

# KIC 006185711

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006185711-01	OBS	0169.01	11.702214	139.430433	640.4	2.637	51.8	43.4	0.76	5758	3.19	63.33

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006185711-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—EPHEM_MATCH

**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 006185711-01

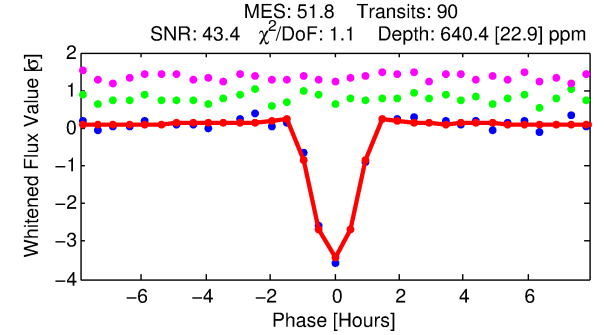
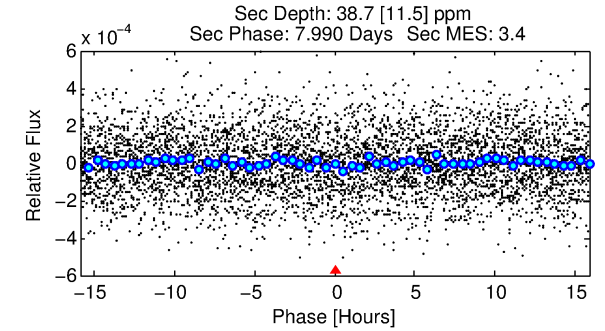
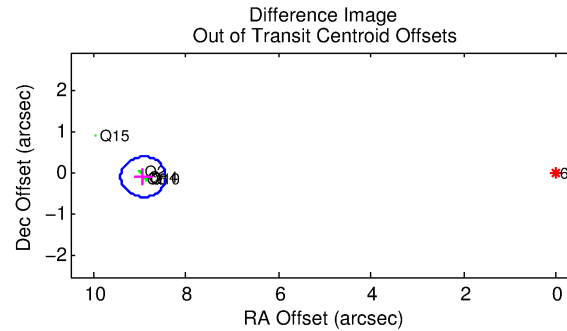
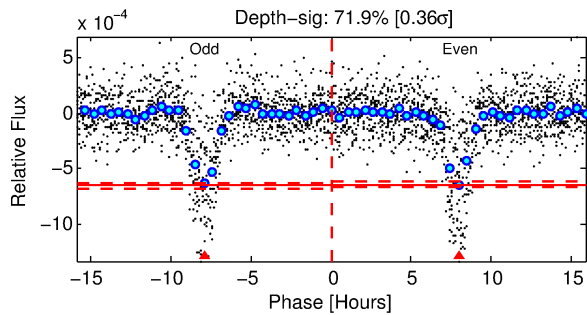
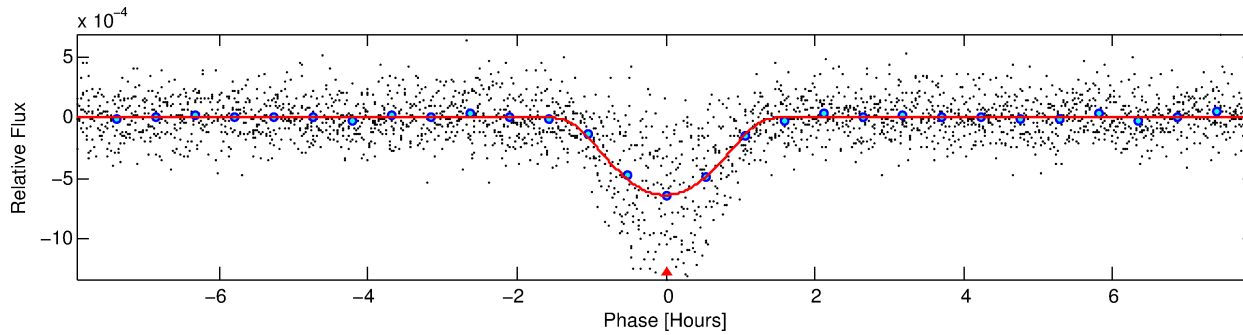
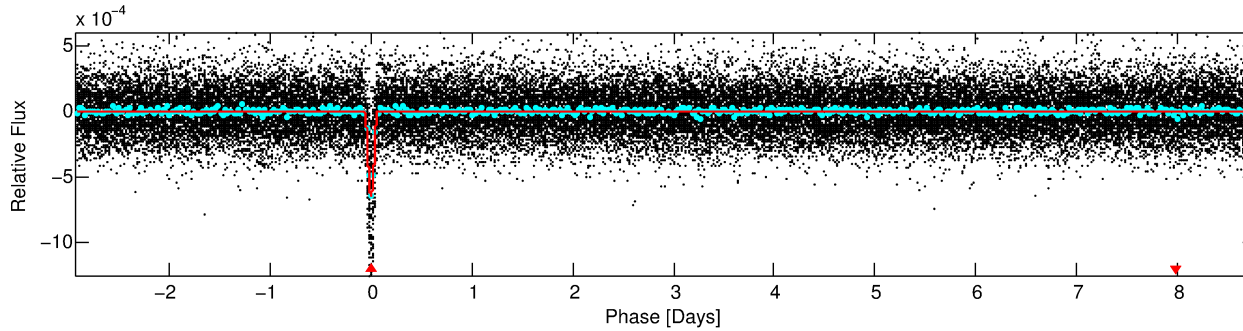
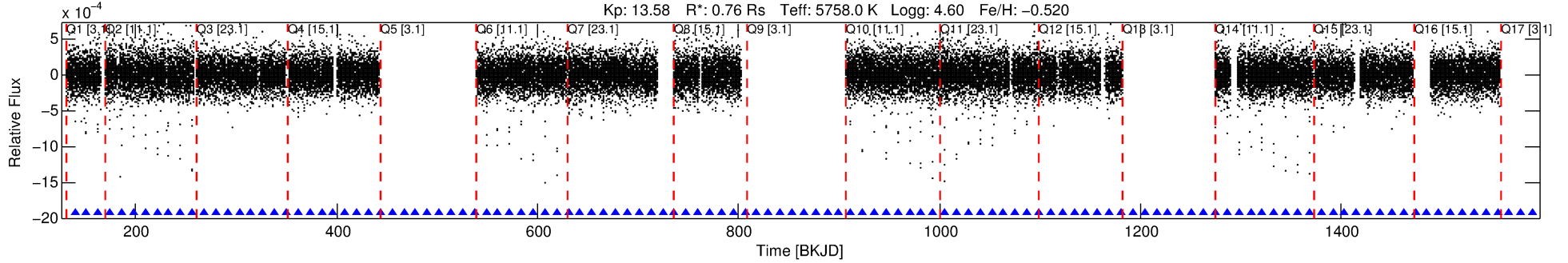
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
006185711-01	6185711	6671.01	6185717	1:1	11.8	3	-2	13.39	13.58	45.73	Direct-PRF	0	0.03	0.03

**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 6185711 Candidate: 1 of 1 Period: 11.702 d  
KOI: K00169.01 Corr: 0.930

Kp: 13.58 R<sup>\*</sup>: 0.76 R<sub>s</sub> Teff: 5758.0 K Logg: 4.60 Fe/H: -0.520



## DV Fit Results:

Period = 11.70221 [0.00002] d  
Epoch = 139.4304 [0.0013] BKJD  
Rp/R<sup>\*</sup> = 0.0384 [0.0192]  
a/R<sup>\*</sup> = 10.84 [1.84]  
b = 0.99 [0.03]  
Seff = 63.33 [19.09]  
Teq = 719 [54] K  
Rp = 3.19 [1.77] Re  
a = 0.0950 [0.0186] AU  
Ag = 18.87 [20.38] [0.88σ]  
Teff = 2318 [607] K [2.62σ]

