

# KIC 006587105

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006587105-01	OBS	2721.01	33.878844	160.212438	679.8	5.918	24.4	25.6	1.07	5533	3.31	24.04

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006587105-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

**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.

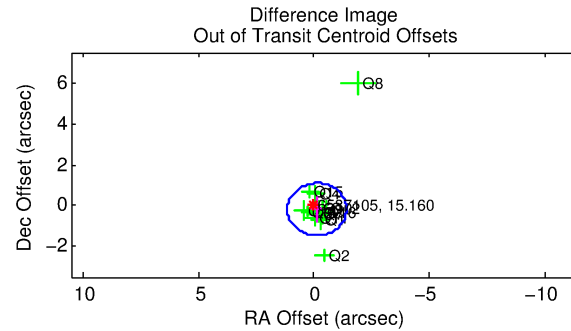
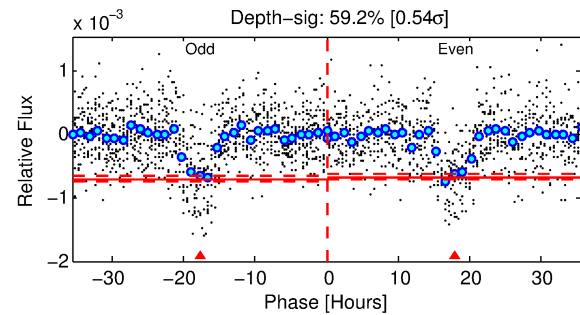
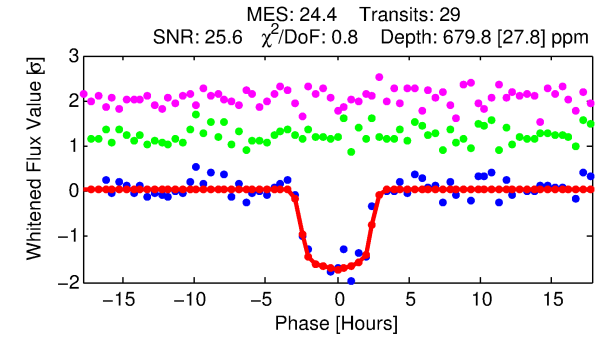
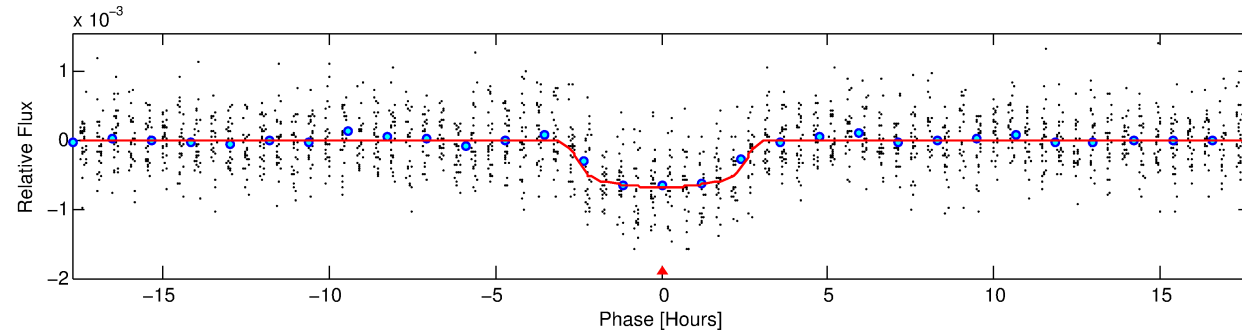
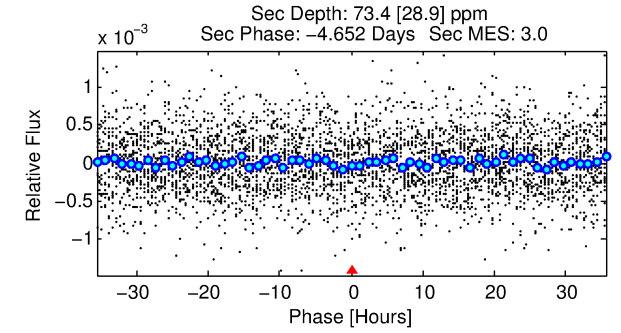
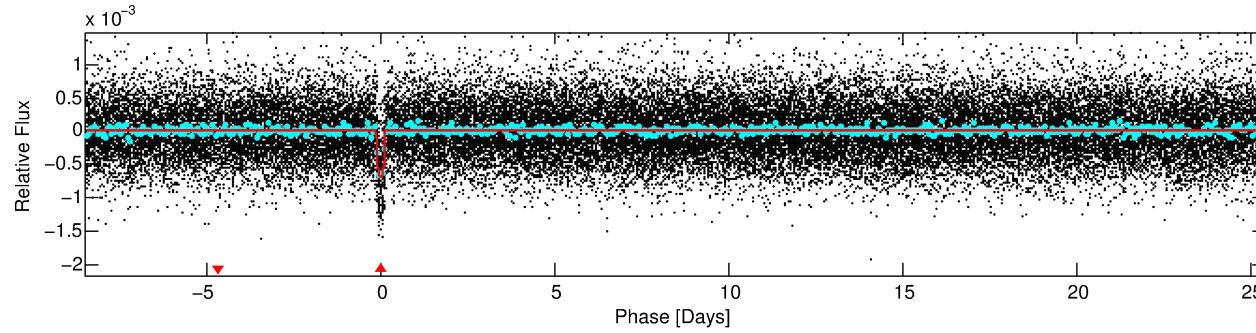
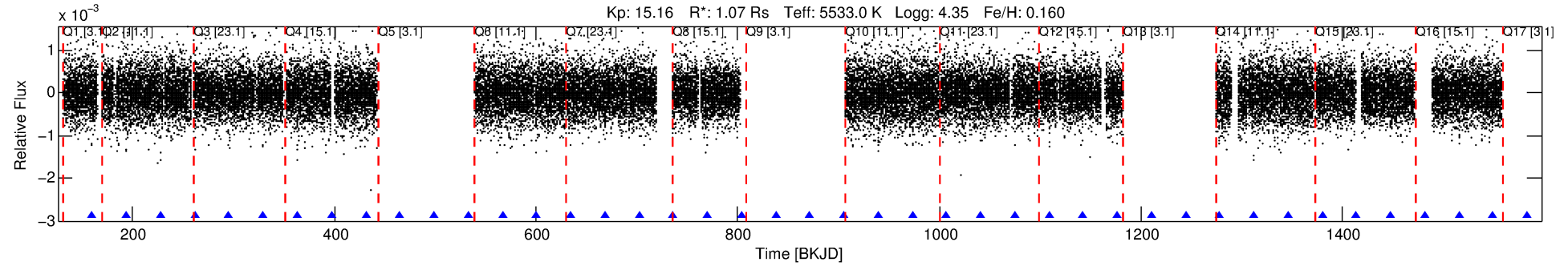
## Ephemeris Match Information For 006587105-01

No Significant Match Found

# DV One-Page Summary

KIC: 6587105 Candidate: 1 of 1 Period: 33.879 d

KOI: K02721.01 Corr: 0.988



## DV Fit Results:

Period = 33.87884 [0.00020] d  
Epoch = 160.2124 [0.0047] BKJD  
Rp/R\* = 0.0283 [0.0024]  
a/R\* = 22.75 [7.38]  
b = 0.89 [0.08]  
Seff = 24.04 [5.32]  
Teq = 565 [31] K  
Rp = 3.31 [0.54] Re  
a = 0.2003 [0.0269] AU  
Ag = 147.63 [70.70] [2.07σ]  
Teffp = 3043 [328] K [7.52σ]

