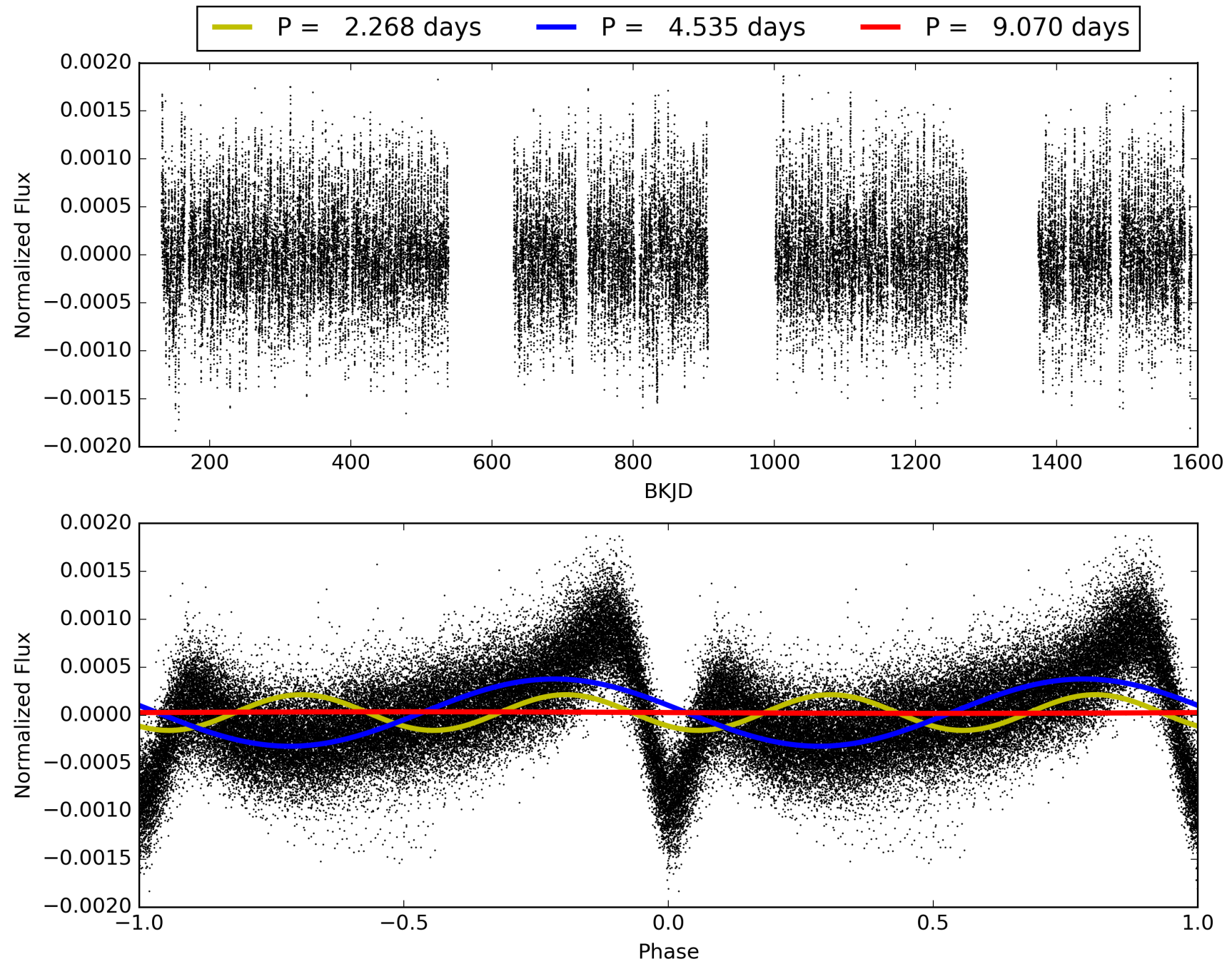
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:57:06 Z

