

# KIC 008554541

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008554541-01	OBS	No	372.755867	227.923679	378.0	14.373	8.0	7.9	0.88	6099	1.78	0.96

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008554541-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—CENT_FEW_DIFFS—HALO_GHOST

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

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

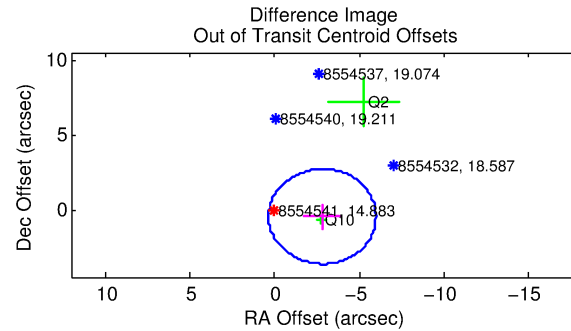
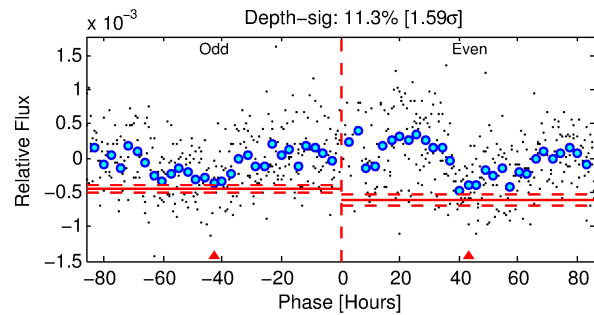
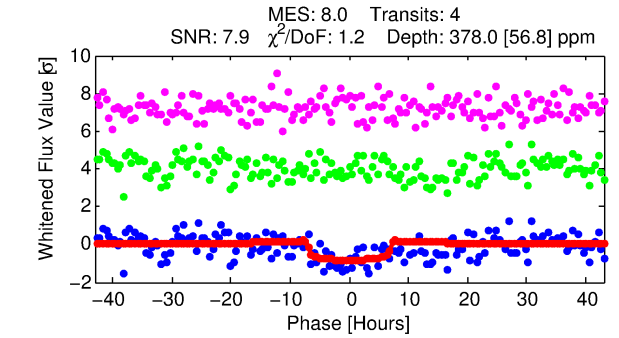
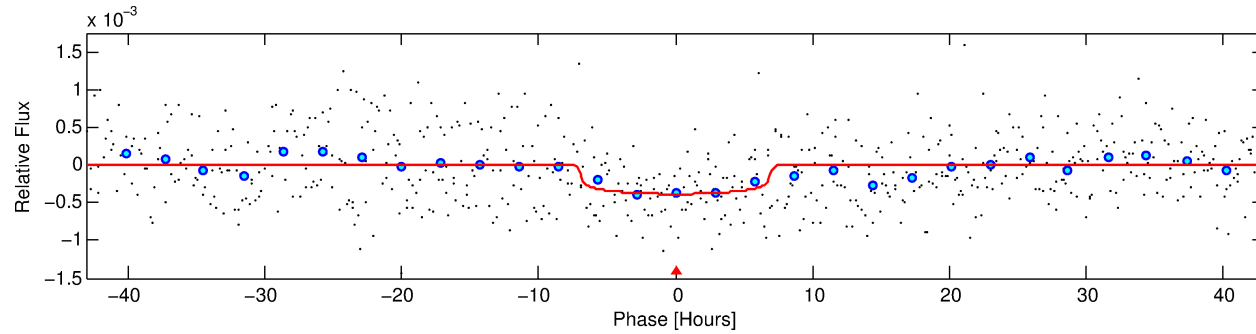
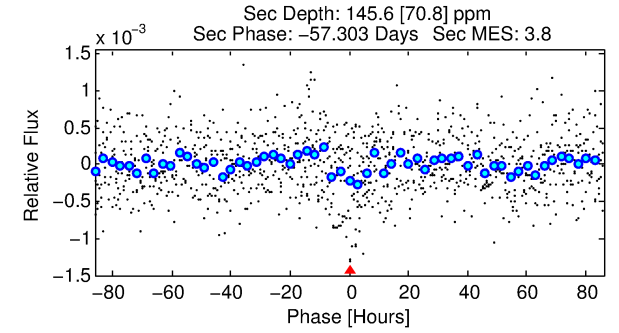
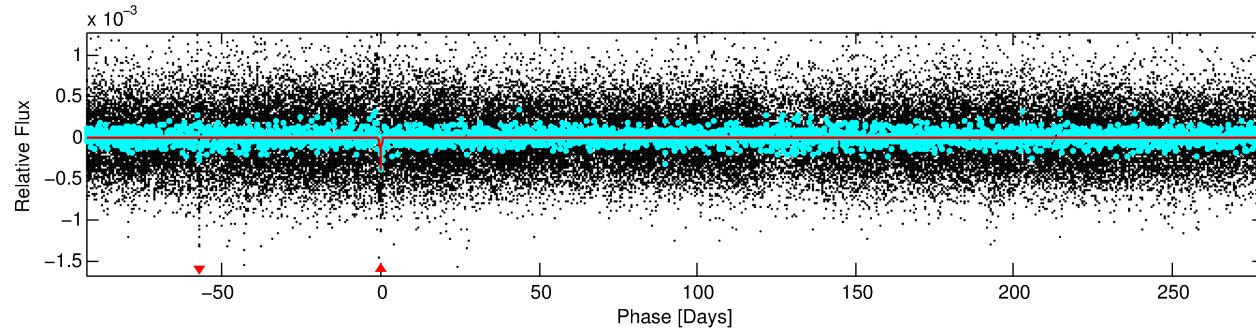
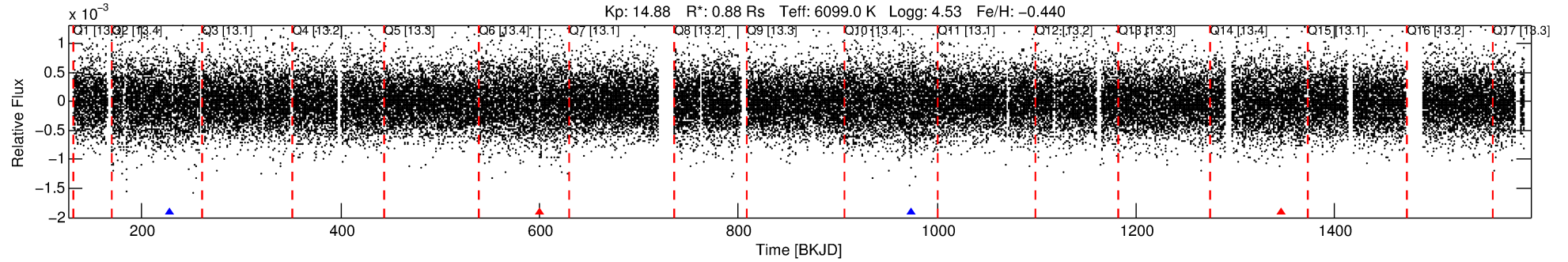
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008554541-01

No Significant Match Found

# DV One-Page Summary

KIC: 8554541 Candidate: 1 of 1 Period: 372.756 d



## DV Fit Results:

Period = 372.75587 [0.01222] d  
Epoch = 227.9237 [0.0236] BKJD  
Rp/R\* = 0.0186 [0.0129]  
a/R\* = 165.13 [583.17]  
b = 0.59 [3.99]  
Seff = 0.96 [0.39]  
Teff = 253 [25] K  
Rp = 1.78 [1.34] Re  
a = 0.9946 [0.2551] AU  
Ag = 25041.92 [38024.61] [0.66 $\sigma$ ]  
Teffp = 4914 [1811] K [2.57 $\sigma$ ]