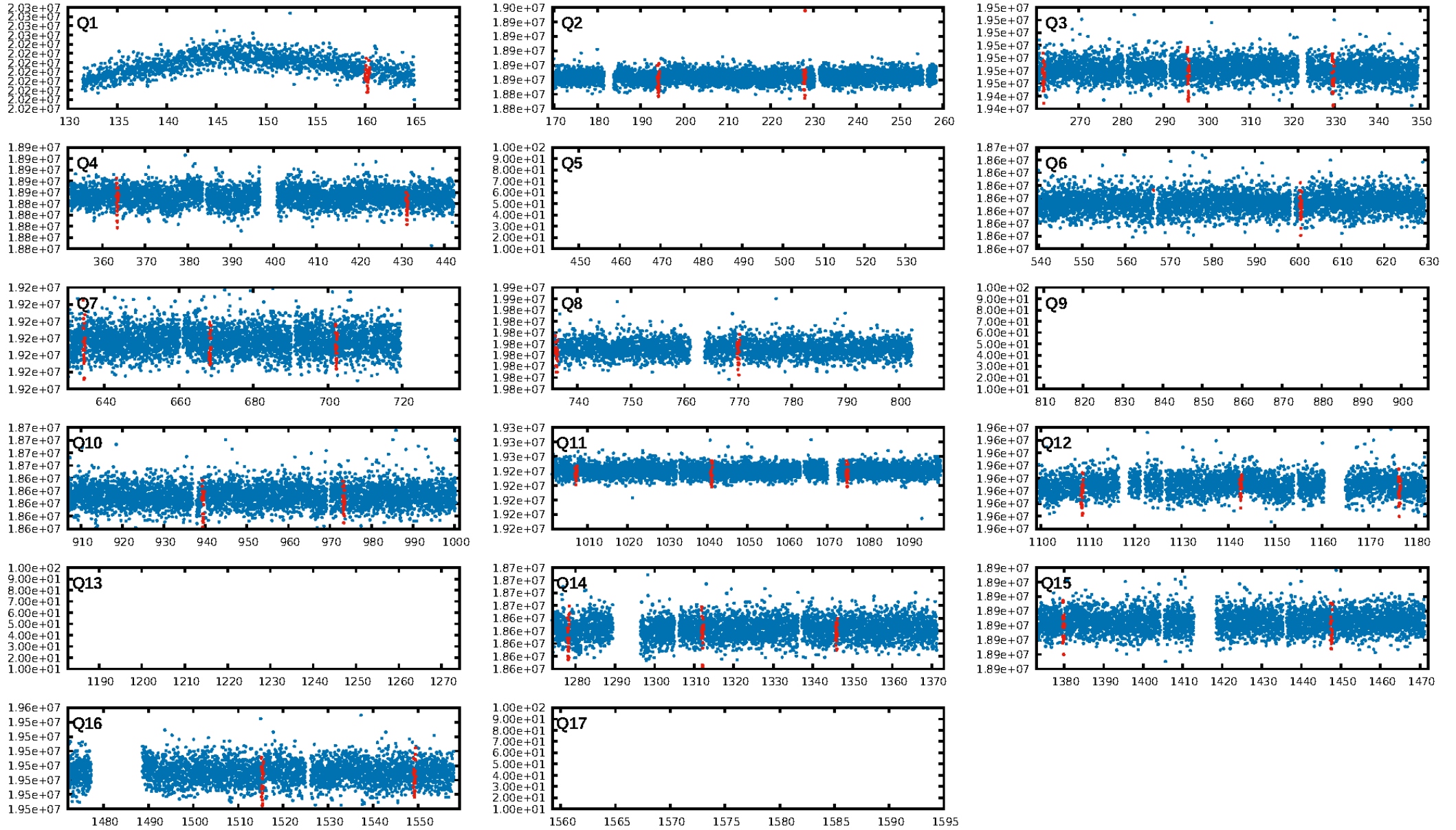
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 91.9%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 5.15e-130  
RollingBand-fgt: 1.00 [28/28]  
GhostDiagnostic-chr: 4  
Centroid-sig: 34.9%  
Centroid-so: 0.492 arcsec [0.88σ]  
OotOffset-rm: 0.227 arcsec [0.53σ]  
KicOffset-rm: 0.424 arcsec [1.23σ]  
OotOffset-st: 3/4/4/1 [12]  
KicOffset-st: 3/4/4/1 [12]  
DiffImageQuality-fgm: 0.92 [11/12]  
DiffImageOverlap-fno: 1.00 [13/13]

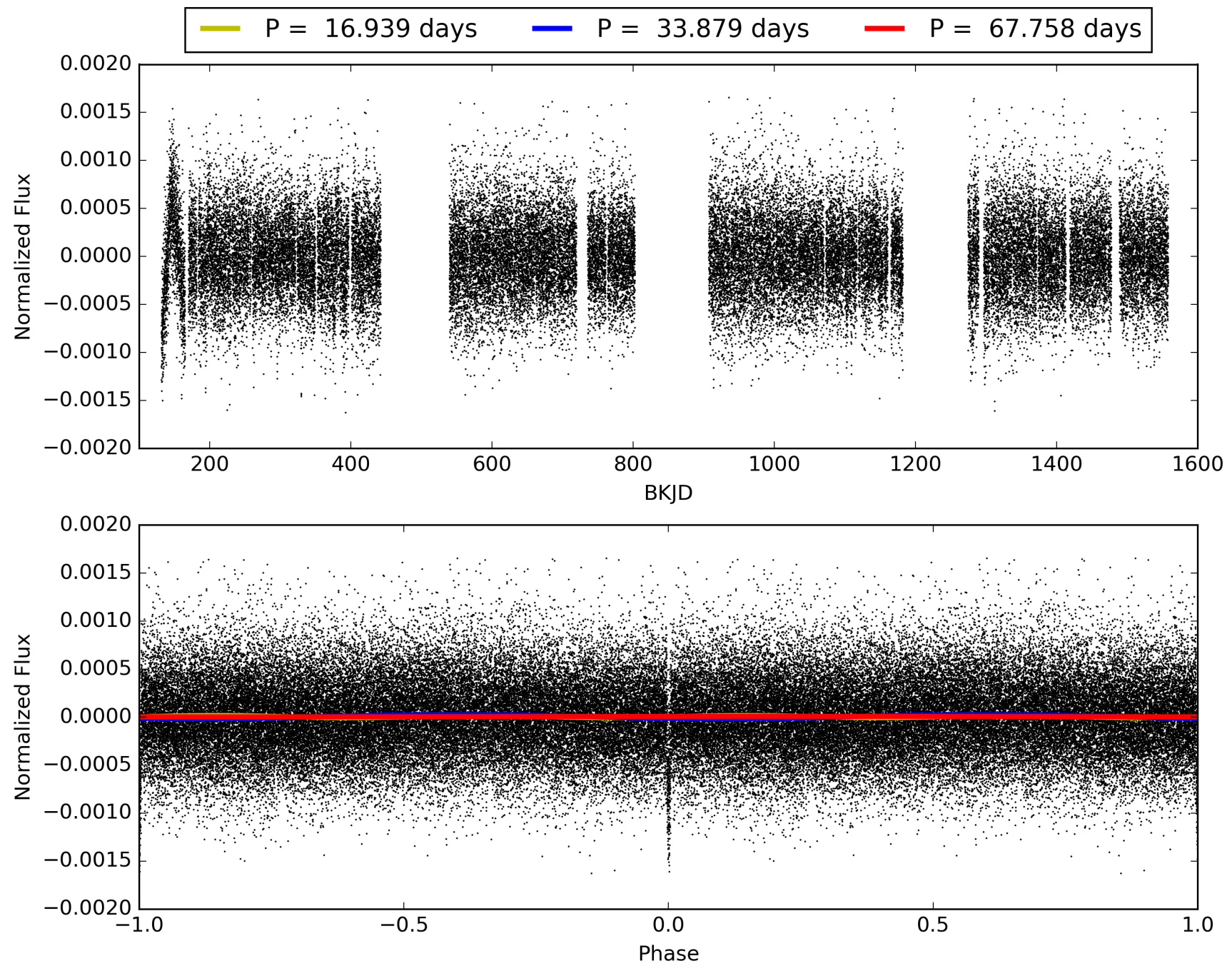
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:17:44 Z

