

# KIC 005597970

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005597970-01	OBS	6014.01	6.717383	137.209969	166307.1	3.627	17334.2	9415.7	0.94	5301	37.70	144.18

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005597970-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—CENT_KIC_POS

**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.

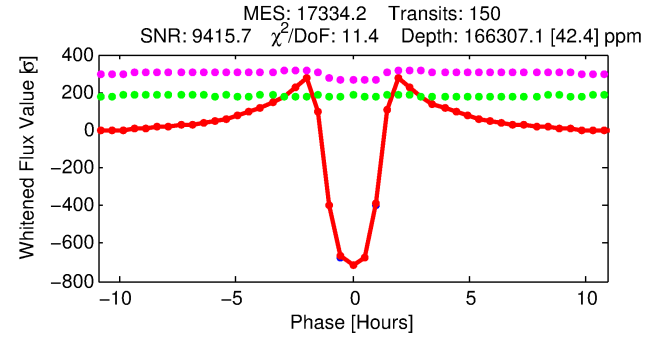
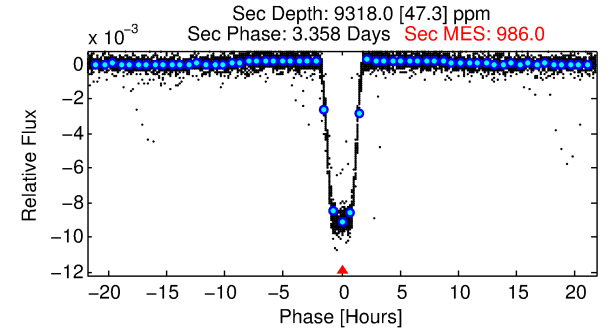
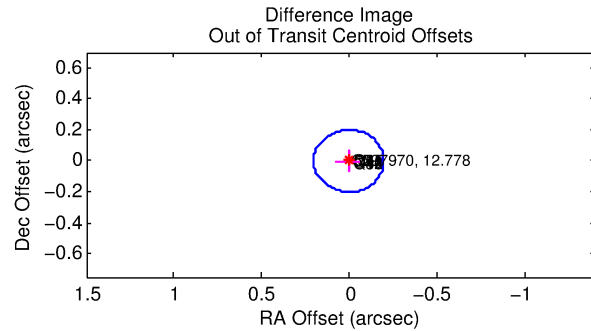
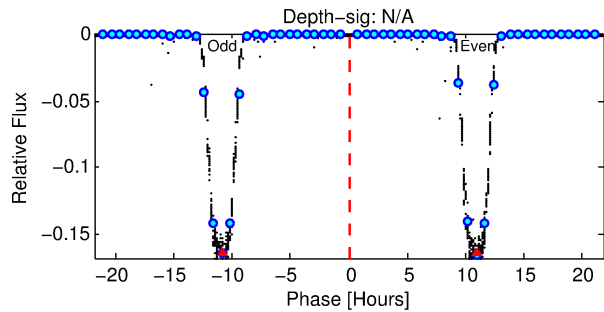
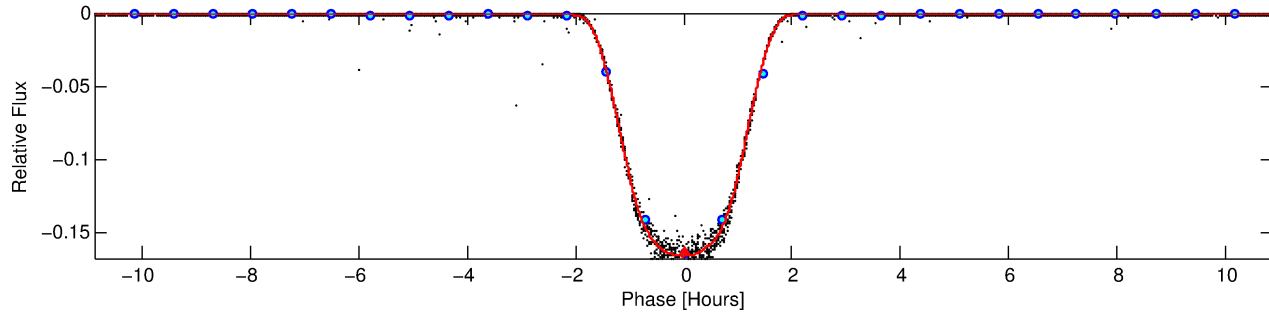
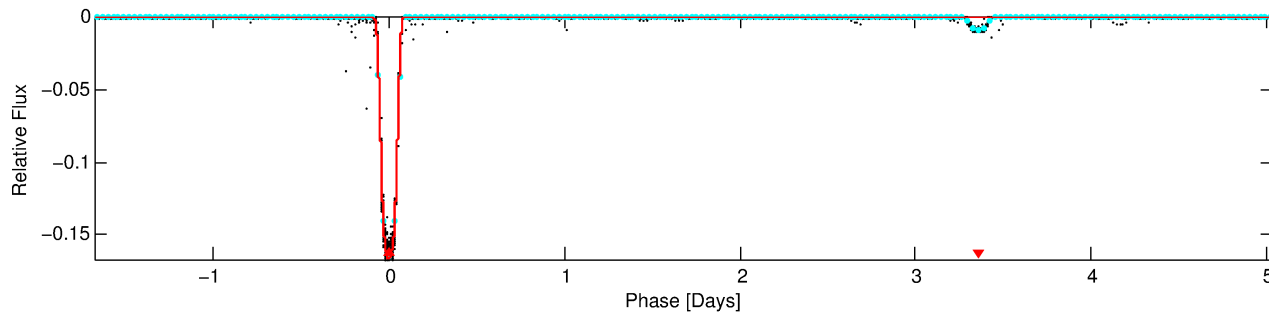
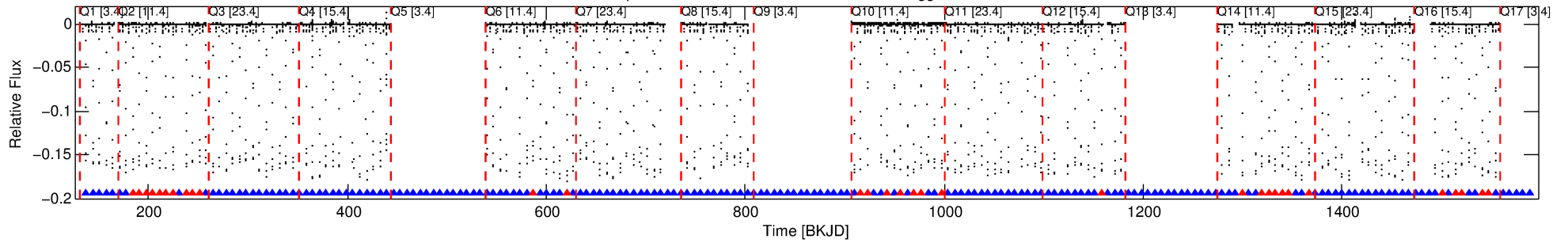
## Ephemeris Match Information For 005597970-01

