

# KIC 005955234

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005955234-01	OBS	No	446.547237	563.931657	922.4	14.554	9.6	9.1	0.74	5387	2.34	0.38

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005955234-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—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.

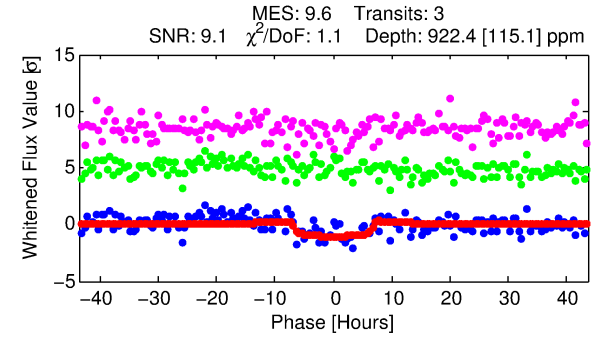
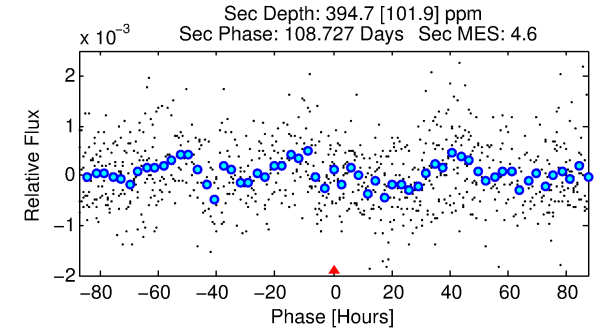
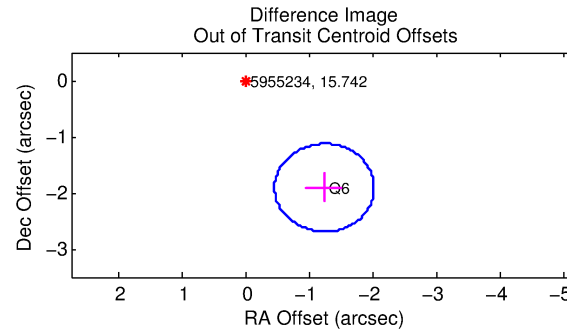
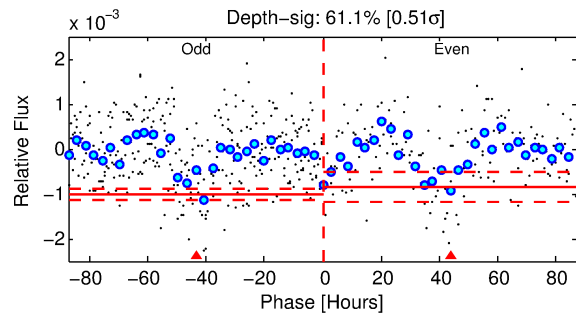
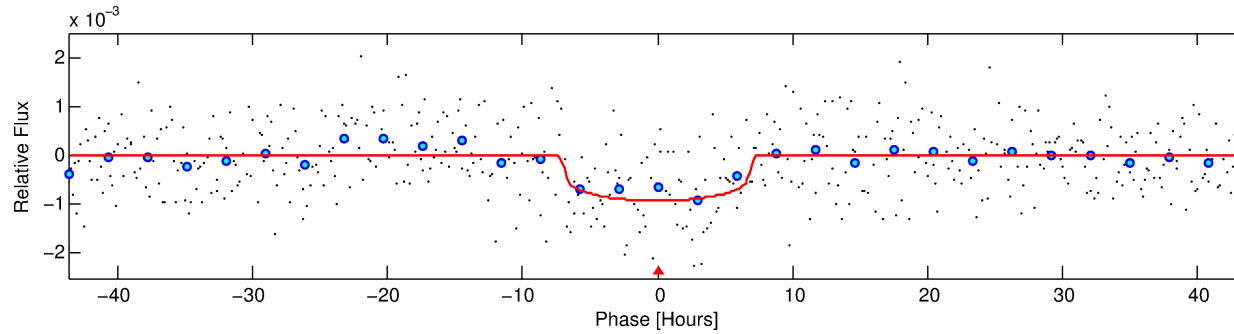
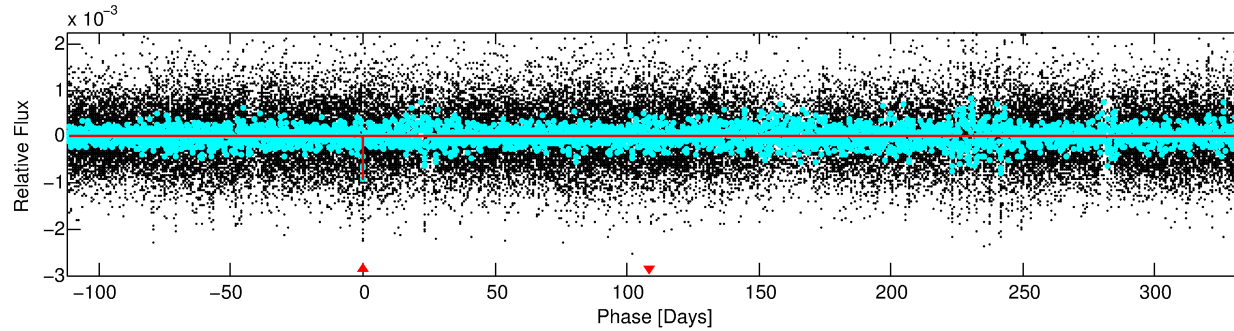
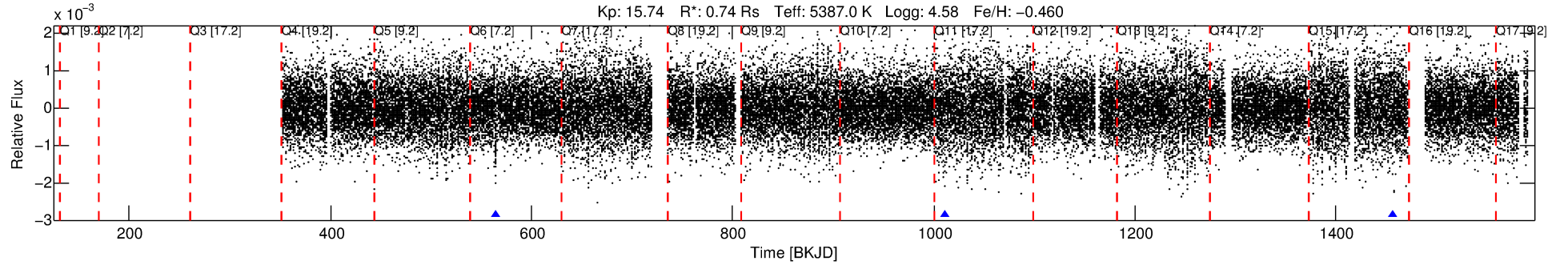
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005955234-01

No Significant Match Found

# DV One-Page Summary

KIC: 5955234 Candidate: 1 of 1 Period: 446.547 d



## DV Fit Results:

Period = 446.54724 [0.01545] d  
Epoch = 563.9317 [0.0171] BKJD  
Rp/R\* = 0.0291 [0.0112]  
a/R\* = 190.45 [301.15]  
b = 0.63 [1.52]  
Seff = 0.38 [0.09]  
Teff = 200 [12] K  
Rp = 2.34 [0.97] Re  
a = 1.0380 [0.1290] AU  
Ag = 42788.50 [35619.97] [1.20 $\sigma$ ]  
Teffp = 4450 [922] K [4.61 $\sigma$ ]