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

# TCE 006587105-01, PDC Light Curves

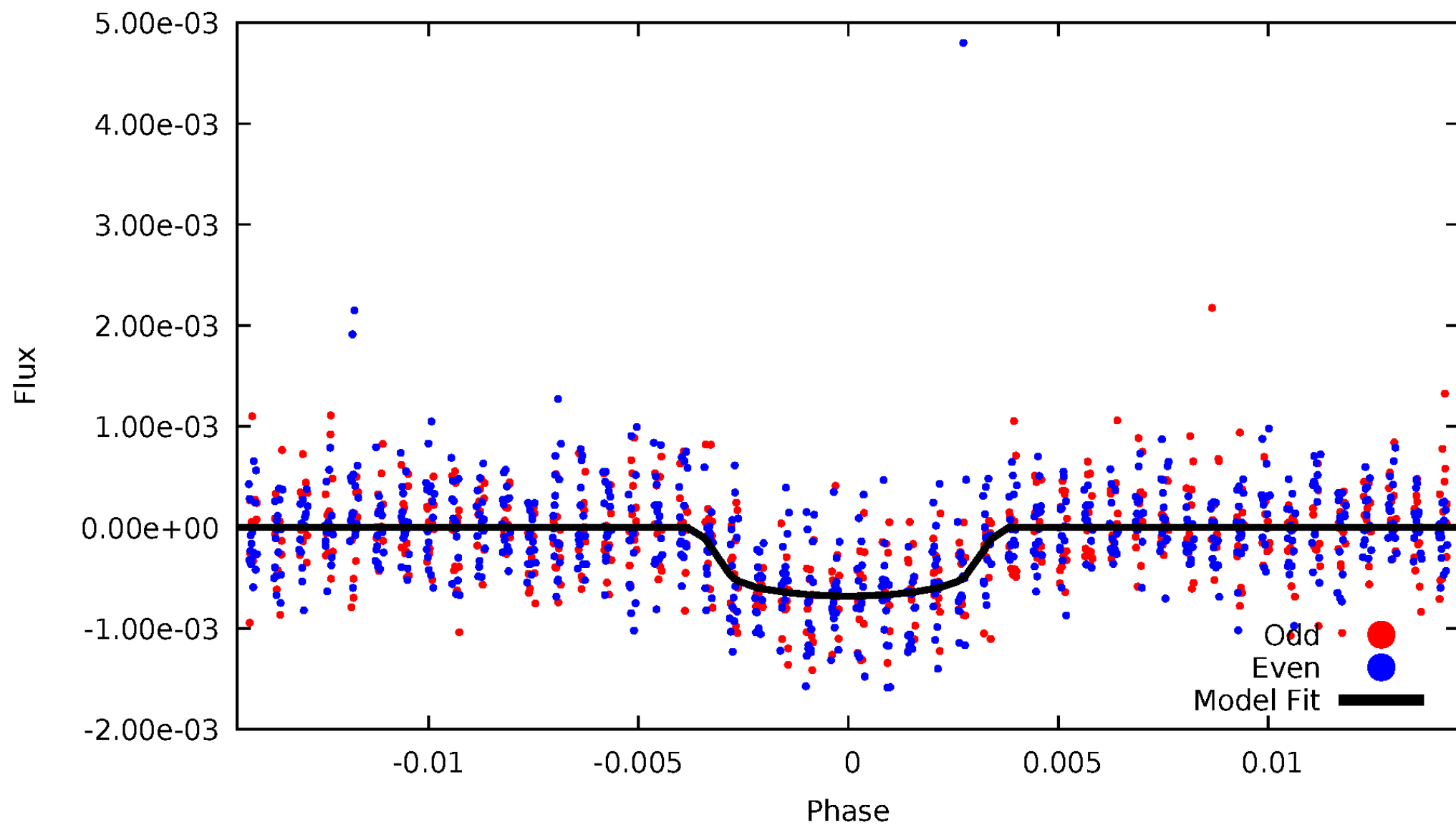


TCE 006587105-01



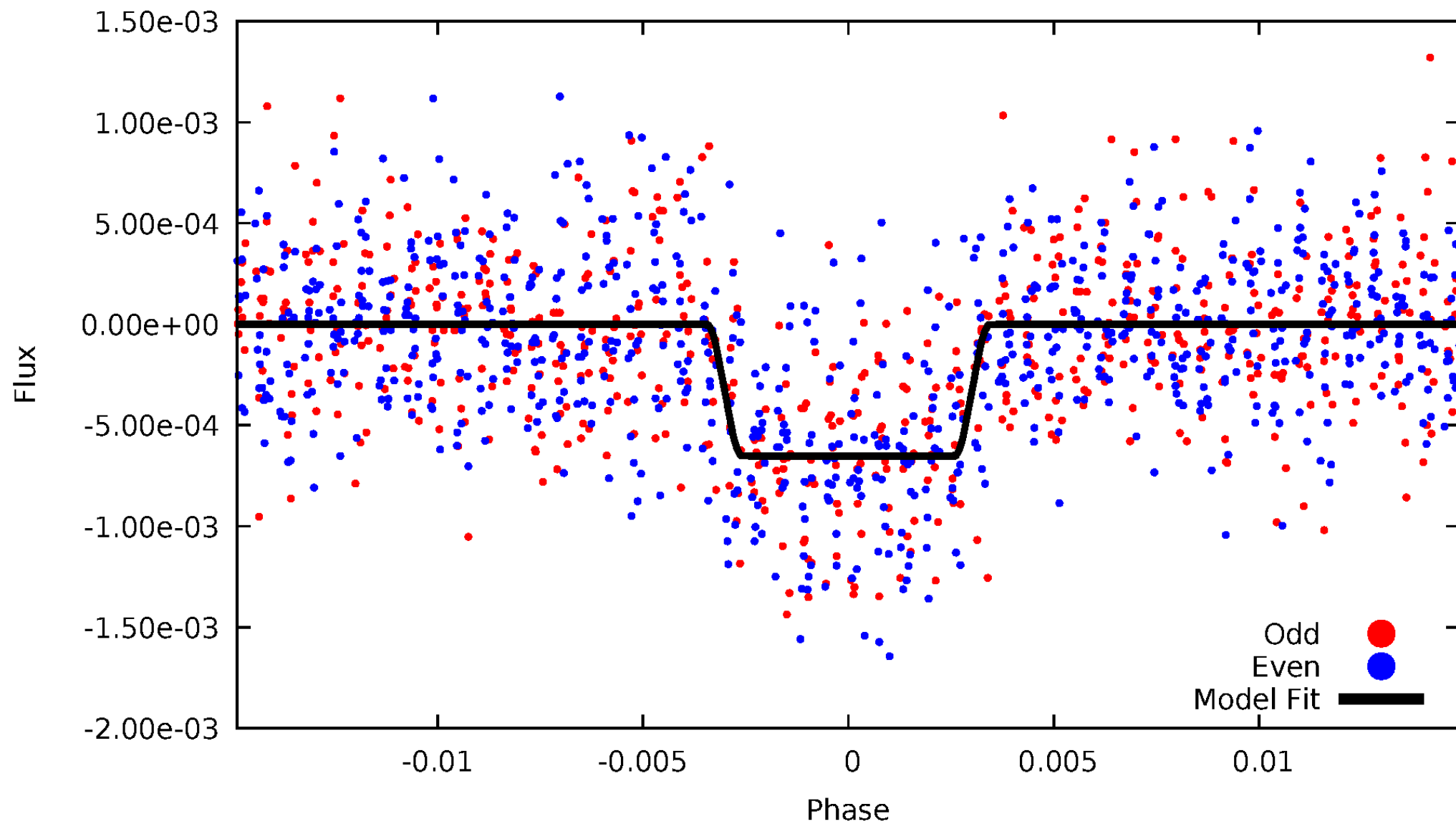
# DV Odd/Even

TCE 006587105-01



# ALT Odd/Even

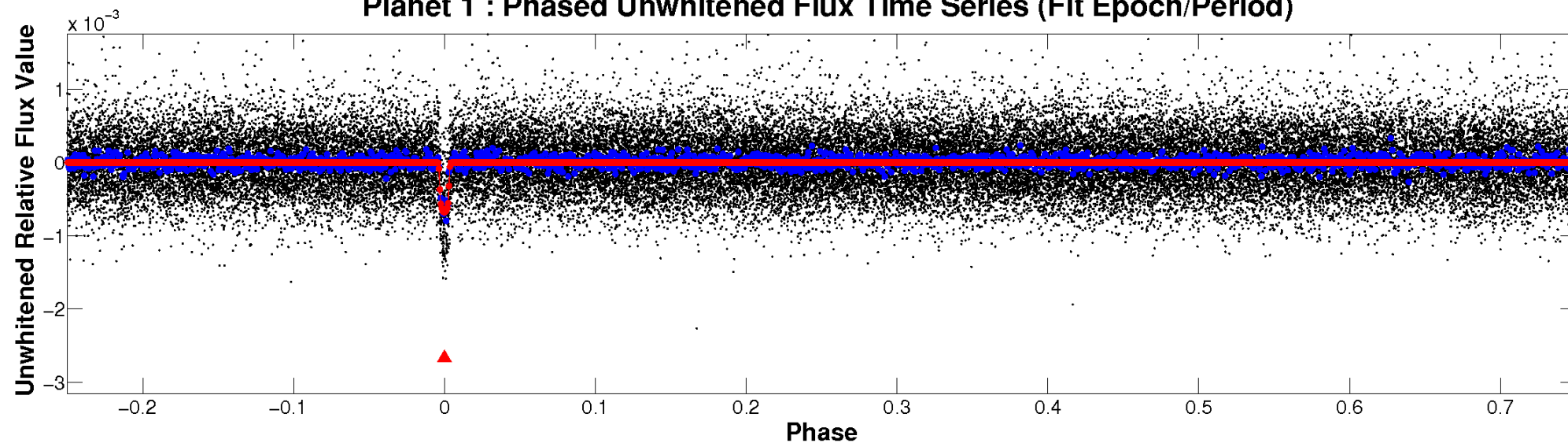
TCE 006587105-01