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

# TCE 004372379-01, PDC Light Curves

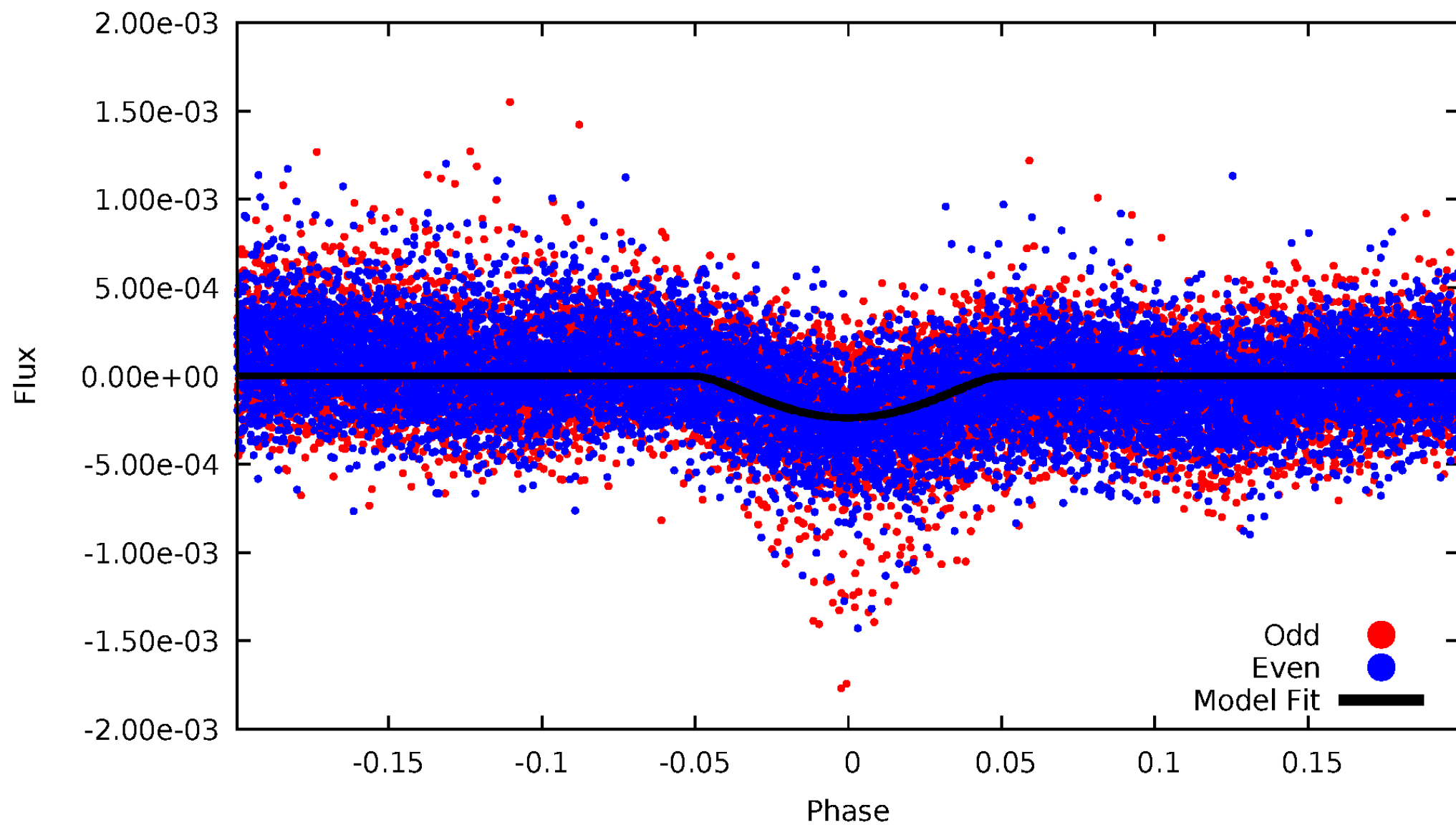


TCE 004372379-01



# DV Odd/Even

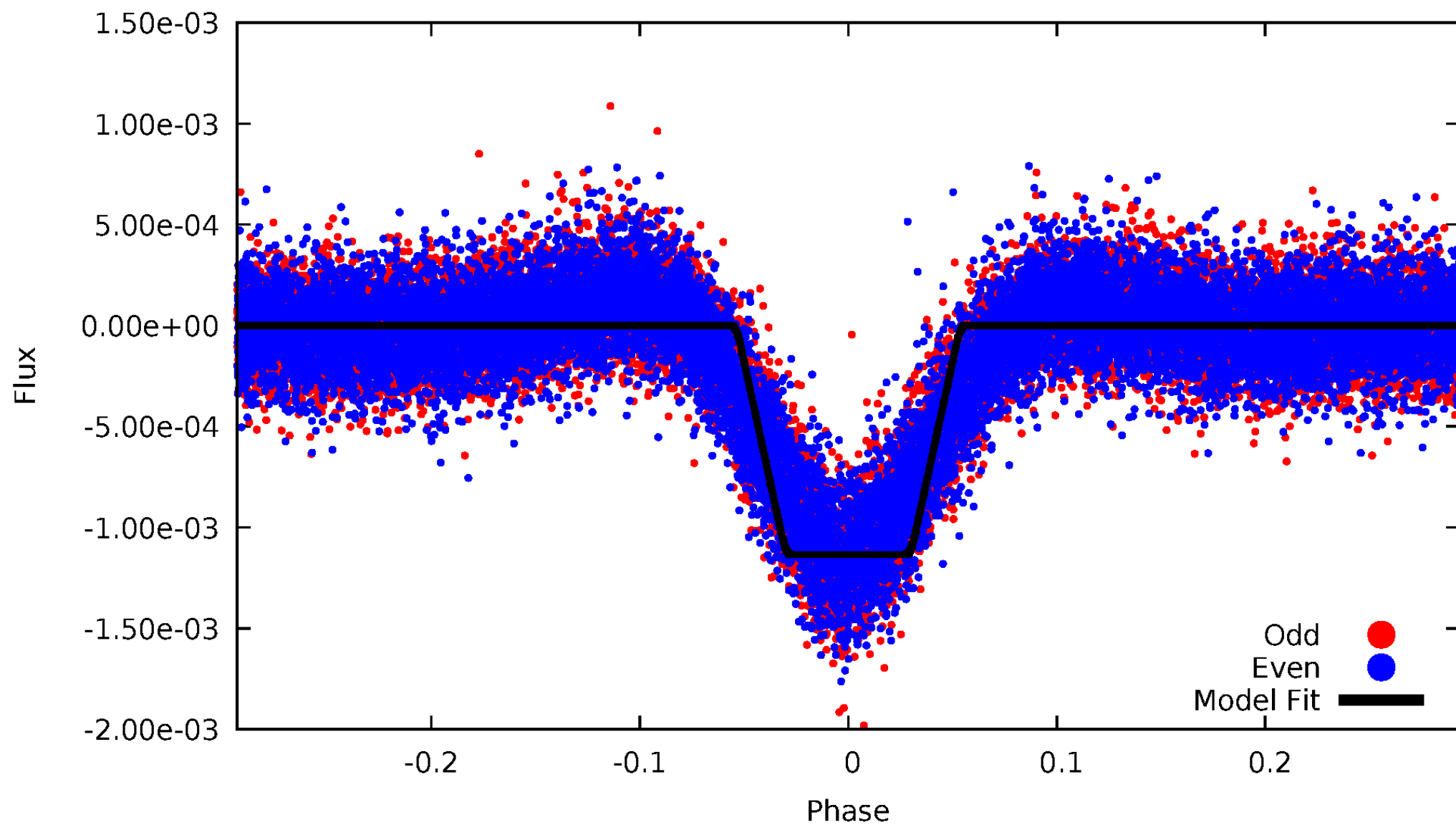
TCE 004372379-01



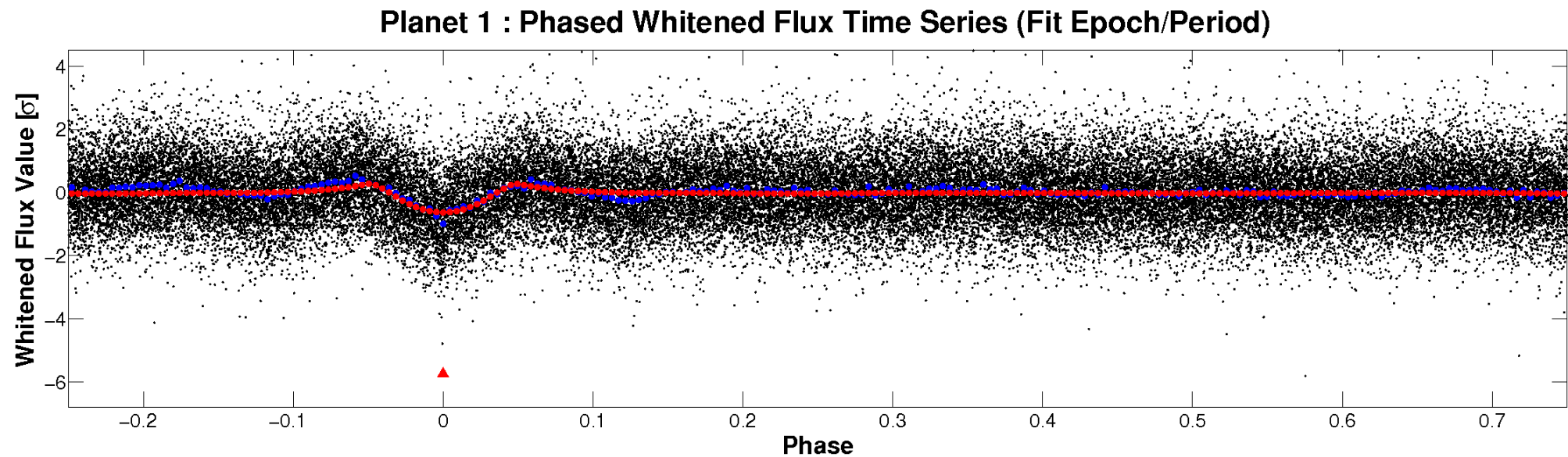
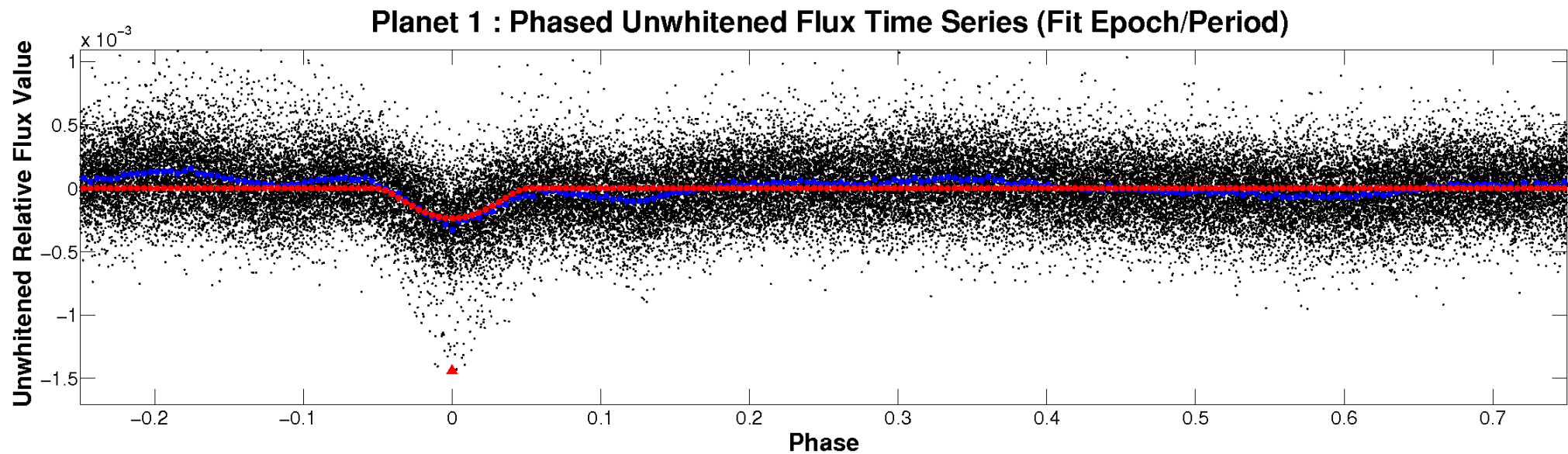