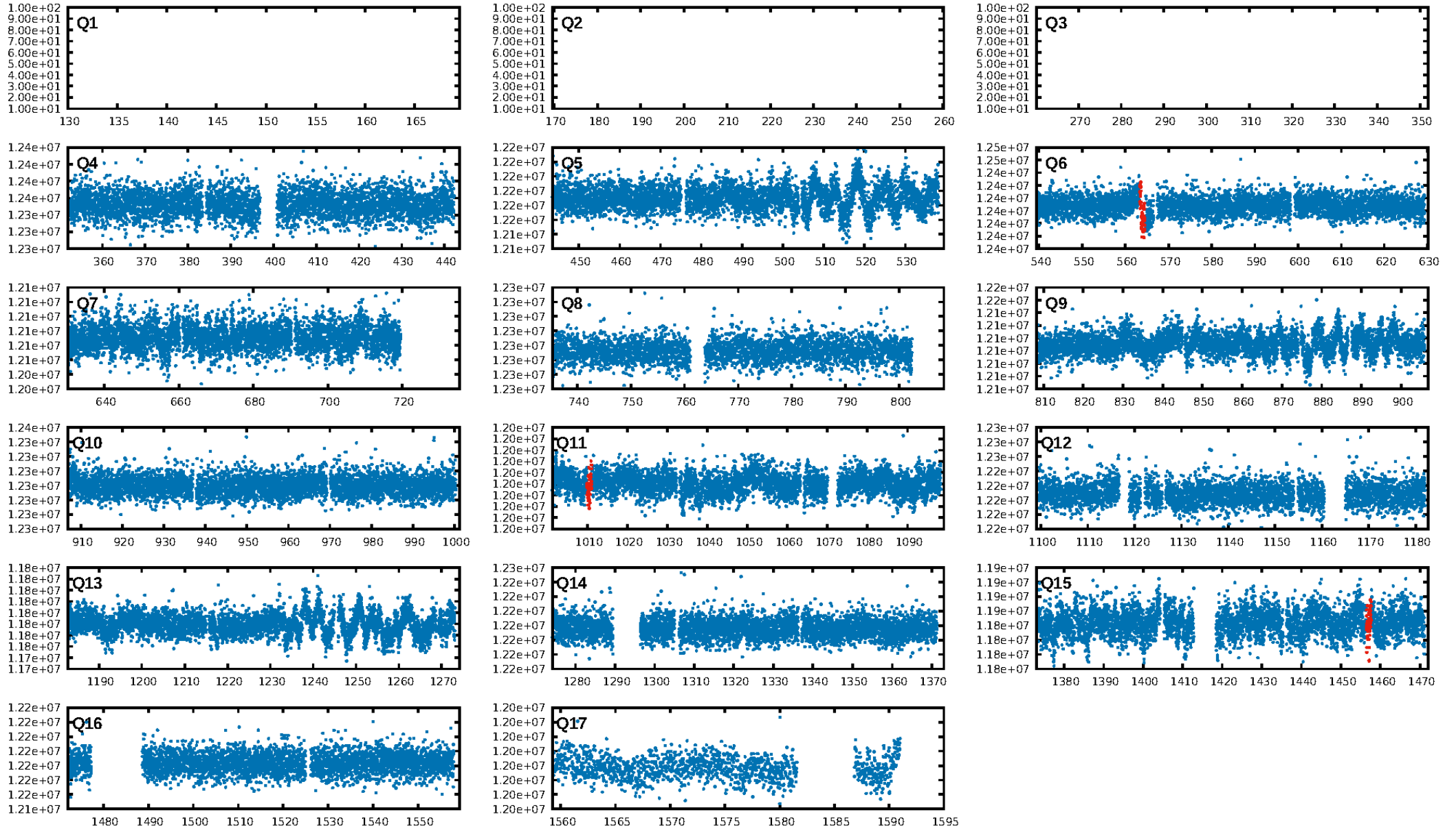
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 6.9%  
ModelChiSquareGof-sig: 94.4%  
Bootstrap-pfa: 9.00e-13  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 6.164  
Centroid-sig: 57.3%  
Centroid-so: 1.264 arcsec [0.74 $\sigma$ ]  
OotOffset-rm: 2.273 arcsec [8.71 $\sigma$ ]  
KicOffset-rm: 2.338 arcsec [8.94 $\sigma$ ]  
OotOffset-st: 1/0/0/0 [1]  
KicOffset-st: 1/0/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [3/3]

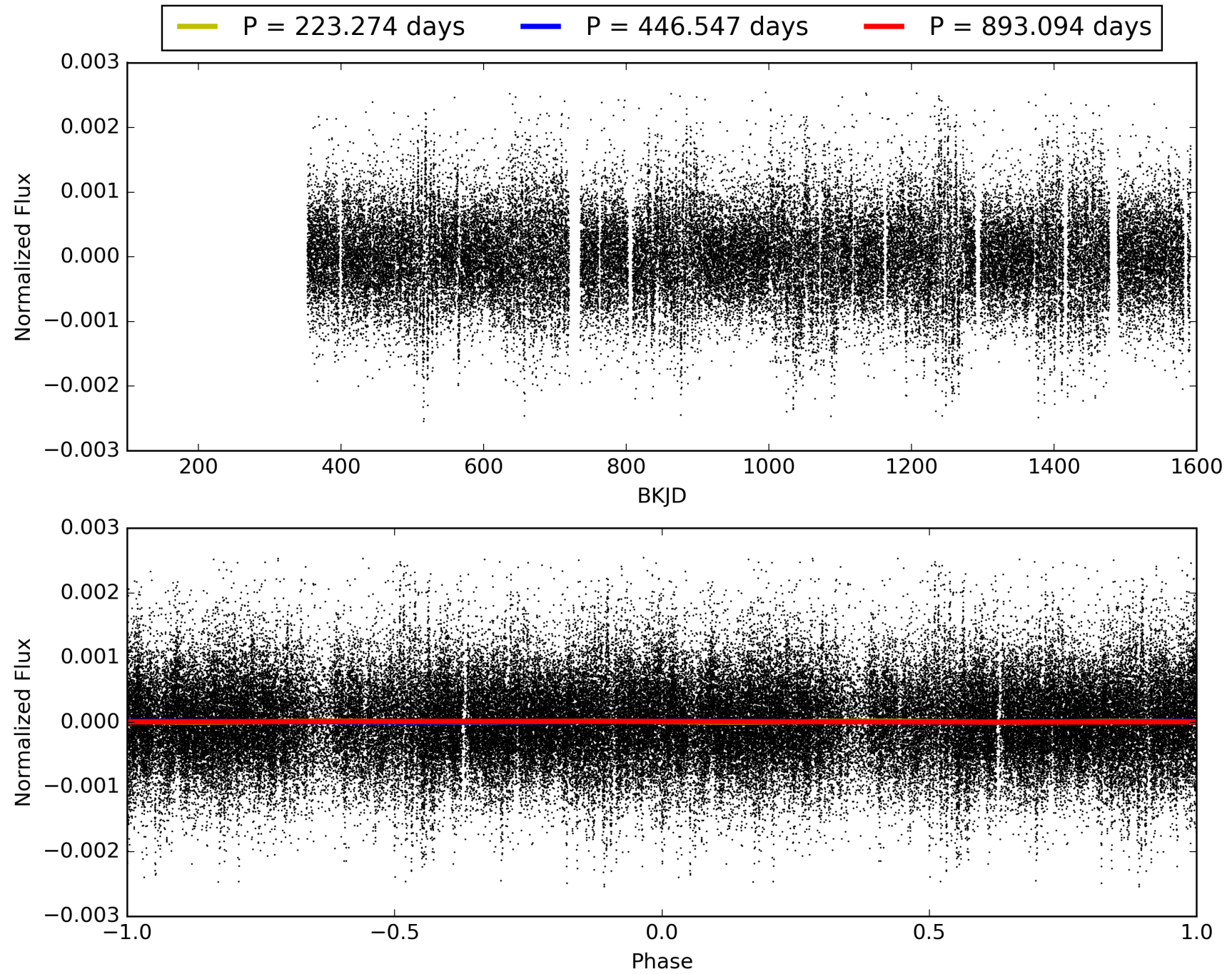
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 15:28:03 Z