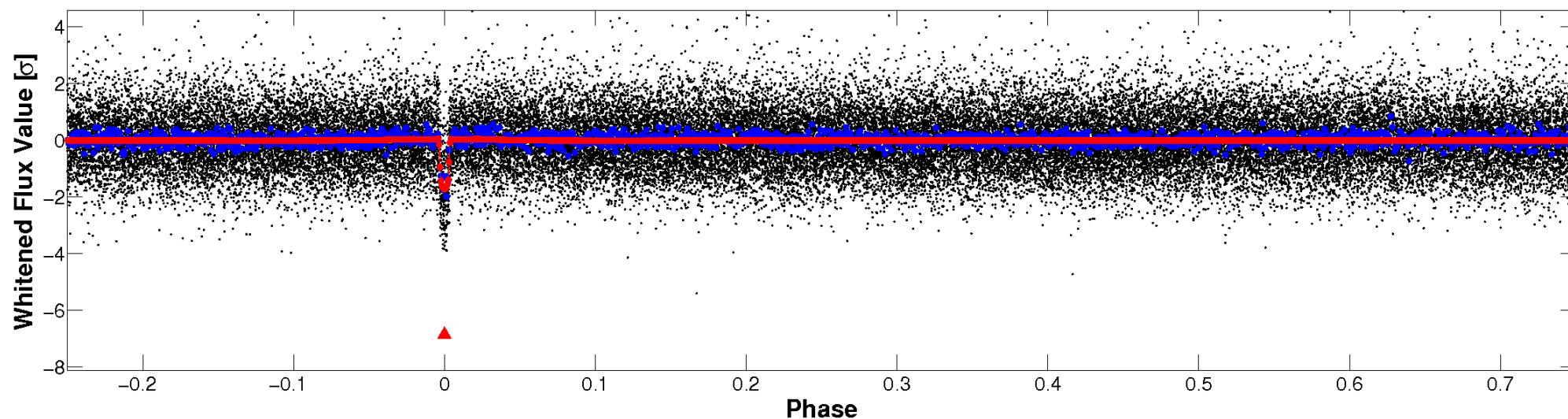


# Non-Whitened Vs. Whitened Light Curve

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

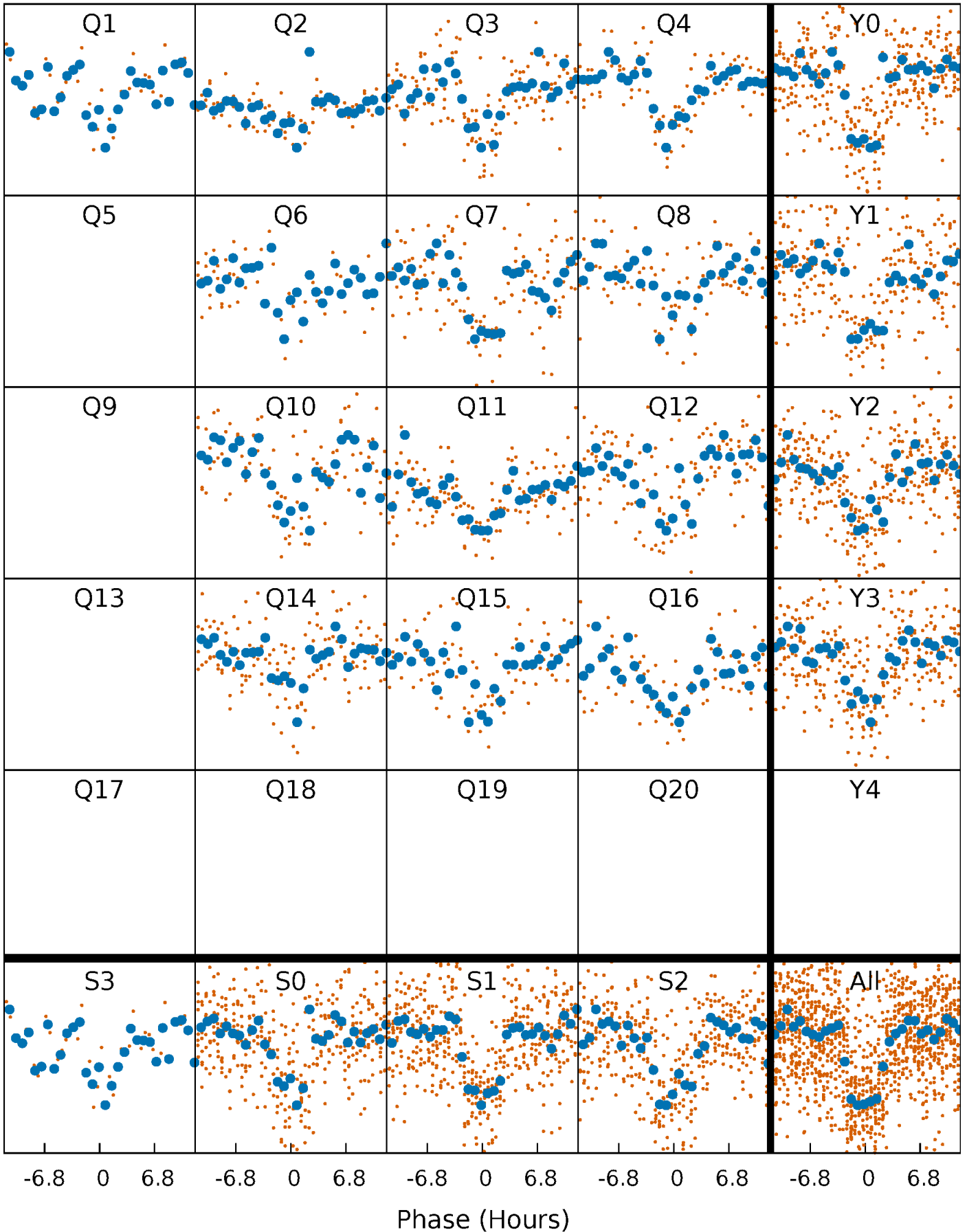


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

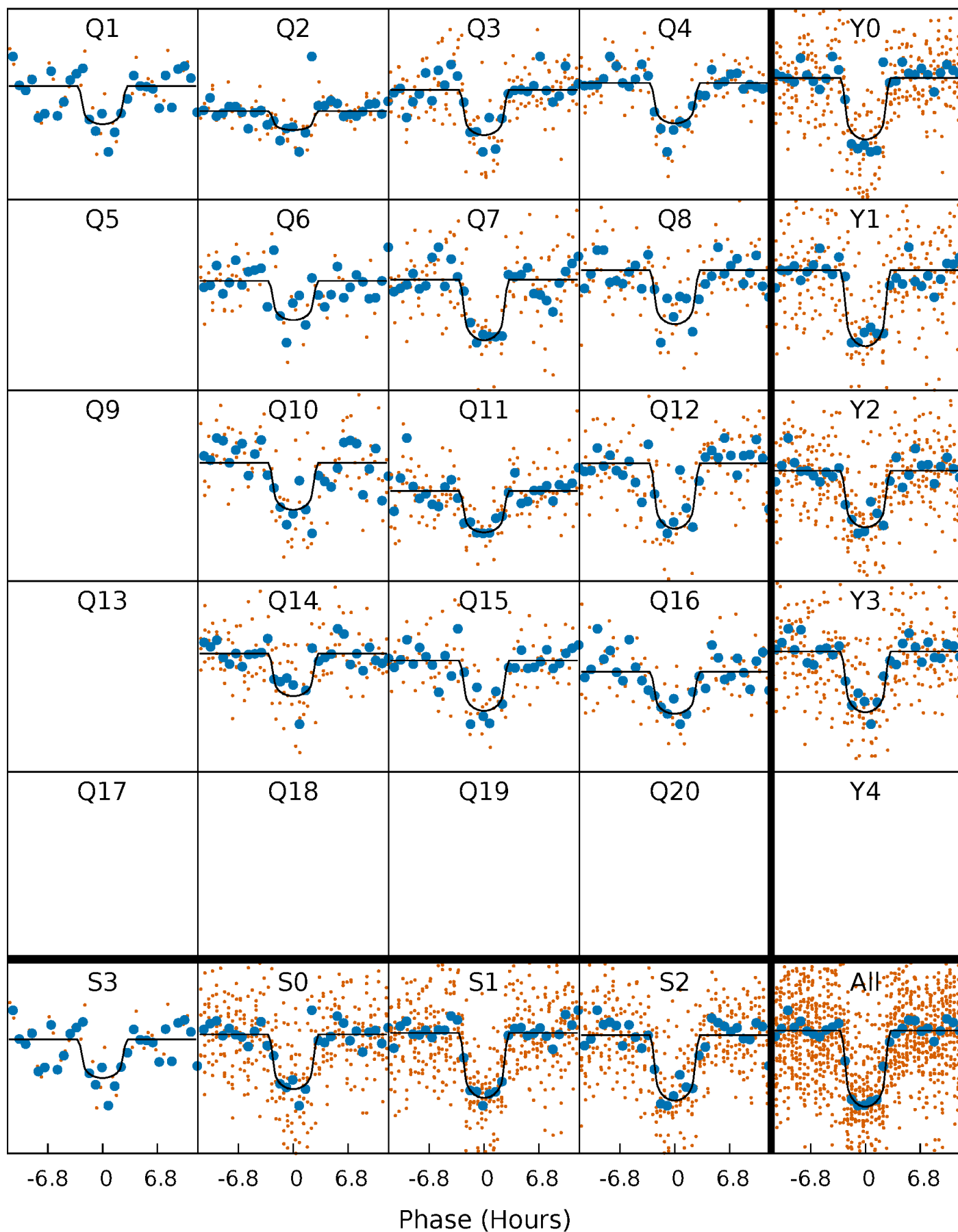
TCE 006587105-01 P= 33.878844 Days  $T_0=160.212438$  (BKJD)