No Significant Match Found

# DV One-Page Summary

KIC: 5597970 Candidate: 1 of 1 Period: 6.717 d  
KOI: K06014.01 Corr: 0.998

Kp: 12.78 R\*: 0.94 Rs Teff: 5301.0 K Logg: 4.42 Fe/H: 0.070



## DV Fit Results:

Period = 6.71738 [0.00000] d  
Epoch = 137.2100 [0.0000] BKJD  
Rp/R\* = 0.3691 [0.0001]  
a/R\* = 19.31 [0.01]  
b = 0.12 [0.00]  
Seff = 144.18 [50.91]  
Teq = 884 [78] K  
Rp = 37.70 [8.70] Re  
a = 0.0656 [0.0138] AU  
Ag = 15.50 [5.03] [2.88σ]  
Teffp = 2711 [95] K [14.90σ]

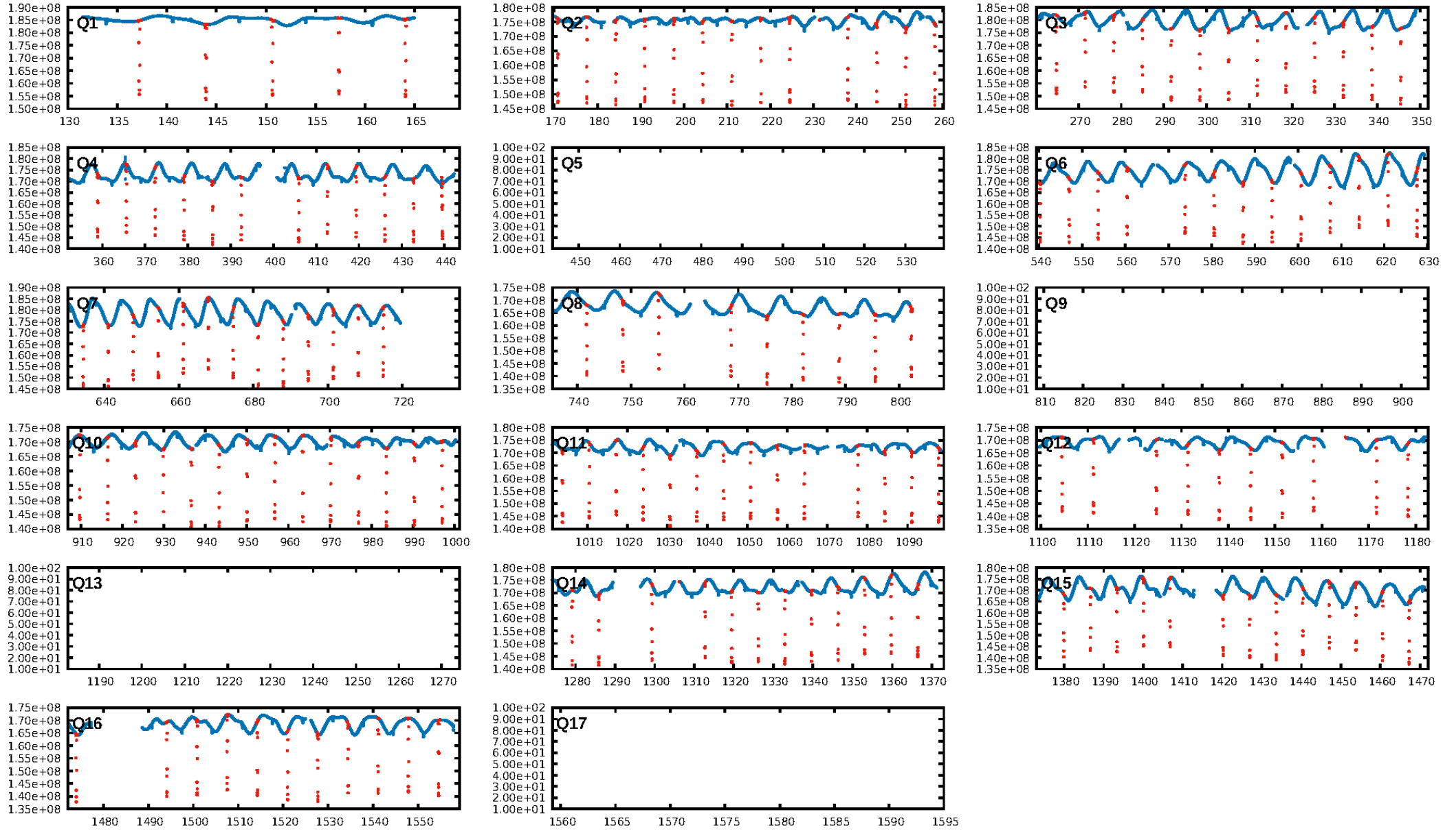
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.0%  
Bootstrap-pfa: N/A  
RollingBand-ftg: 0.78 [113/145]  
GhostDiagnostic-chr: 1.409  
Centroid-sig: 0.0%  
Centroid-so: 0.709 arcsec [1318.15σ]  
OotOffset-rm: 0.005 arcsec [0.08σ]  
OotOffset-st: 4/4/4/1 [13]  
KicOffset-rm: 0.757 arcsec [10.08σ]  
KicOffset-st: 4/4/4/1 [13]  
DiffImageQuality-fgm: 1.00 [13/13]  
DiffImageOverlap-fno: 1.00 [13/13]