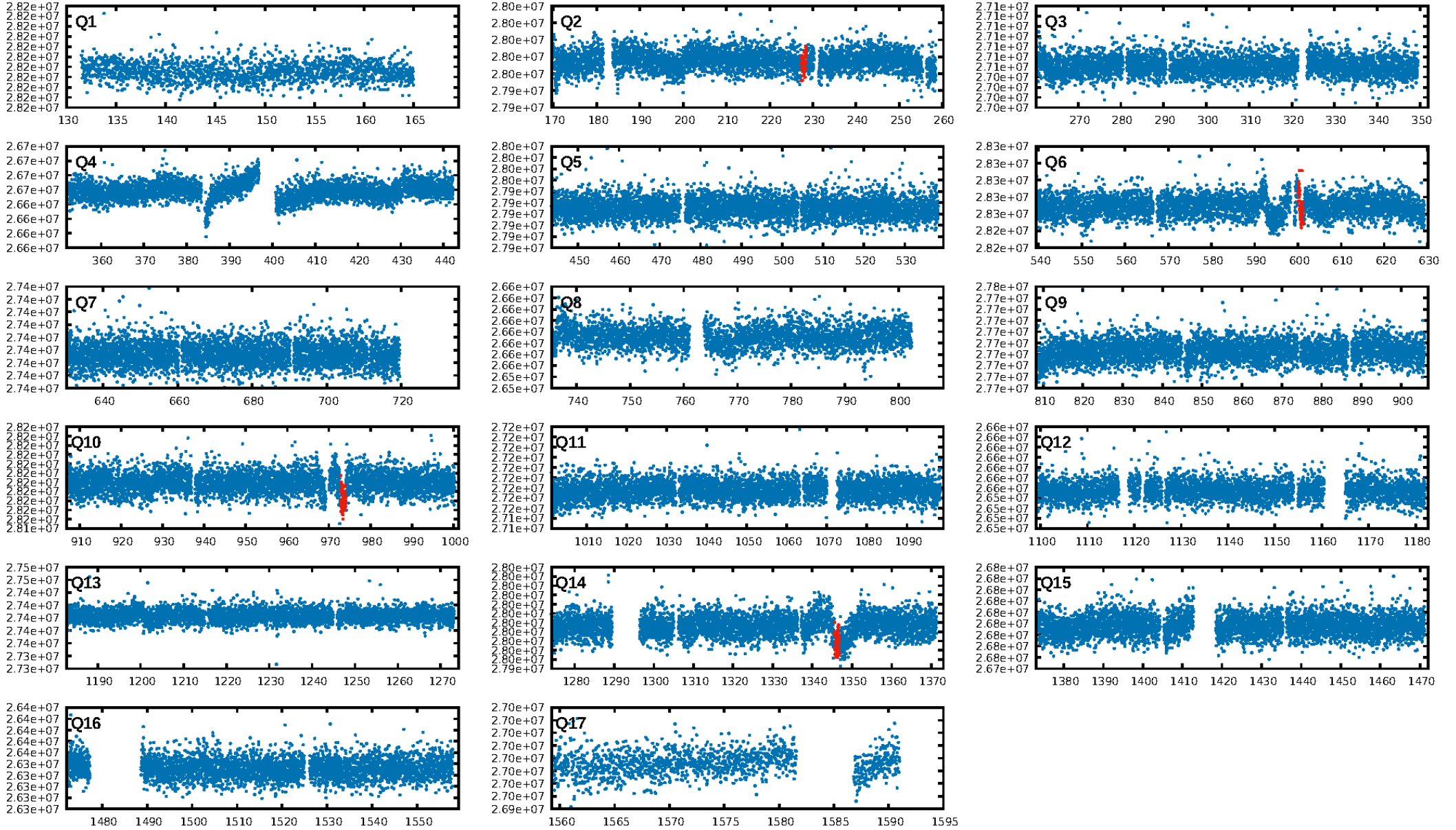
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 5.7%  
ModelChiSquareGof-sig: 99.9%  
Bootstrap-pfa: 1.01e-10  
RollingBand-fgt: 0.50 [2/4]  
GhostDiagnostic-chr: 0.2494  
Centroid-sig: 5.1%  
Centroid-so: 3.329 arcsec [1.36 $\sigma$ ]  
OotOffset-rm: 2.853 arcsec [2.70 $\sigma$ ]  
KicOffset-rm: 2.840 arcsec [2.69 $\sigma$ ]  
OotOffset-st: 2/0/0/0 [2]  
KicOffset-st: 2/0/0/0 [2]  
DiffImageQuality-fgm: 0.00 [0/2]  
DiffImageOverlap-fno: 1.00 [3/3]

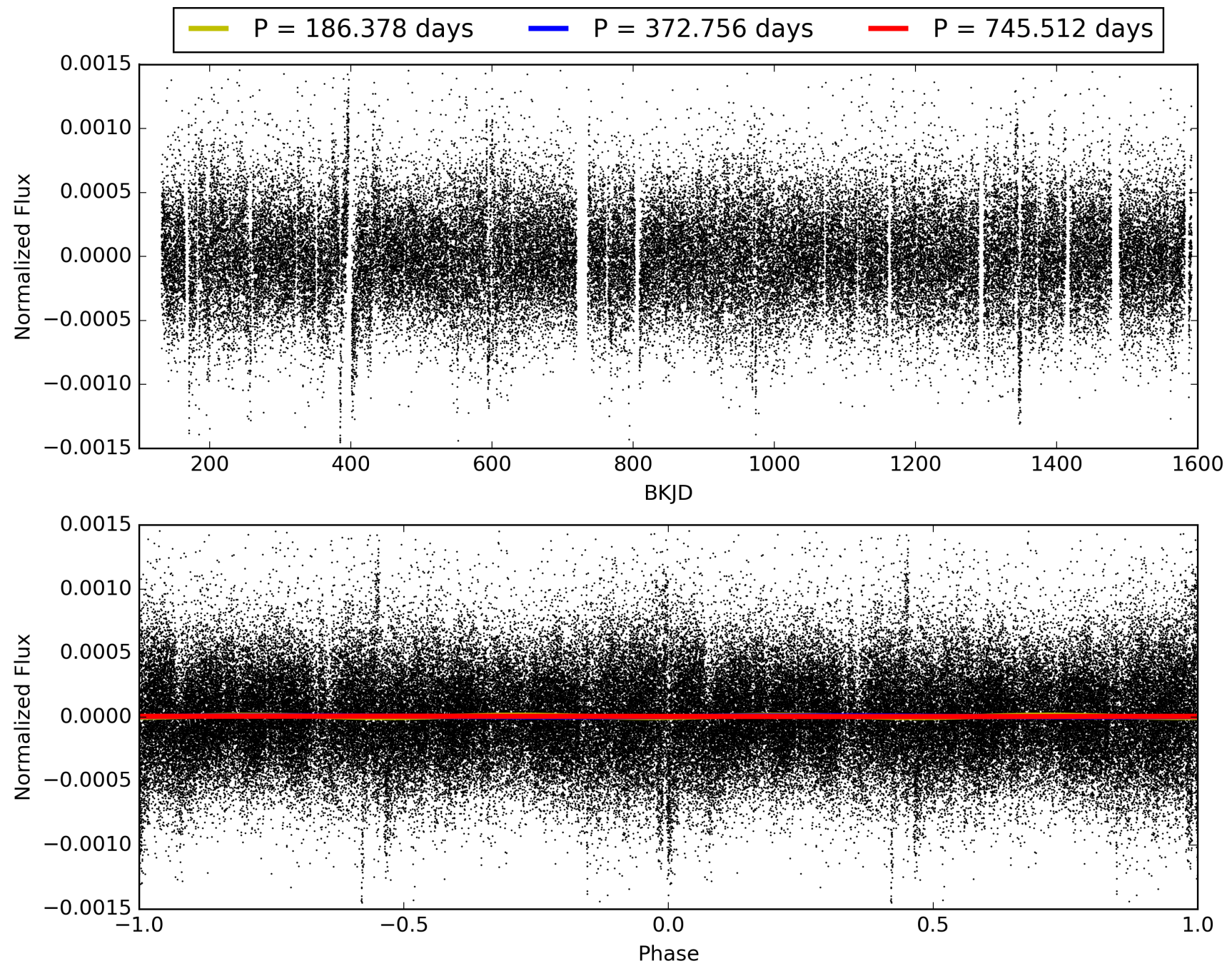
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:46:00 Z

