

# KIC 008554885

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008554885-01	OBS	No	391.034745	167.168459	1234.8	35.120	10.6	11.1	0.89	5580	6.03	0.63

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008554885-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—INCONSISTENT_TRANS—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.

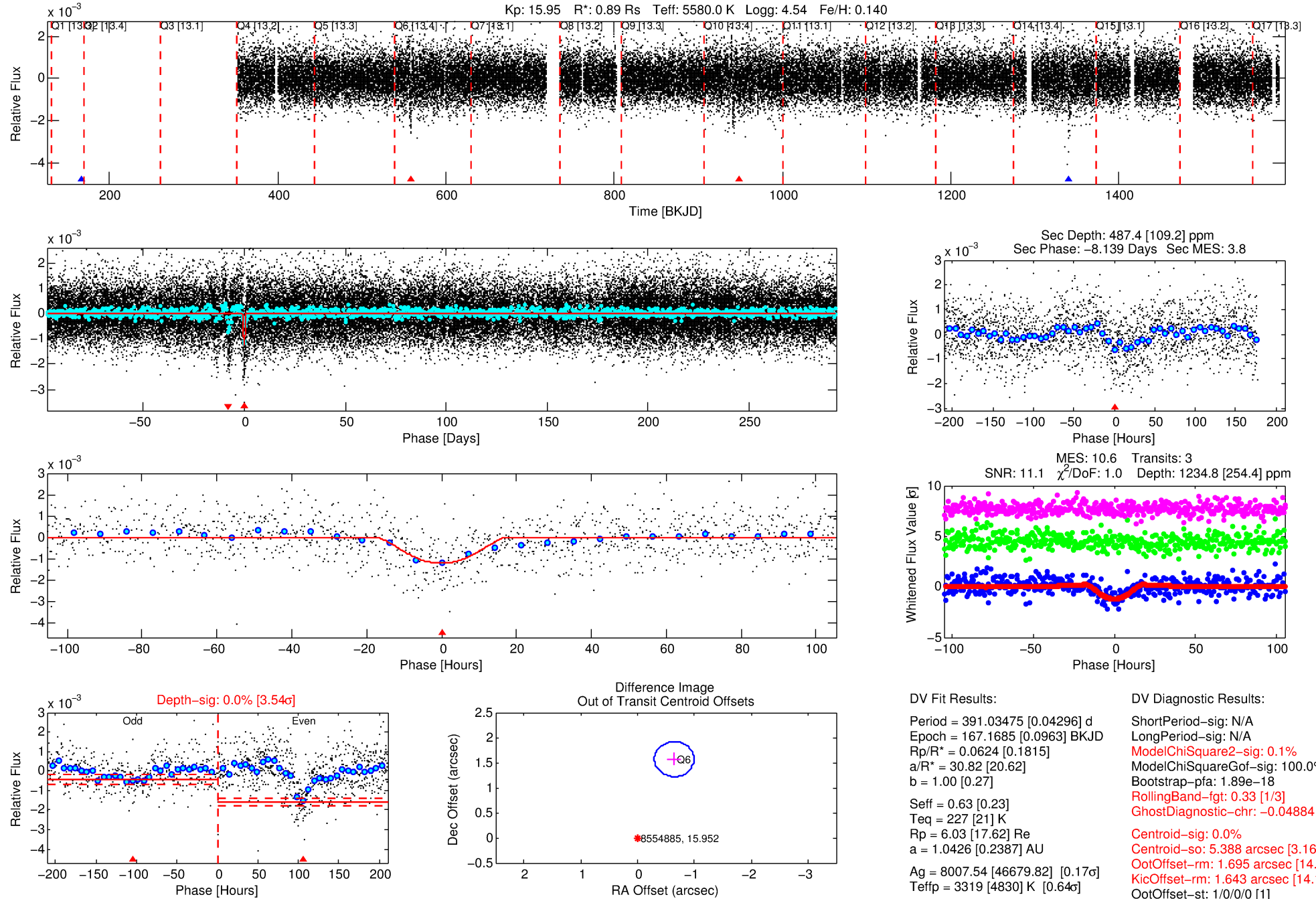
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008554885-01

No Significant Match Found

# DV One-Page Summary

KIC: 8554885 Candidate: 1 of 1 Period: 391.035 d



## DV Fit Results:

Period = 391.03475 [0.04296] d  
Epoch = 167.1685 [0.0963] BKJD  
Rp/R\* = 0.0624 [0.1815]  
a/R\* = 30.82 [20.62]  
b = 1.00 [0.27]  
Seff = 0.63 [0.23]  
Teq = 227 [21] K  
Rp = 6.03 [17.62] Re  
a = 1.0426 [0.2387] AU  
Ag = 8007.54 [46679.82] [0.17σ]  
Teff = 3319 [4830] K [0.64σ]

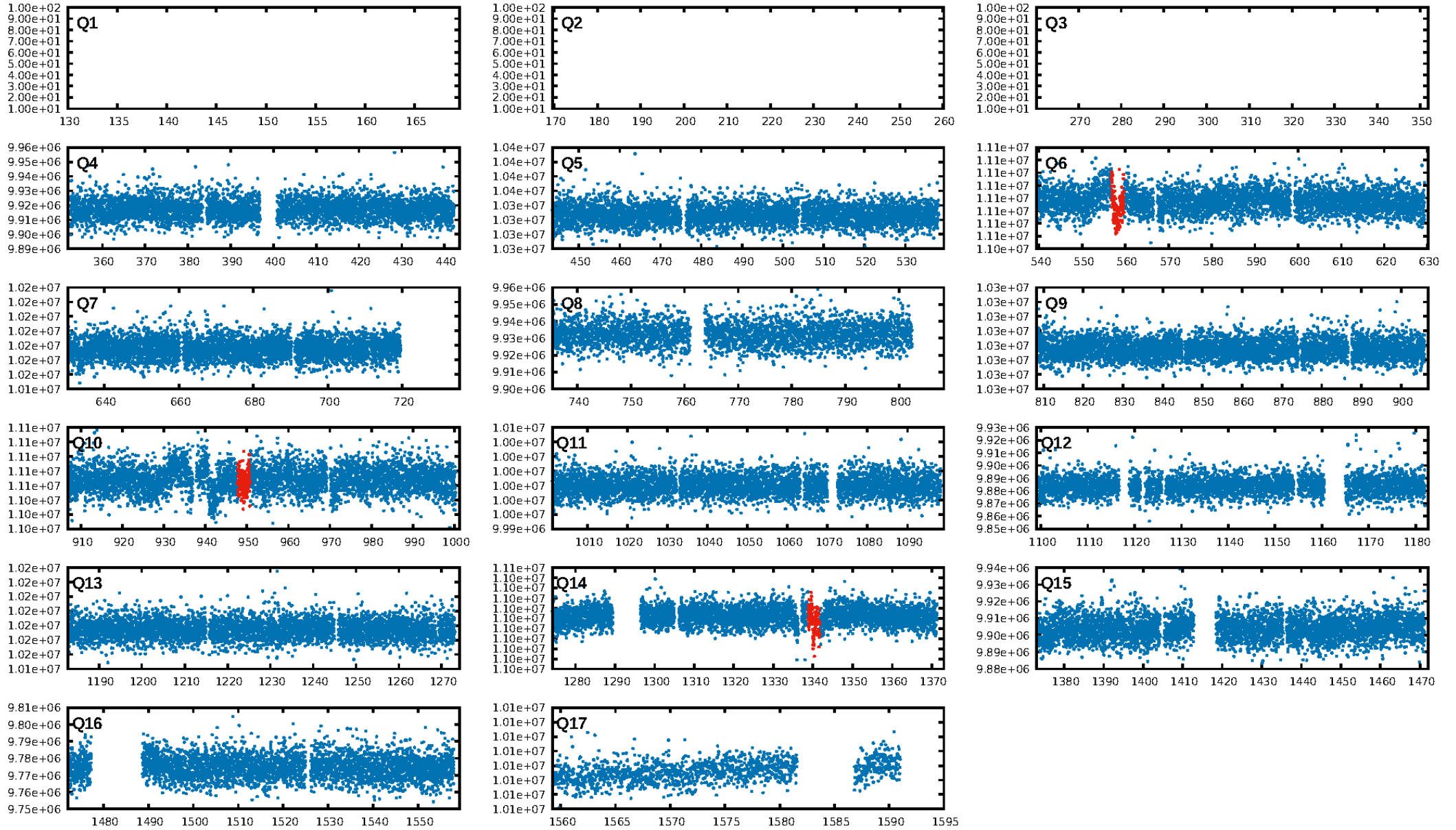
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.1%  
ModelChiSquareGoF-sig: 100.0%  
Bootstrap-pfa: 1.89e-18  
RollingBand-fgt: 0.33 [1/3]  
GhostDiagnostic-chr: -0.04884  
Centroid-sig: 0.0%  
Centroid-so: 5.388 arcsec [3.16σ]  
OotOffset-rm: 1.695 arcsec [14.59σ]  
KicOffset-rm: 1.643 arcsec [14.14σ]  
OotOffset-st: 1/0/0/0 [1]  
KicOffset-st: 1/0/0/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [2/2]