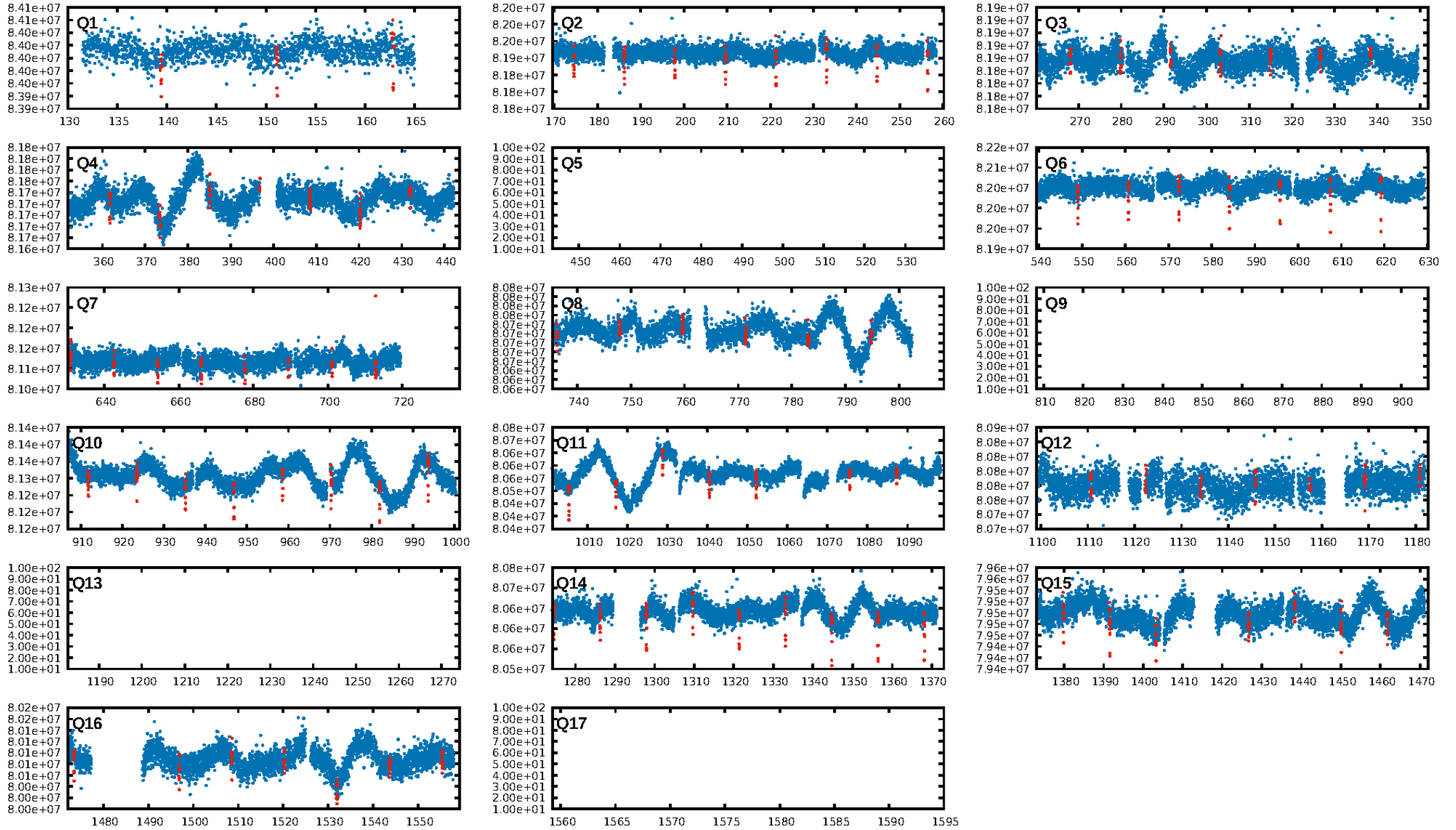
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 76.7%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [87/87]  
GhostDiagnostic-chr: -0.4816  
Centroid-sig: 0.0%  
Centroid-so: 48.231 arcsec [190.86σ]  
OotOffset-rm: 8.926 arcsec [54.49σ]  
KicOffset-rm: 9.250 arcsec [54.29σ]  
OotOffset-st: 4/1/0/0 [5]  
KicOffset-st: 4/1/0/0 [5]  
DiffImageQuality-fgm: 1.00 [5/5]  
DiffImageOverlap-fno: 1.00 [13/13]

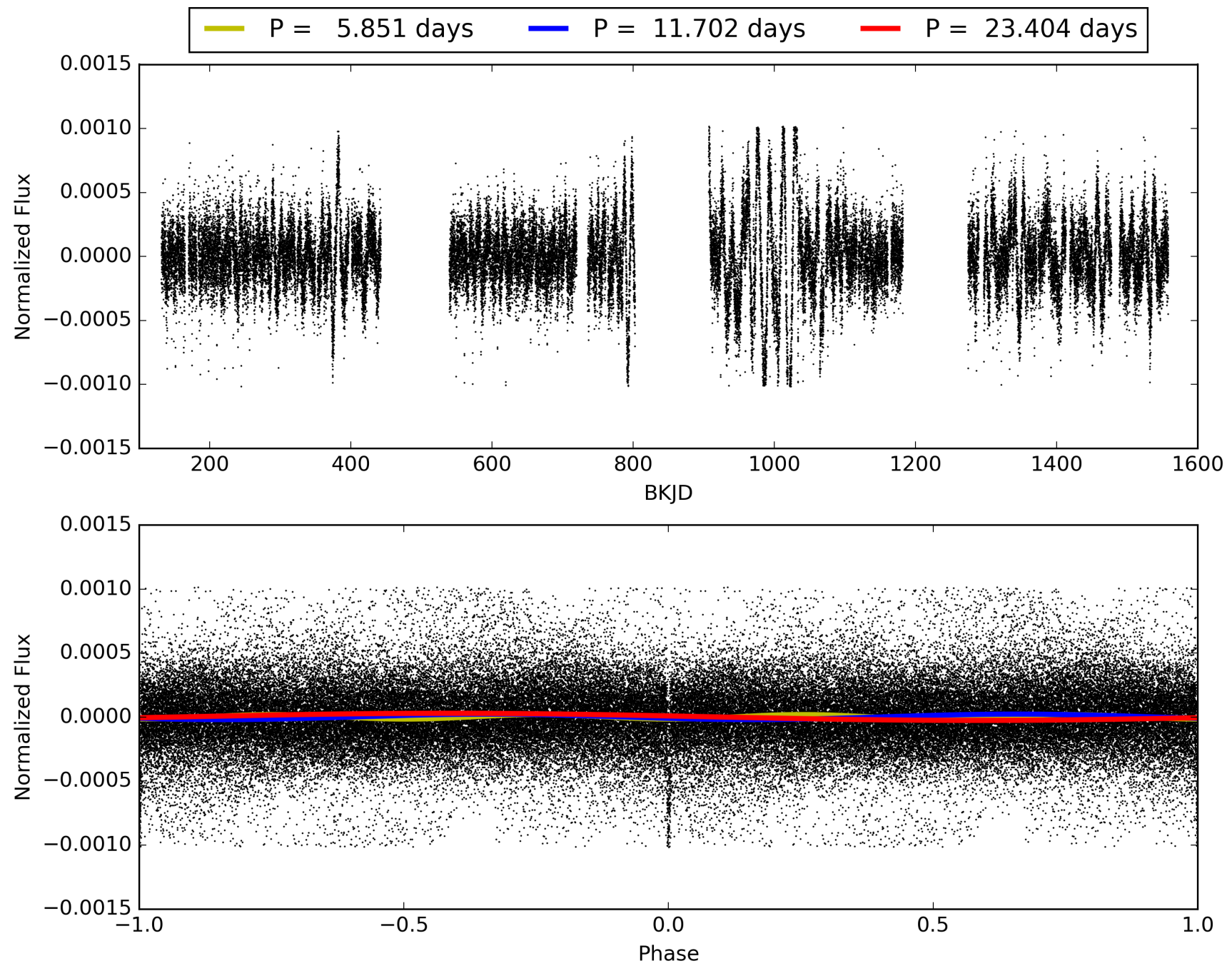
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:09:20 Z