# ALT Odd/Even

TCE 004372379-01

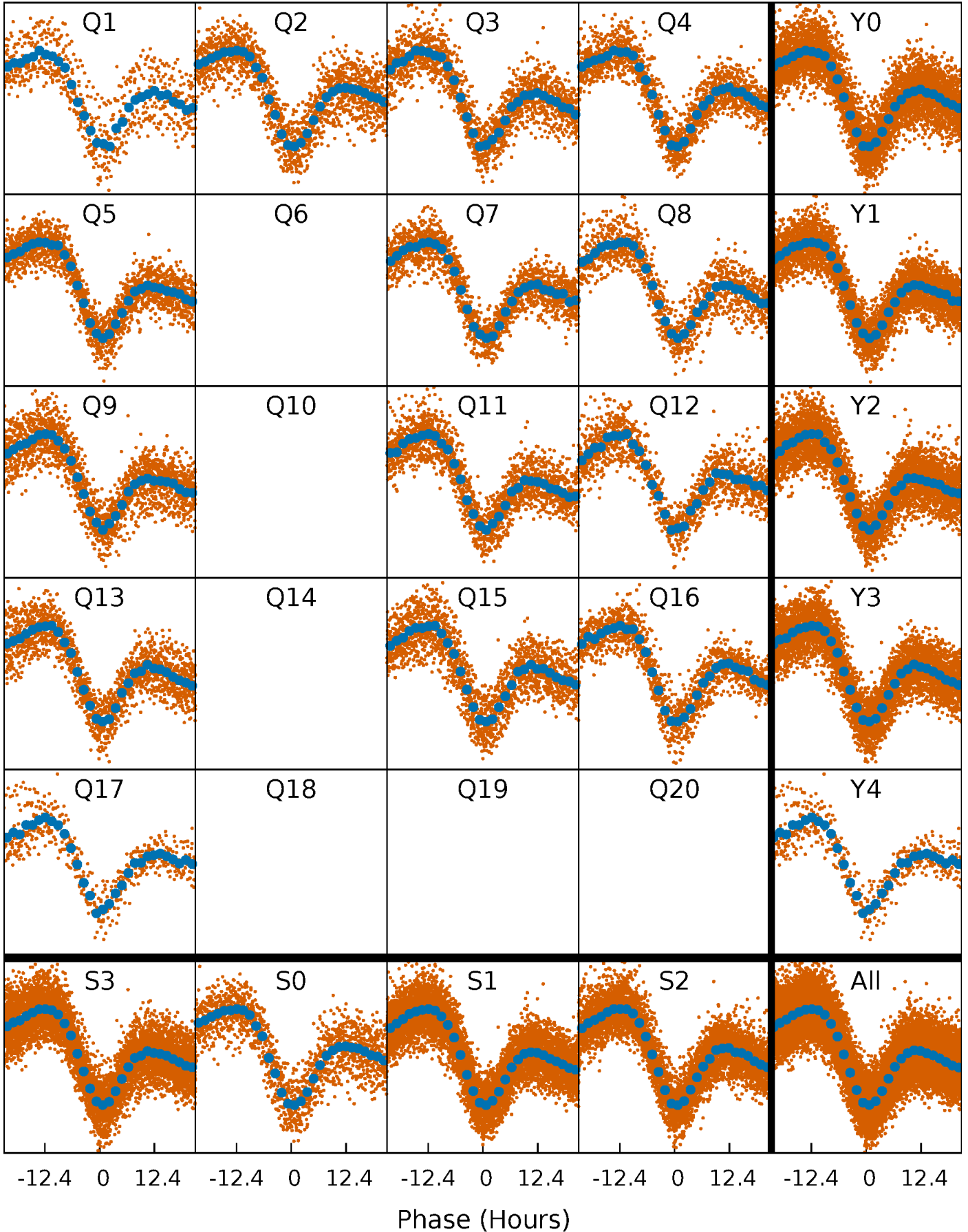


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

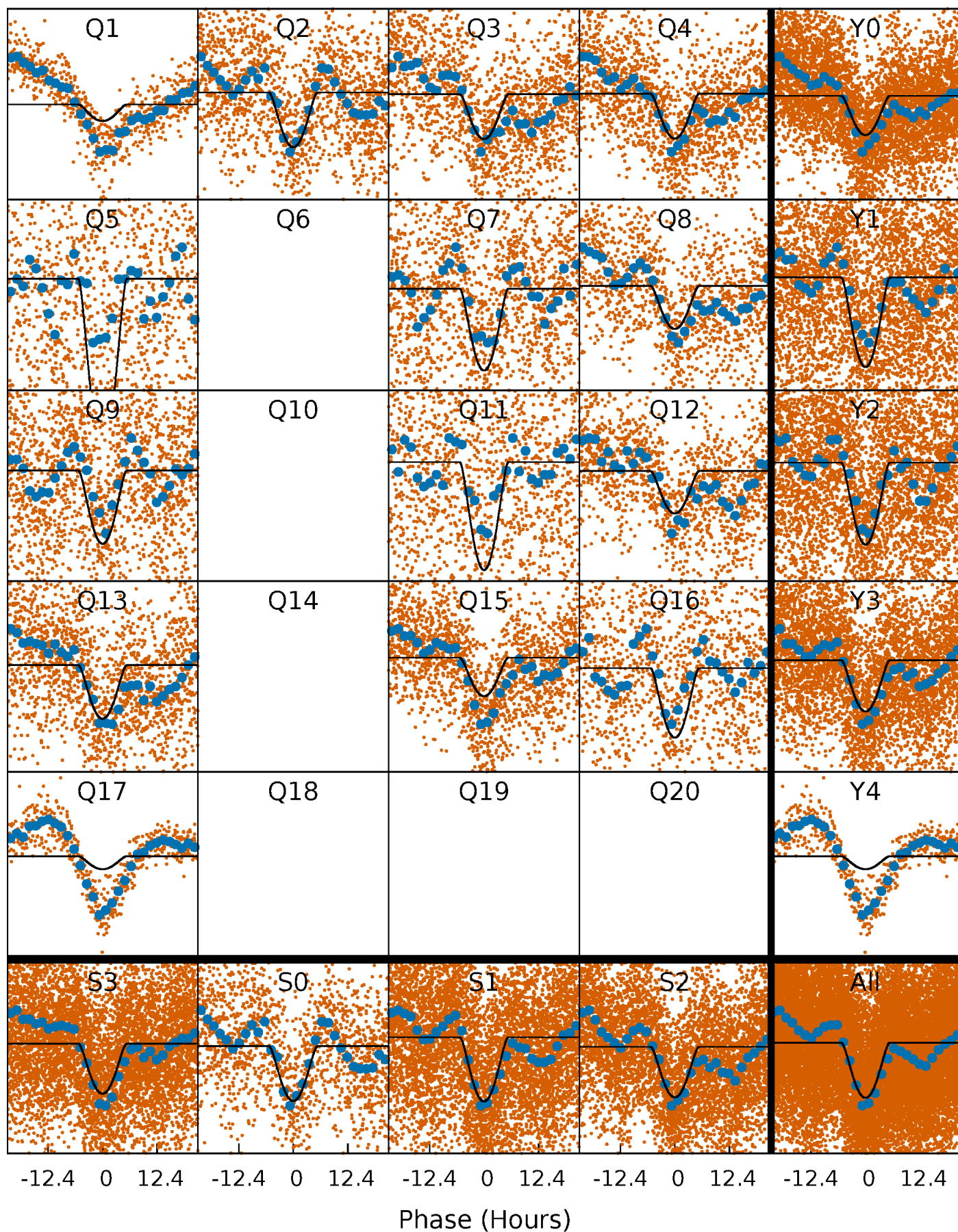
TCE 004372379-01   P= 4.535182 Days    $T_0=133.207763$  (BKJD)