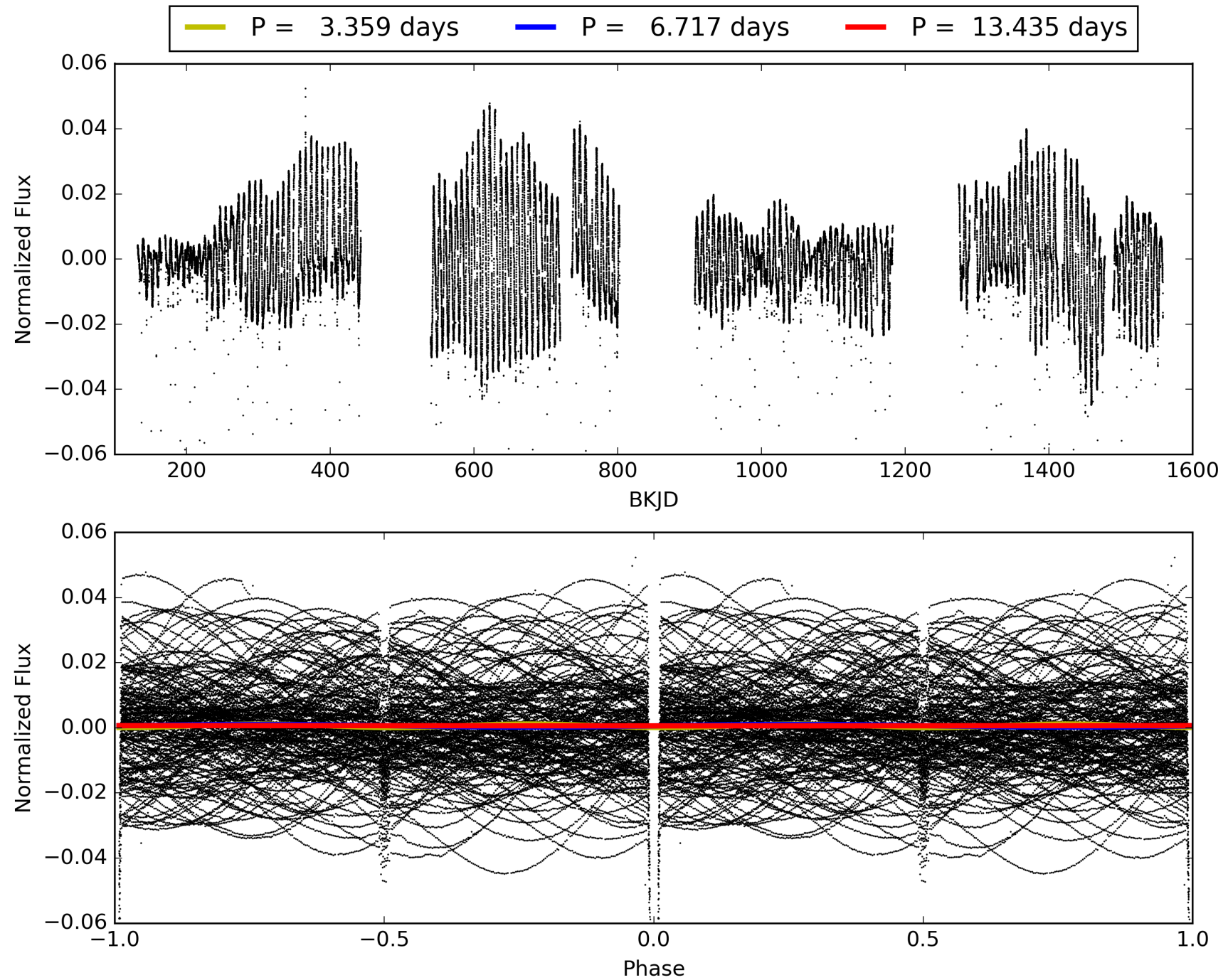
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 08:34:45 Z