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

# TCE 006185711-01, PDC Light Curves

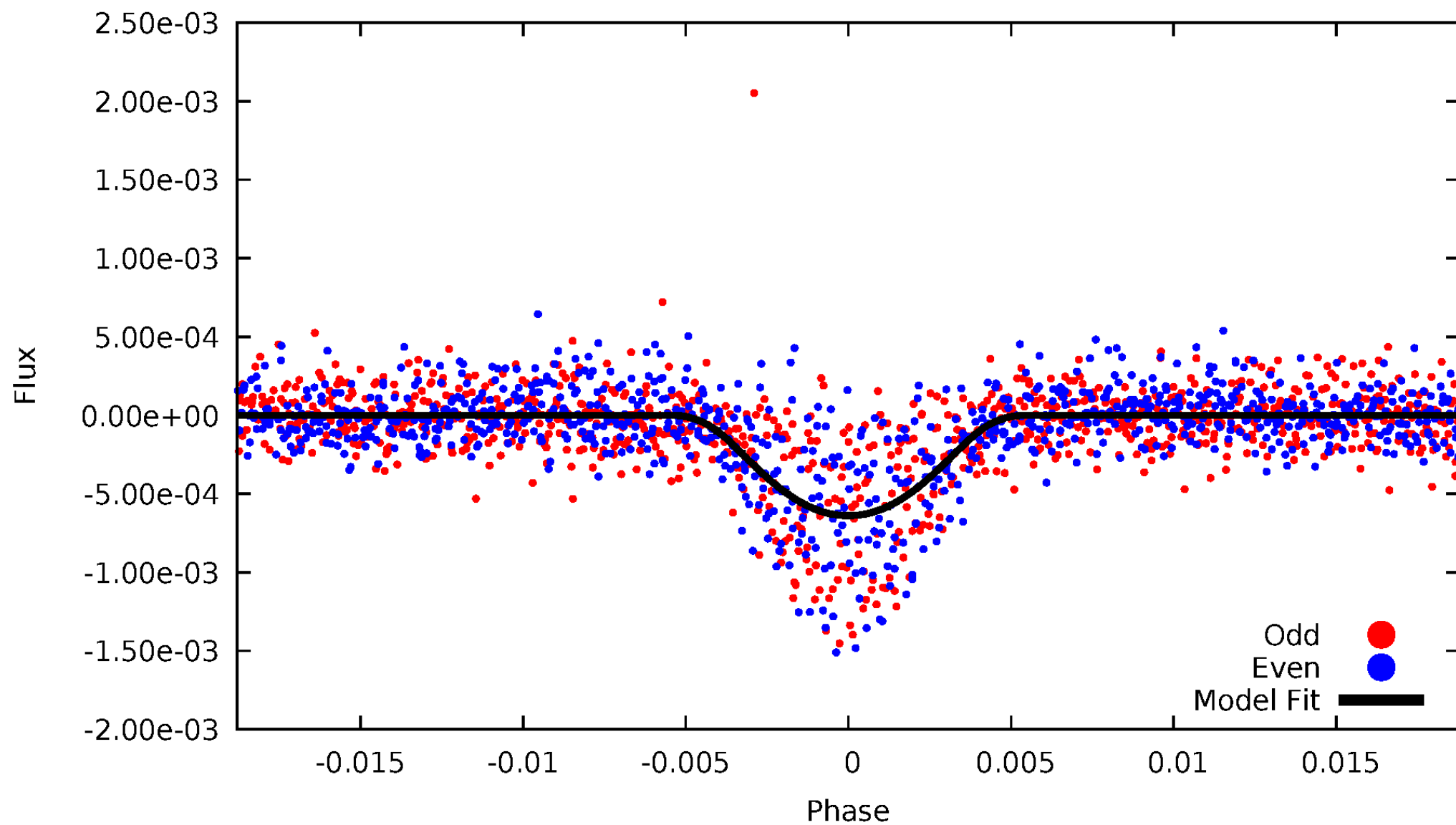


TCE 006185711-01



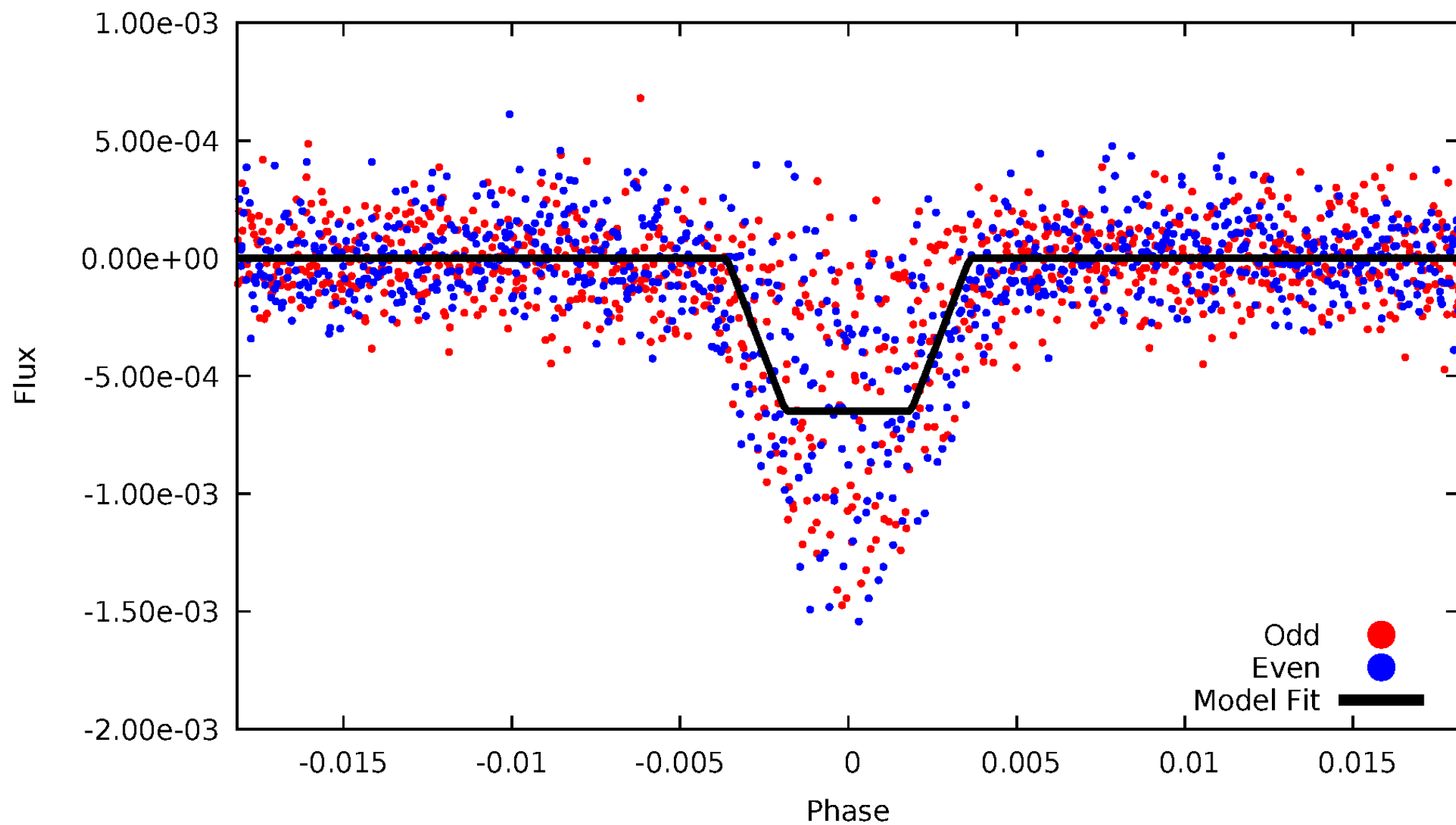
# DV Odd/Even

TCE 006185711-01



# ALT Odd/Even

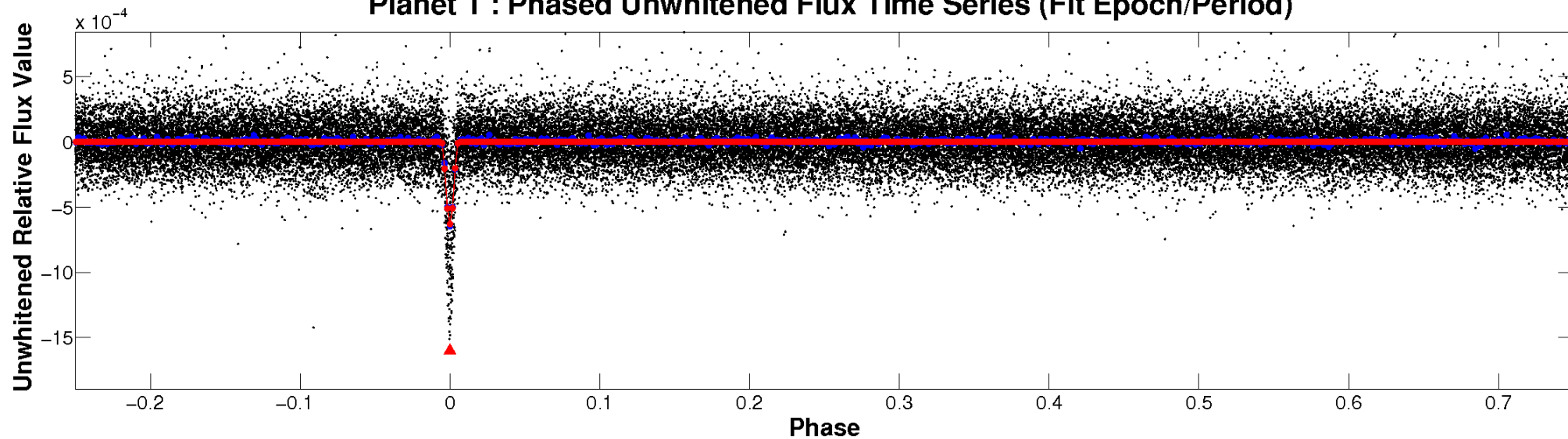
TCE 006185711-01