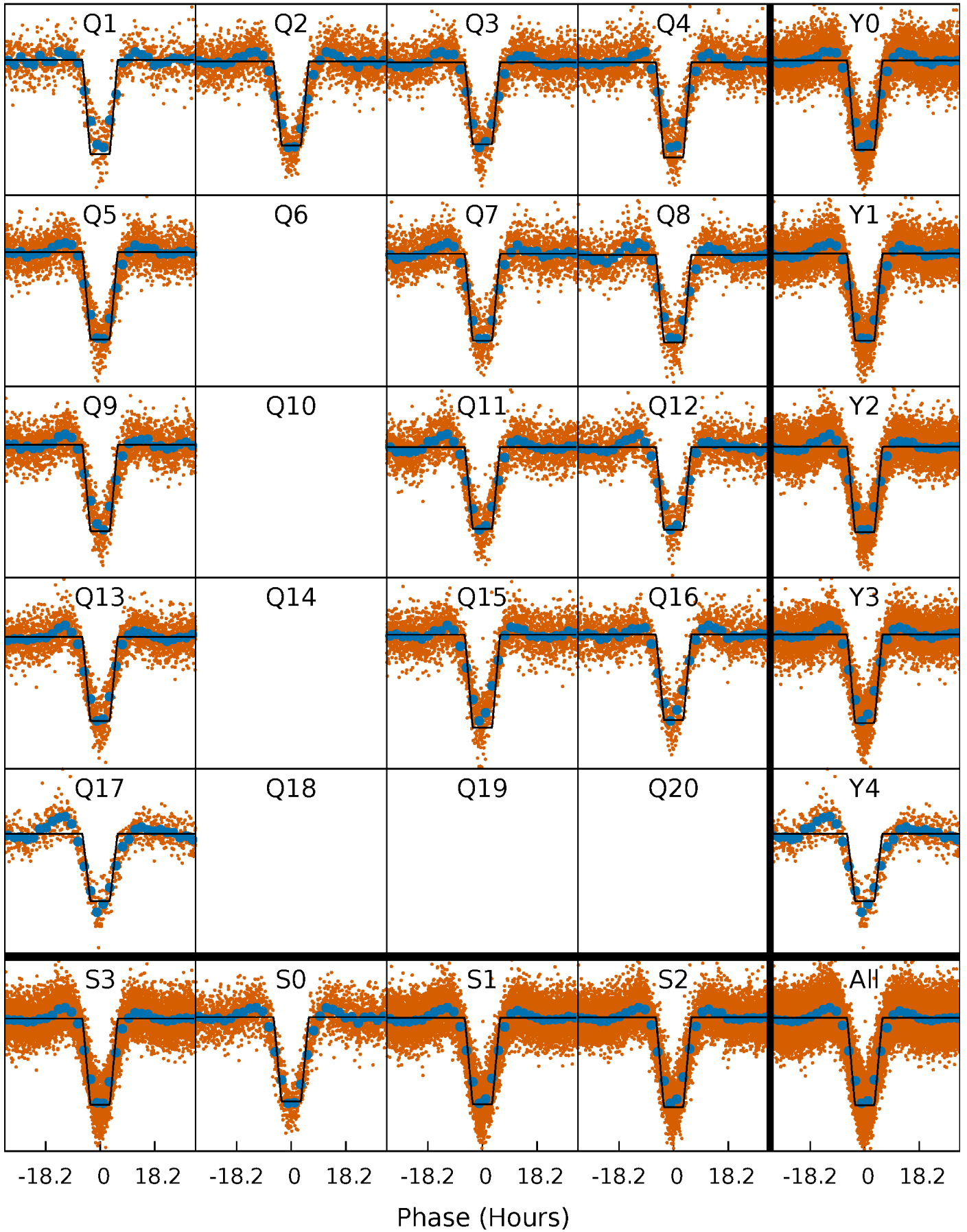
# DV Quarter-Phased Transit Curves

TCE 004372379-01 P= 4.535182 Days  $T_0=133.207763$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

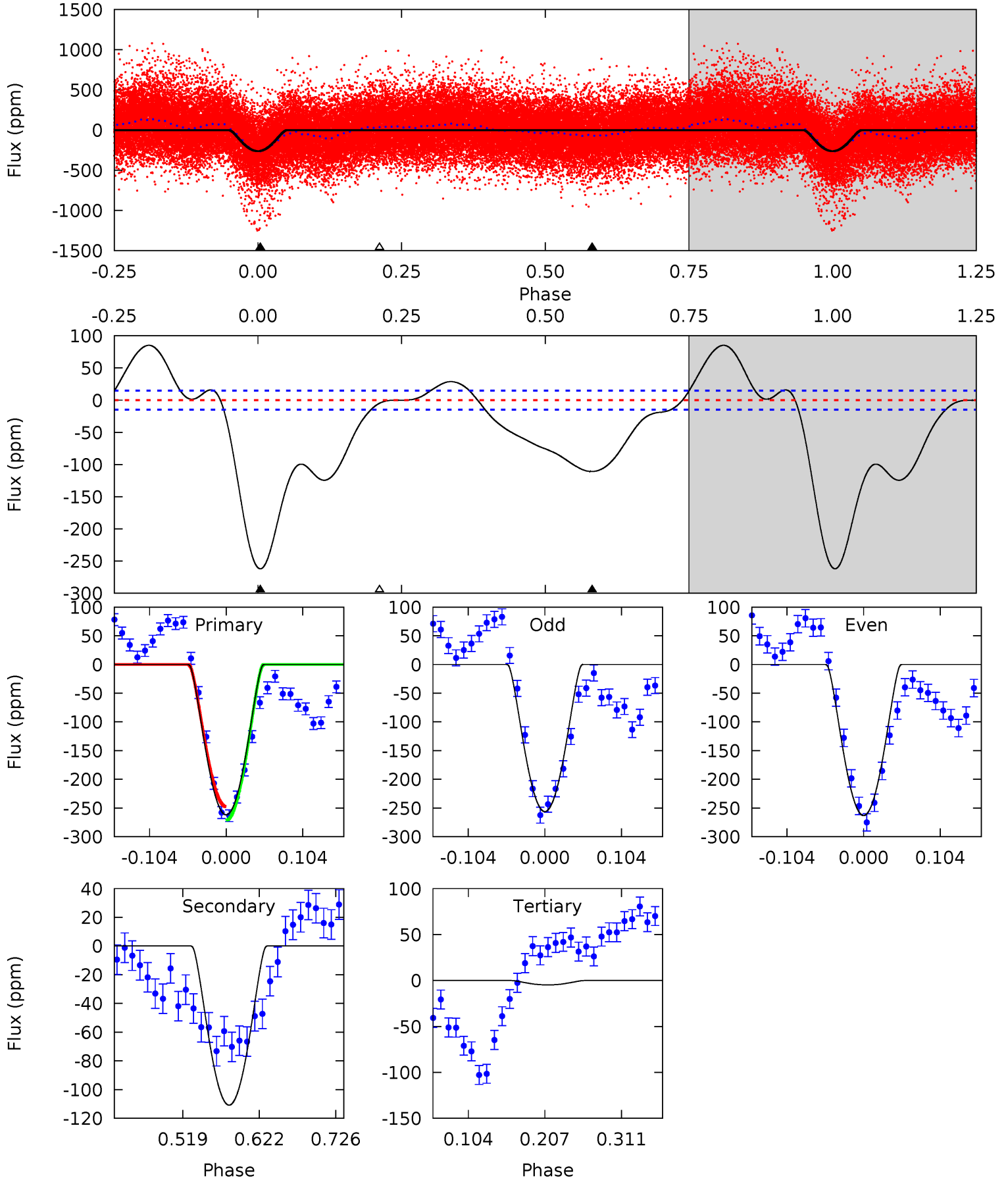
TCE 004372379-01   P= 4.535241 Days    $T_0=133.205952$  (BKJD)