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

# TCE 005597970-01, PDC Light Curves

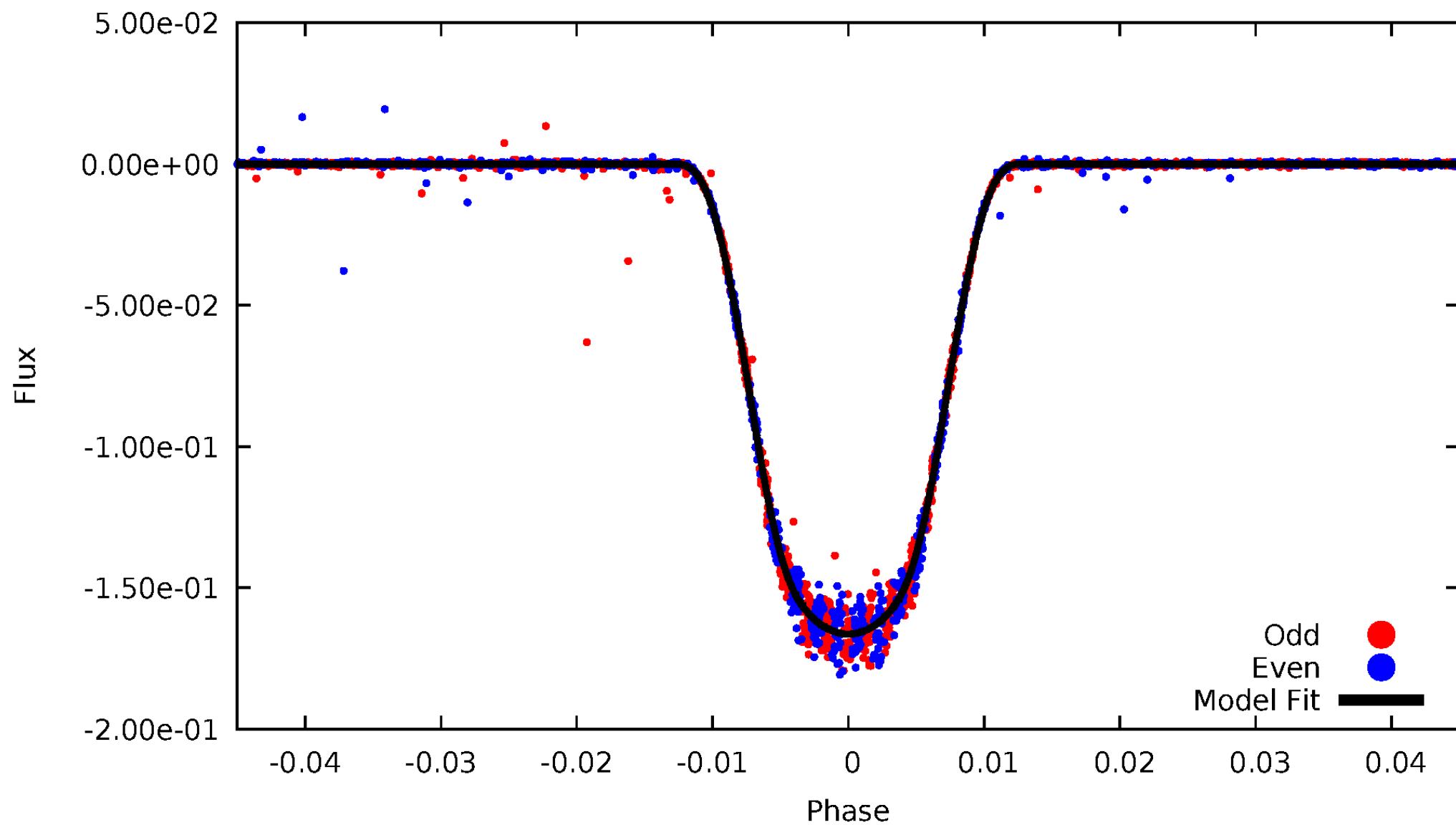