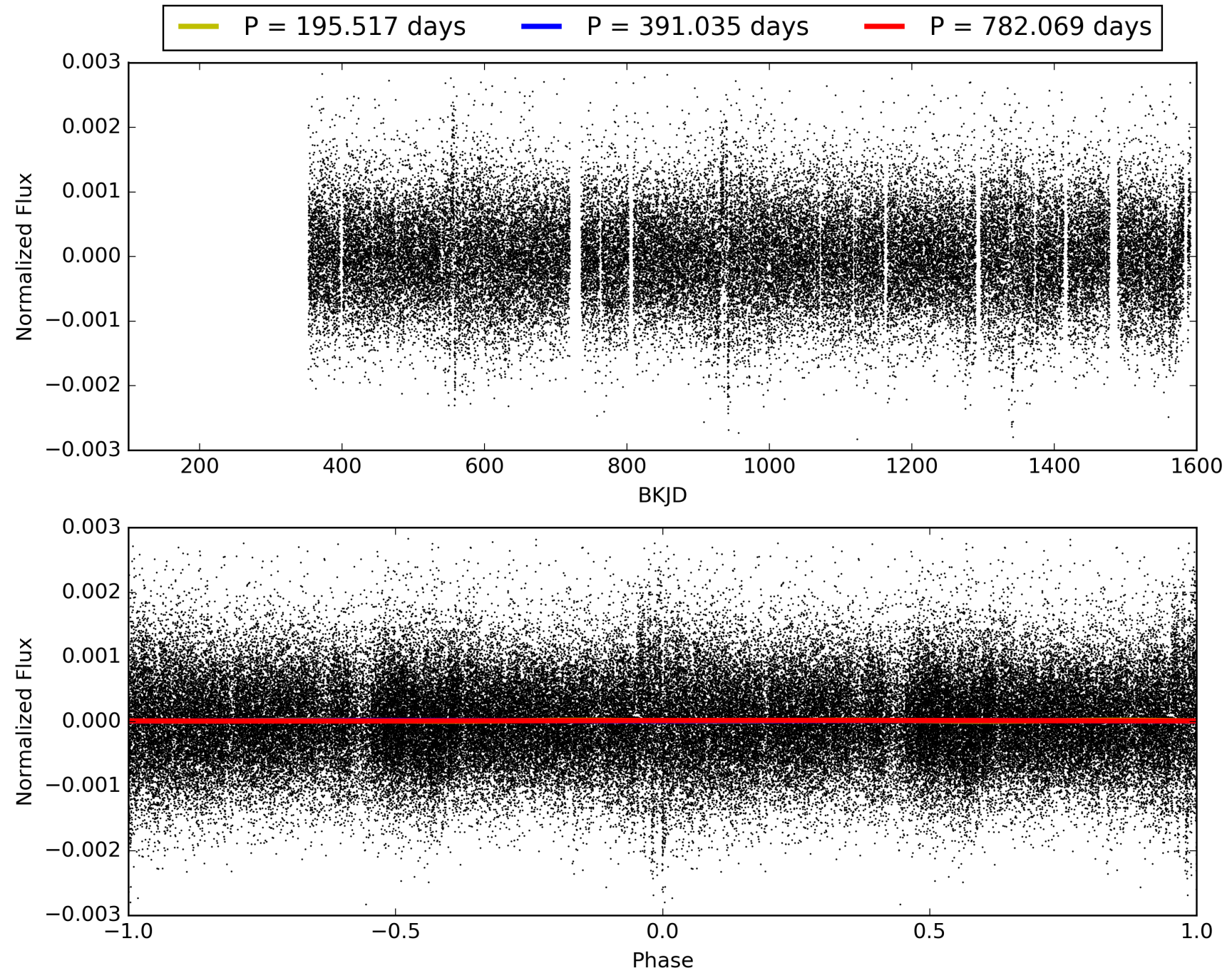
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:29:35 Z