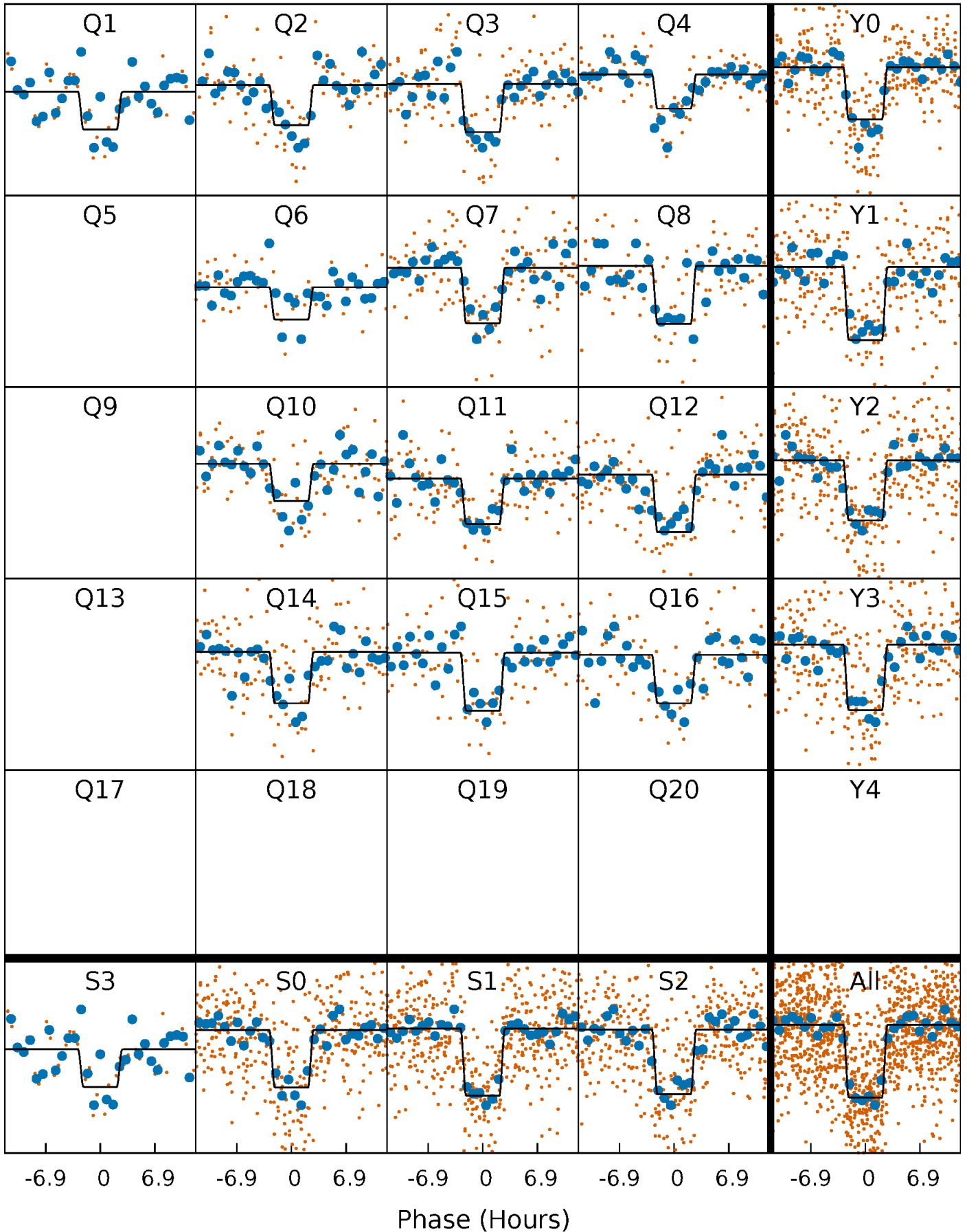
# DV Quarter-Phased Transit Curves

TCE 006587105-01 P= 33.878844 Days  $T_0=160.212438$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

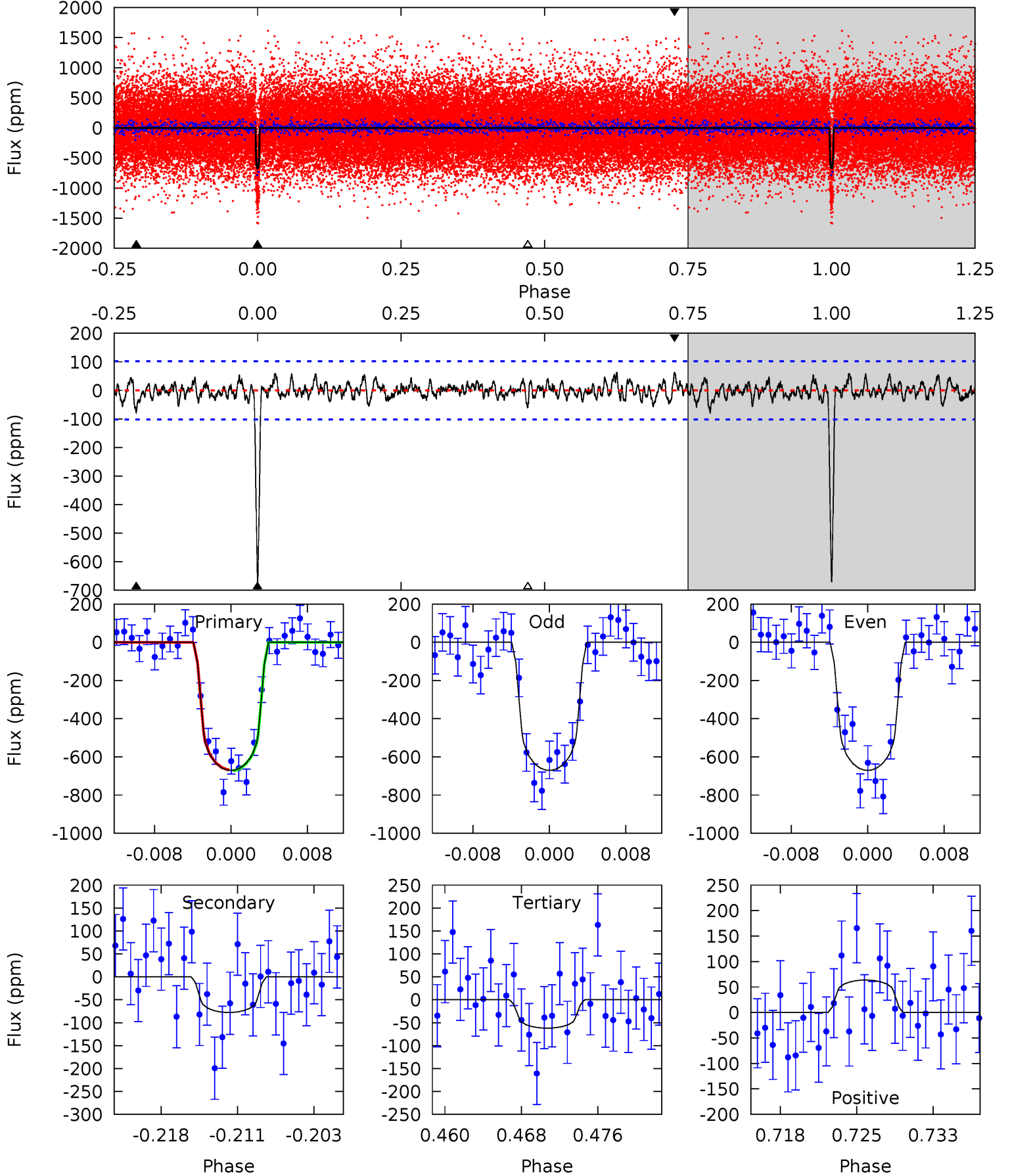
TCE 006587105-01 P= 33.878647 Days  $T_0=160.218828$  (BKJD)



# DV Model-Shift Uniqueness Test

006587105-01,  $P = 33.878844$  Days,  $E = 126.333594$  Days

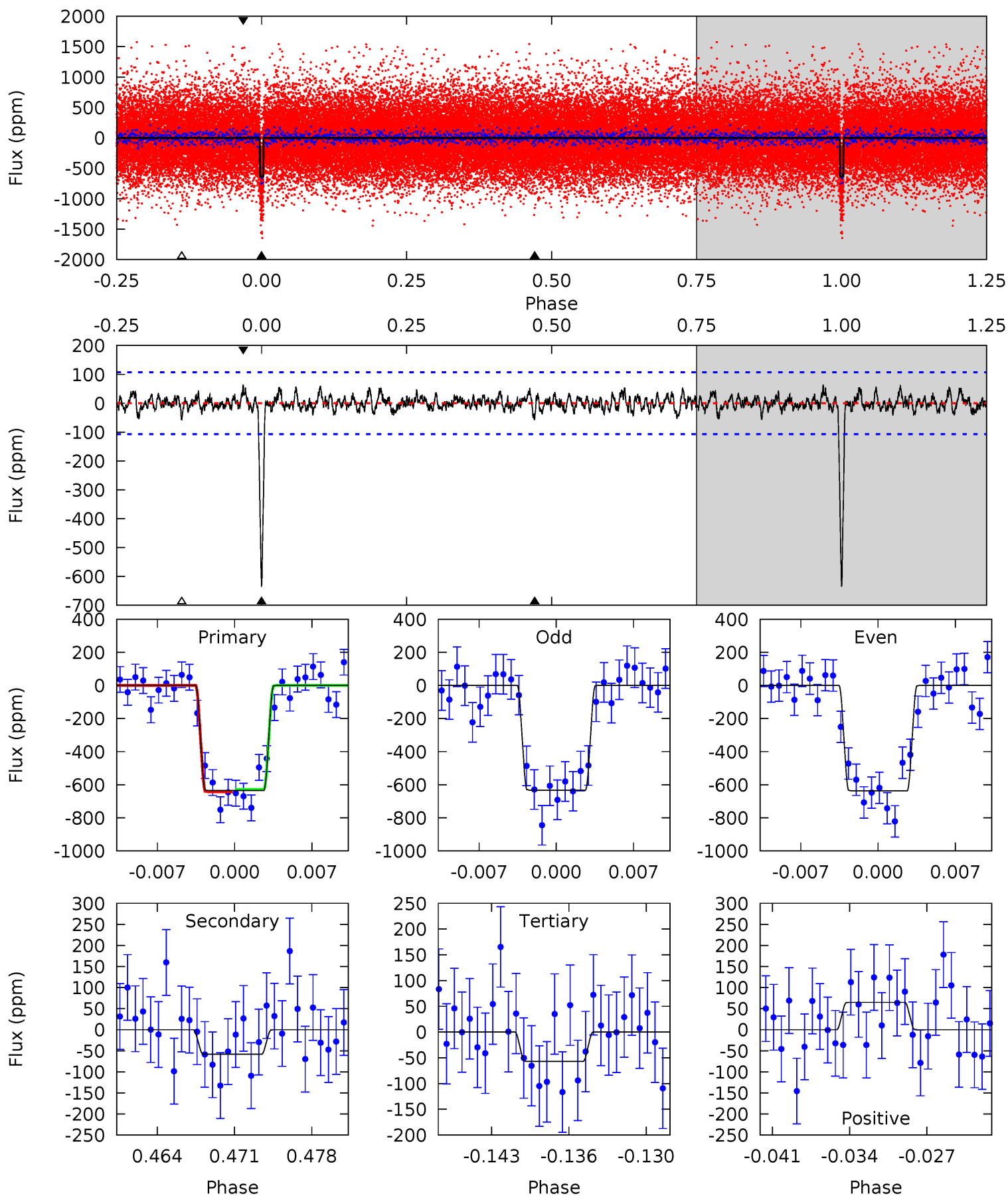
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.4	3.88	3.09	3.18	5.07	2.66	1.04	30.4	30.3	0.79	0.70	0.00	1.03	0.09	0.13