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

# TCE 008554541-01, PDC Light Curves

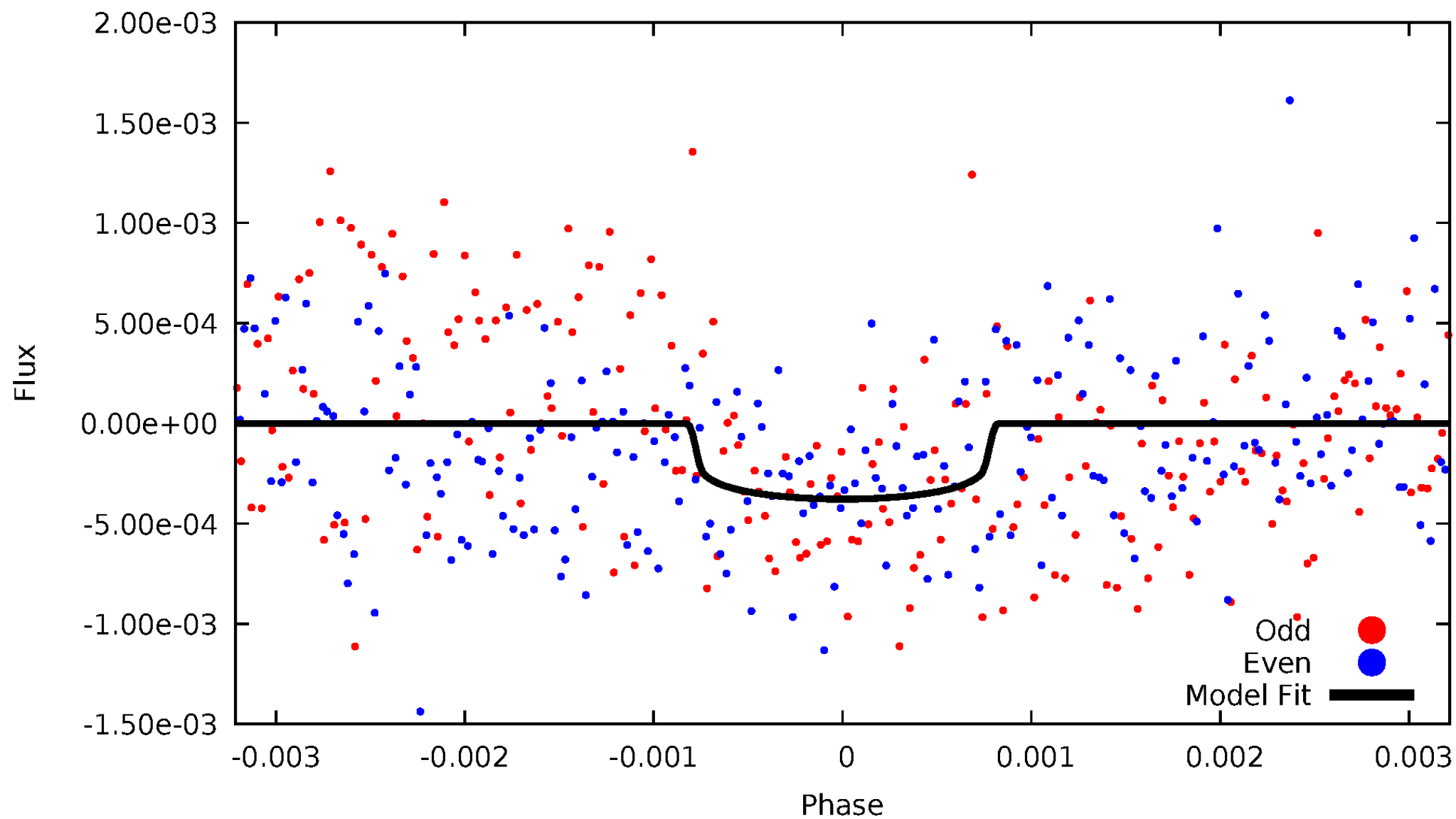


TCE 008554541-01



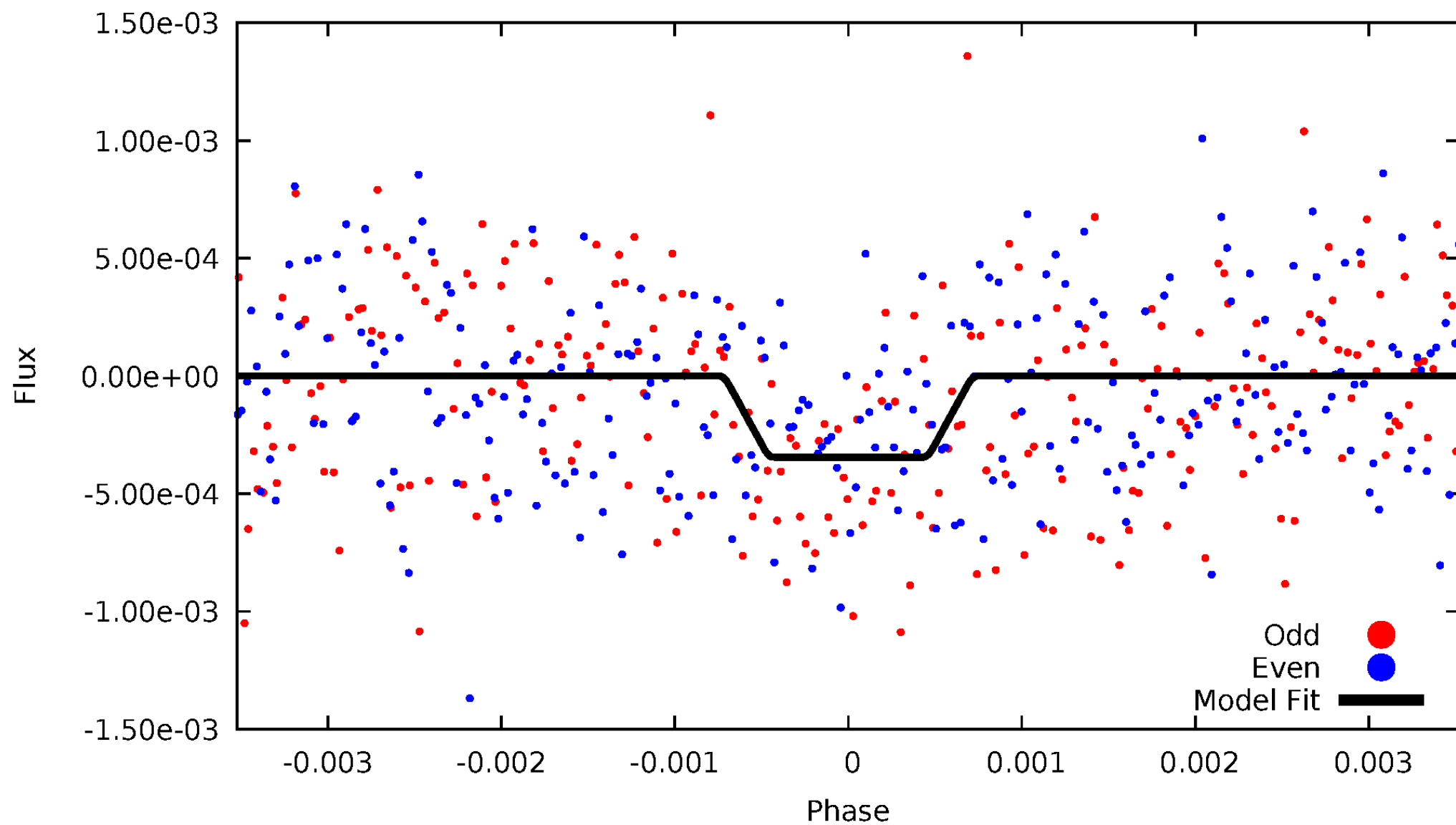
# DV Odd/Even

TCE 008554541-01



# ALT Odd/Even

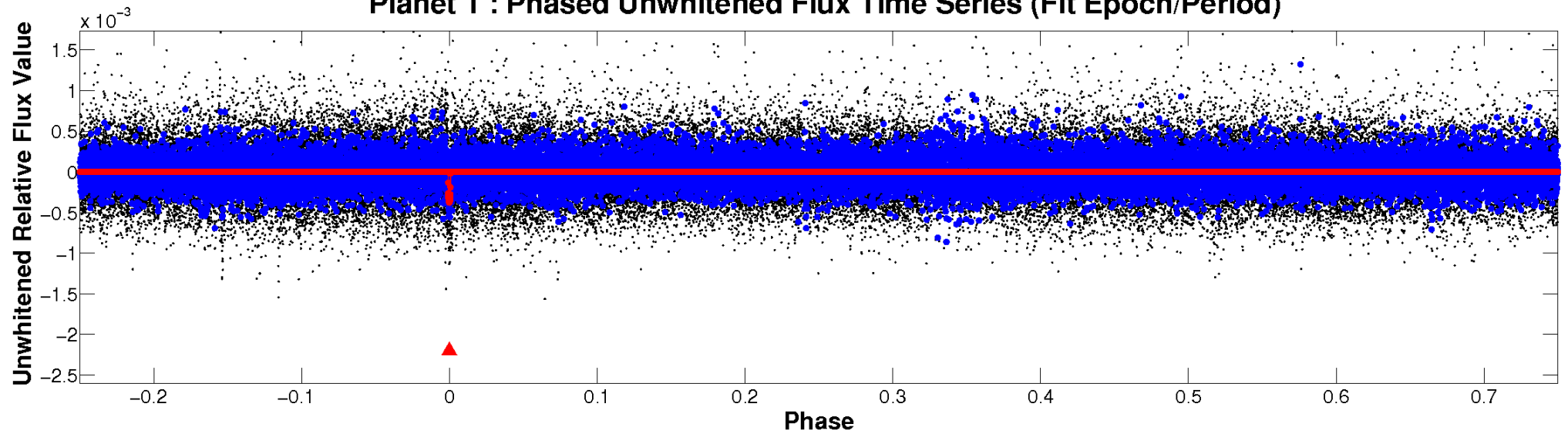
TCE 008554541-01