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

# TCE 008554885-01, PDC Light Curves

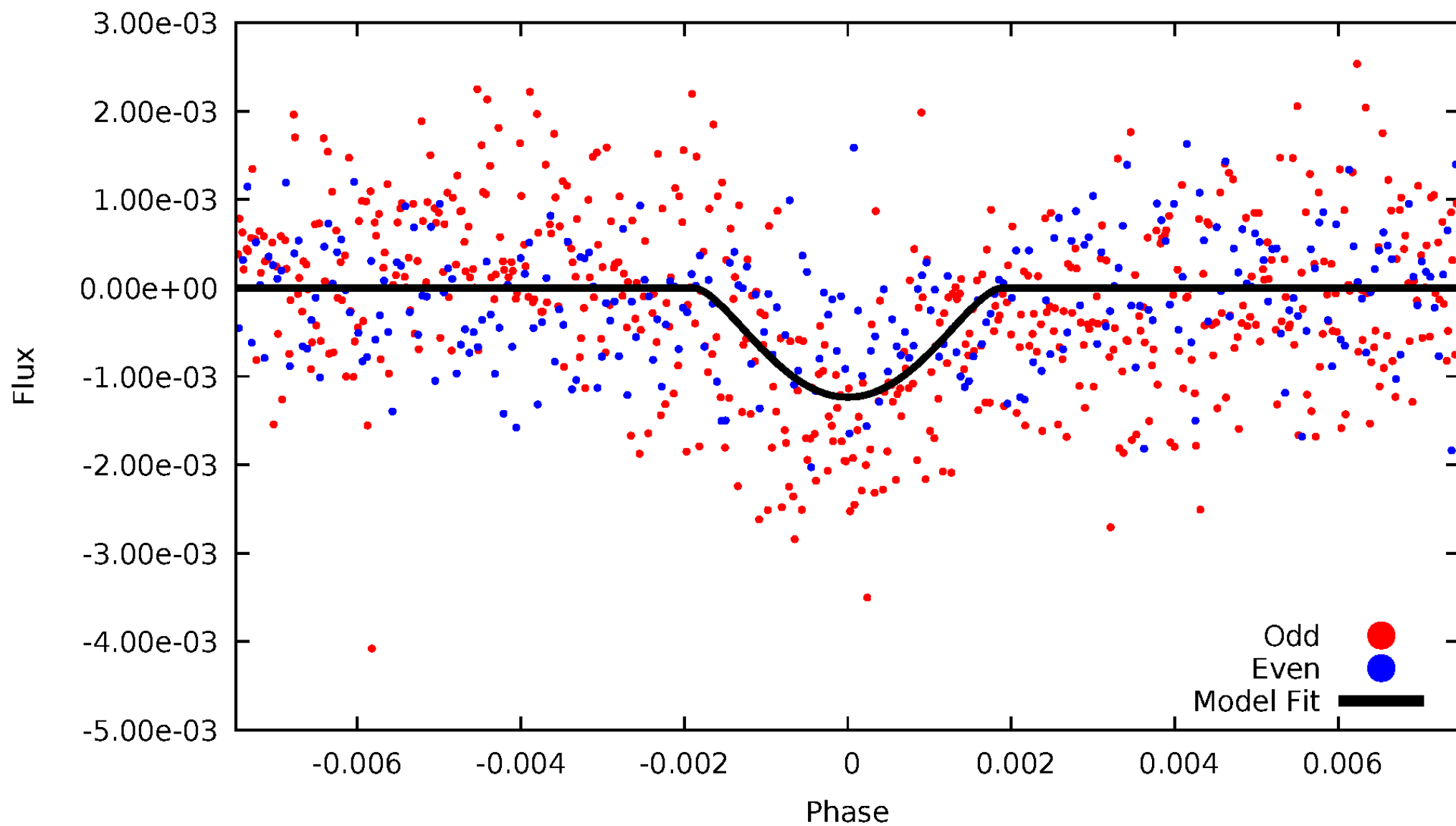


TCE 008554885-01



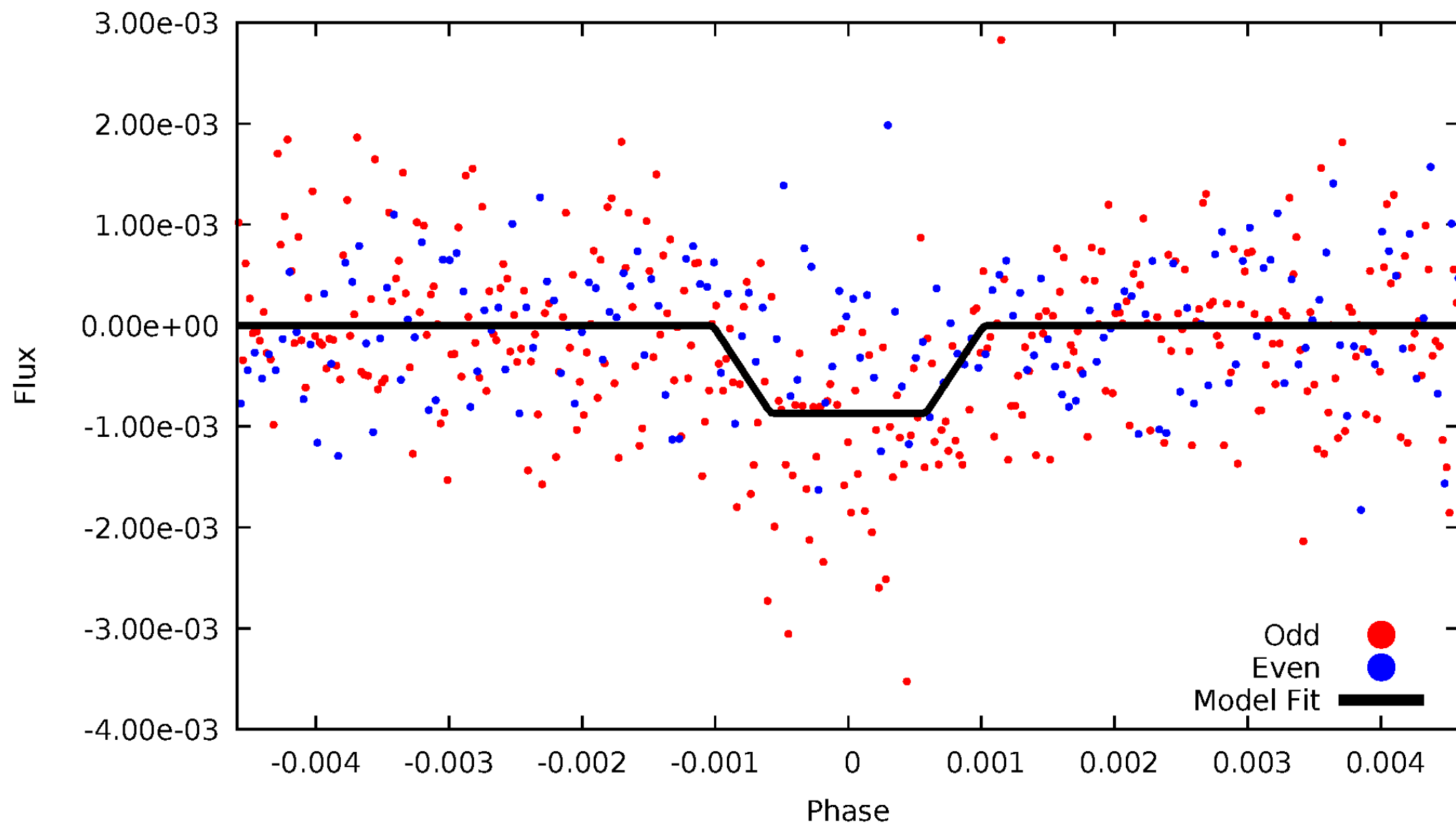
# DV Odd/Even

TCE 008554885-01



# ALT Odd/Even

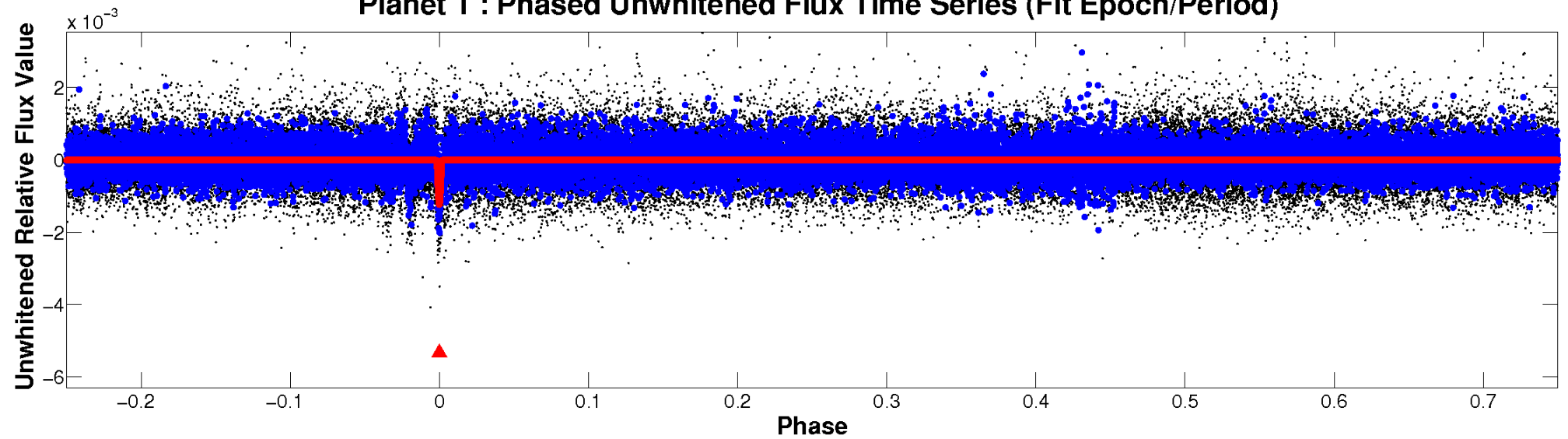