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

# TCE 005955234-01, PDC Light Curves

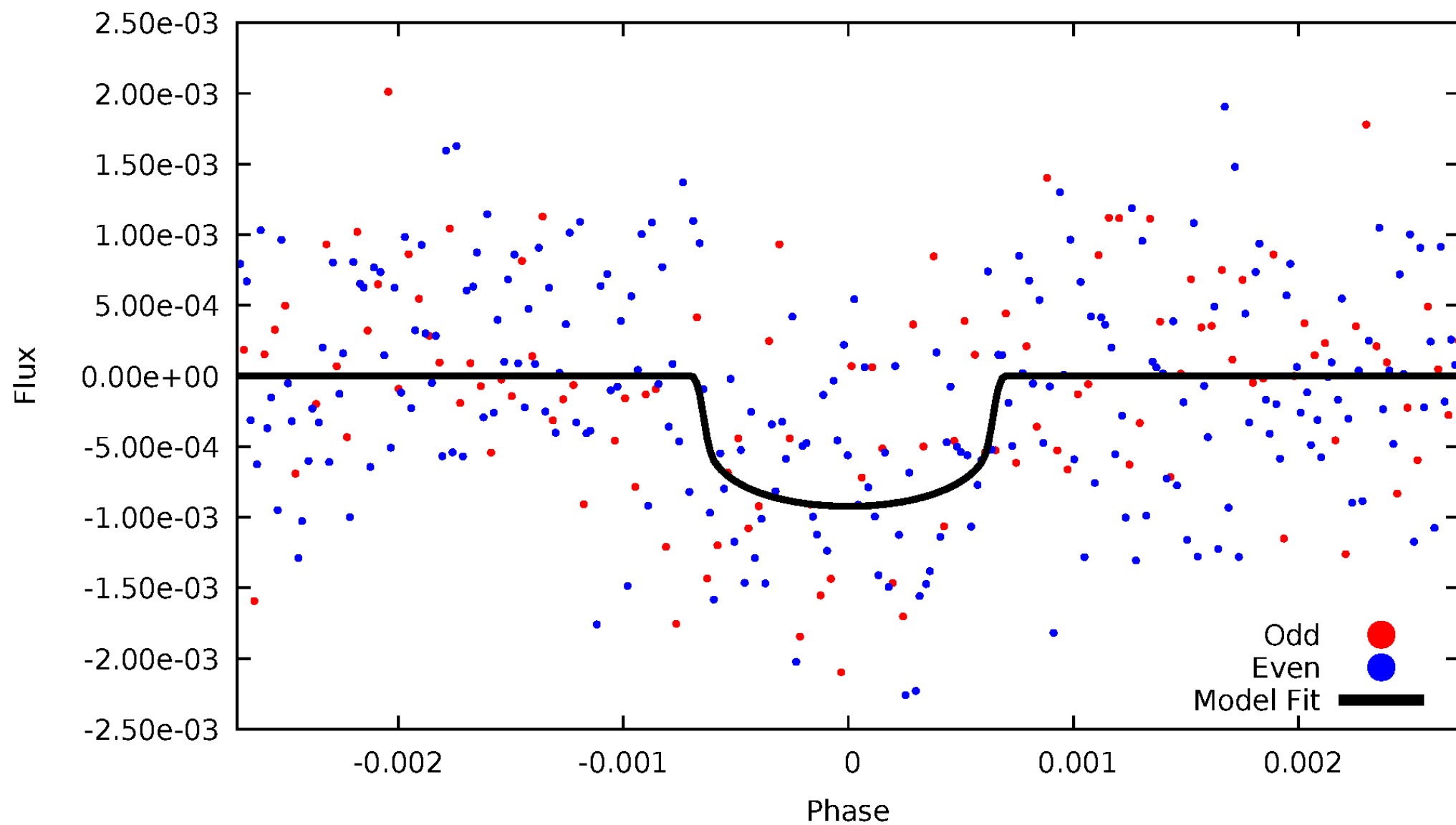


TCE 005955234-01



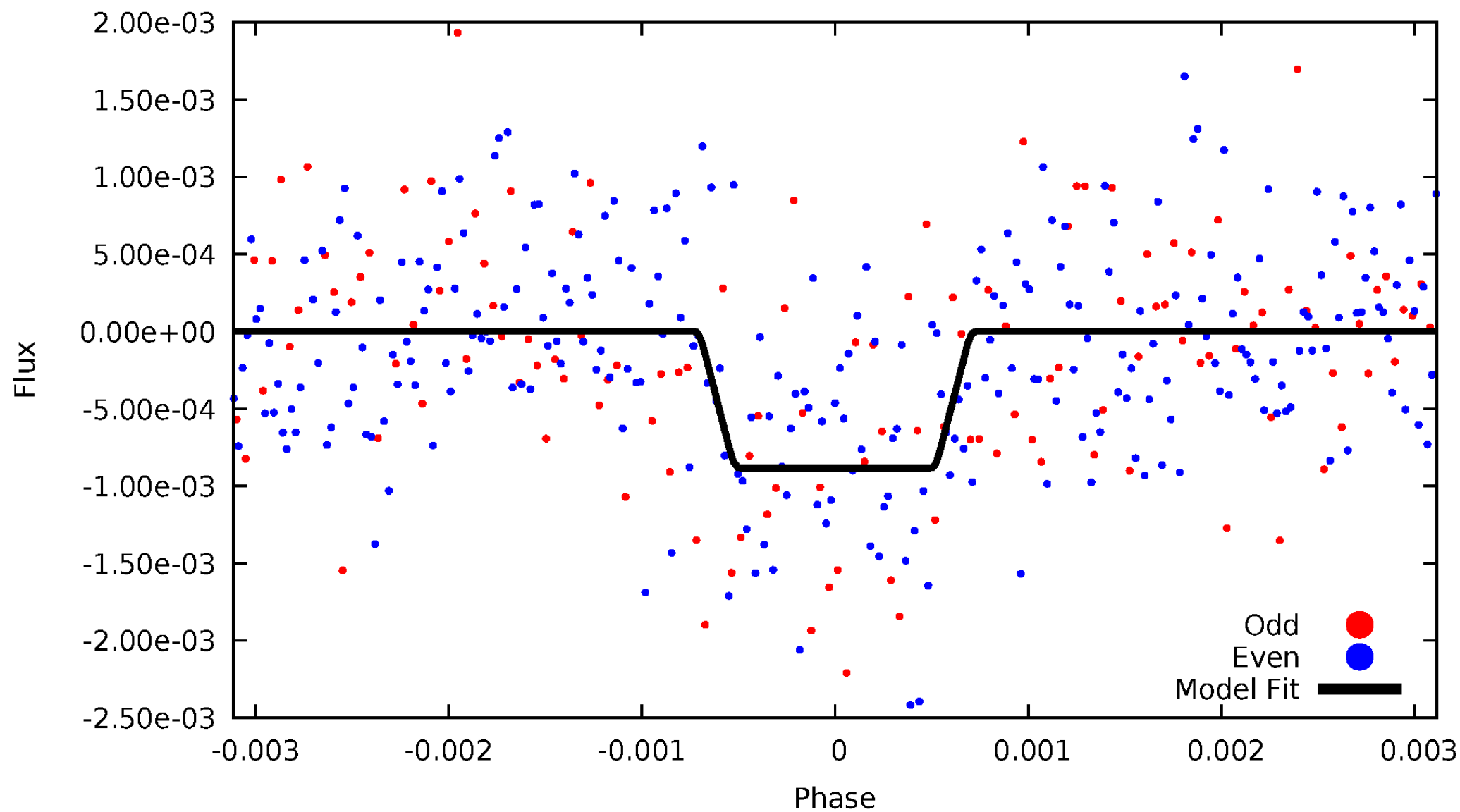
# DV Odd/Even

TCE 005955234-01



# ALT Odd/Even

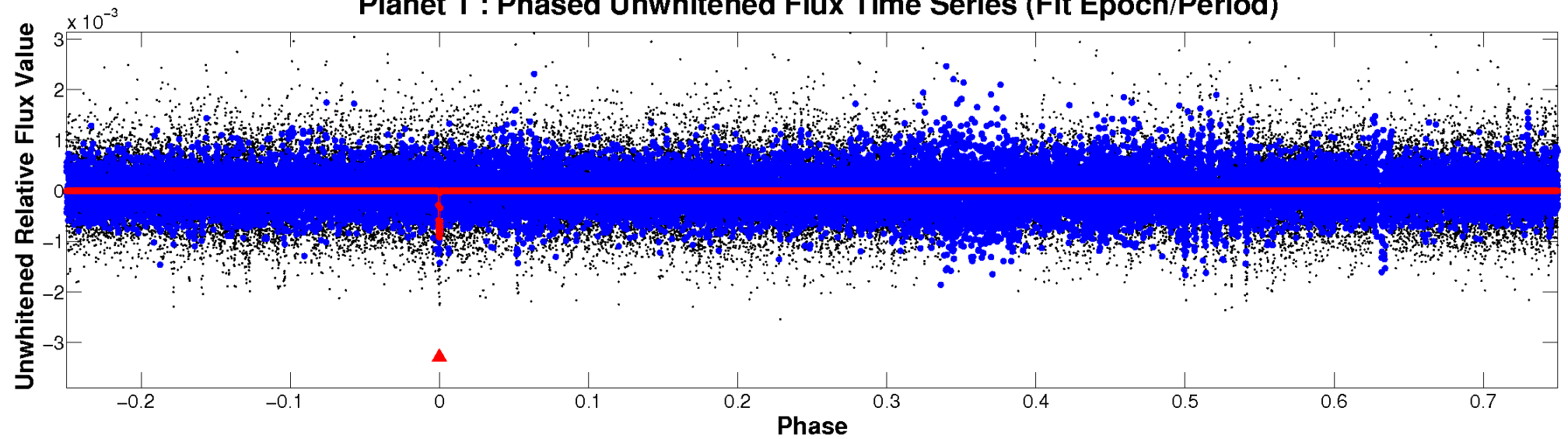
TCE 005955234-01