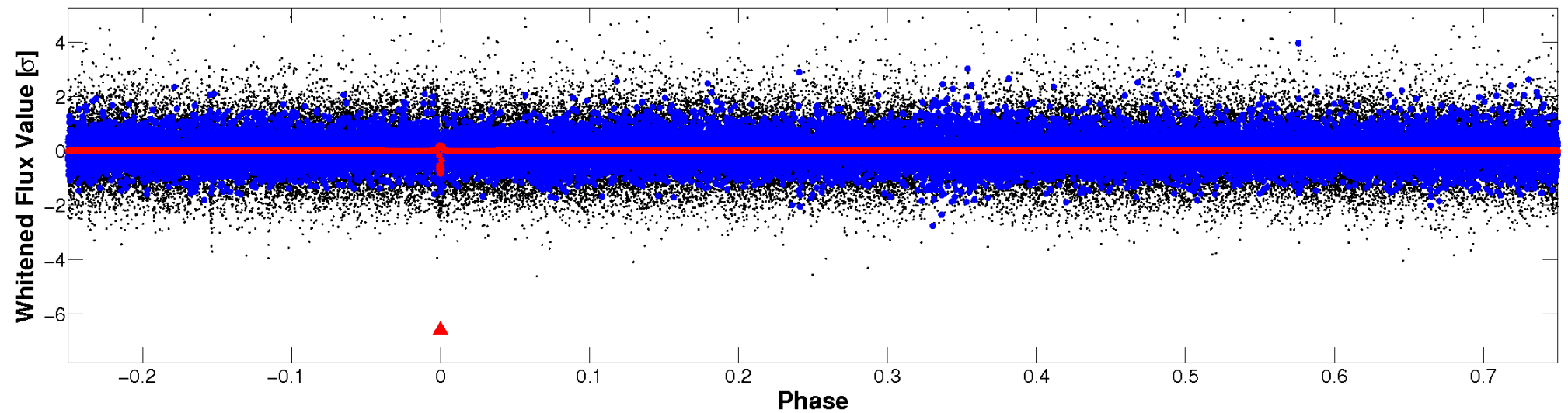


# Non-Whitened Vs. Whitened Light Curve

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

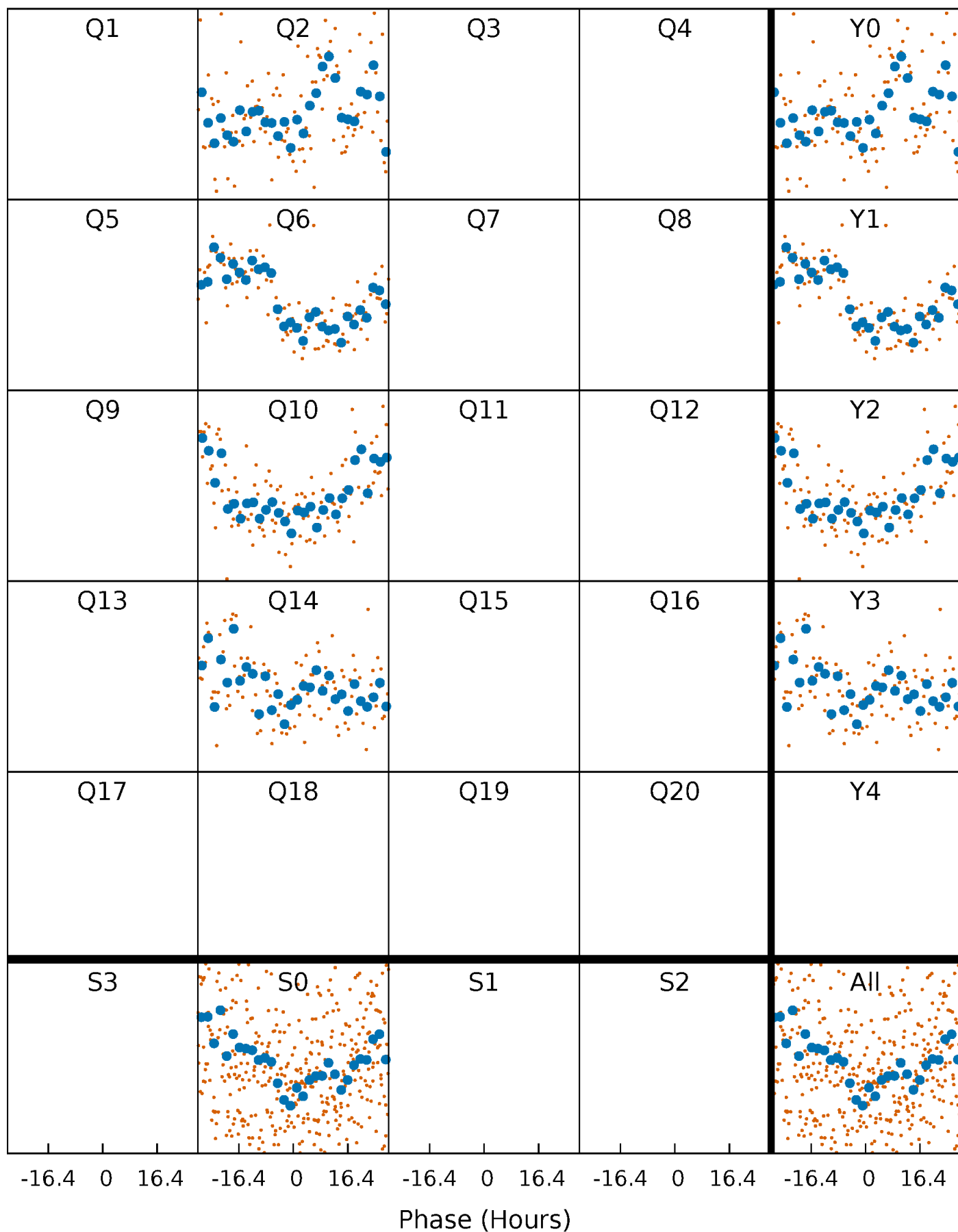


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

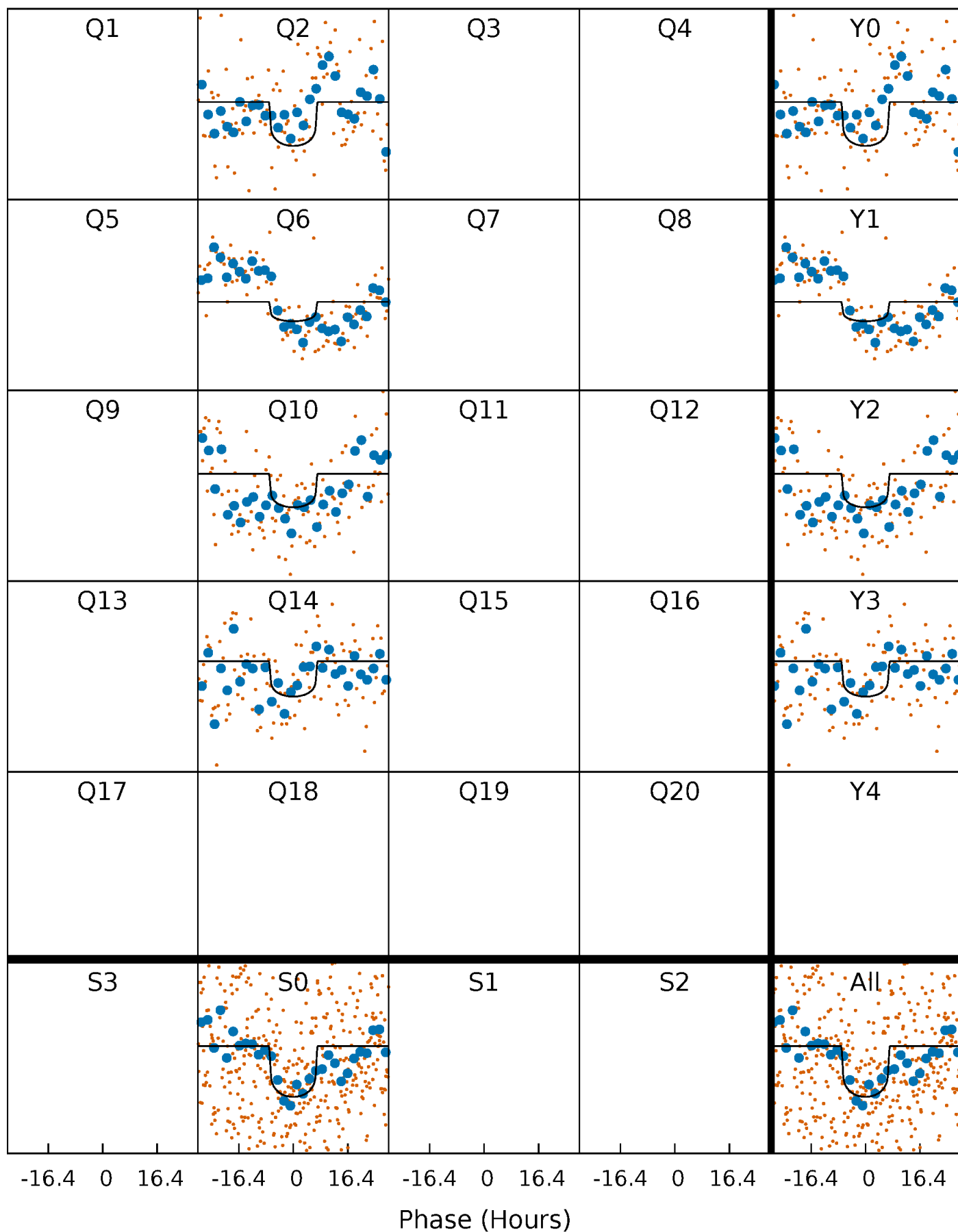
TCE 008554541-01 P=372.755867 Days  $T_0=227.923679$  (BKJD)