TCE 008554885-01



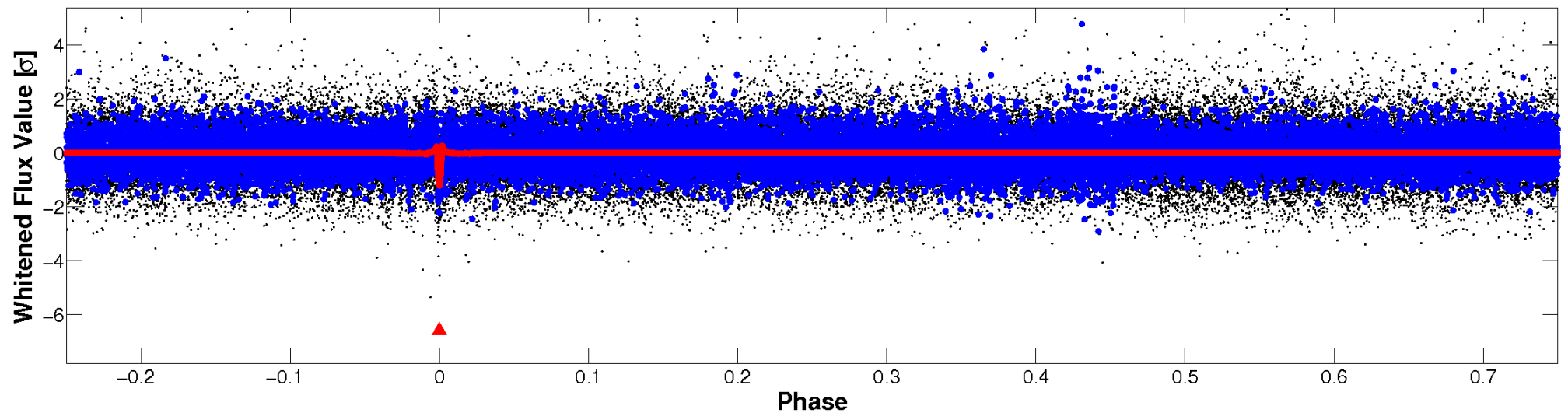


# Non-Whitened Vs. Whitened Light Curve

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

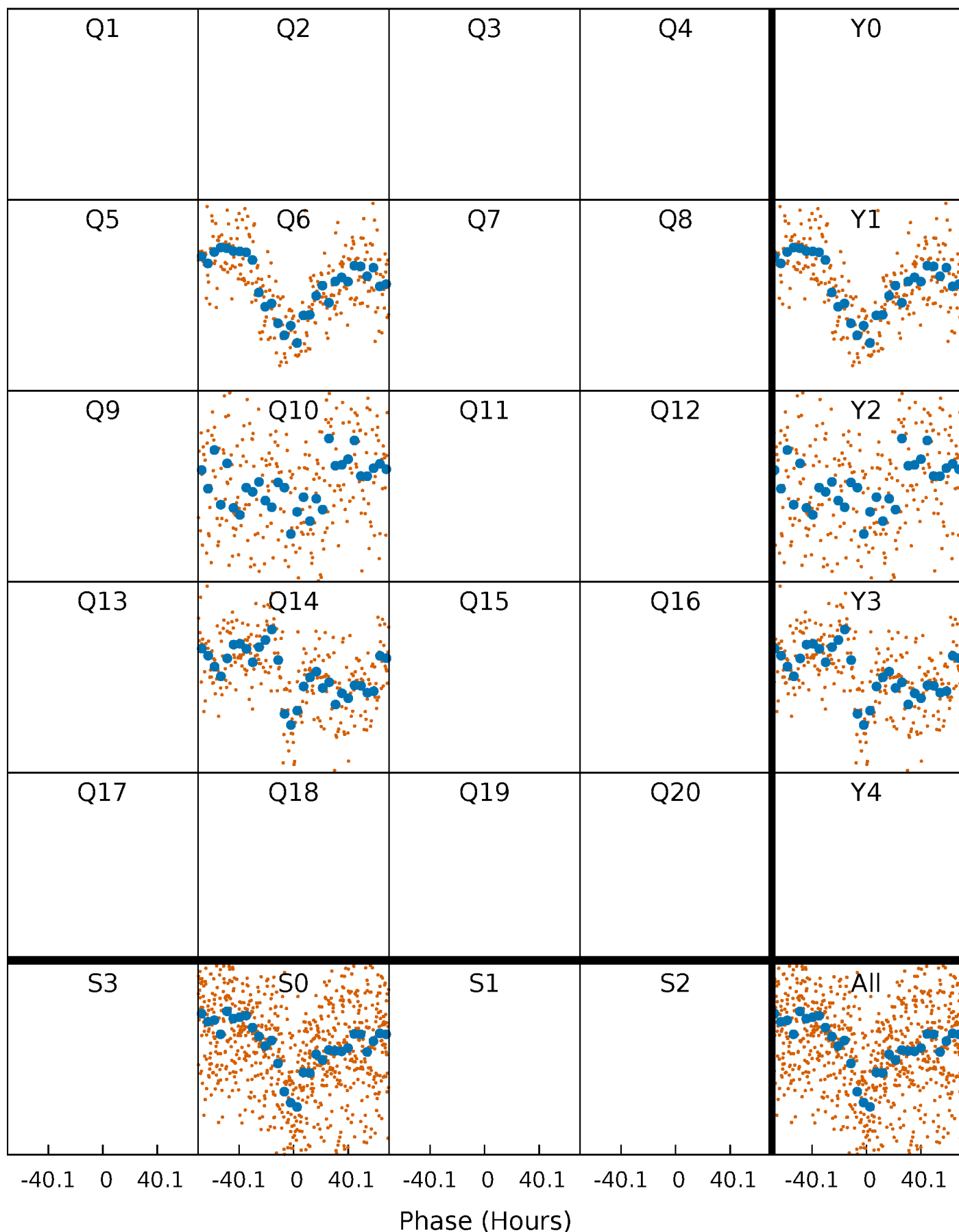


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