# DV Model-Shift Uniqueness Test

004372379-01, P = 4.535182 Days, E = 128.672581 Days

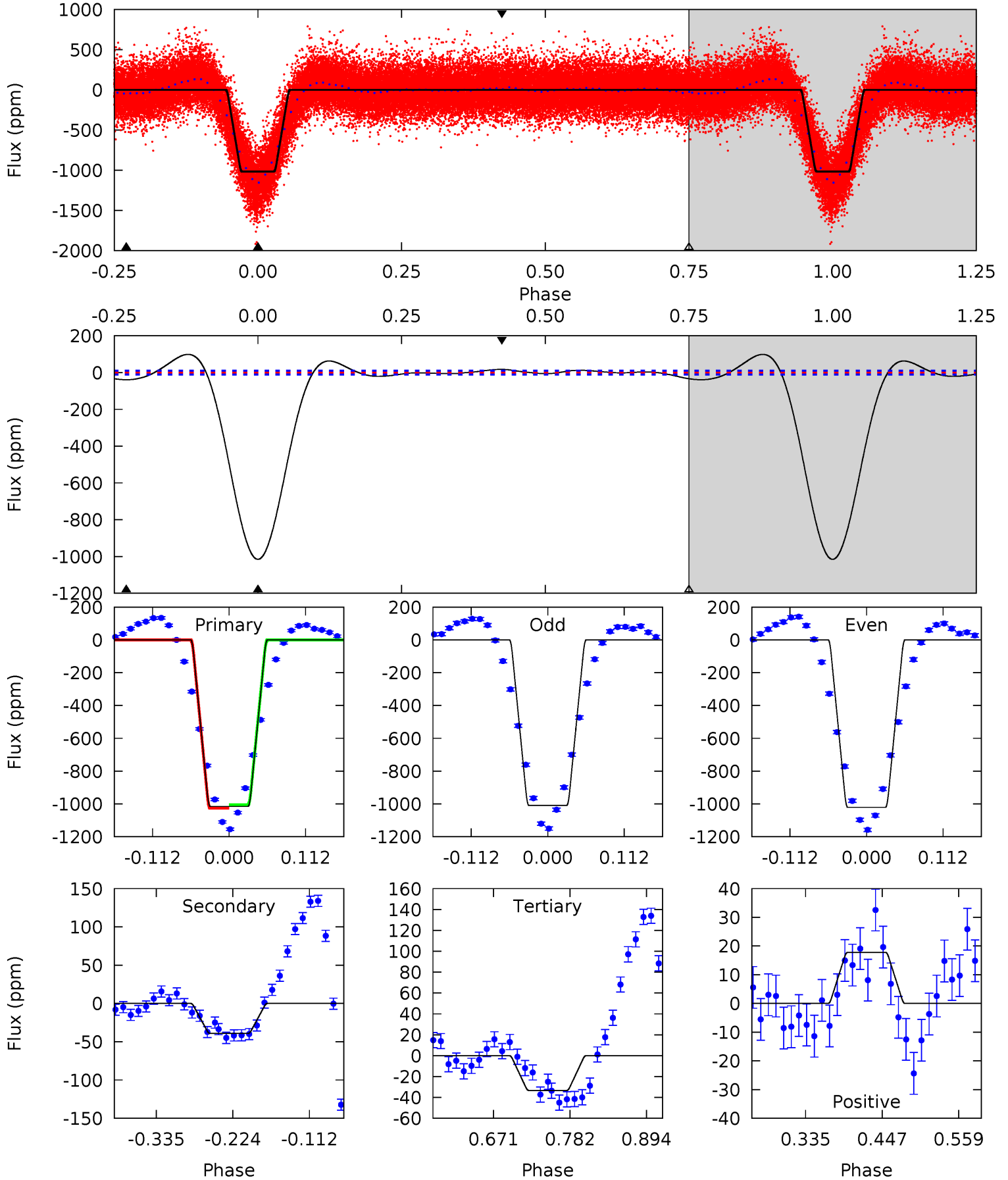
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
80.3	34.0	1.50	0	4.56	1.63	14.7	78.8	80.3	32.5	34.0	1.07	1.13	0.25	3.61



# Alt Model-Shift Uniqueness Test

004372379-01, P = 4.535241 Days, E = 128.670711 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
443.0	17.1	14.5	7.77	4.54	1.59	8.33	428.5	435.2	2.58	9.35	2.64	1.00	0.09	4.63



### Stellar Parameters For KIC 004372379

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6632^{+79}_{-79}$	$4.006^{+0.180}_{-0.120}$	$0.000^{+0.150}_{-0.150}$	$1.990^{+0.377}_{-0.461}$	$1.464^{+0.129}_{-0.144}$	$0.262^{+0.241}_{-0.091}$
	+1%/-1%	+4%/-3%	+inf%/-inf%	+19%/-23%	+9%/-10%	+92%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 004372379-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	-111±3	$6.23^{+3.53}_{-3.12}$	$2334^{+120}_{-135}$	$4182^{+1408}_{-625}$	$5.870^{+17.552}_{-3.555}$
Alt.	-39±2	$7.18^{+3.86}_{-3.52}$	$2333^{+111}_{-140}$	$3279^{+872}_{-532}$	$1.555^{+4.228}_{-0.912}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

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

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

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



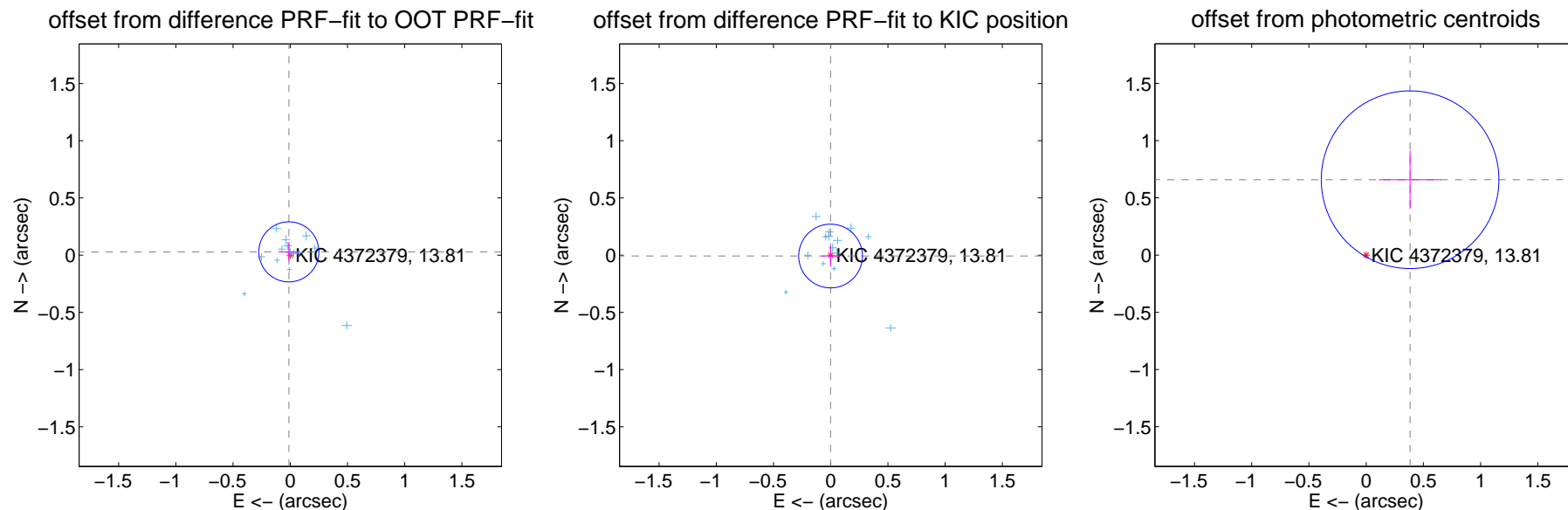
## DV Centroid Data

Supplemental centroid analysis for 004372379-01. Kepler magnitude: 13.81. Transit SNR 29.04