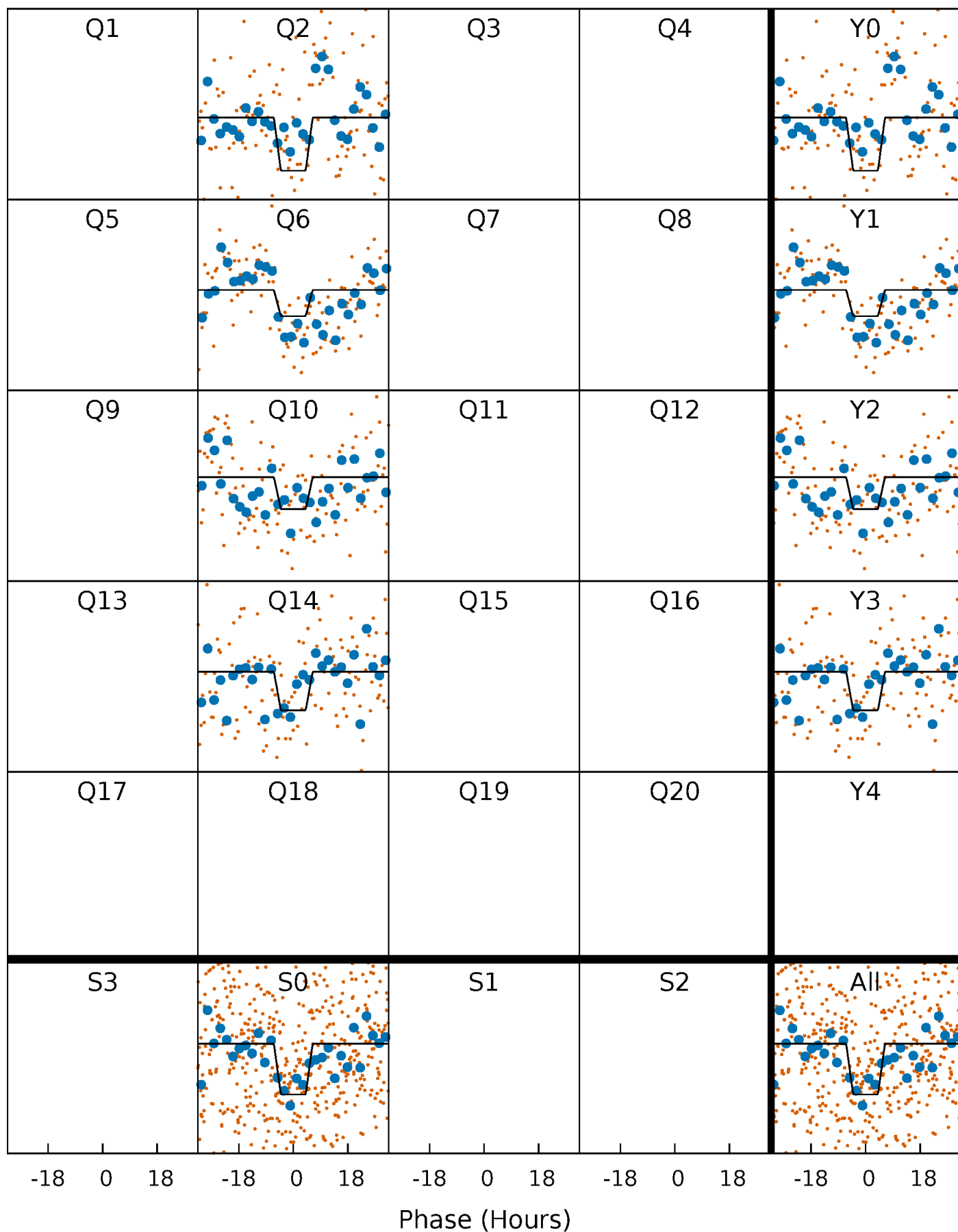
# DV Quarter-Phased Transit Curves

TCE 008554541-01 P=372.755867 Days  $T_0=227.923679$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

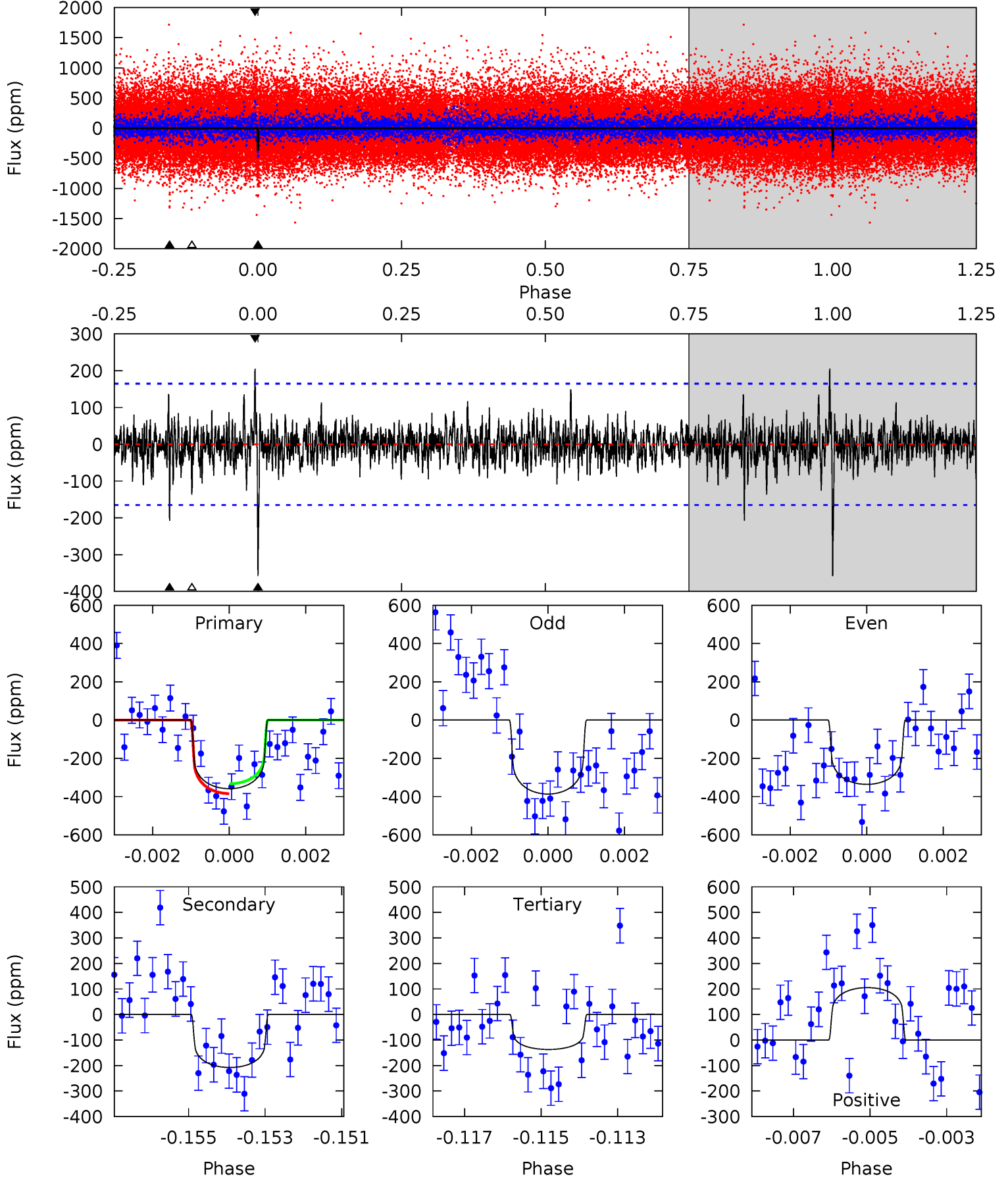
TCE 008554541-01 P=372.735379 Days  $T_0=227.944237$  (BKJD)



# DV Model-Shift Uniqueness Test

008554541-01, P = 372.755867 Days, E = 227.923679 Days

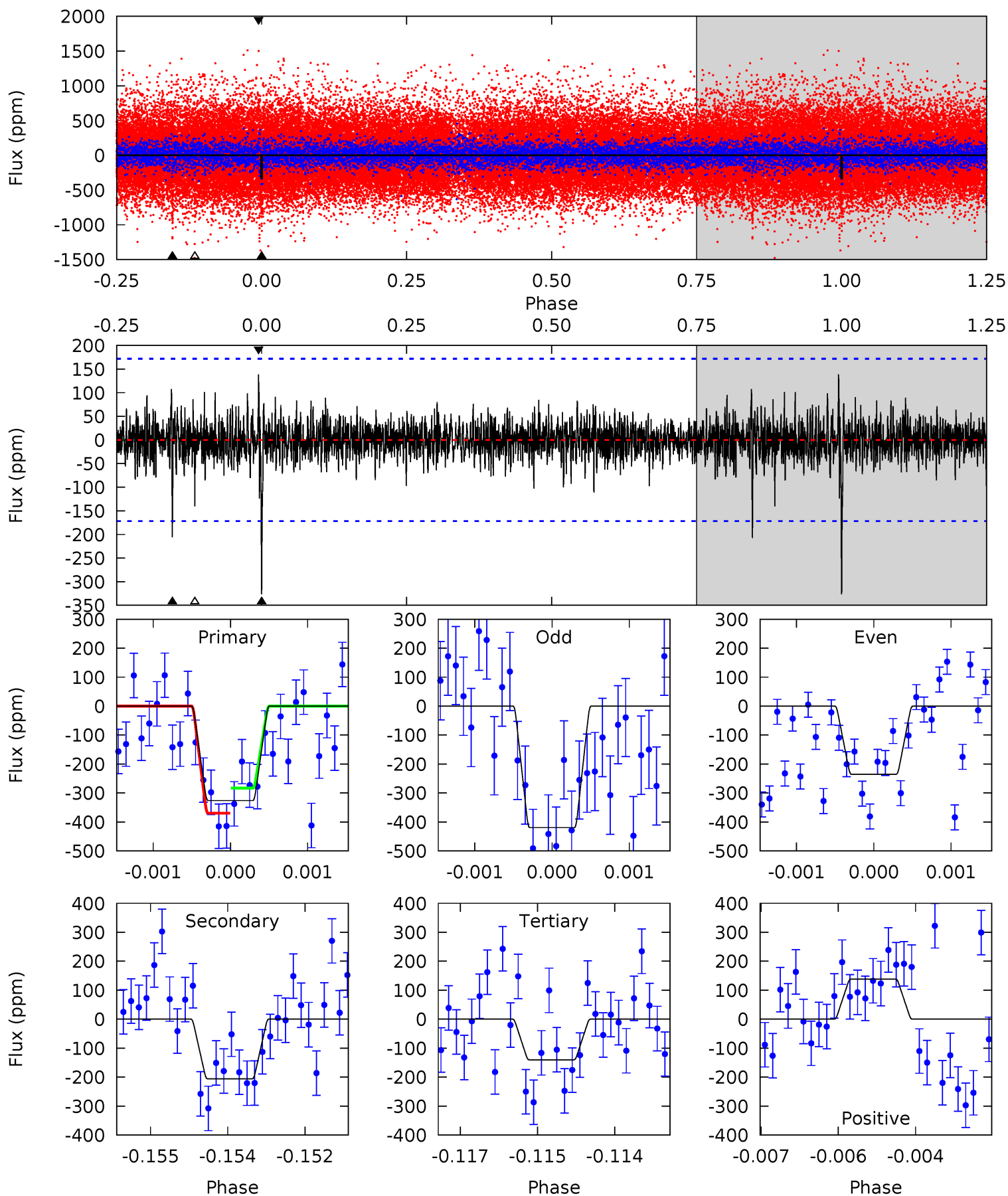
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	6.75	4.45	6.67	5.36	3.15	1.17	7.20	4.98	2.30	0.08	0.82	0.97	0.36	0.83