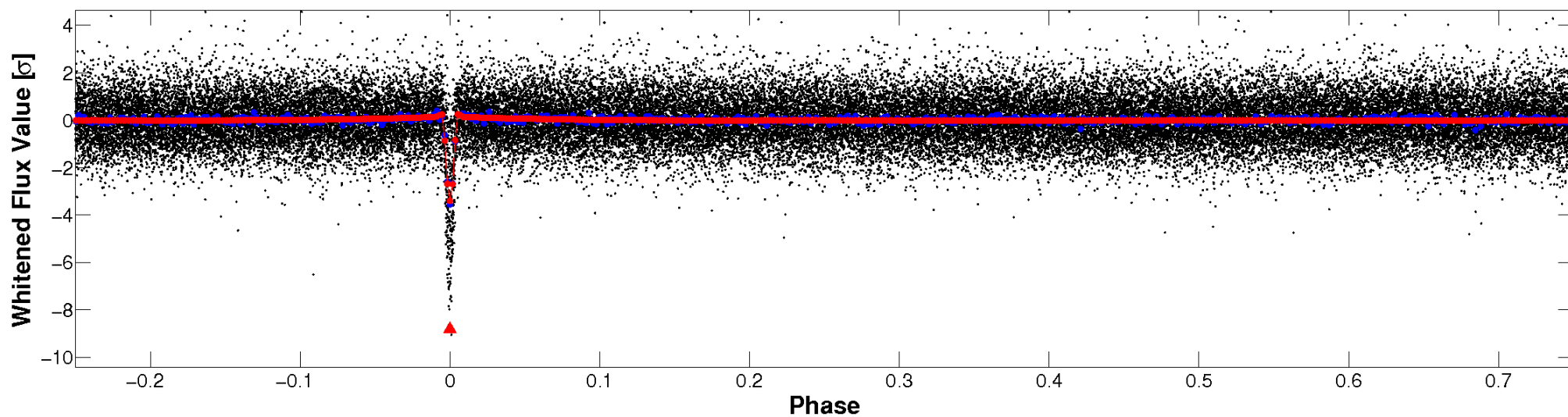


# Non-Whitened Vs. Whitened Light Curve

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

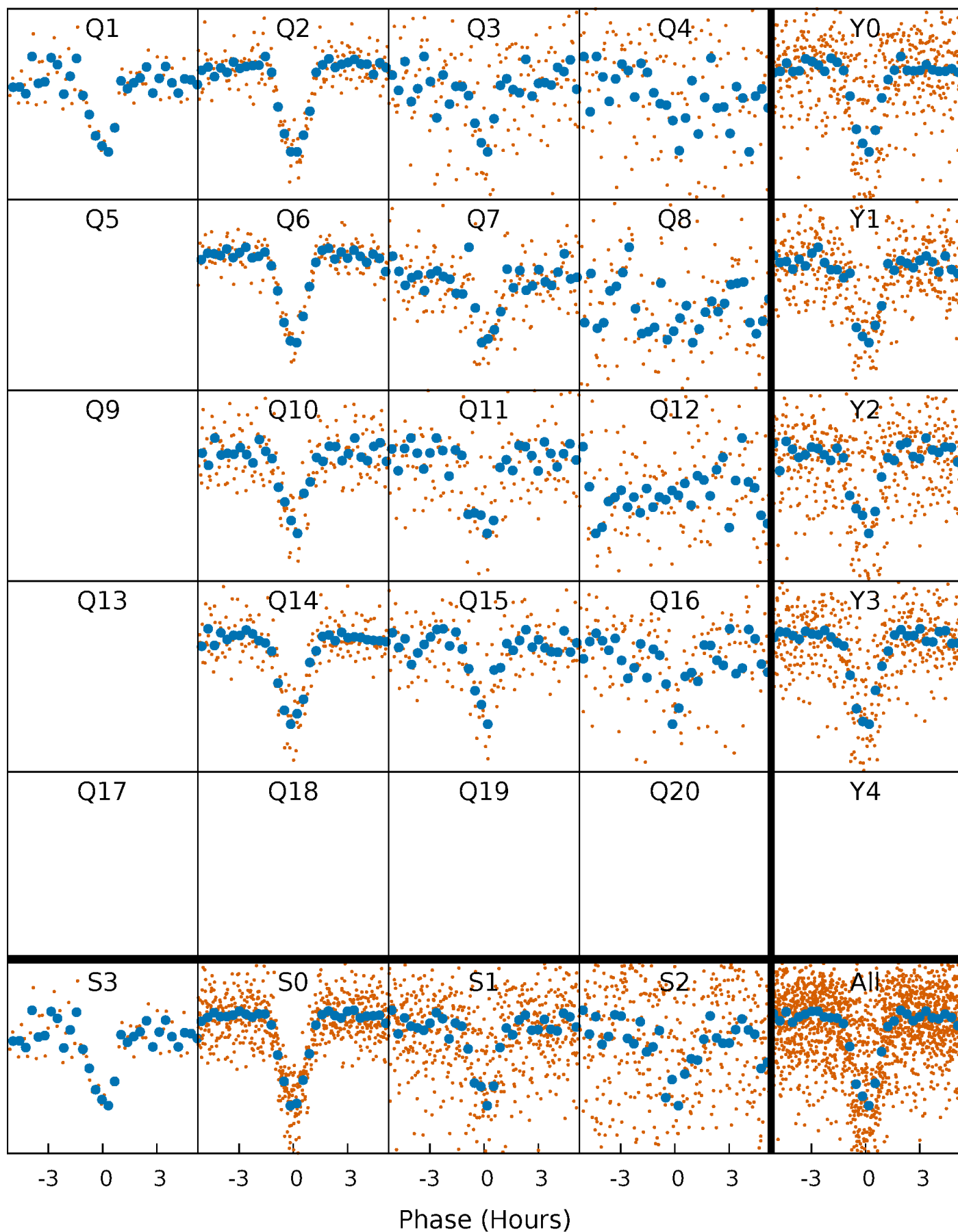


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

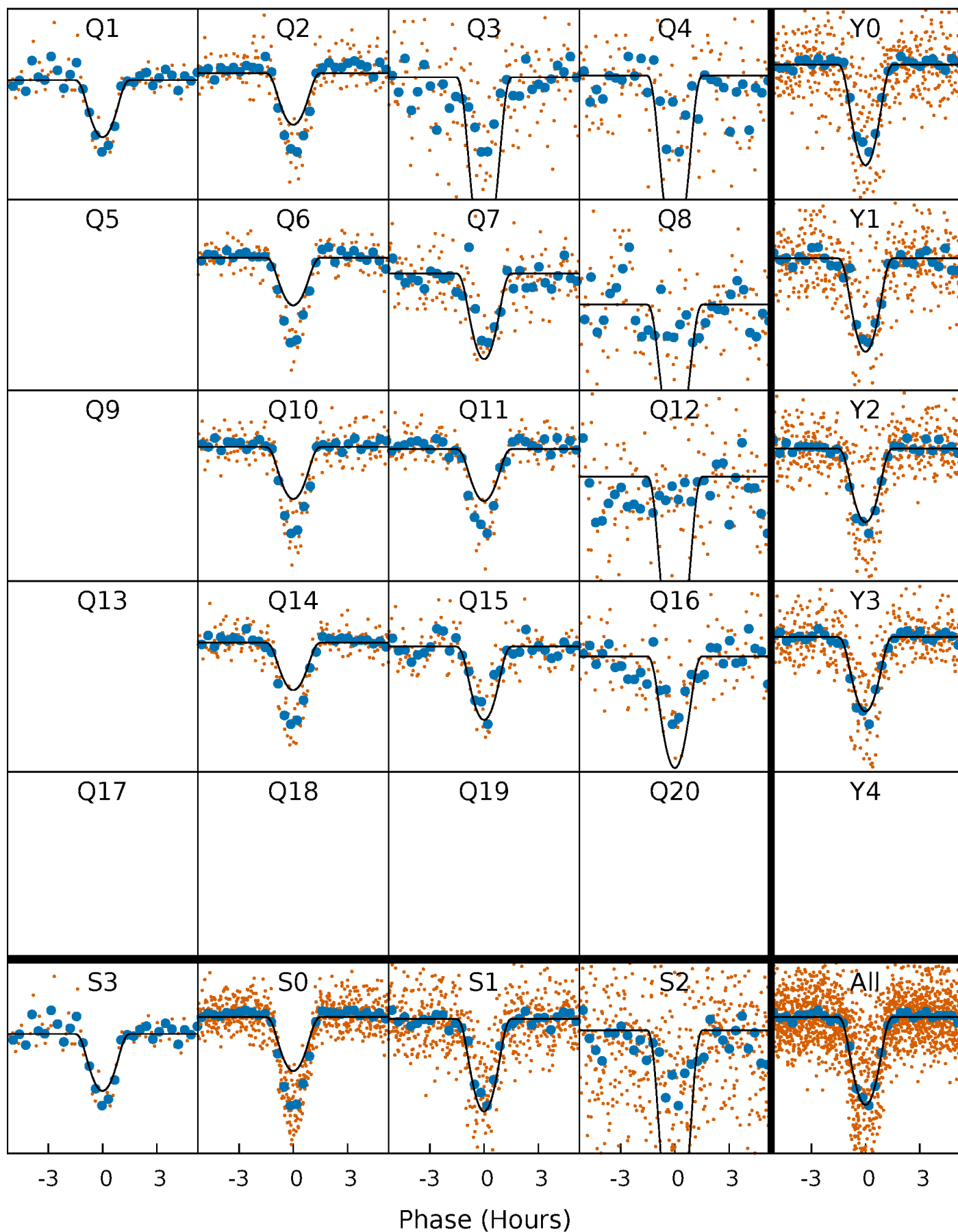
TCE 006185711-01 P= 11.702214 Days  $T_0=139.430433$  (BKJD)