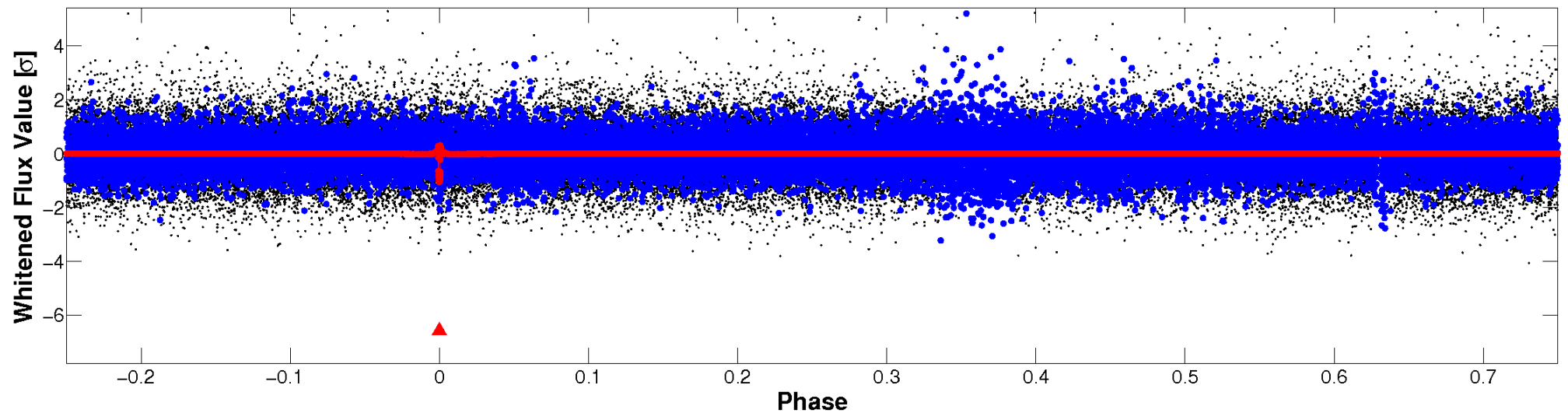


# Non-Whitened Vs. Whitened Light Curve

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

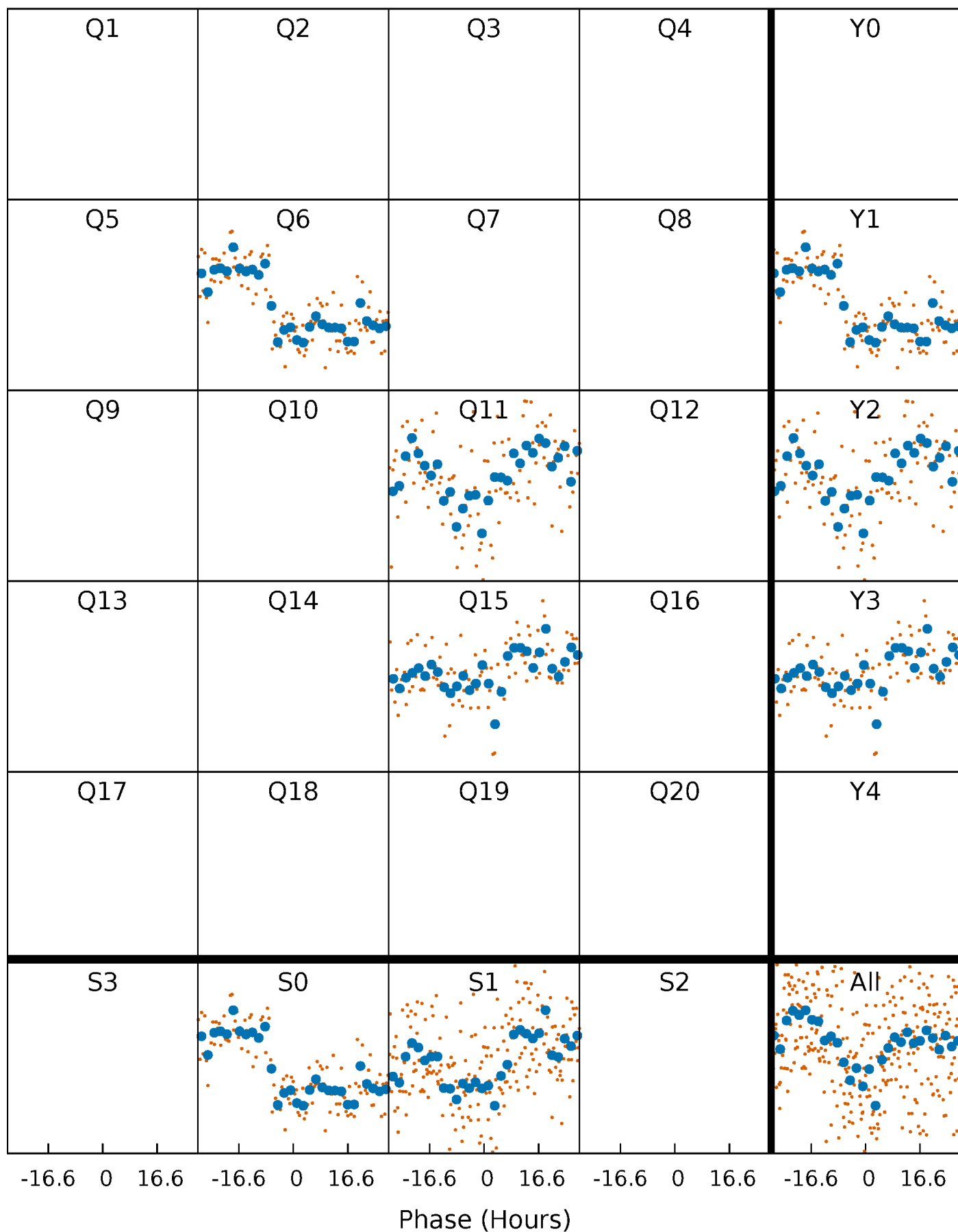


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

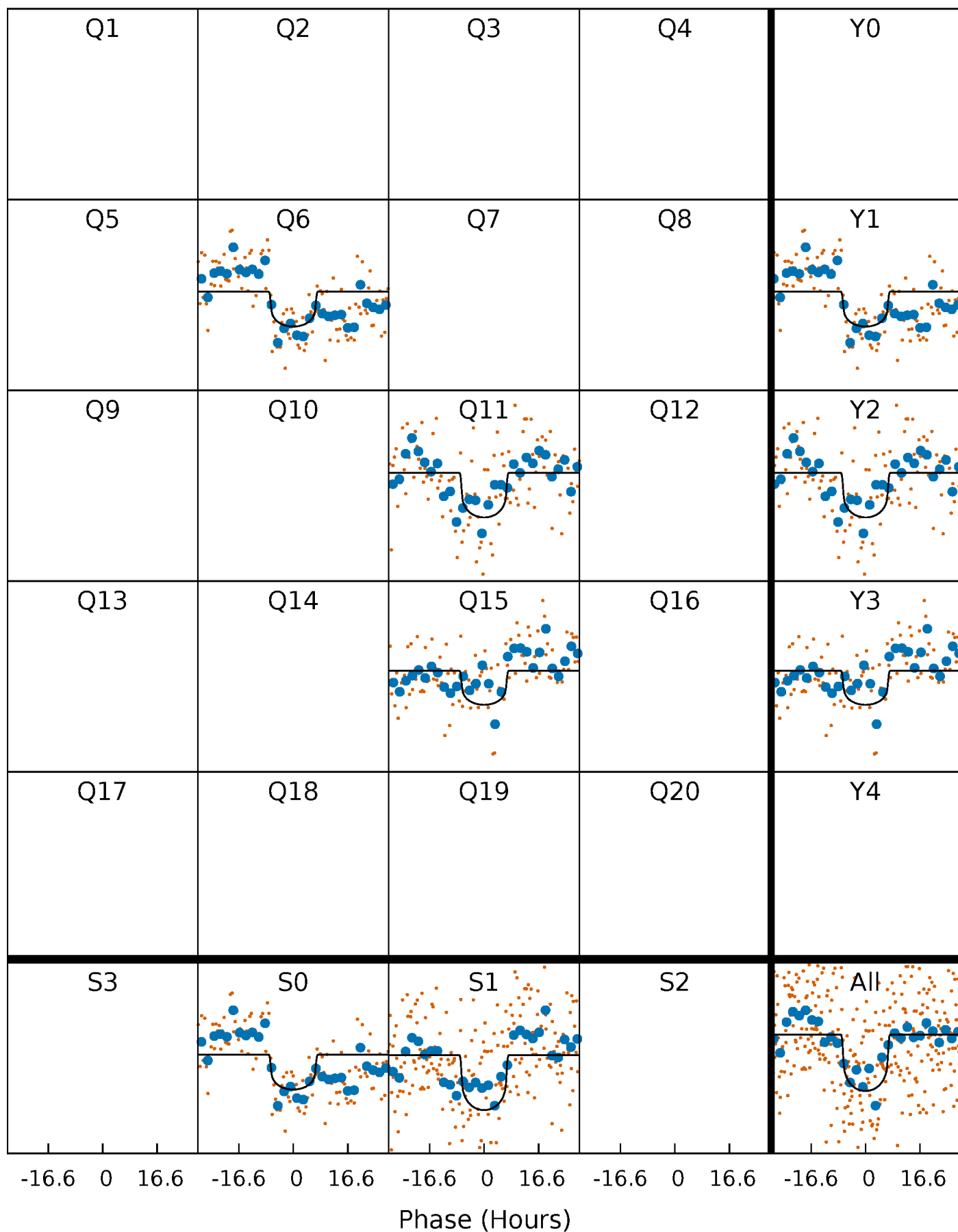
TCE 005955234-01 P=446.547237 Days  $T_0=563.931657$  (BKJD)