There are 14 quarters with good PRF difference image offsets

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

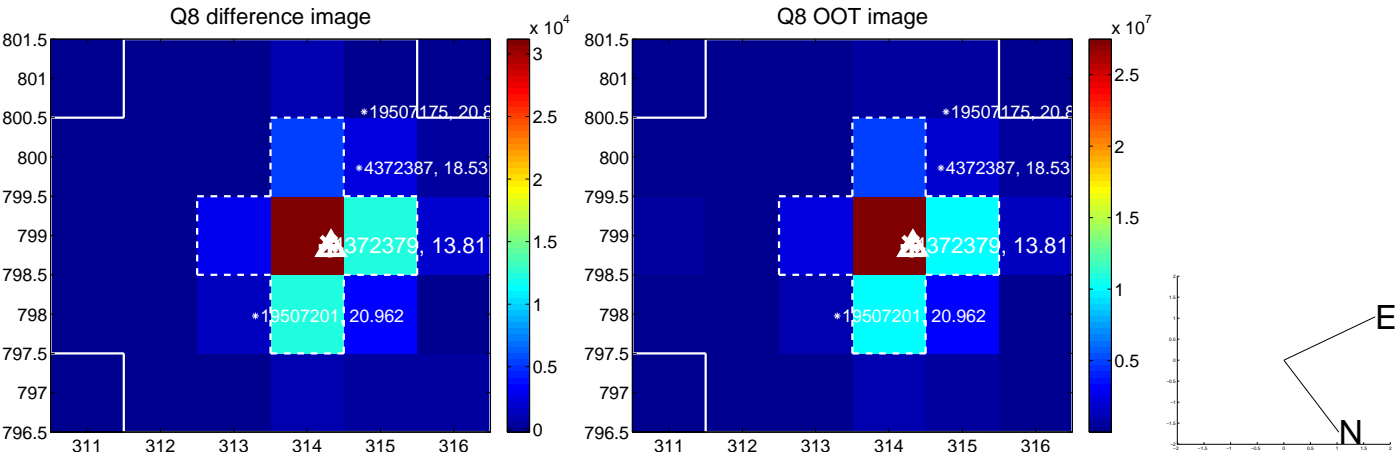
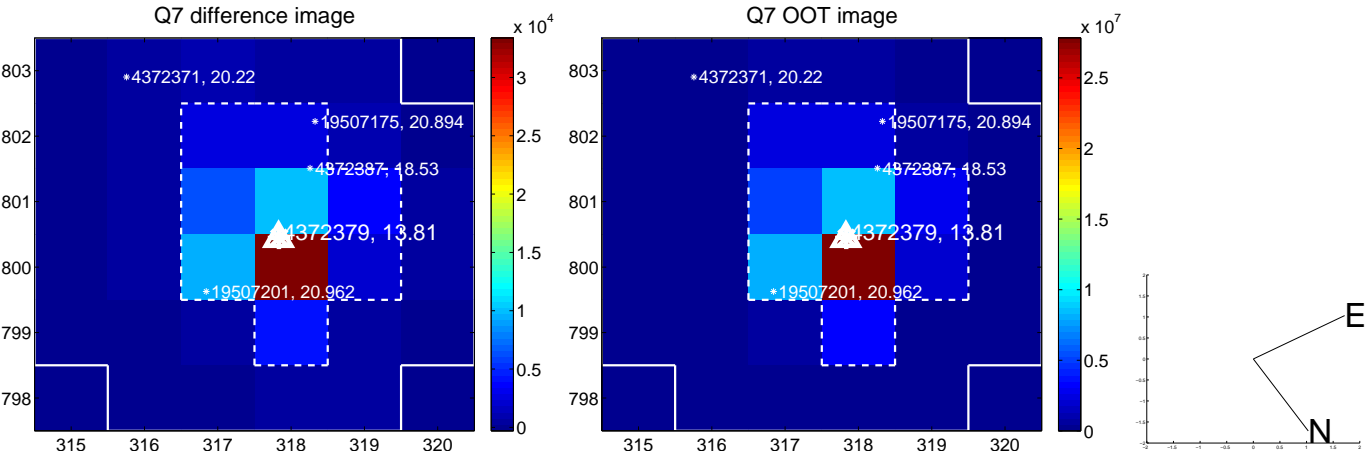
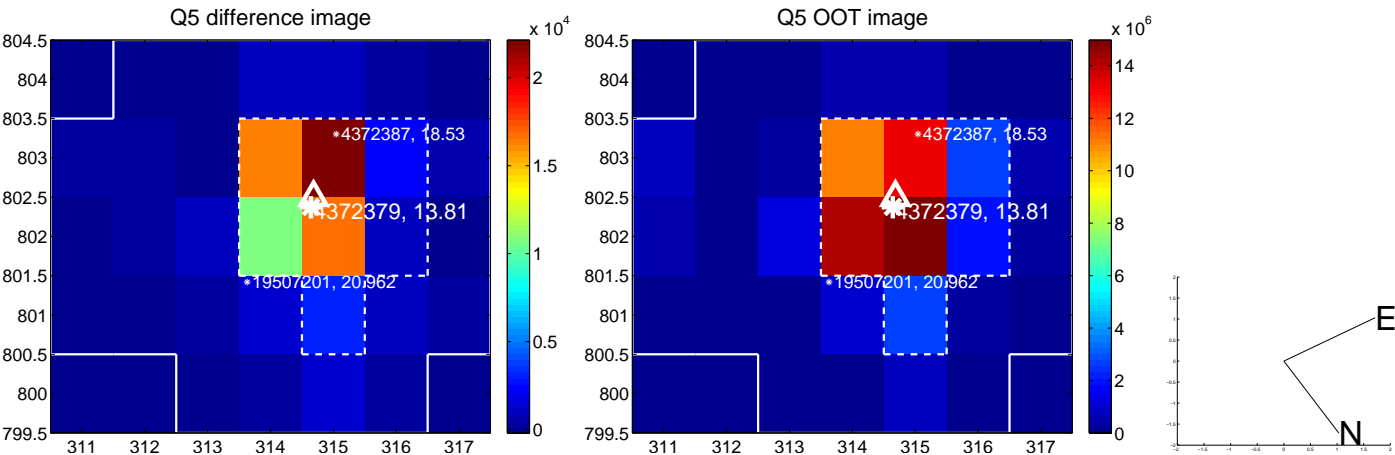
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.031 \pm 0.087$	0.36	$0.012 \pm 0.087$	$0.029 \pm 0.085$
PRF-fit source offset from KIC position	$0.008 \pm 0.093$	0.08	$0.001 \pm 0.077$	$-0.008 \pm 0.093$
photometric centroid source offset	$0.76 \pm 0.26$	2.95	$-0.38 \pm 0.27$	$0.66 \pm 0.25$