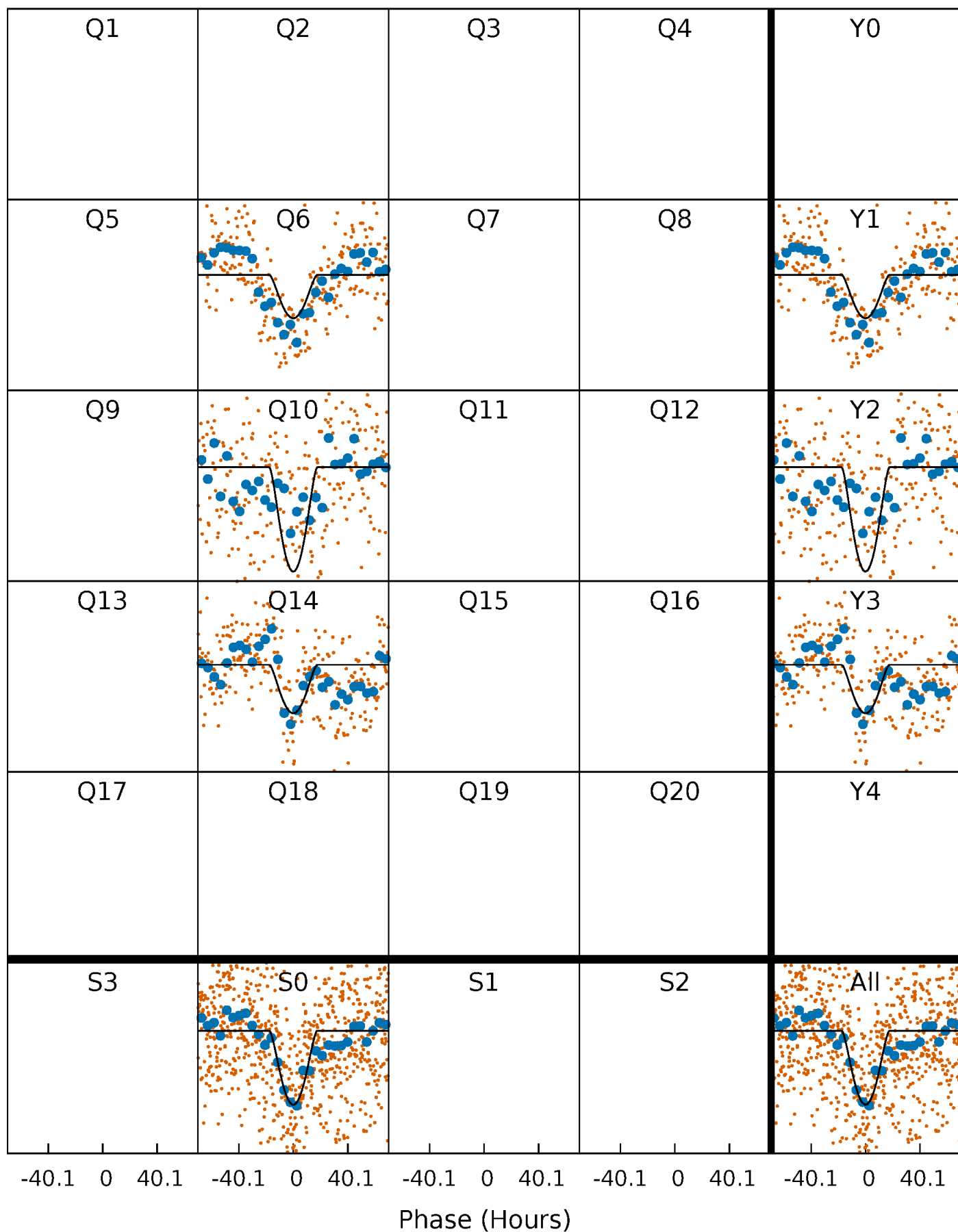
TCE 008554885-01 P=391.034745 Days  $T_0=167.168459$  (BKJD)





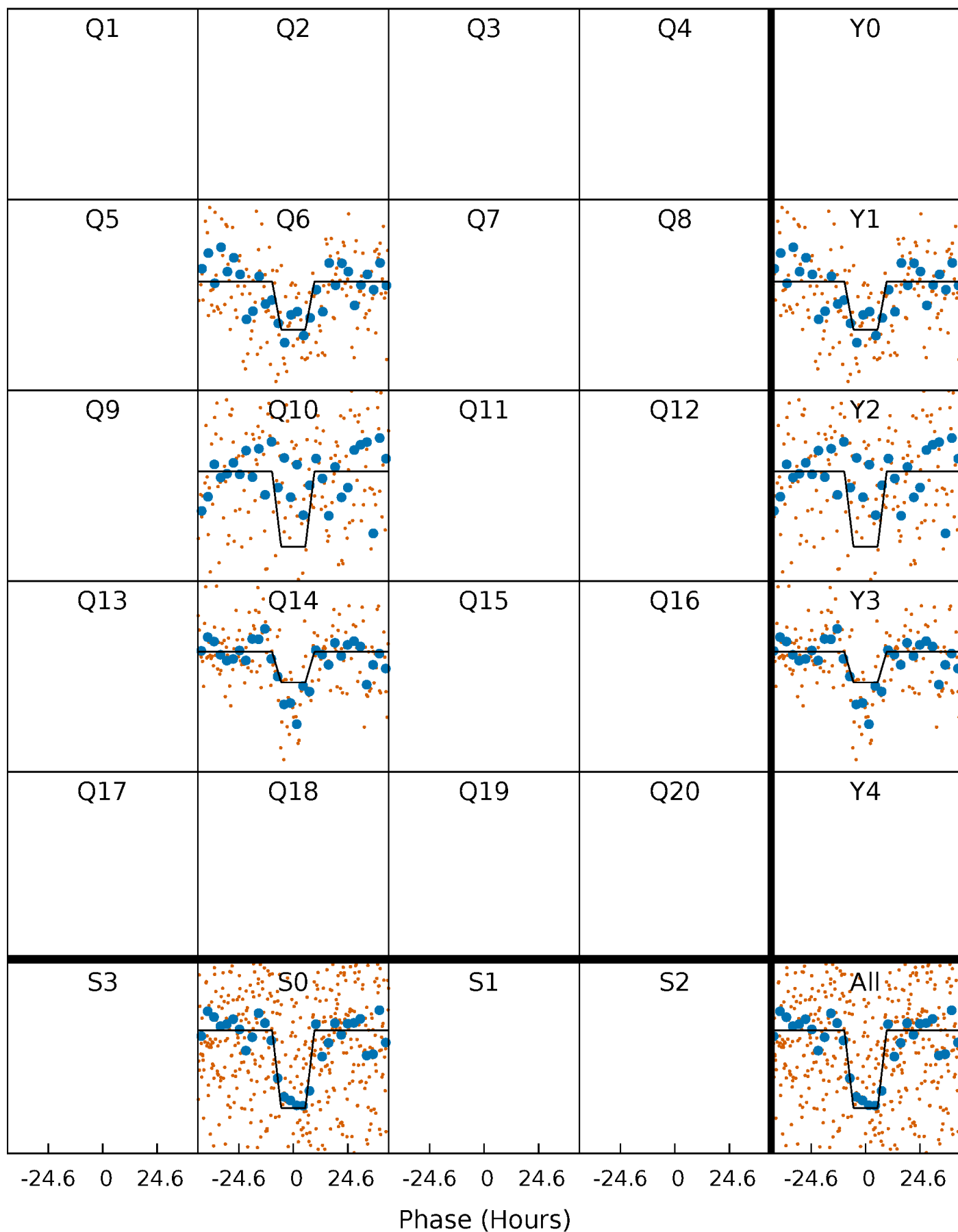
# DV Quarter-Phased Transit Curves

TCE 008554885-01 P=391.034745 Days  $T_0=167.168459$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