# Alt Model-Shift Uniqueness Test

008554541-01, P = 372.735379 Days, E = 227.944237 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
10.2	6.45	4.40	4.34	5.38	3.18	0.93	5.83	5.89	2.05	2.11	2.89	1.10	0.30	1.36



### Stellar Parameters For KIC 008554541

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6099^{+165}_{-184}$	$4.527^{+0.050}_{-0.213}$	$-0.440^{+0.300}_{-0.300}$	$0.877^{+0.260}_{-0.081}$	$0.944^{+0.105}_{-0.117}$	$1.973^{+0.404}_{-0.986}$
	+3%/-3%	+1%/-5%	+68%/-68%	+30%/-9%	+11%/-12%	+20%/-50%
Source	PHO1	KIC0	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 008554541-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-208 \pm 31$	$2.01^{+1.33}_{-1.11}$	$360^{+26}_{-17}$	$5252^{+2737}_{-974}$	$27176^{+113513}_{-17410}$
Alt.	$-206 \pm 32$	$1.93^{+1.29}_{-1.05}$	$361^{+24}_{-15}$	$5324^{+2566}_{-1008}$	$28558^{+119068}_{-18162}$

$T_{max}$  = 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  $A_{obs} \gg 1.0$

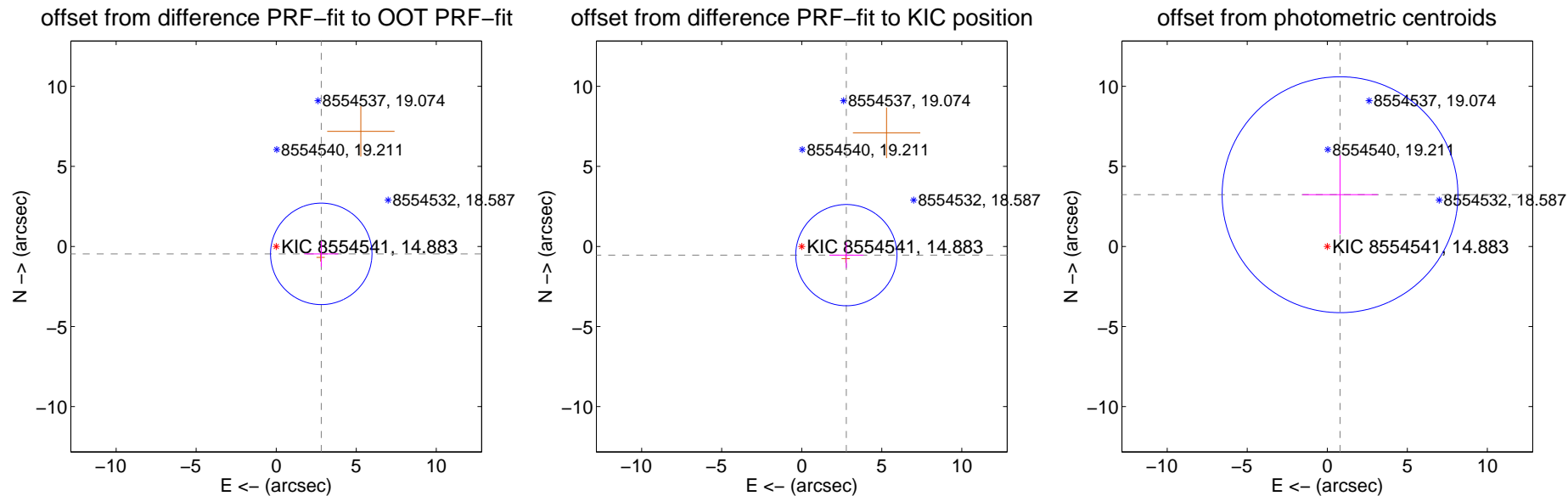
## DV Centroid Data

Supplemental centroid analysis for 008554541-01. Kepler magnitude: 14.88. Transit SNR 7.93