# Alt Model-Shift Uniqueness Test

006587105-01, P = 33.878647 Days, E = 126.340181 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
30.2	2.78	2.71	3.08	5.10	2.71	0.90	27.5	27.1	0.07	-0.30	0.10	1.09	0.09	0.34



### Stellar Parameters For KIC 006587105

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5533^{+74}_{-74}$	$4.348^{+0.126}_{-0.103}$	$0.160^{+0.150}_{-0.150}$	$1.072^{+0.150}_{-0.150}$	$0.933^{+0.062}_{-0.048}$	$1.067^{+0.597}_{-0.325}$
	+1%/-1%	+3%/-2%	+94%/-94%	+14%/-14%	+7%/-5%	+56%/-30%
Source	SPE90	SPE90	SPE90	DSEP		

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

### Secondary Eclipse Parameters for KIC 006587105-01 / KOI 2721.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-78 \pm 20$	$3.33^{+0.42}_{-0.42}$	$788^{+32}_{-36}$	$3540^{+166}_{-185}$	$153^{+66}_{-46}$
Alt.	$-58 \pm 21$	$2.98^{+0.36}_{-0.35}$	$789^{+29}_{-30}$	$3490^{+219}_{-245}$	$144^{+65}_{-60}$

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

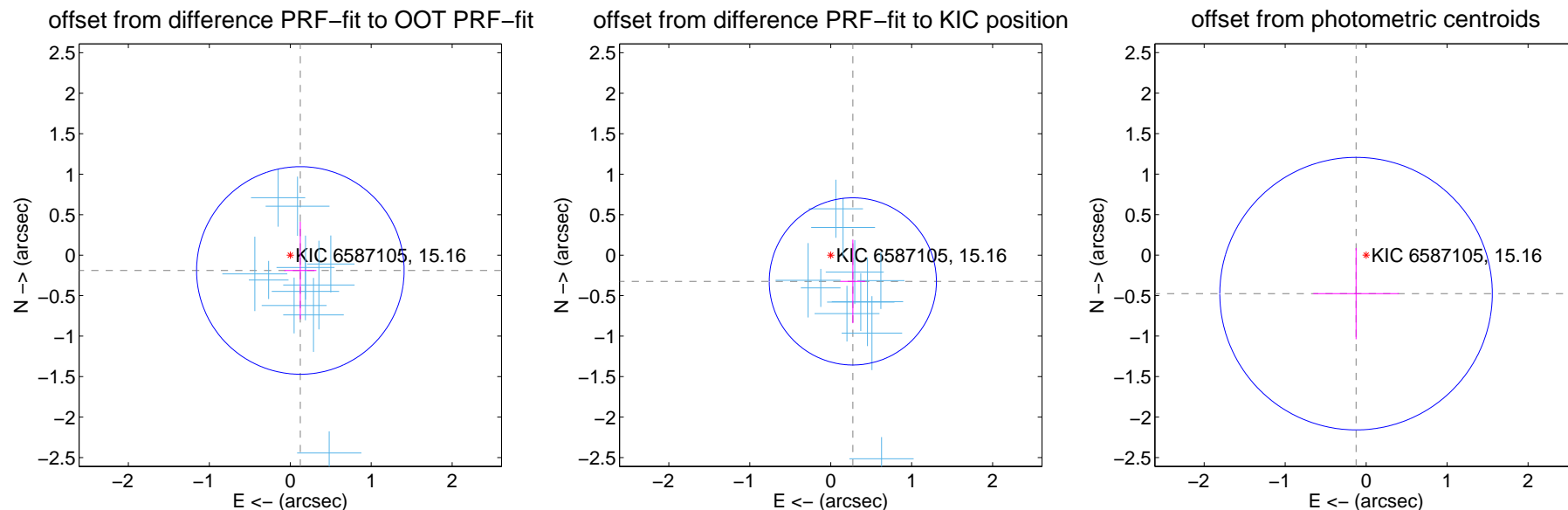
## DV Centroid Data

Supplemental centroid analysis for 006587105-01. Kepler magnitude: 15.16. Transit SNR 25.59

There are 11 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

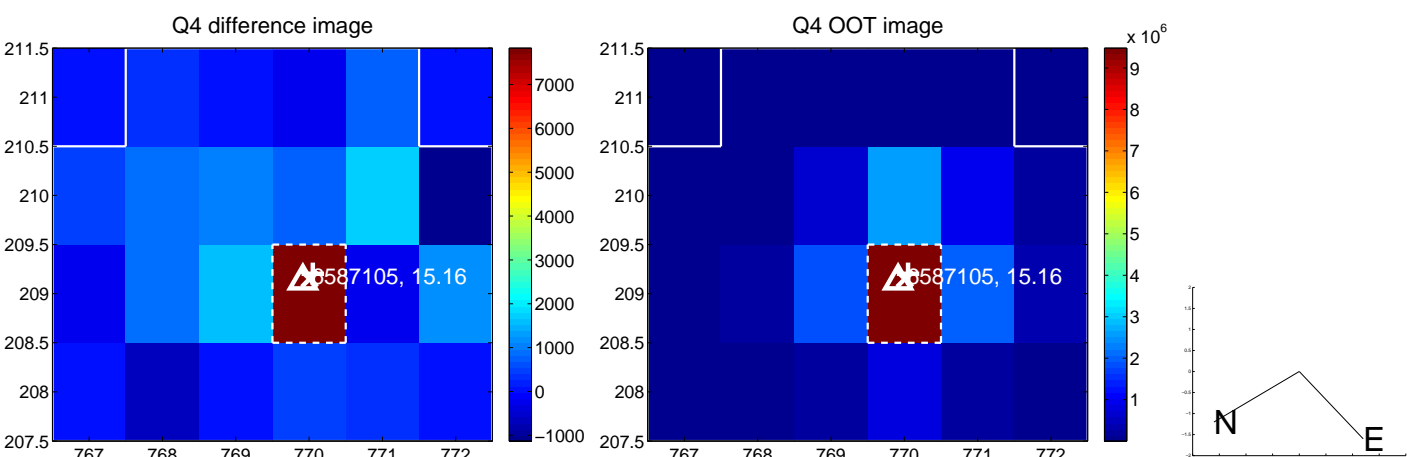
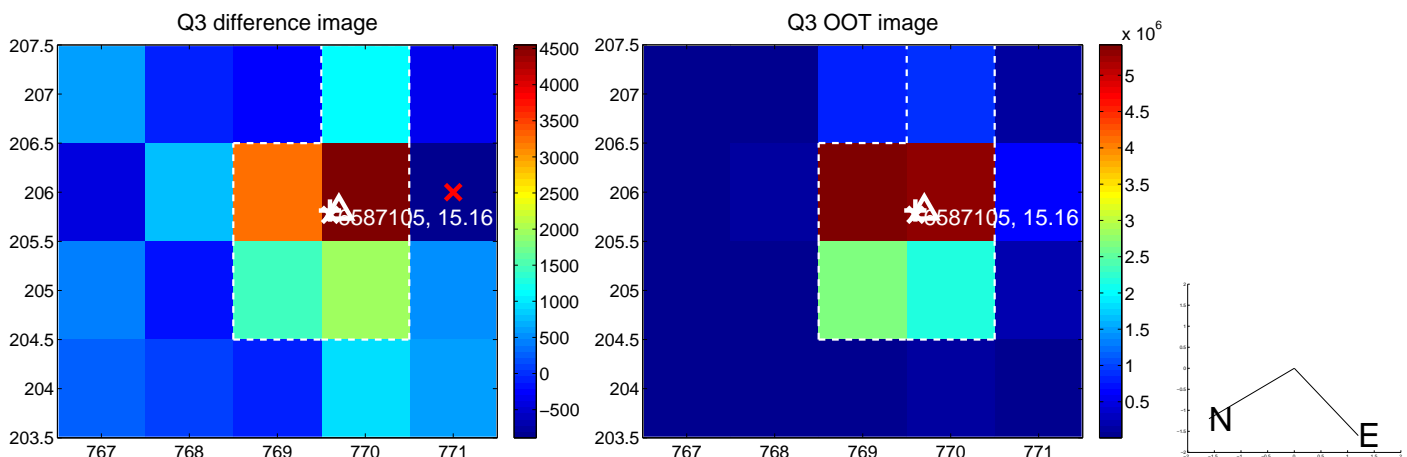
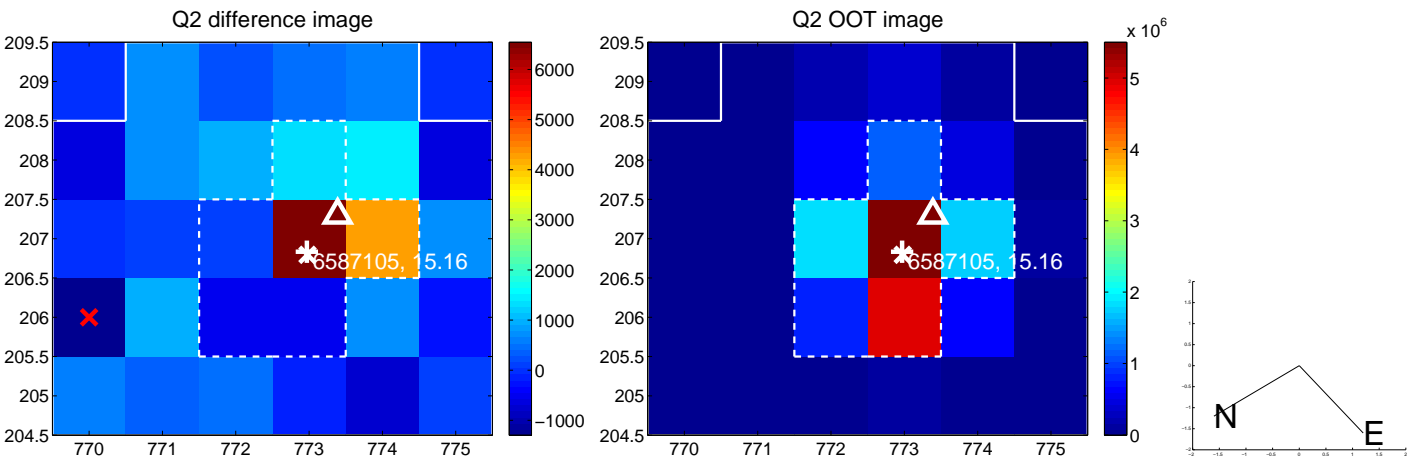
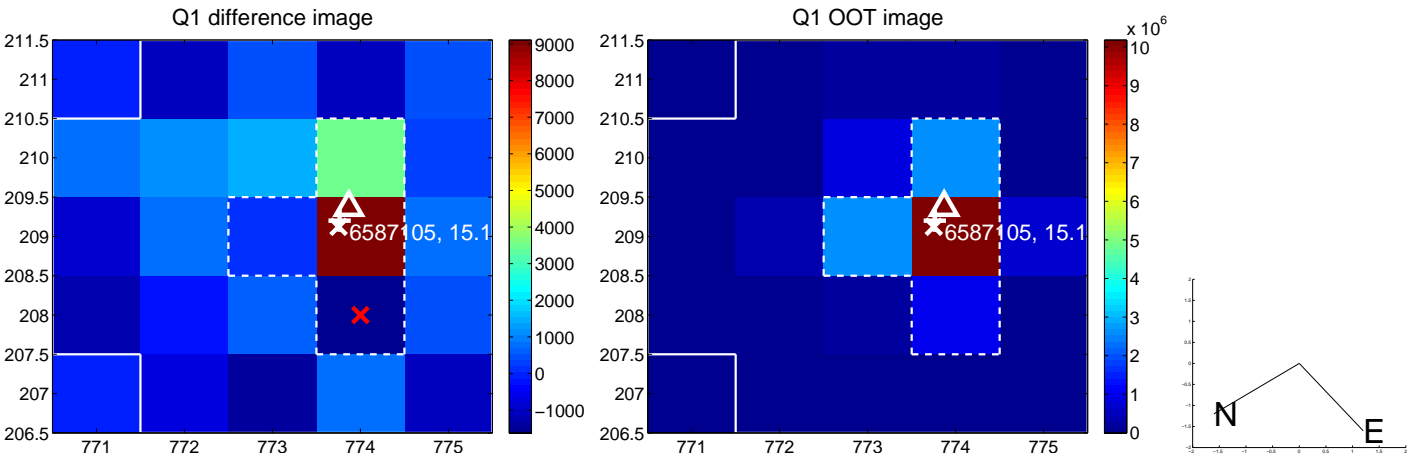
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.227 \pm 0.427$	0.53	$-0.125 \pm 0.198$	$-0.189 \pm 0.601$
PRF-fit source offset from KIC position	$0.424 \pm 0.344$	1.23	$-0.273 \pm 0.155$	$-0.324 \pm 0.516$
photometric centroid source offset	$0.49 \pm 0.56$	0.88	$0.12 \pm 0.53$	$-0.48 \pm 0.56$