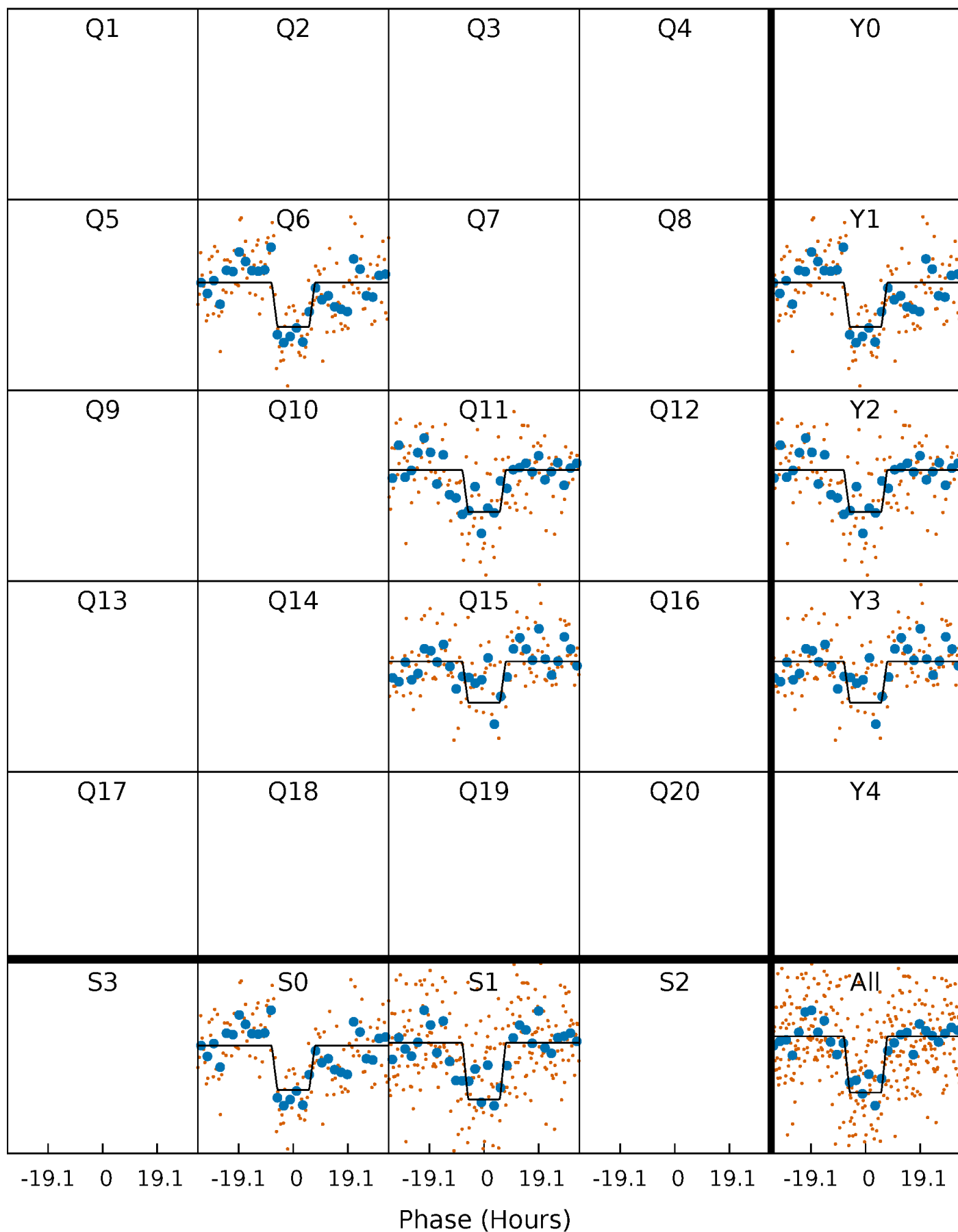
# DV Quarter-Phased Transit Curves

TCE 005955234-01 P=446.547237 Days  $T_0=563.931657$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

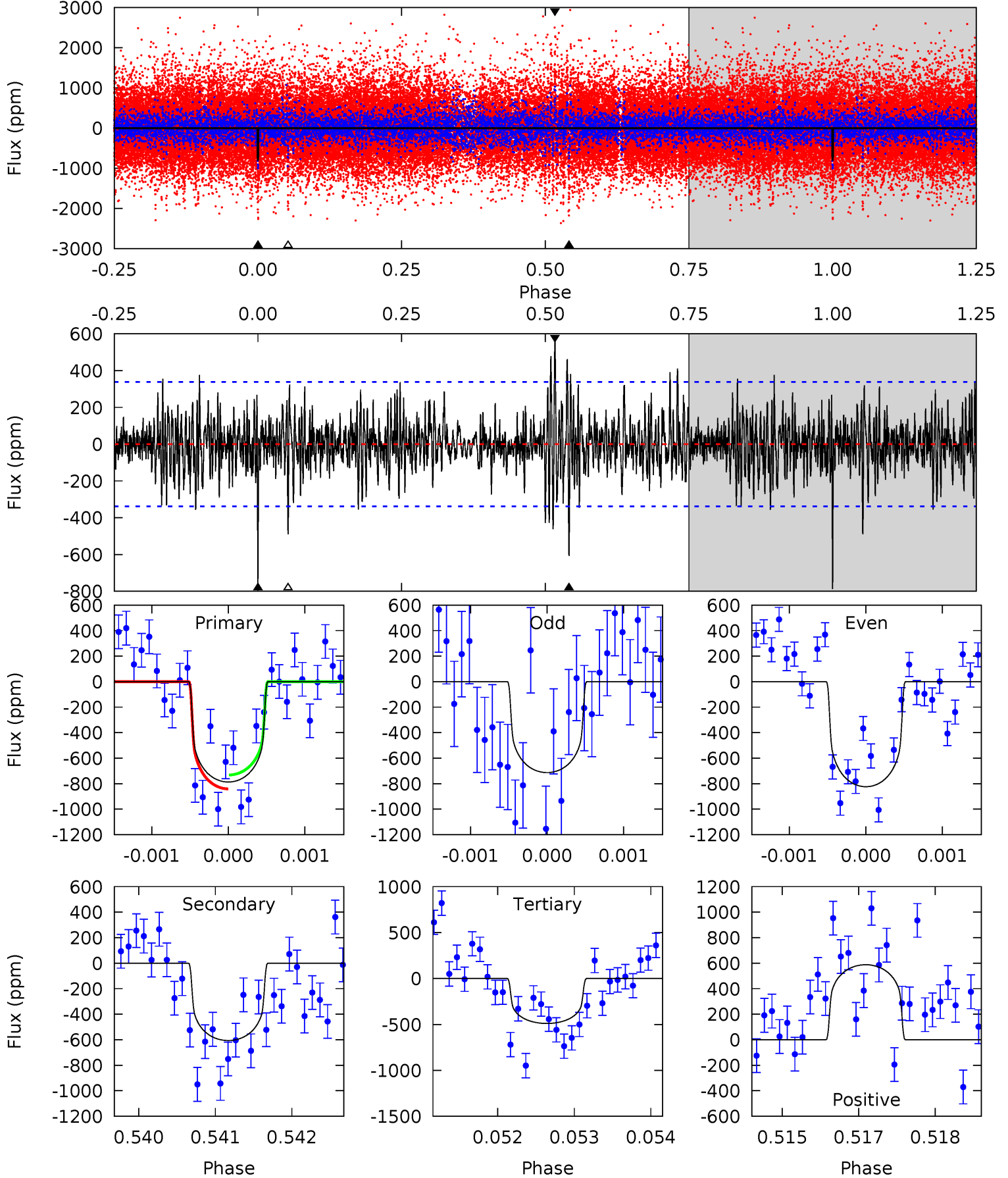
TCE 005955234-01 P=446.527776 Days  $T_0=563.909974$  (BKJD)