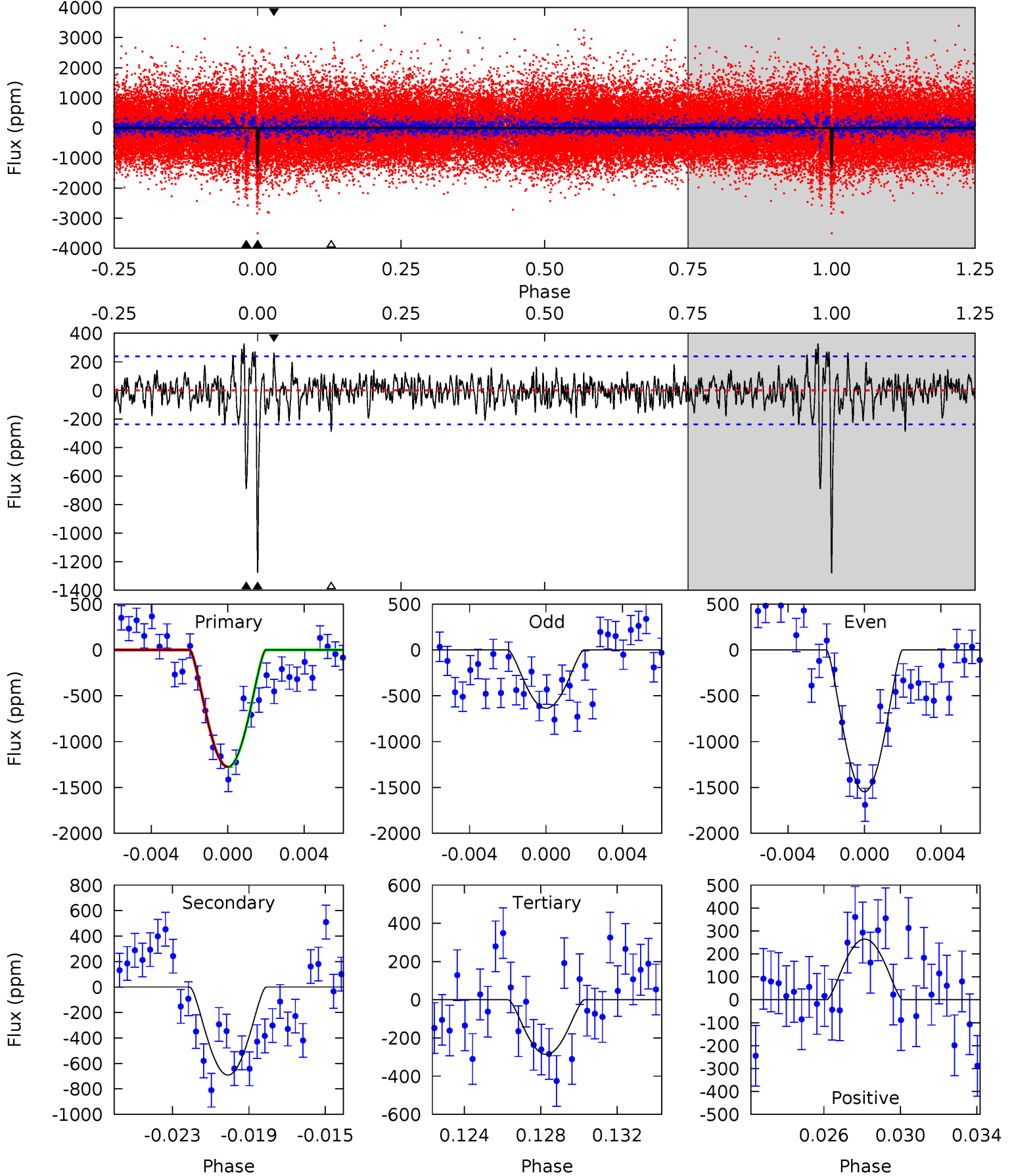
TCE 008554885-01 P=391.043849 Days  $T_0=167.062752$  (BKJD)



# DV Model-Shift Uniqueness Test

008554885-01, P = 391.034745 Days, E = 167.168459 Days

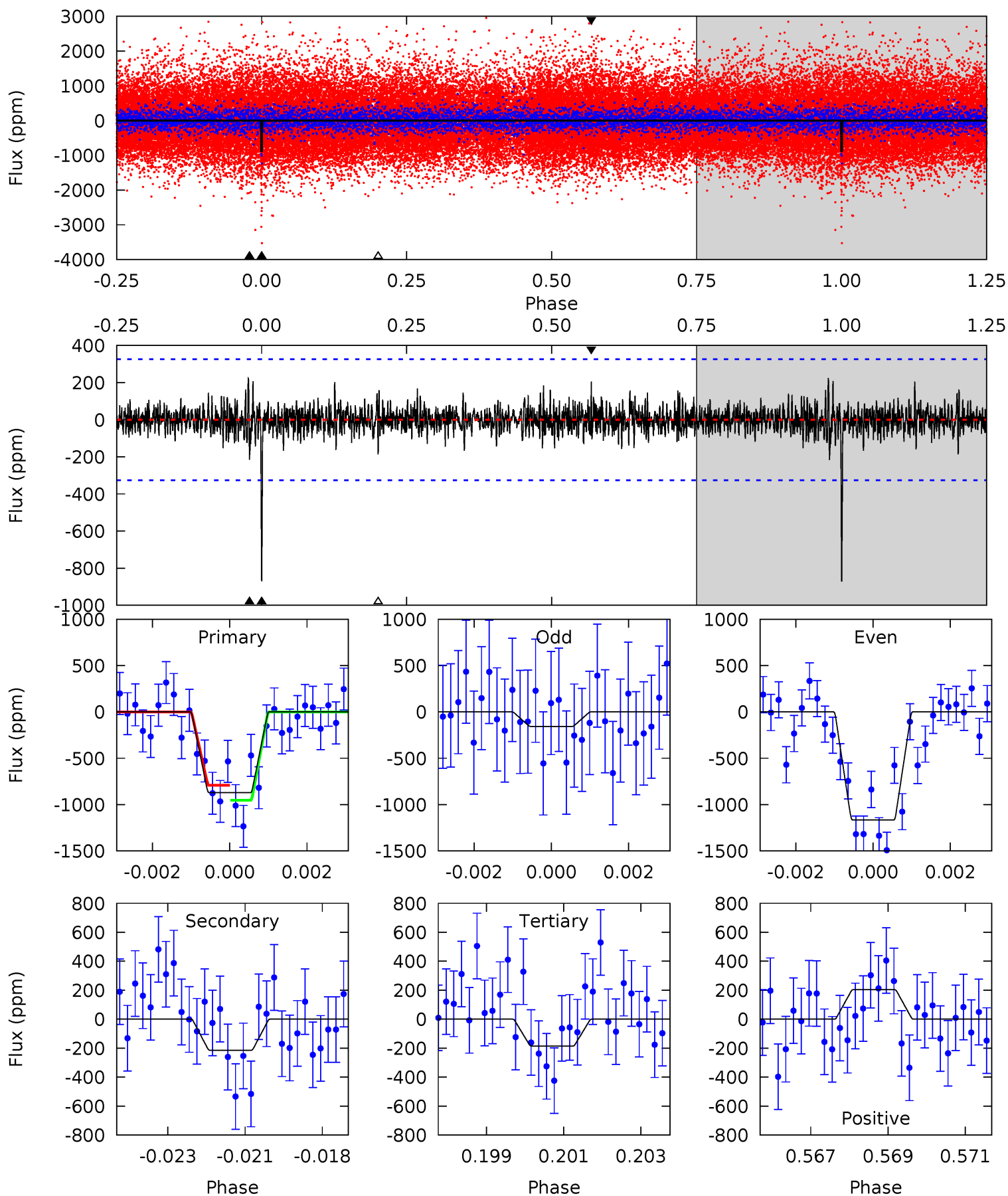
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.9	15.1	6.26	5.78	5.21	2.90	1.64	21.7	22.1	8.85	9.32	9.40	1.06	0.20	0.08



# Alt Model-Shift Uniqueness Test

008554885-01, P = 391.043849 Days, E = 167.062752 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
14.2	3.50	3.03	3.32	5.32	3.08	0.85	11.2	10.9	0.47	0.18	7.76	0.99	0.20	1.30



### Stellar Parameters For KIC 008554885

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5580^{+183}_{-183}$	$4.538^{+0.033}_{-0.187}$	$0.140^{+0.200}_{-0.300}$	$0.886^{+0.237}_{-0.079}$	$0.989^{+0.085}_{-0.113}$	$2.003^{+0.362}_{-0.973}$
	+3%/-3%	+1%/-4%	+143%/-214%	+27%/-9%	+9%/-11%	+18%/-49%
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 008554885-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-691 \pm 46$	$15.64^{+15.02}_{-10.95}$	$326^{+20}_{-14}$	$2986^{+1424}_{-478}$	$1719^{+16764}_{-1289}$
Alt.	$-214 \pm 61$	$13.69^{+14.09}_{-9.87}$	$326^{+22}_{-17}$	$2624^{+1171}_{-406}$	$607^{+7174}_{-455}$