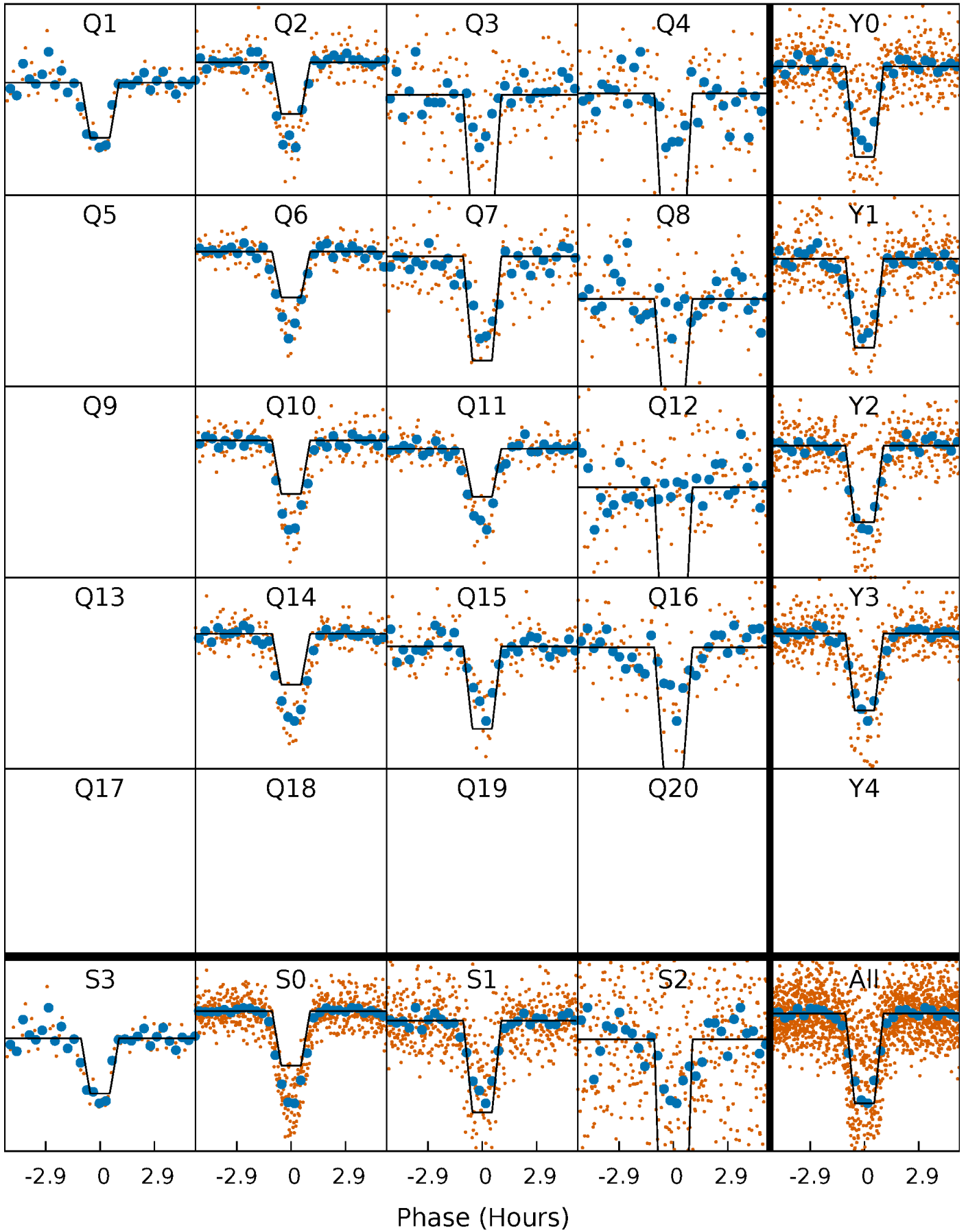
# DV Quarter-Phased Transit Curves

TCE 006185711-01 P= 11.702214 Days  $T_0=139.430433$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

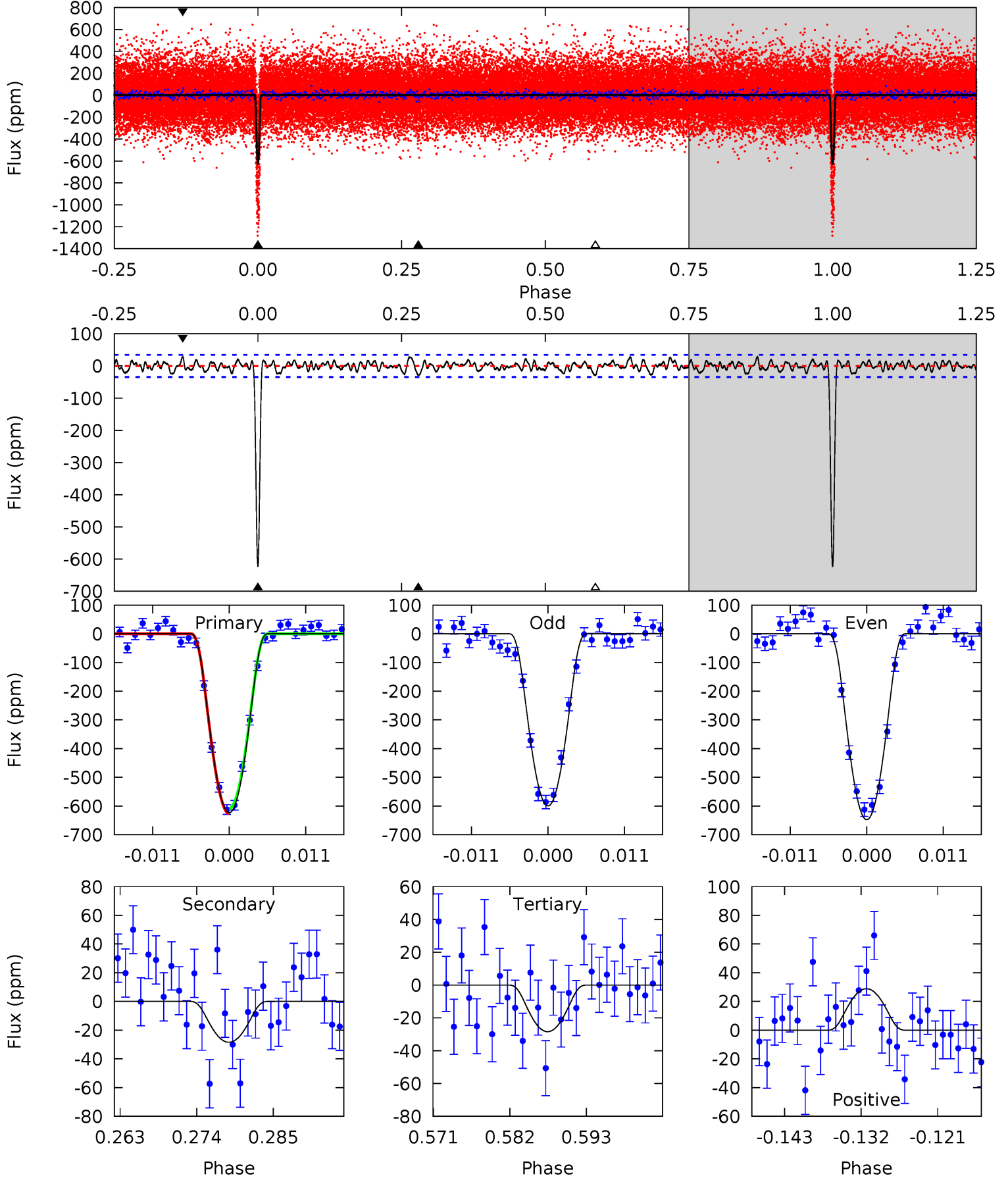
TCE 006185711-01 P= 11.702117 Days  $T_0=139.436549$  (BKJD)