# DV Model-Shift Uniqueness Test

005955234-01, P = 446.547237 Days, E = 117.384420 Days

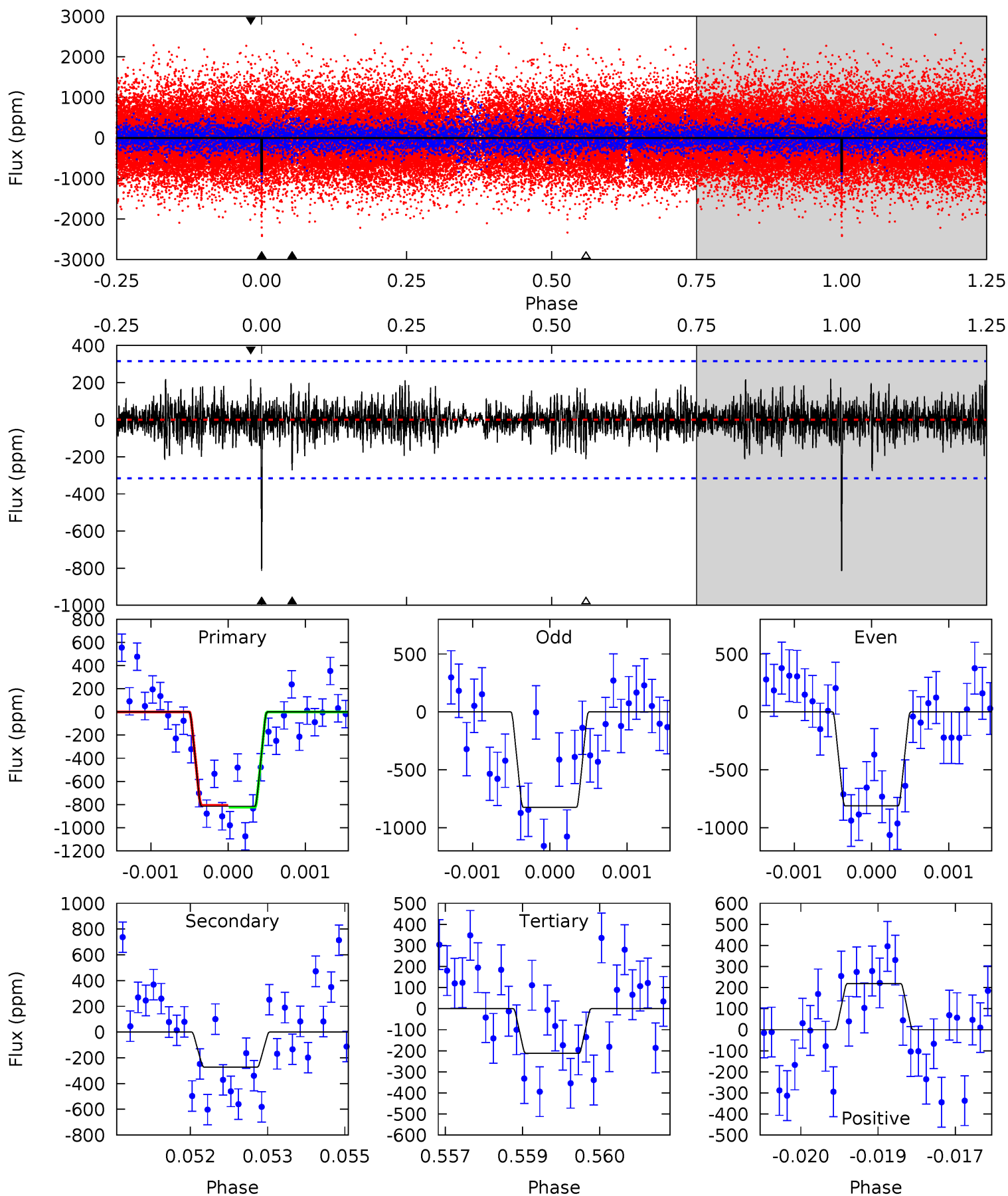
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.6	9.68	7.81	9.38	5.40	3.20	1.85	4.74	3.18	1.86	0.29	0.83	1.10	0.43	0.87



# Alt Model-Shift Uniqueness Test

005955234-01, P = 446.527776 Days, E = 117.382198 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
13.9	4.64	3.61	3.74	5.39	3.19	1.04	10.3	10.2	1.03	0.90	0.10	0.99	0.21	0.13



### Stellar Parameters For KIC 005955234

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5387^{+206}_{-187}$	$4.578^{+0.052}_{-0.090}$	$-0.460^{+0.300}_{-0.300}$	$0.736^{+0.114}_{-0.066}$	$0.748^{+0.099}_{-0.061}$	$2.640^{+0.677}_{-0.763}$
	+4%/-3%	+1%/-2%	+65%/-65%	+15%/-9%	+13%/-8%	+26%/-29%
Source	KIC0	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 005955234-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-606 \pm 63$	$2.40^{+0.96}_{-0.91}$	$282^{+13}_{-11}$	$4992^{+1119}_{-617}$	$62089^{+95619}_{-30644}$
Alt.	$-272 \pm 59$	$2.39^{+0.97}_{-0.87}$	$283^{+13}_{-12}$	$4275^{+897}_{-521}$	$28285^{+45319}_{-14239}$

$T_{max}$  = 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

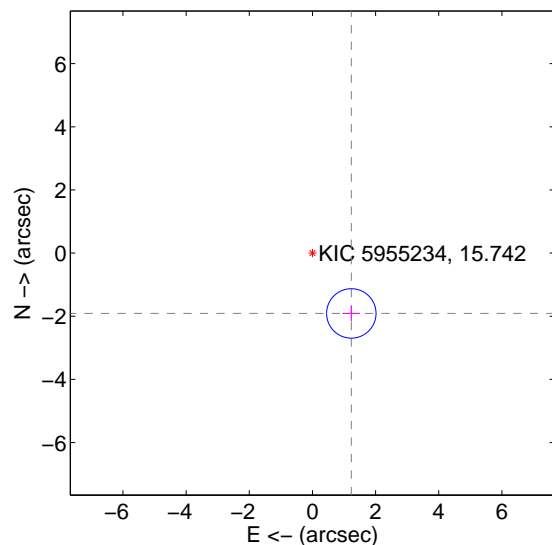
Supplemental centroid analysis for 005955234-01. Kepler magnitude: 15.74. Transit SNR 9.06

There are 1 quarters with good PRF difference image offsets

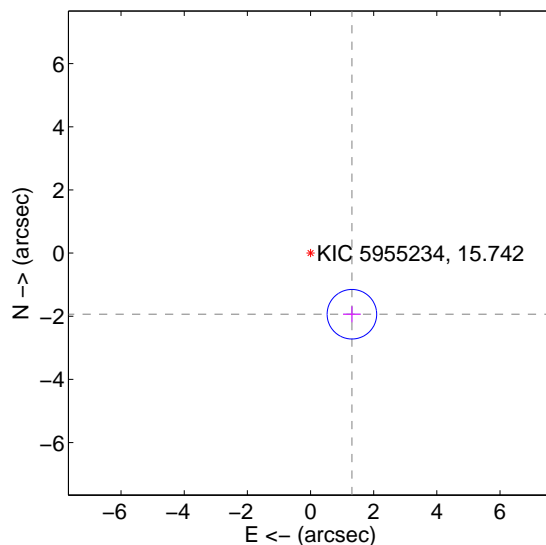
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.273 \pm 0.261$	8.71	$-1.231 \pm 0.281$	$-1.911 \pm 0.252$
PRF-fit source offset from KIC position	$2.338 \pm 0.262$	8.94	$-1.310 \pm 0.281$	$-1.936 \pm 0.252$
photometric centroid source offset	$1.26 \pm 1.71$	0.74	$-1.13 \pm 1.75$	$0.58 \pm 1.55$

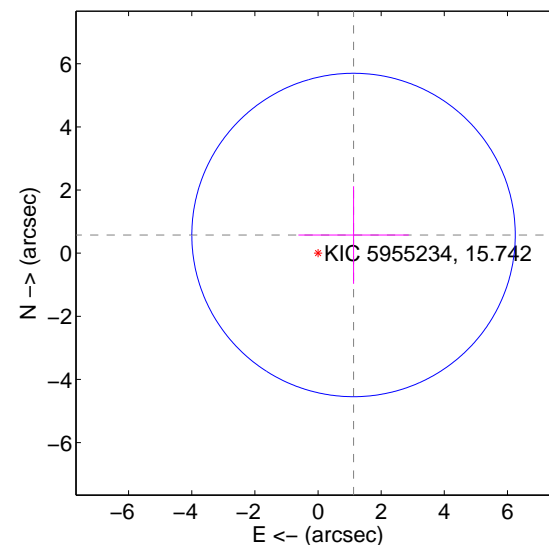
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