$T_{\text{max}}$  = 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

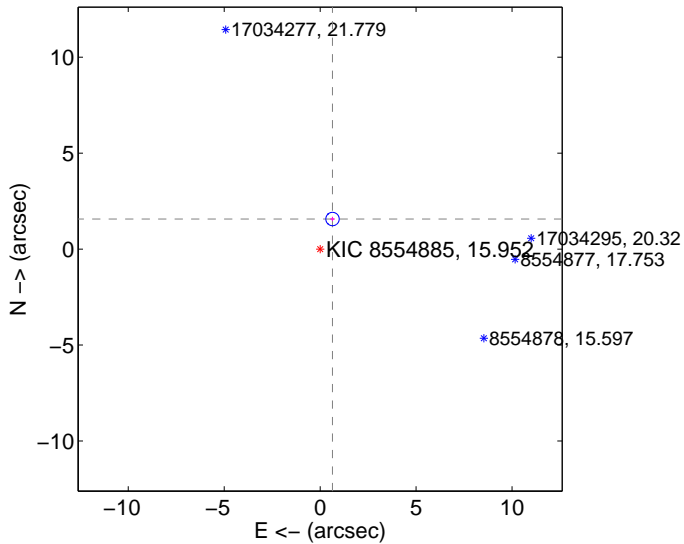
Supplemental centroid analysis for 008554885-01. Kepler magnitude: 15.95. Transit SNR 11.11

There are 0 quarters with good PRF difference image offsets

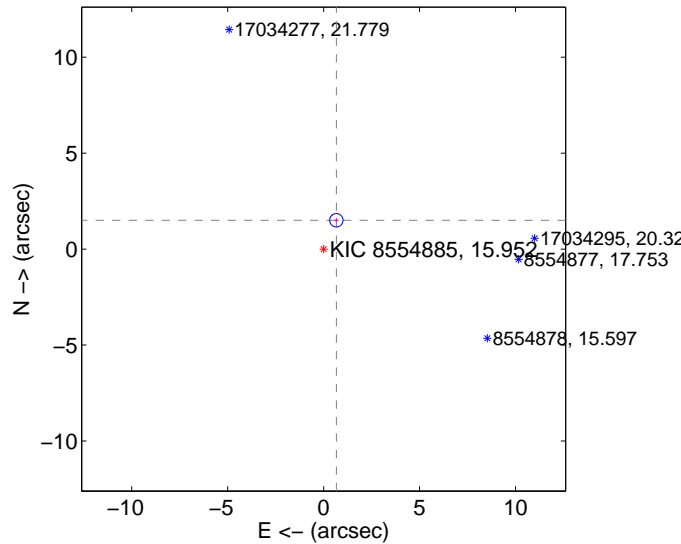
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.695 \pm 0.116$	14.59	$-0.644 \pm 0.116$	$1.567 \pm 0.116$
PRF-fit source offset from KIC position	$1.643 \pm 0.116$	14.14	$-0.663 \pm 0.116$	$1.503 \pm 0.116$
photometric centroid source offset	$5.39 \pm 1.71$	3.16	$-0.88 \pm 2.02$	$-5.32 \pm 1.70$

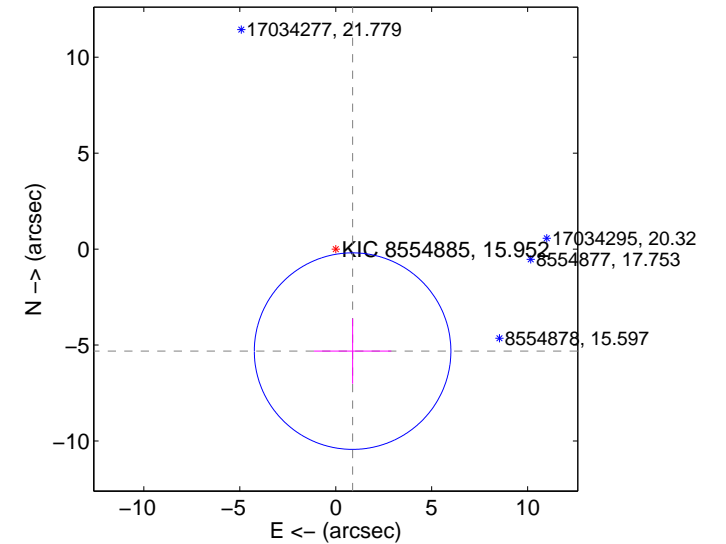
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



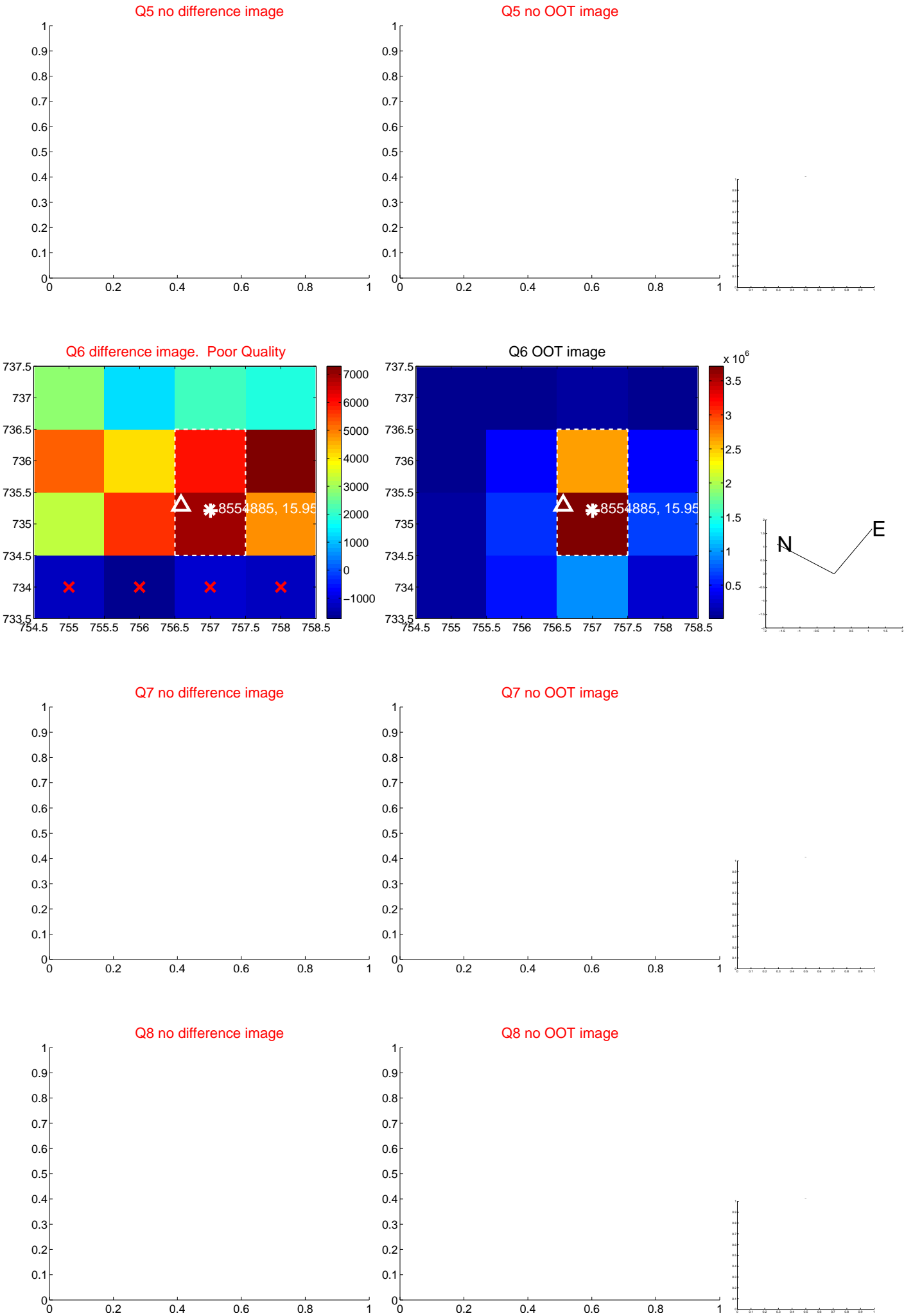
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