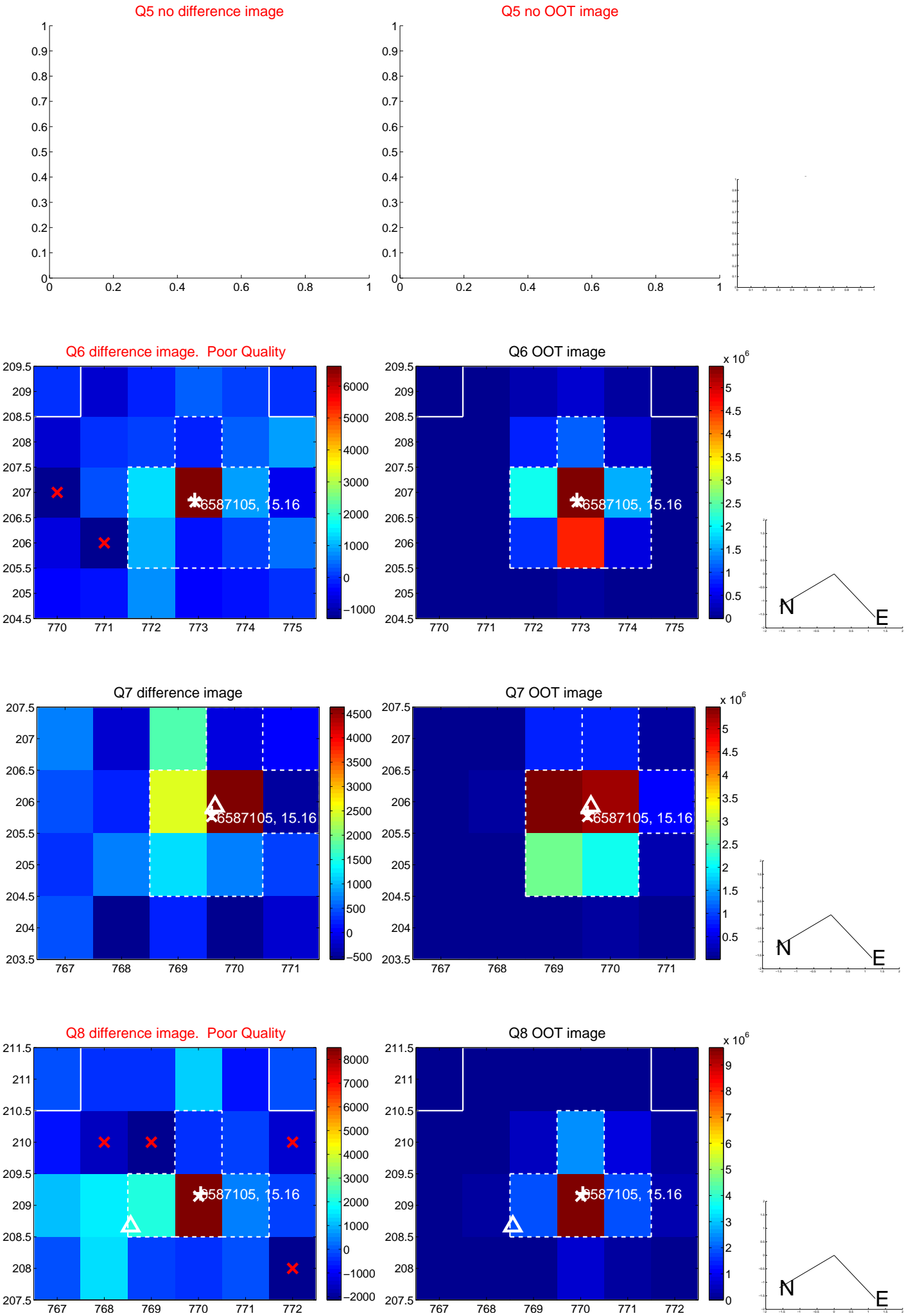
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



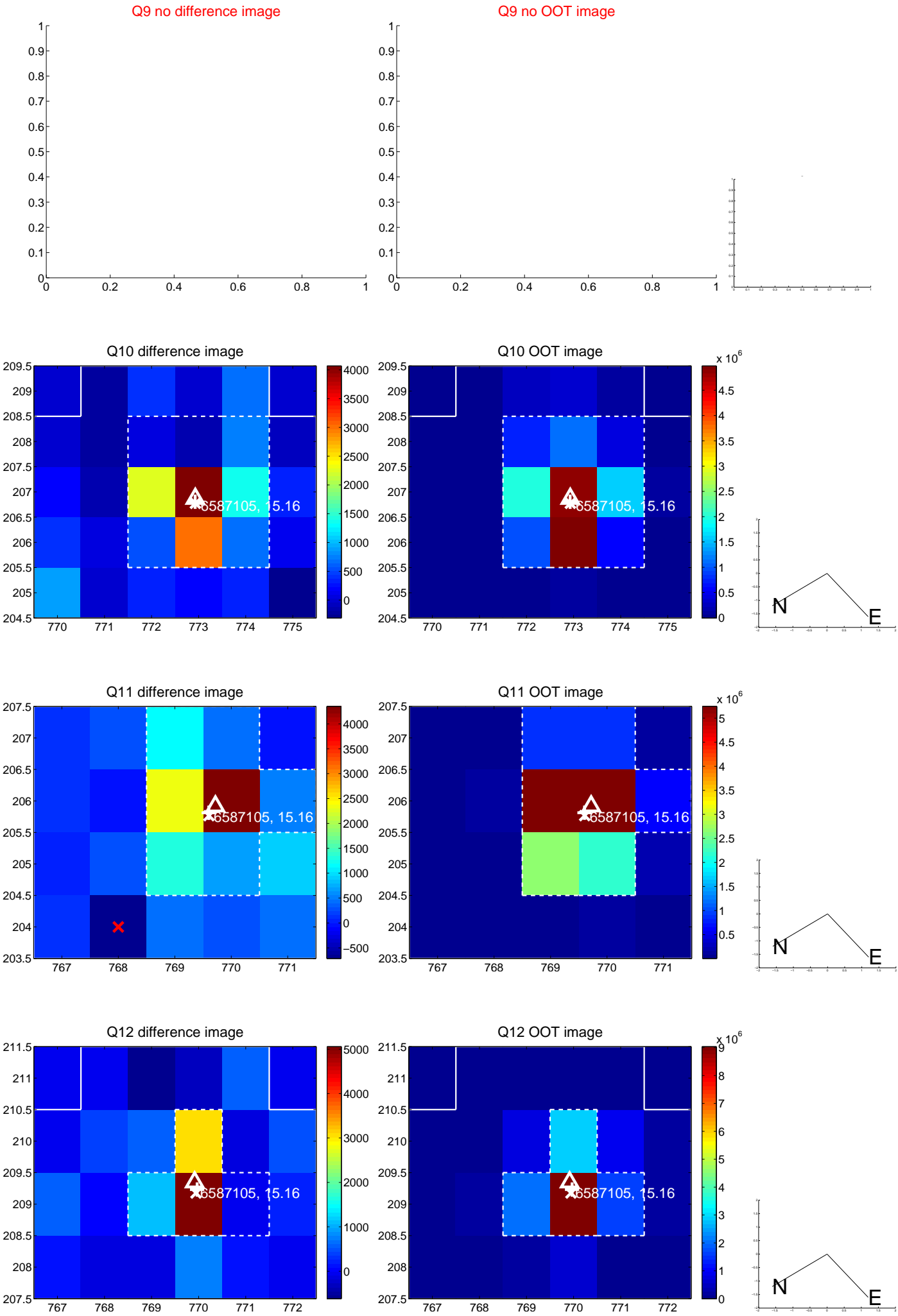
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