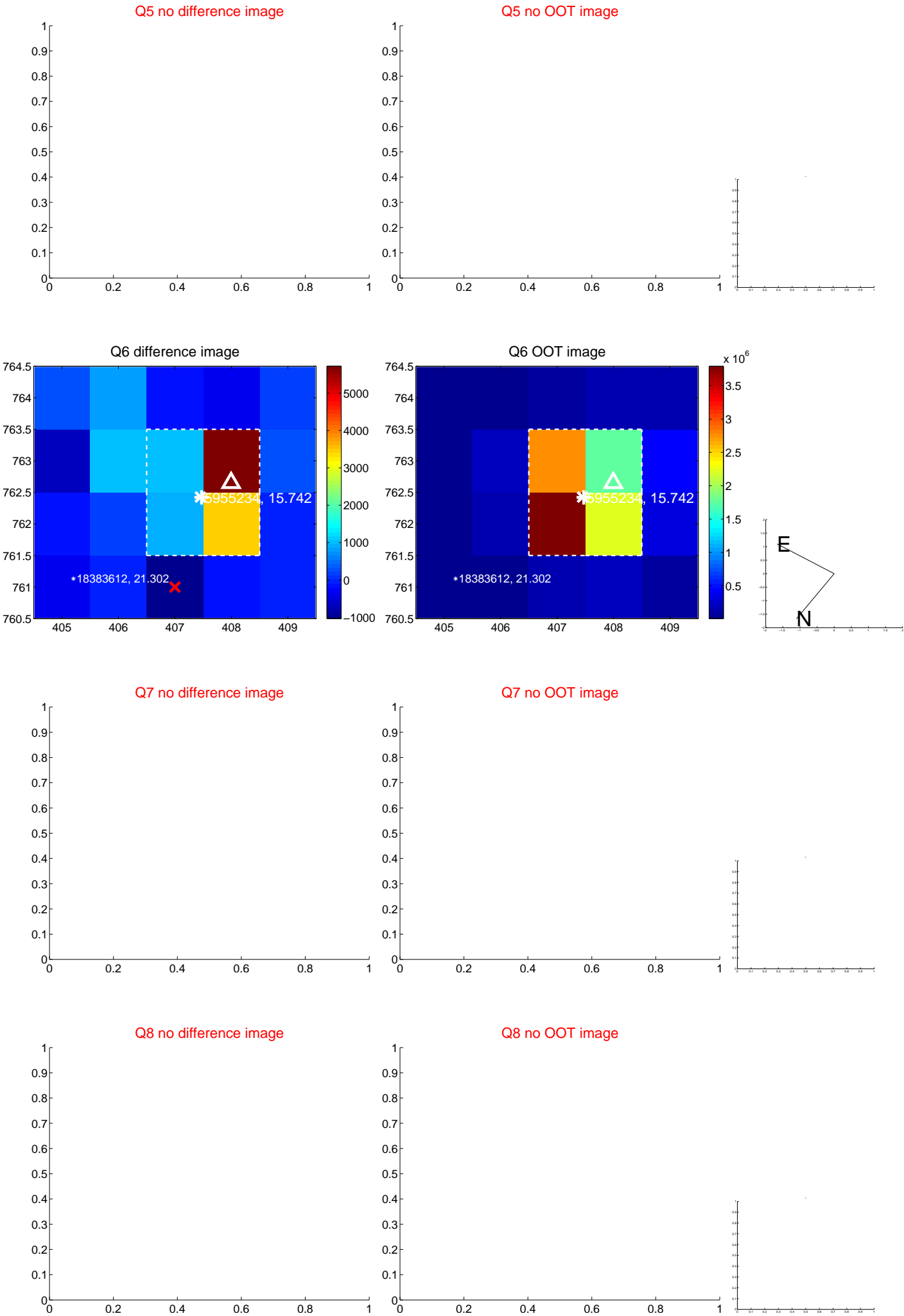
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

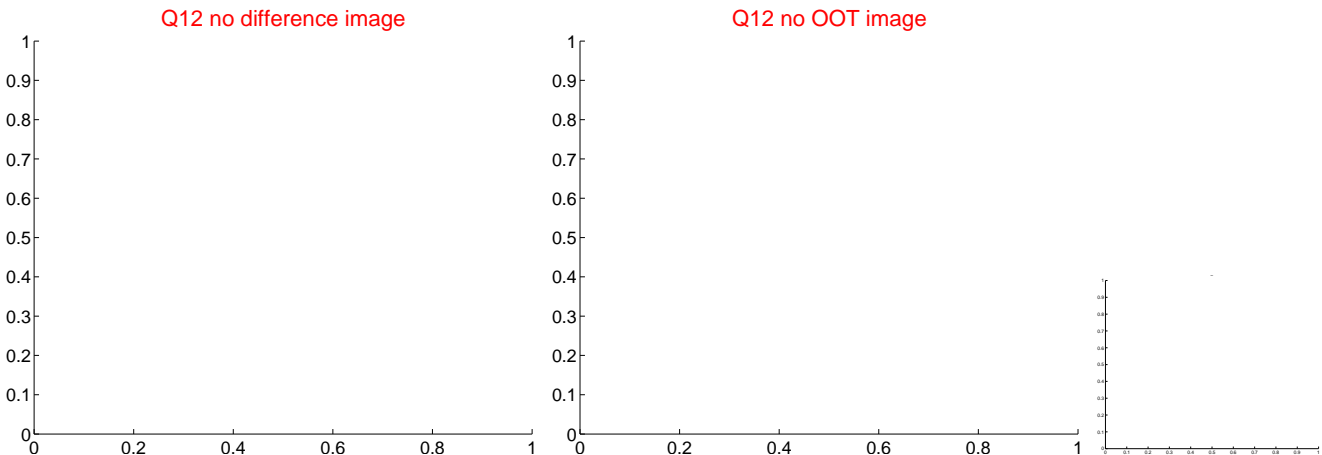
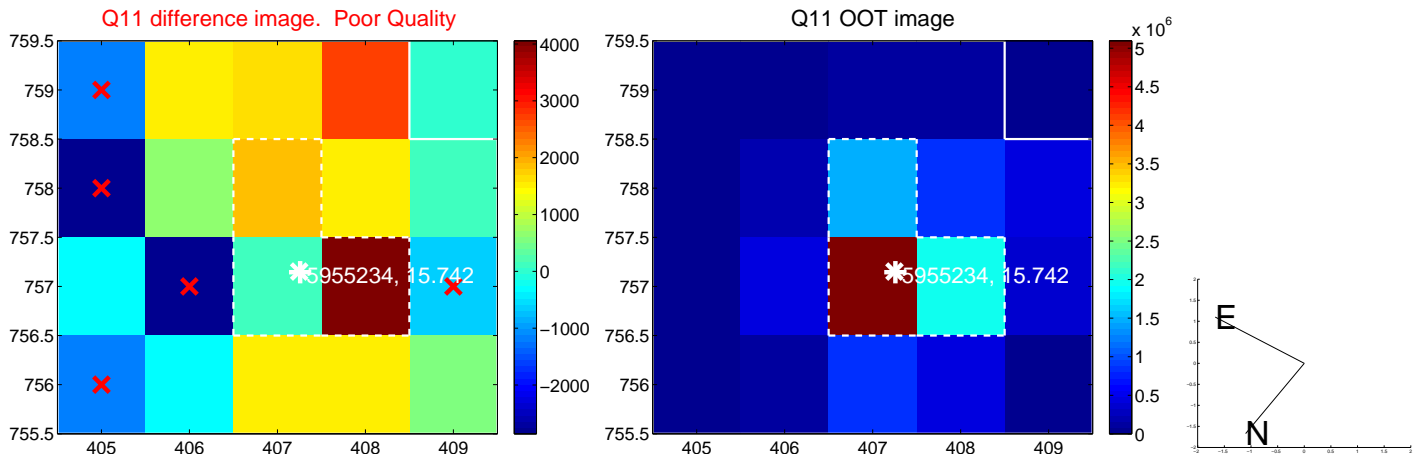
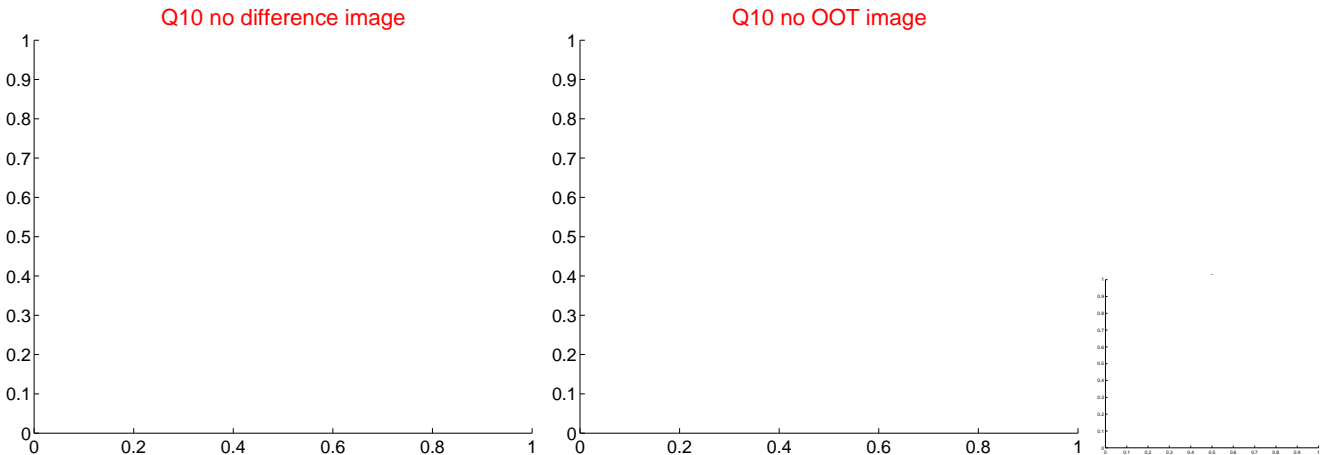
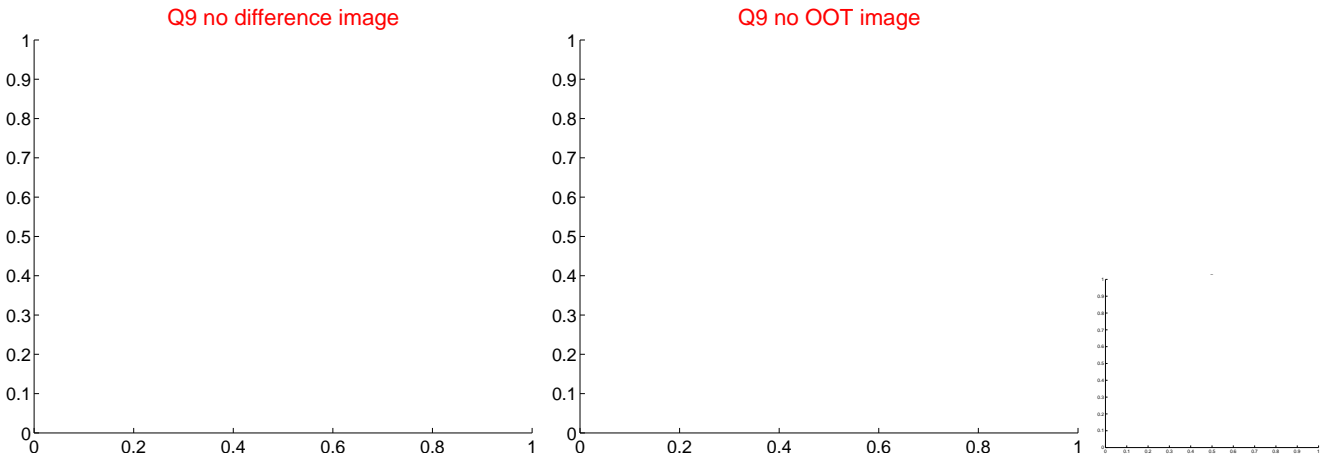