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

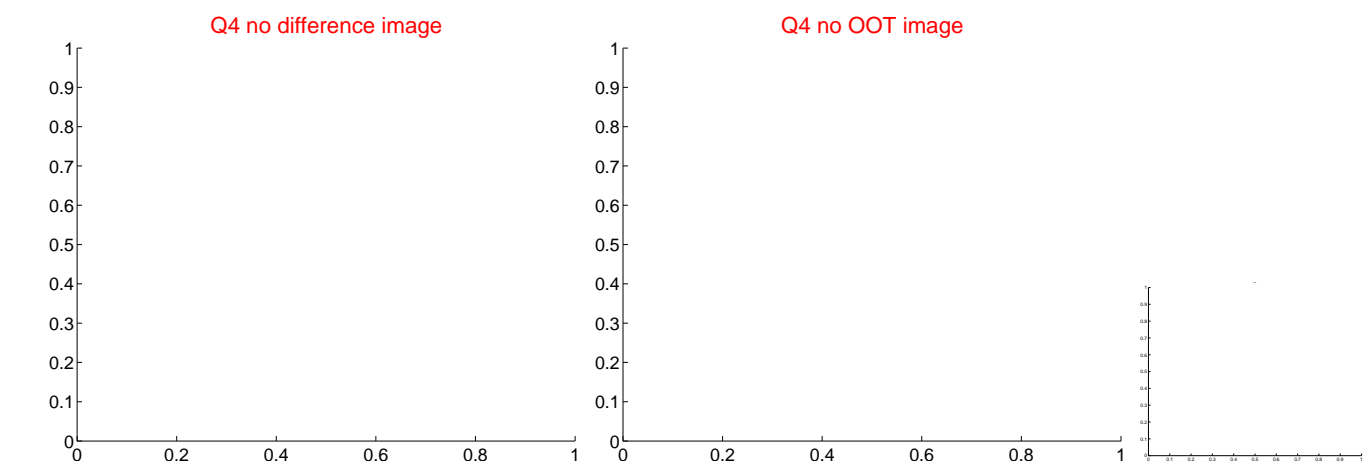
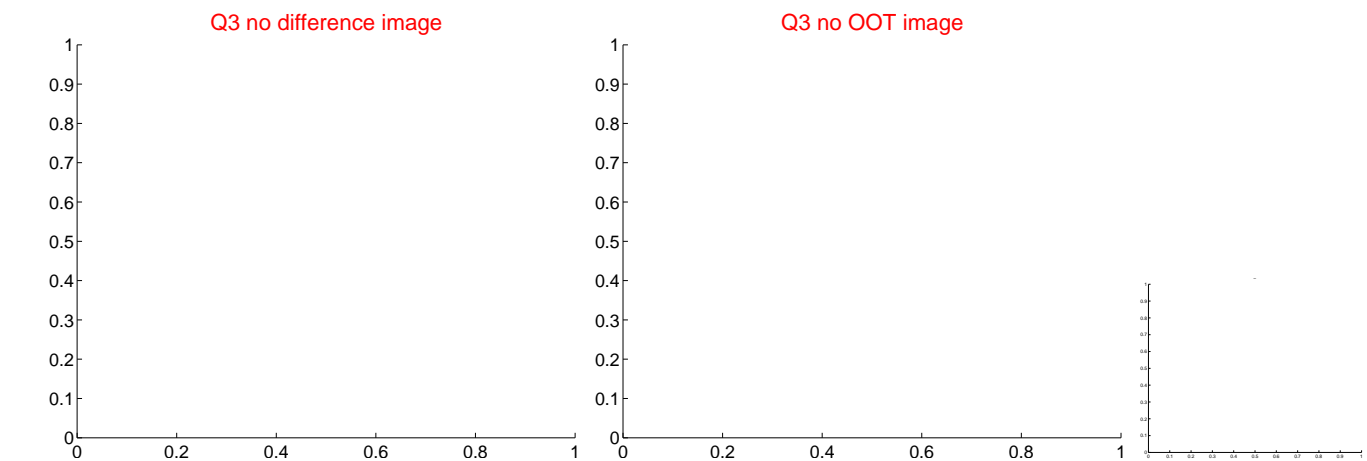
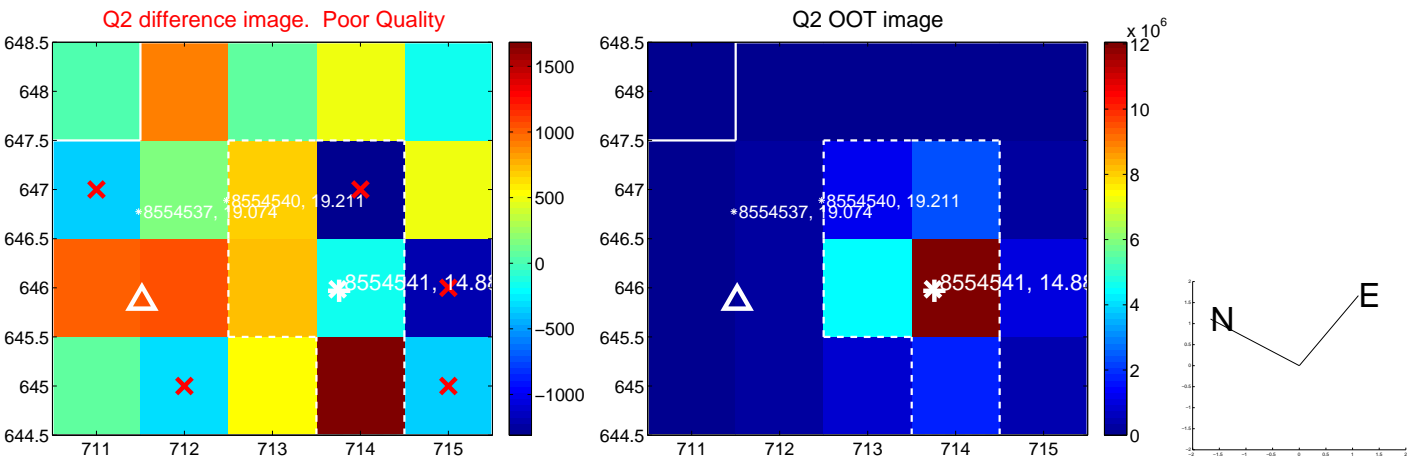
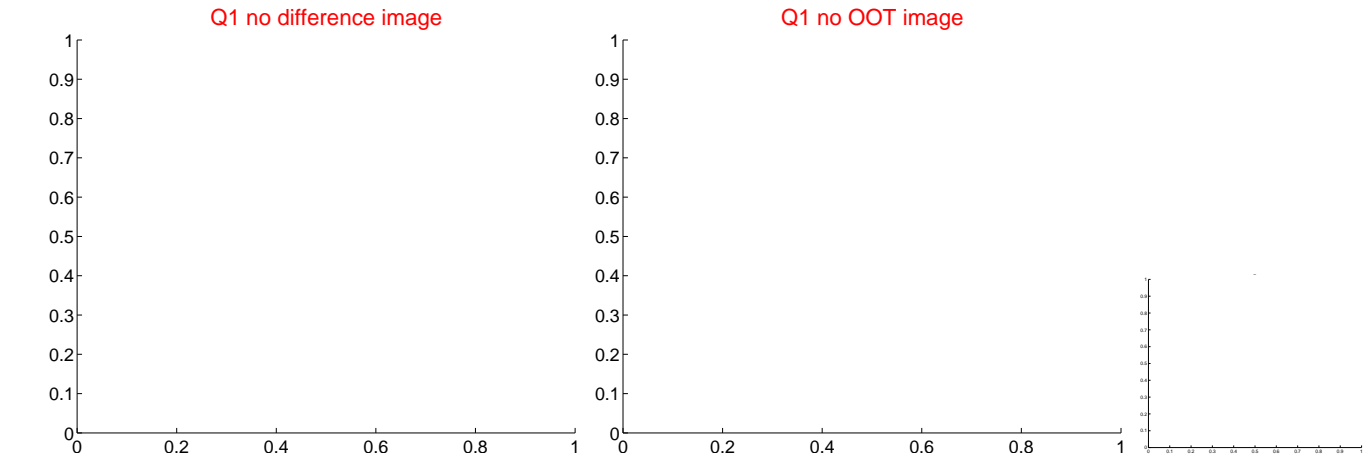
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.853 \pm 1.056$	2.70	$-2.815 \pm 1.062$	$-0.463 \pm 0.802$
PRF-fit source offset from KIC position	$2.840 \pm 1.054$	2.69	$-2.788 \pm 1.062$	$-0.543 \pm 0.802$
photometric centroid source offset	$3.33 \pm 2.46$	1.36	$-0.80 \pm 2.35$	$3.23 \pm 2.46$



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.



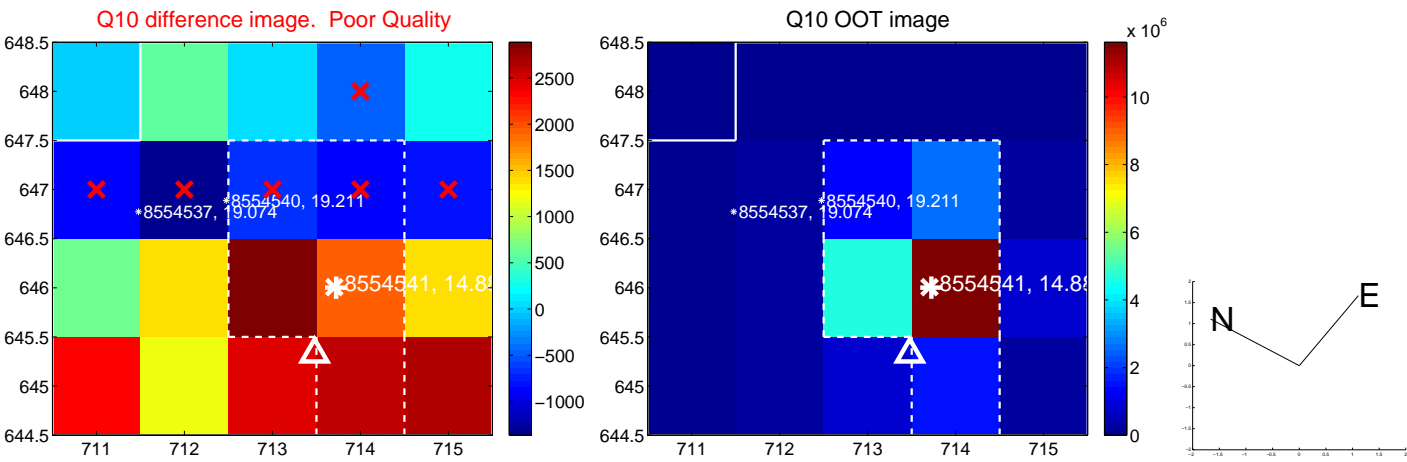
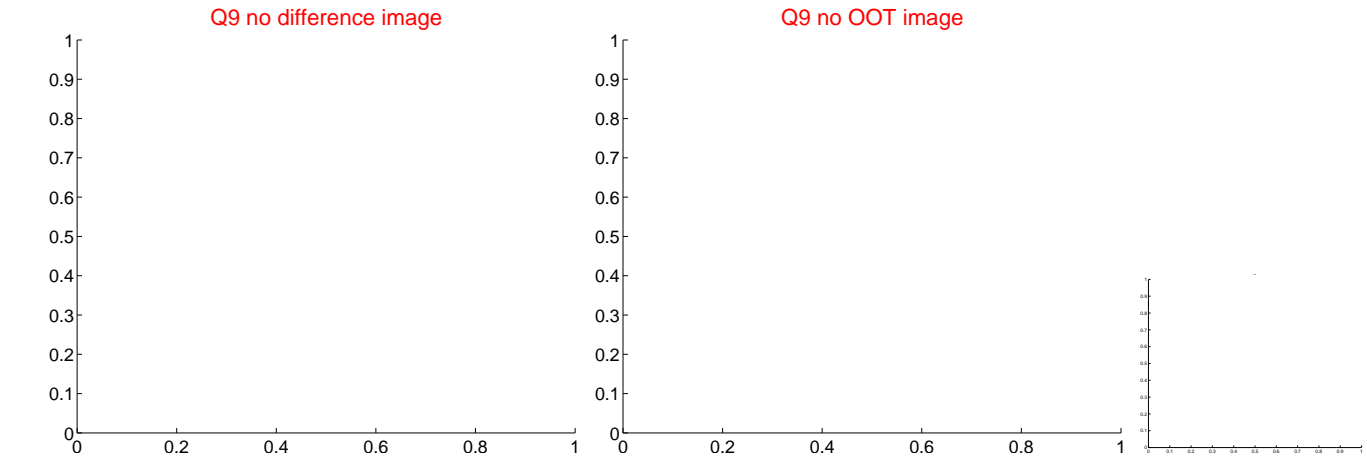
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