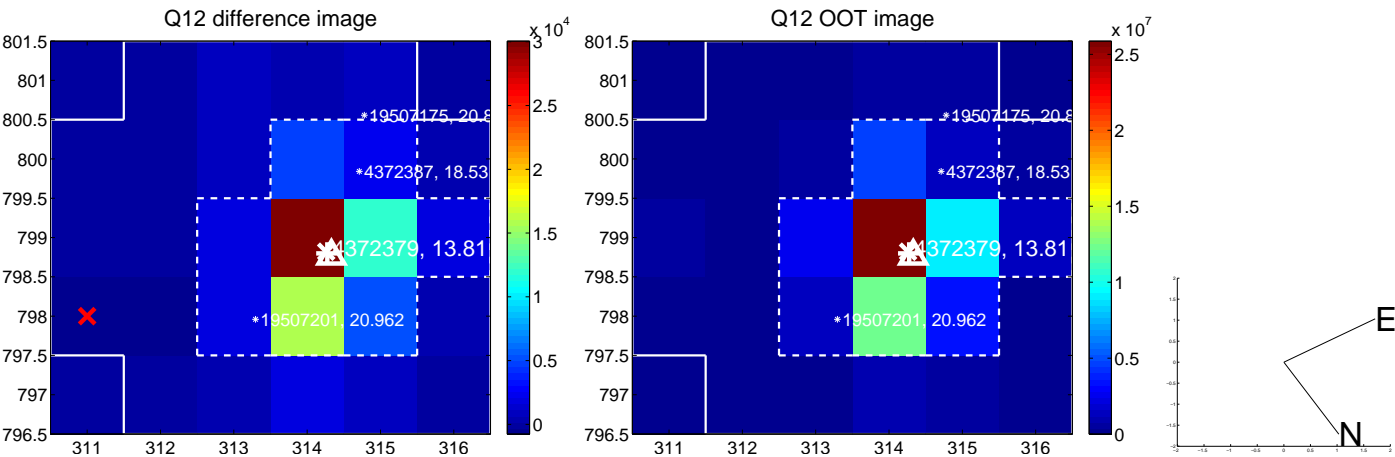
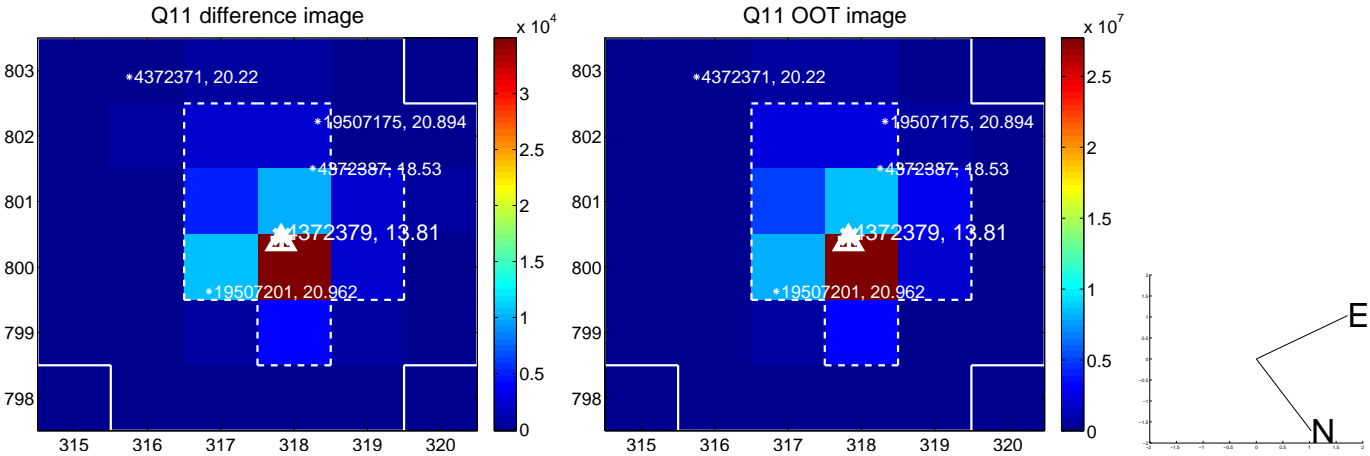
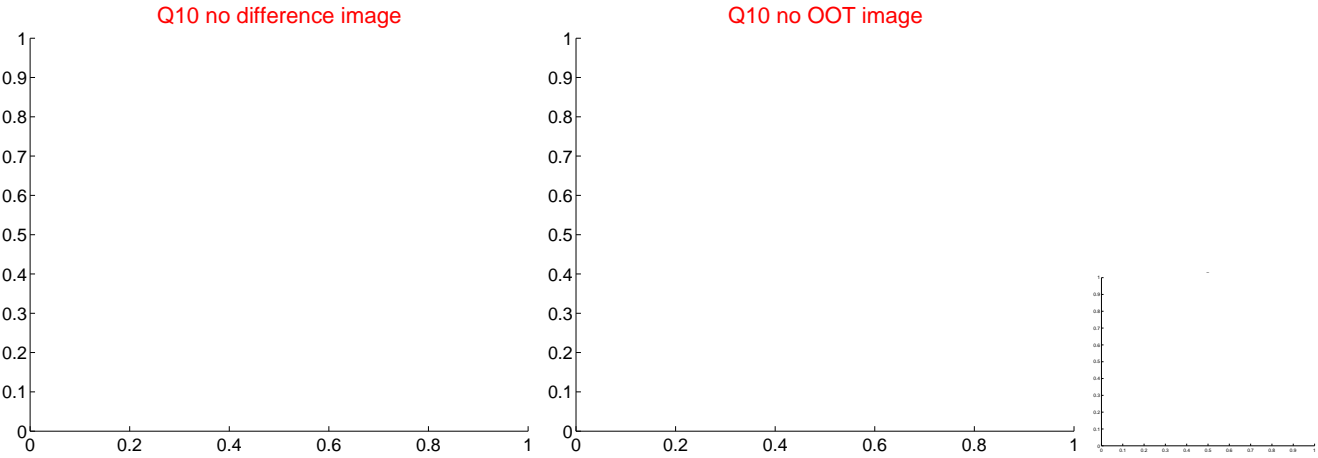
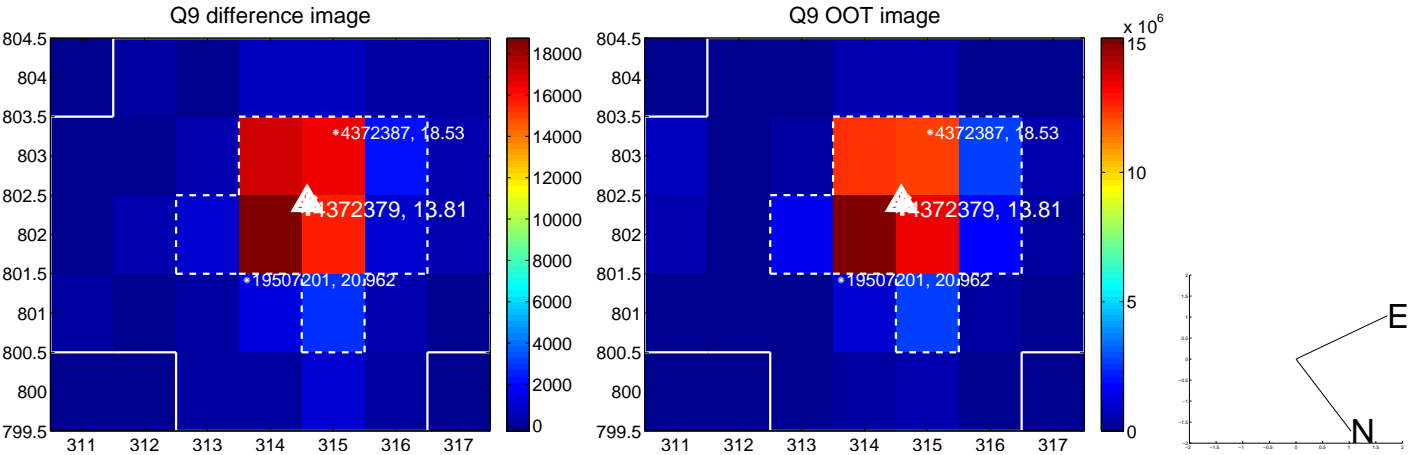
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: 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.