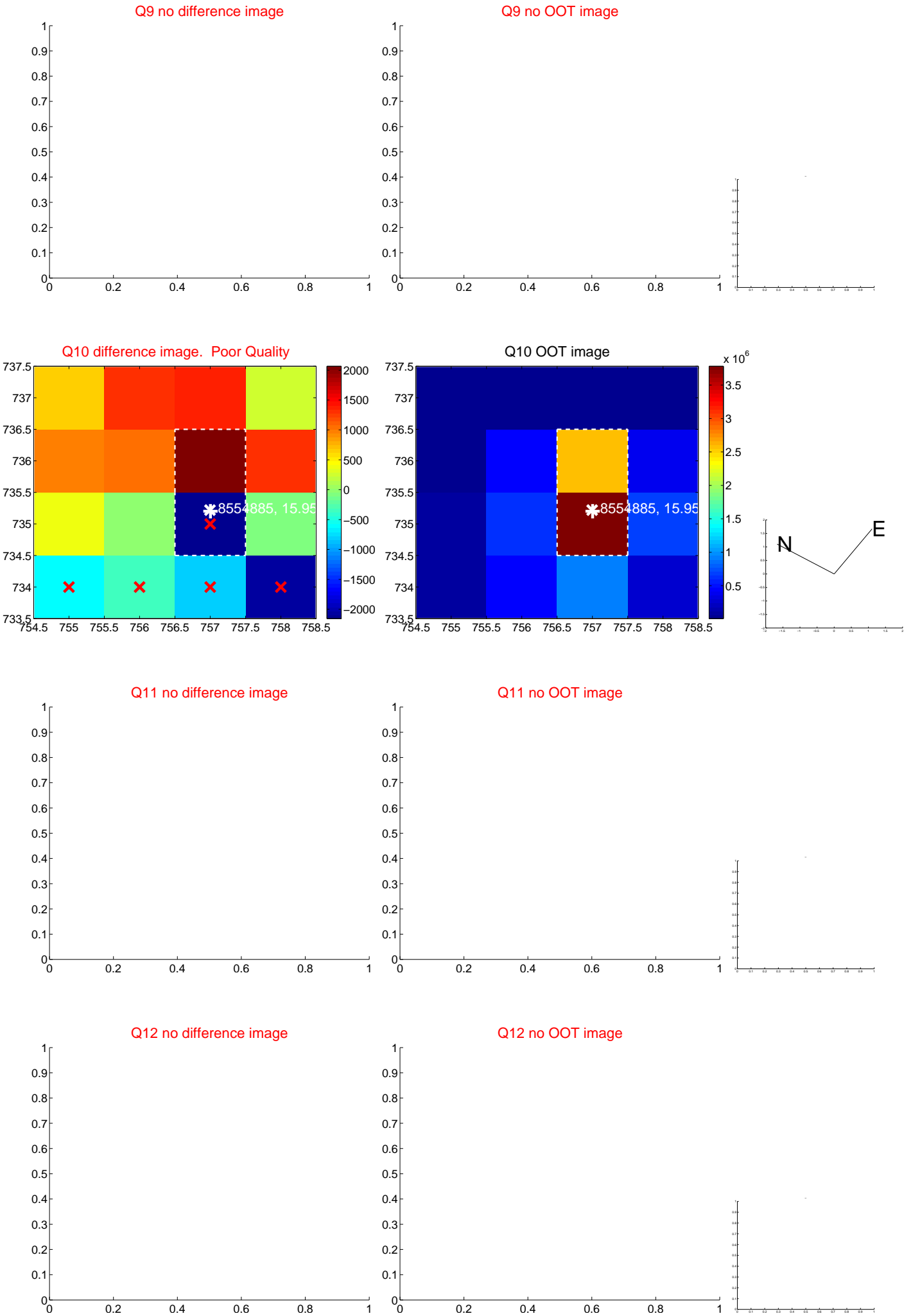
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



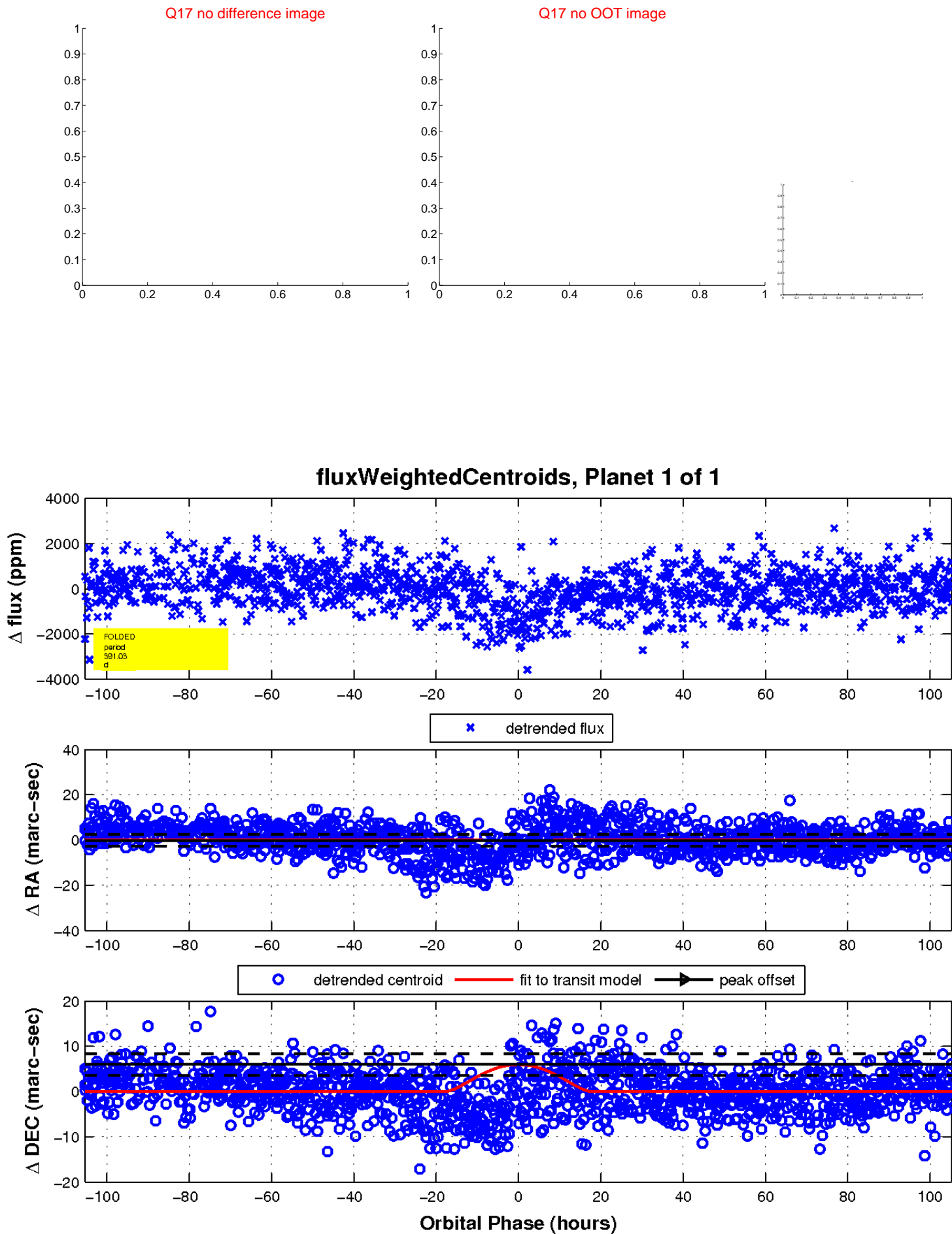
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



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



# UKIRT Image

Declination