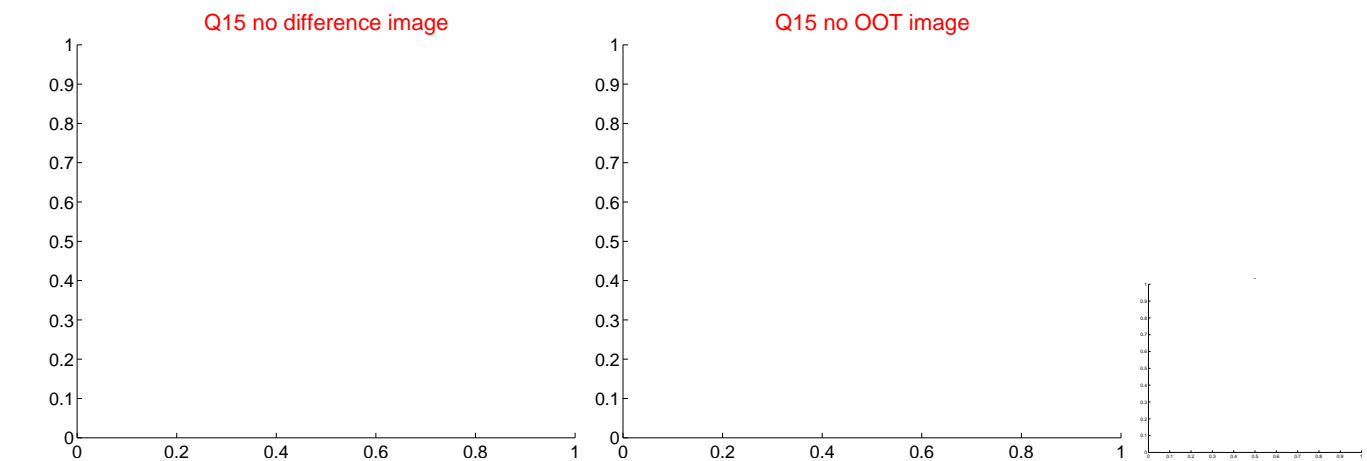
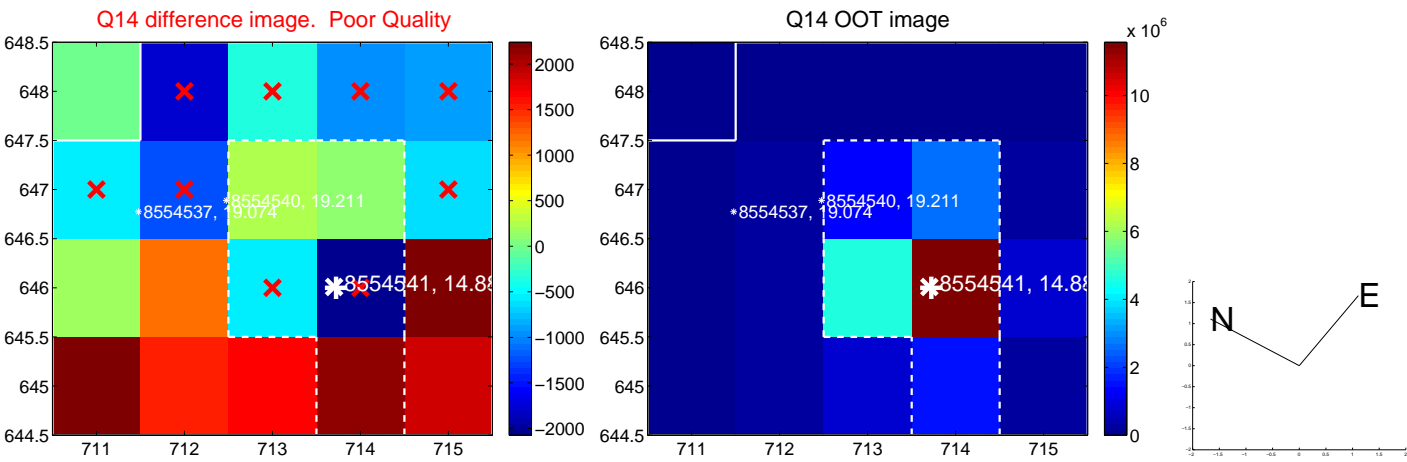
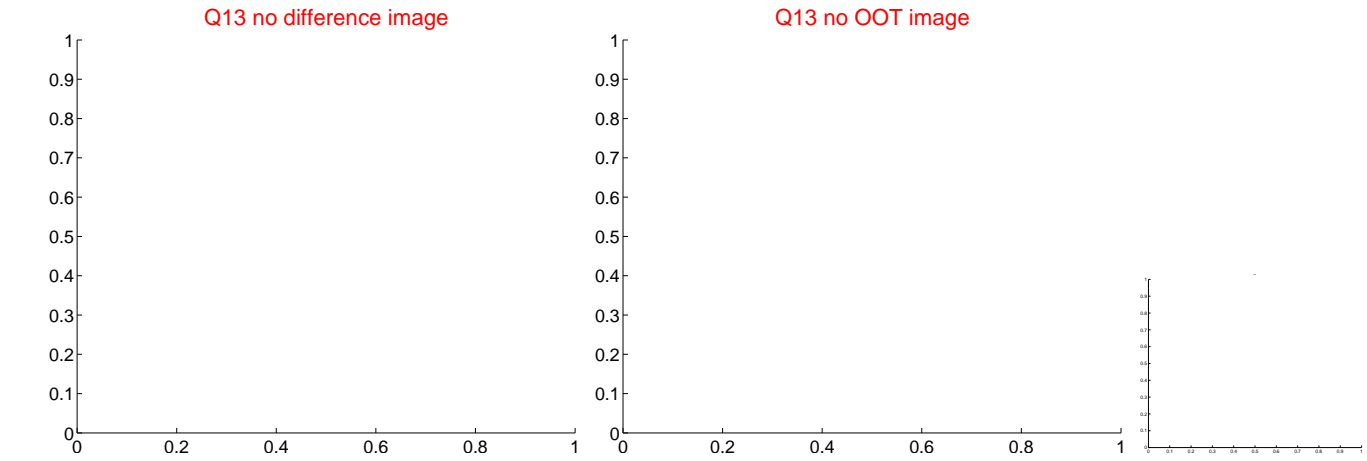
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



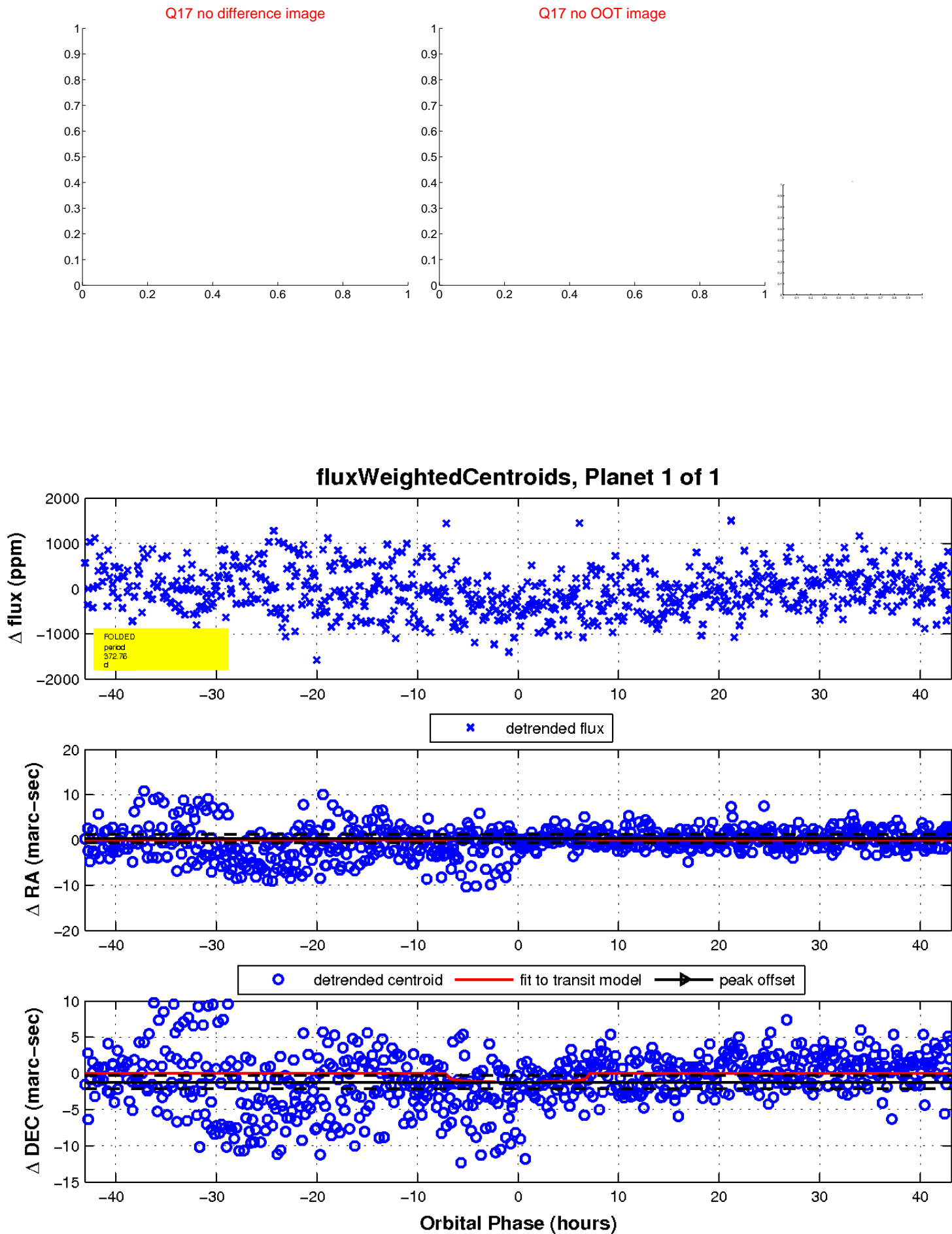
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



UKIRT Image

Declination