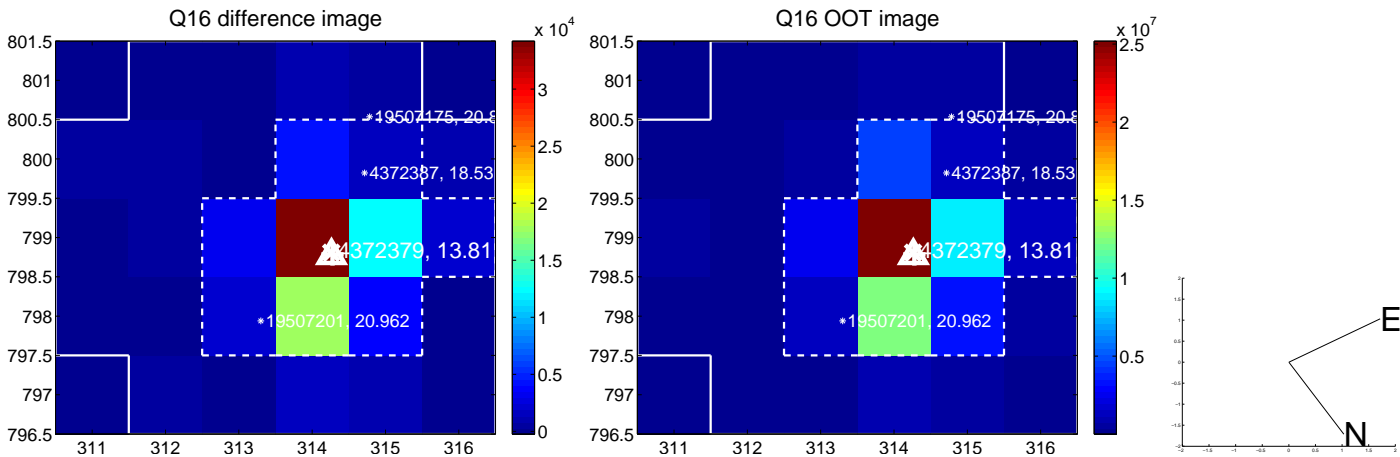
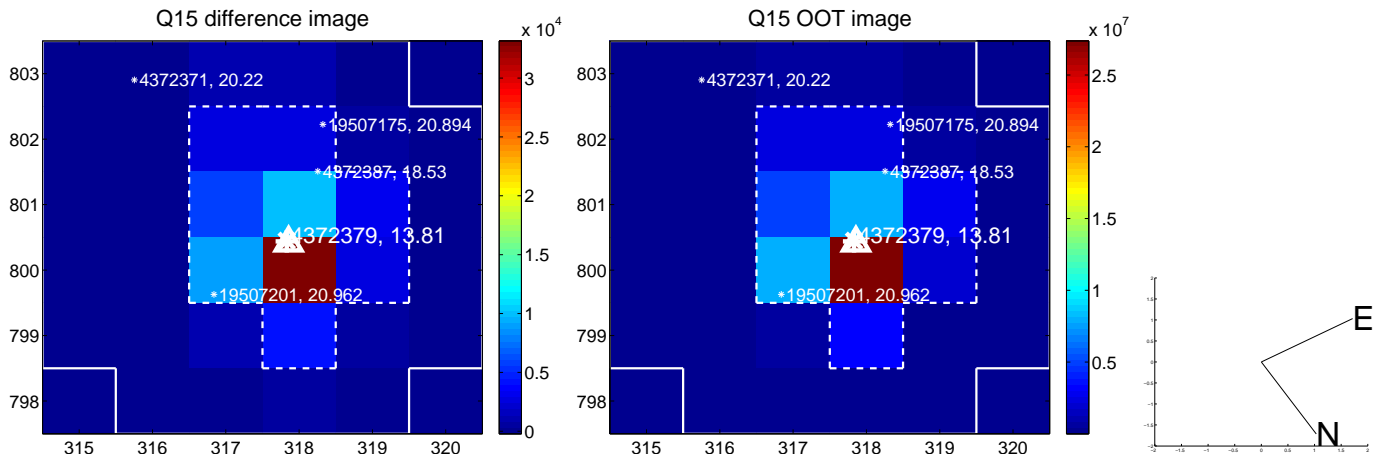
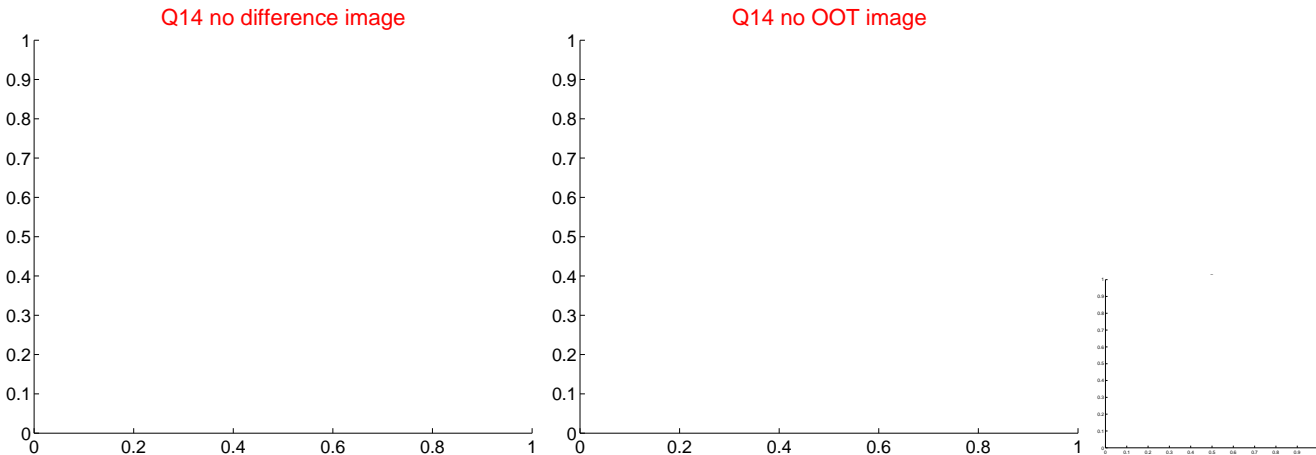
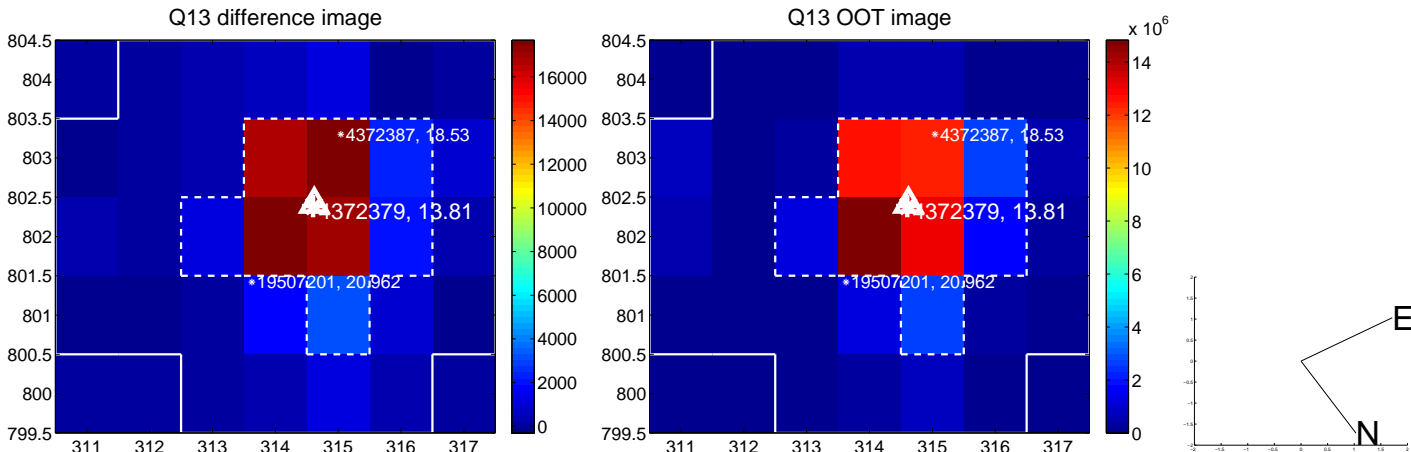
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.







# UKIRT Image

Declination