# DV Model-Shift Uniqueness Test

006185711-01, P = 11.702214 Days, E = 127.728219 Days

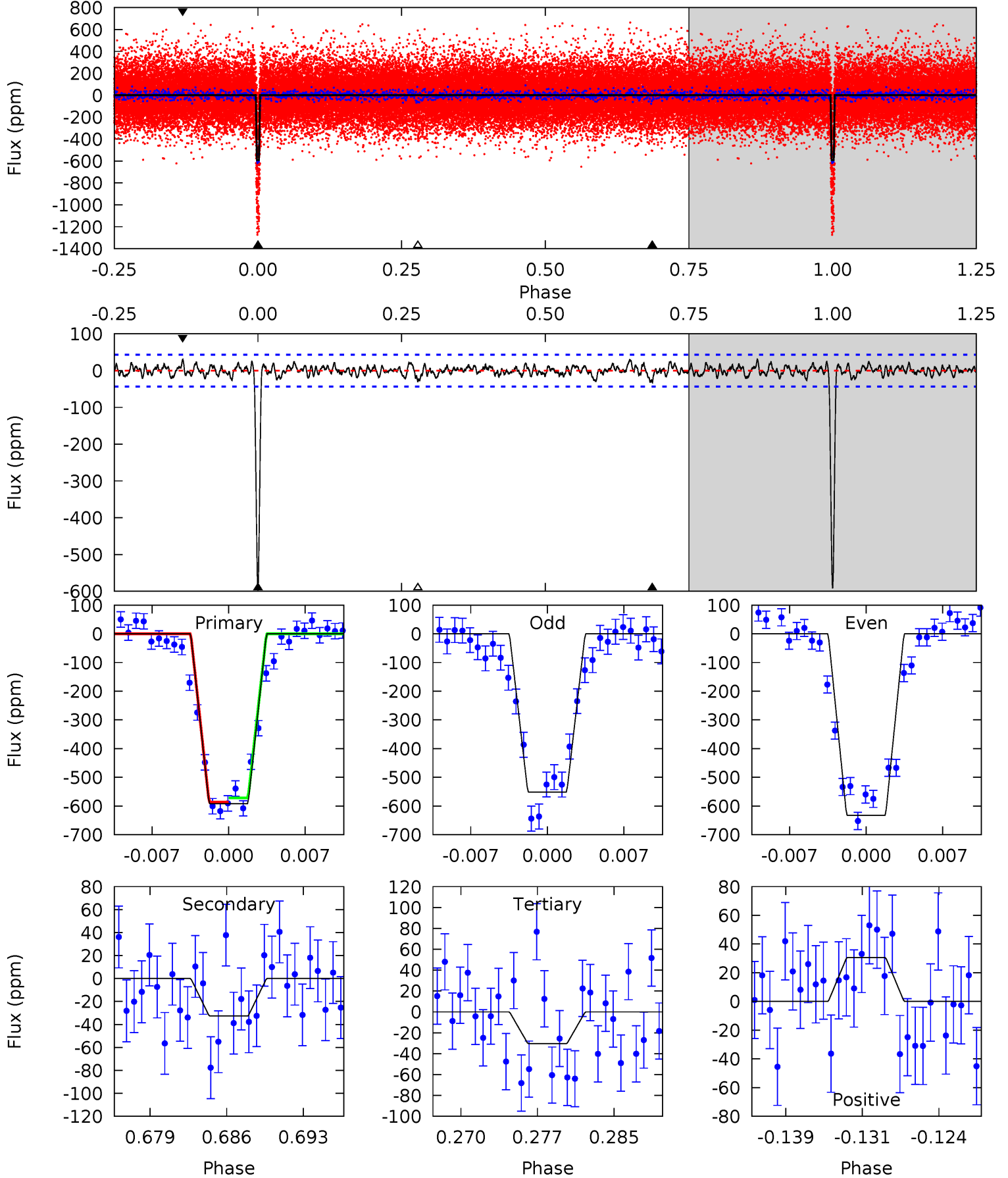
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
90.8	4.14	4.14	4.20	5.01	2.54	1.54	86.7	86.6	0.00	-0.06	3.48	1.07	0.04	0



# Alt Model-Shift Uniqueness Test

006185711-01, P = 11.702117 Days, E = 127.734432 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
69.3	3.83	3.57	3.58	5.09	2.68	1.20	65.8	65.7	0.26	0.25	4.72	1.00	0.05	0.85



### Stellar Parameters For KIC 006185711

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5758^{+155}_{-155}$	$4.596^{+0.038}_{-0.152}$	$-0.520^{+0.300}_{-0.300}$	$0.762^{+0.180}_{-0.056}$	$0.848^{+0.079}_{-0.096}$	$2.693^{+0.412}_{-1.169}$
	+3%/-3%	+1%/-3%	+58%/-58%	+24%/-7%	+9%/-11%	+15%/-43%
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 006185711-01 / KOI 0169.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-28 \pm 7$	$3.39^{+1.74}_{-1.53}$	$1023^{+60}_{-39}$	$2820^{+558}_{-306}$	$12^{+27}_{-7}$
Alt.	$-33 \pm 9$	$2.36^{+1.58}_{-1.30}$	$1019^{+56}_{-40}$	$3201^{+1024}_{-458}$	$28^{+121}_{-18}$

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

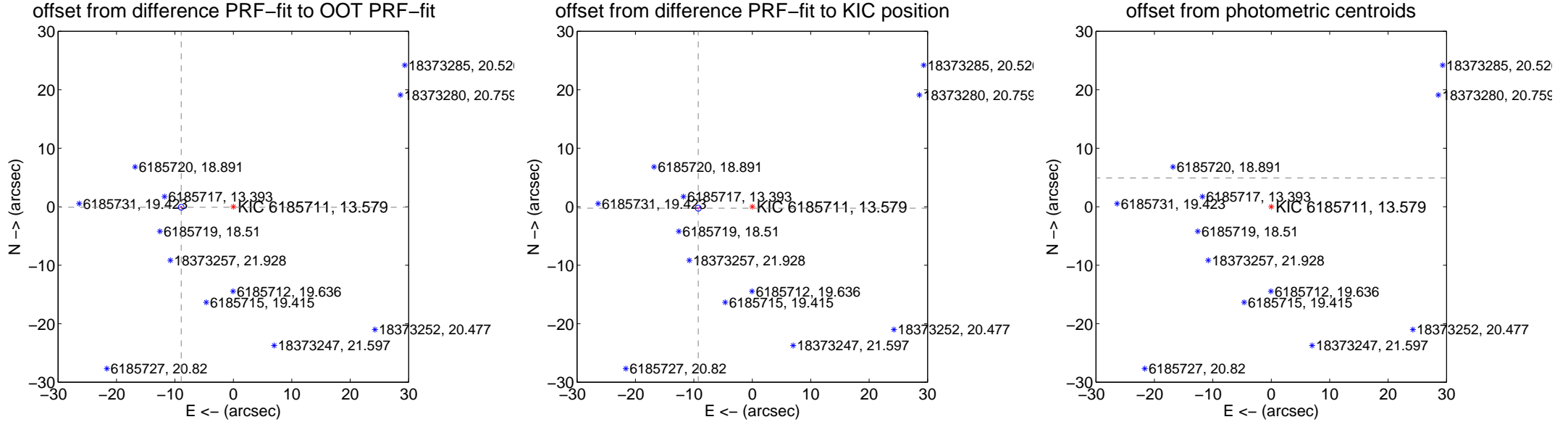
## DV Centroid Data

Supplemental centroid analysis for 006185711-01. Kepler magnitude: 13.58. Transit SNR 43.41