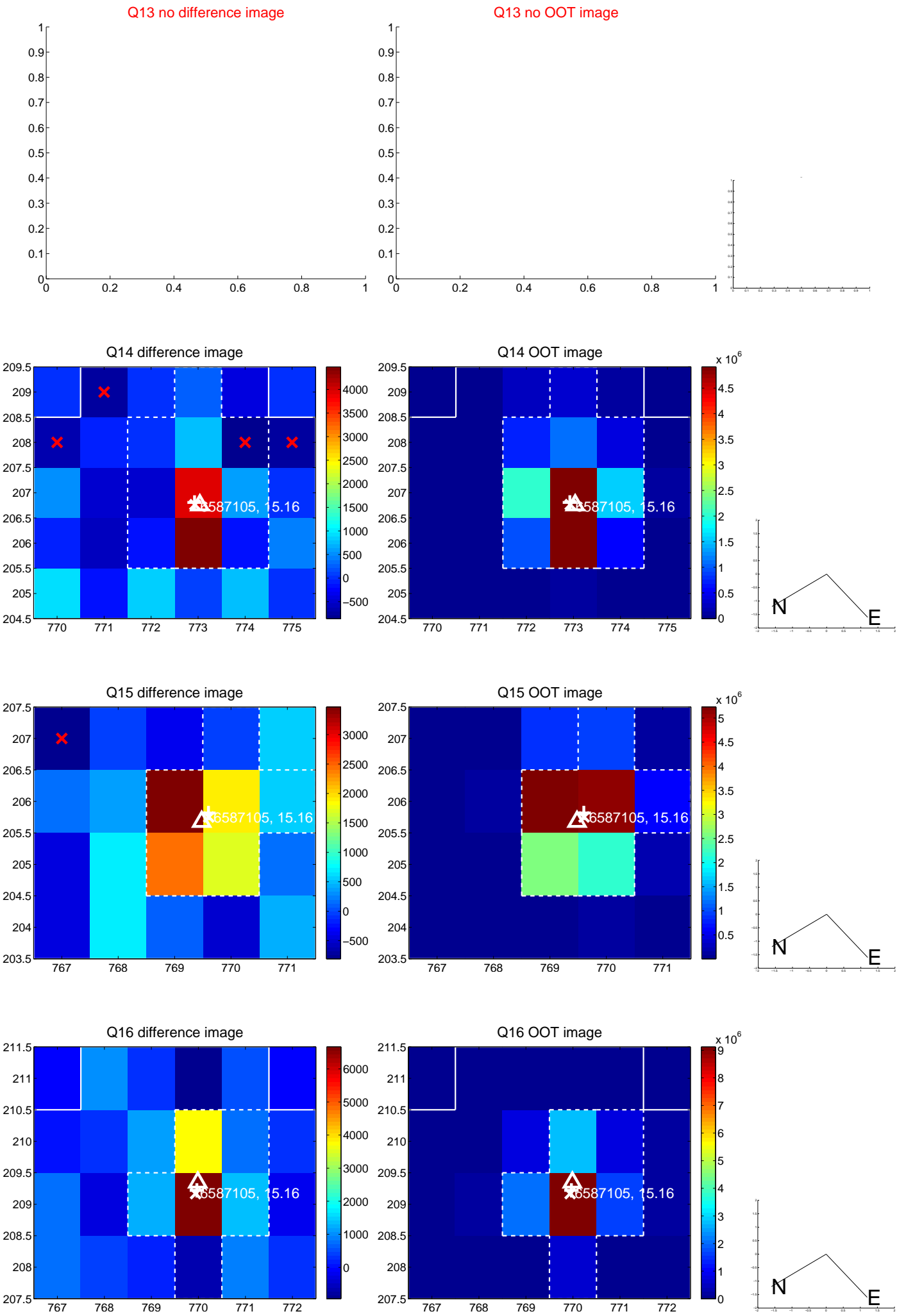
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



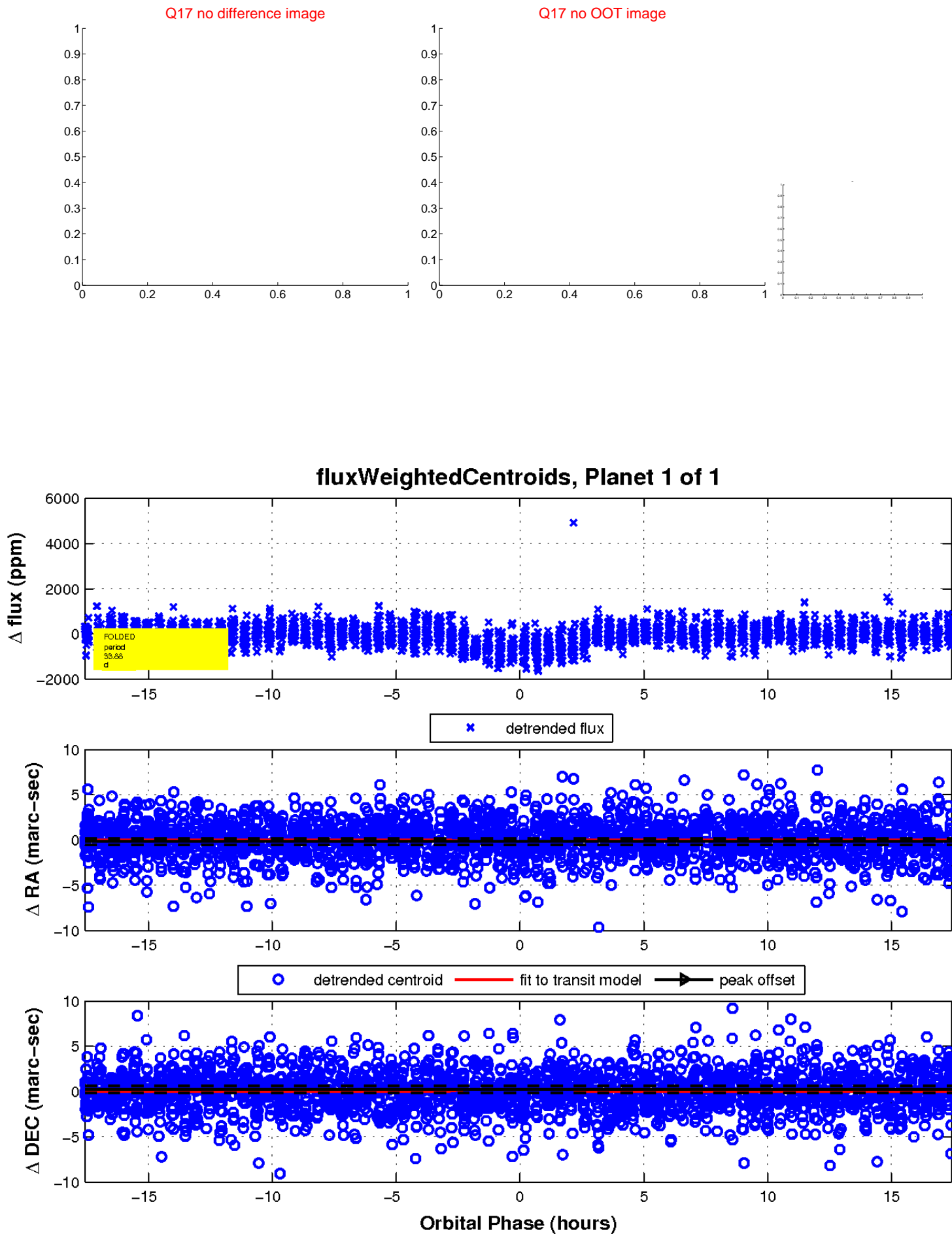
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