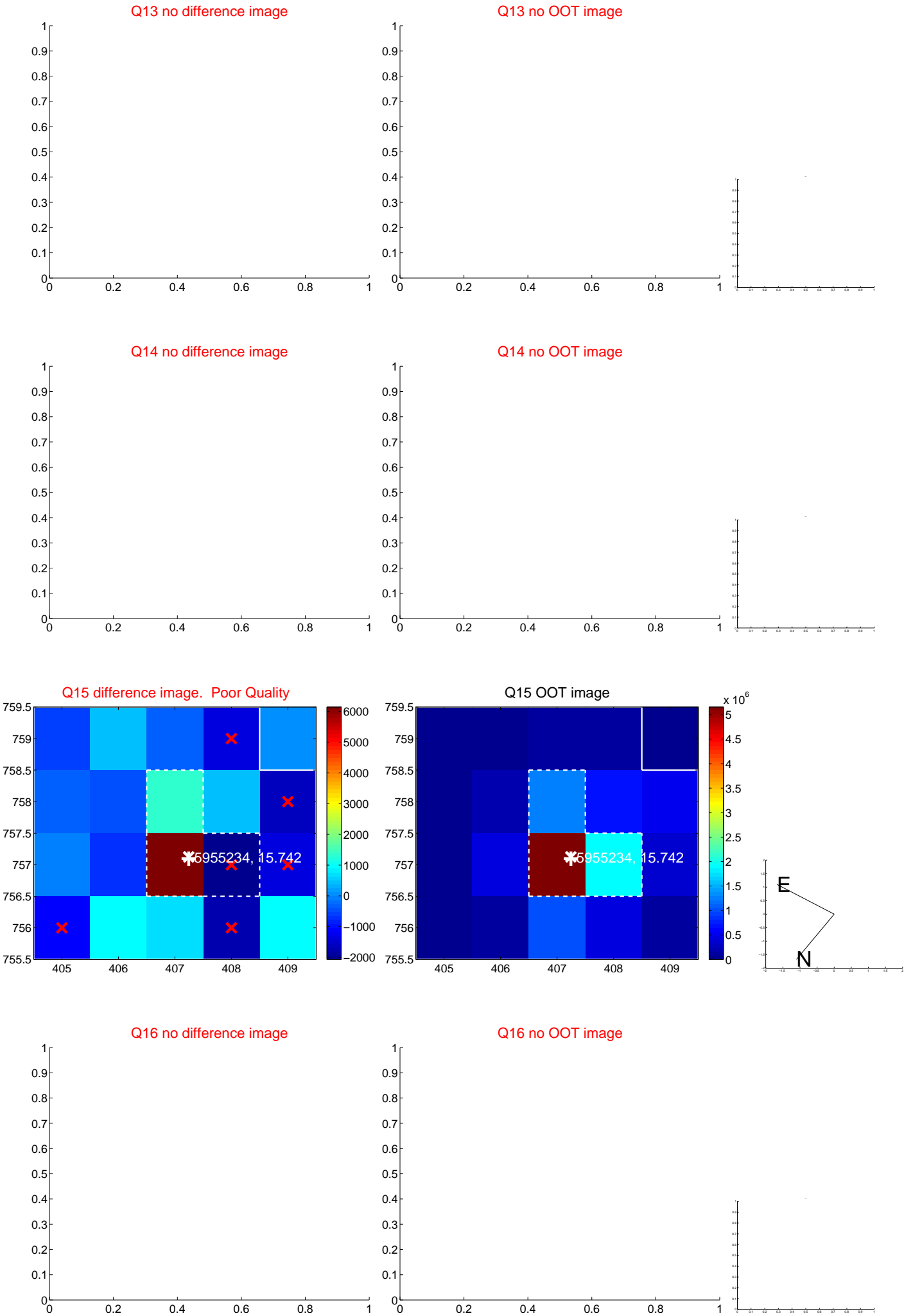
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



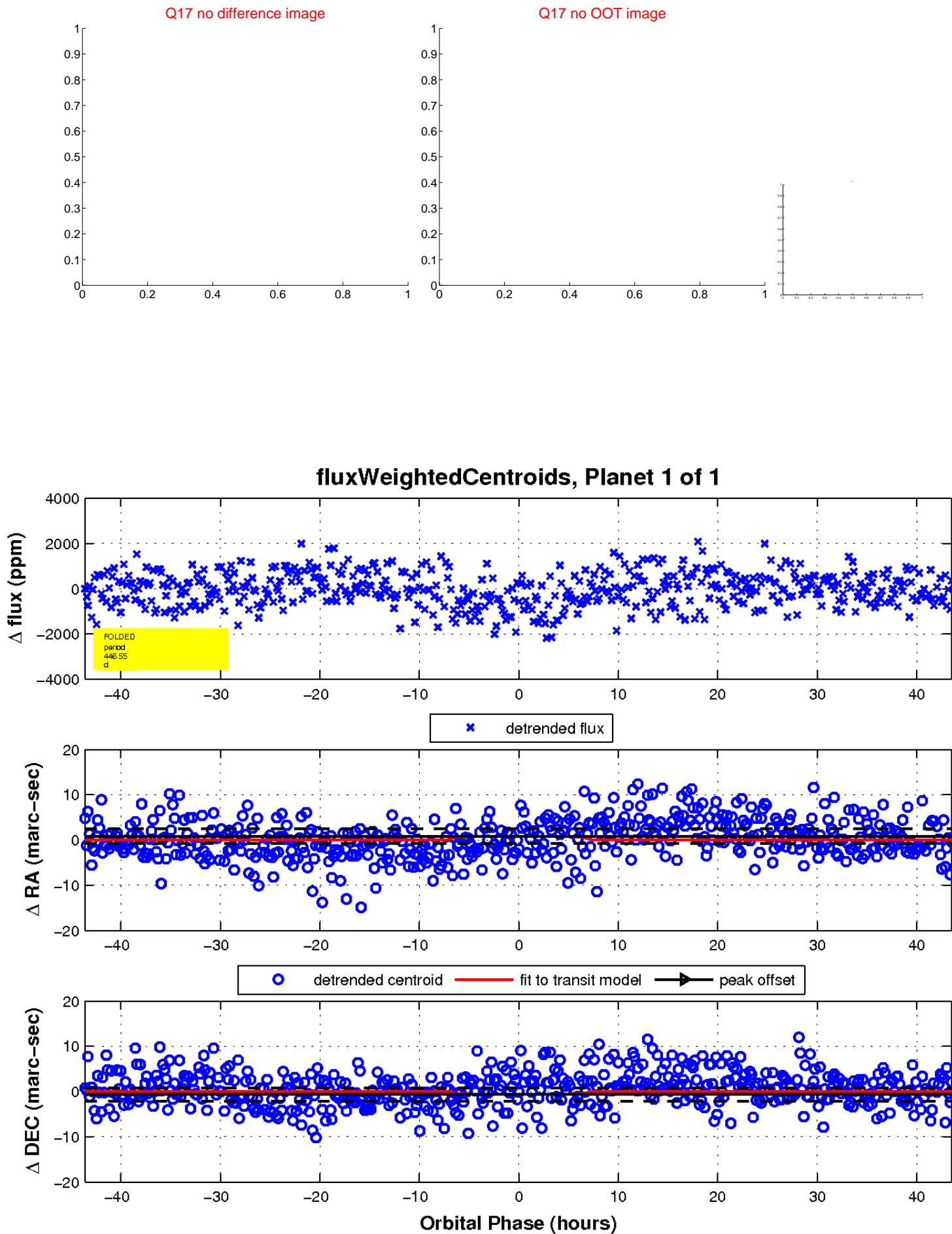
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



white ×: 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