There are 5 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

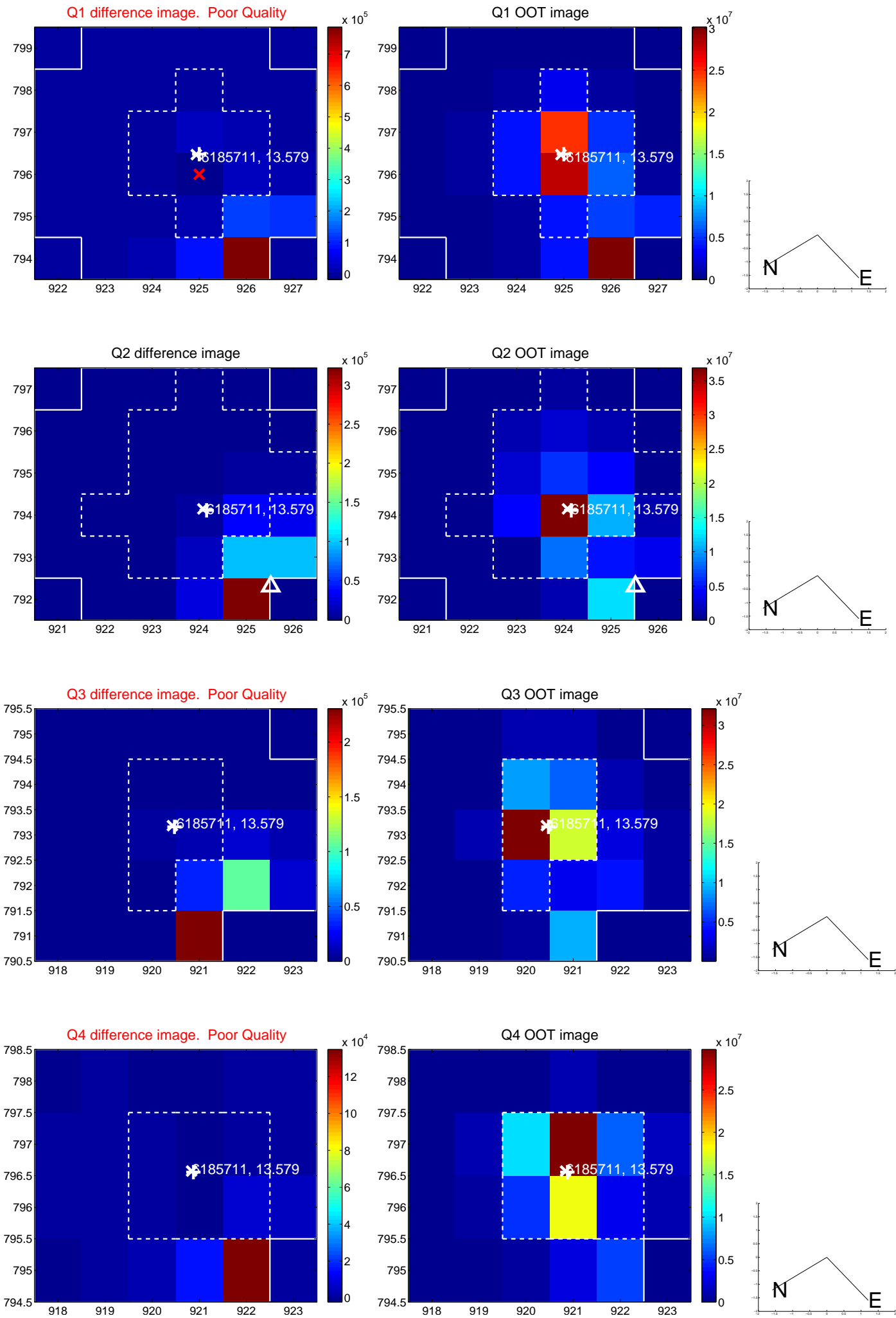
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	8.926 $\pm$ 0.164	54.49	8.925 $\pm$ 0.165	-0.097 $\pm$ 0.162
PRF-fit source offset from KIC position	9.250 $\pm$ 0.170	54.29	9.247 $\pm$ 0.175	-0.246 $\pm$ 0.180
photometric centroid source offset	48.23 $\pm$ 0.25	190.86	47.98 $\pm$ 0.25	4.93 $\pm$ 0.22



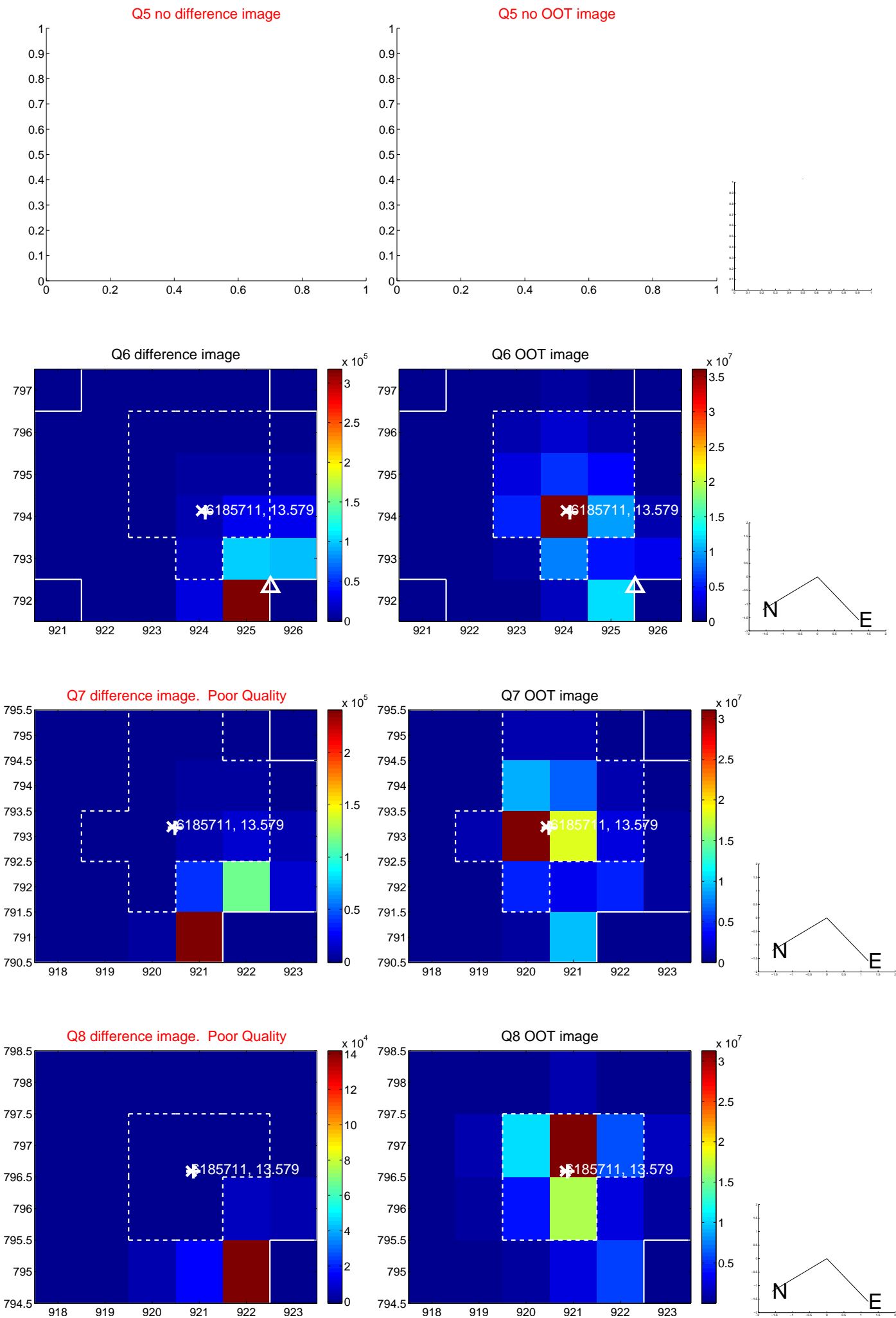
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



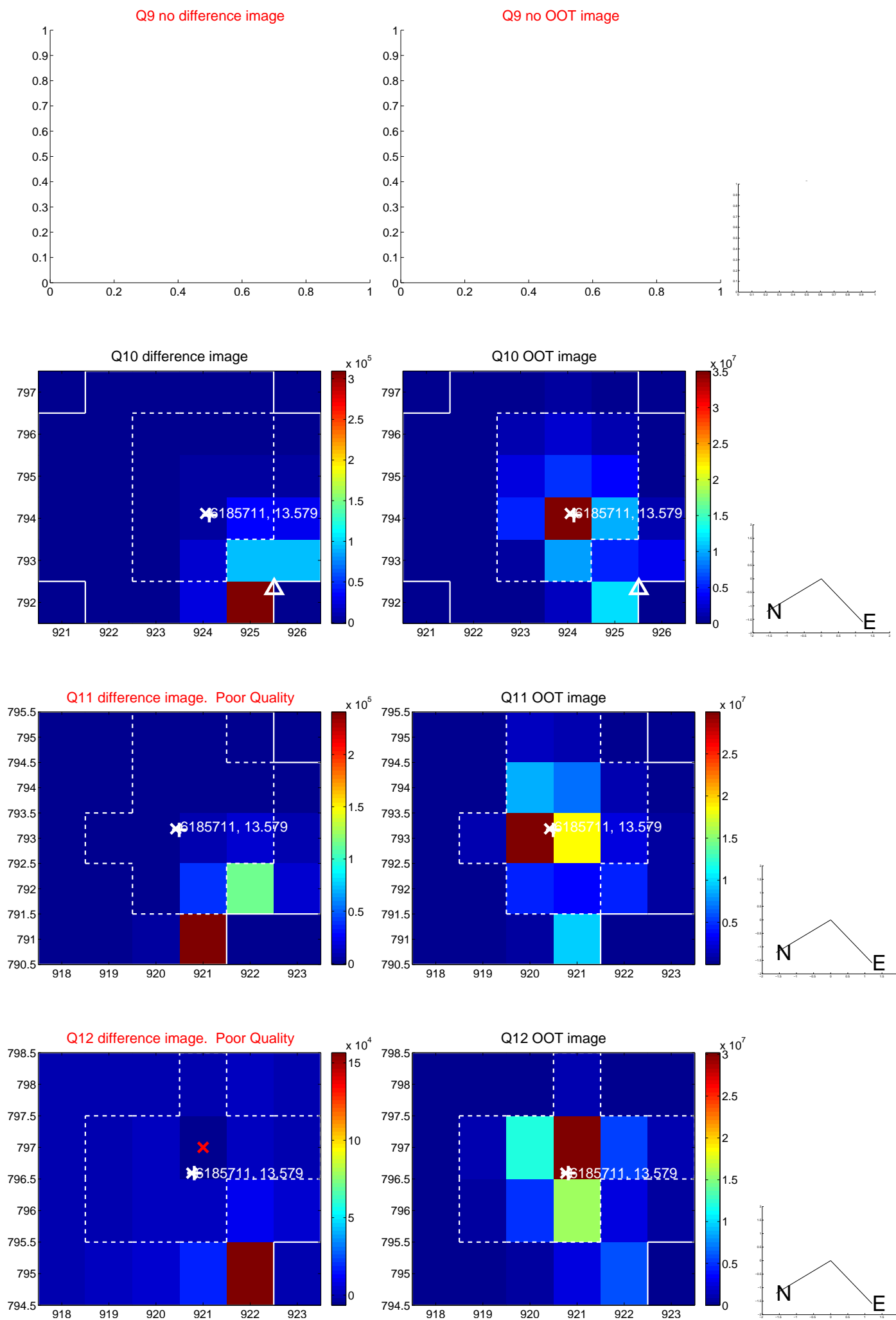
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



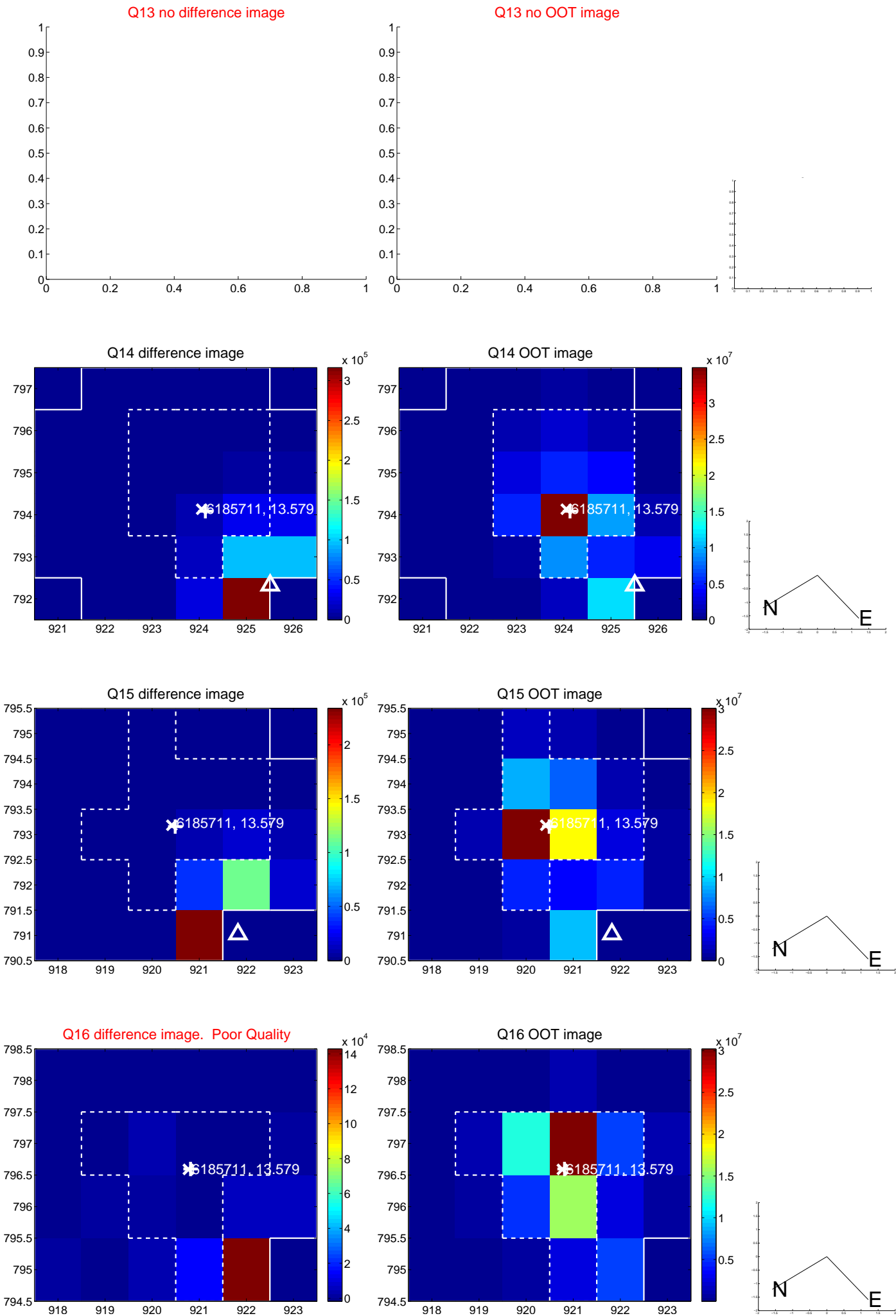
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



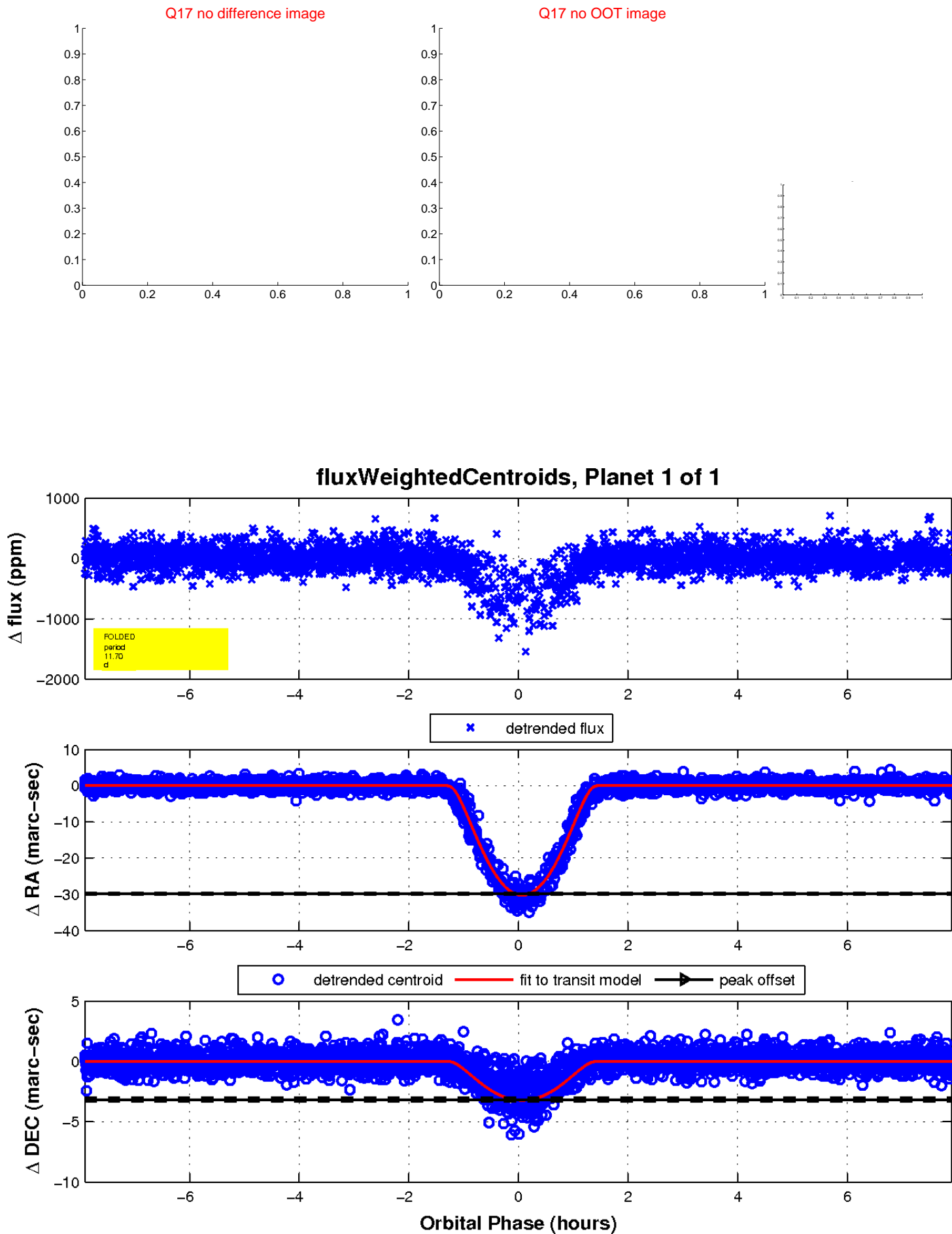
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