TCE 005597970-01



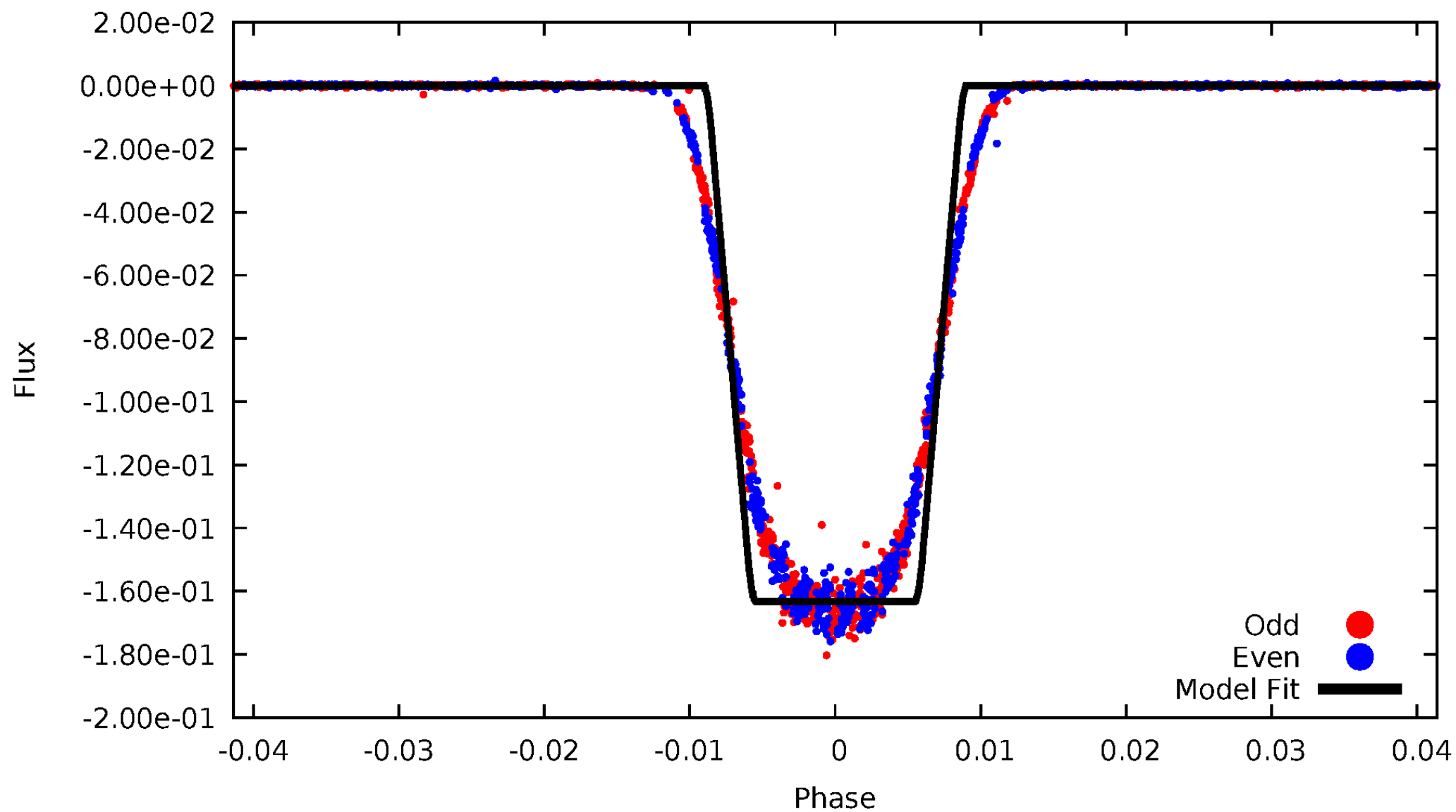
# DV Odd/Even

TCE 005597970-01



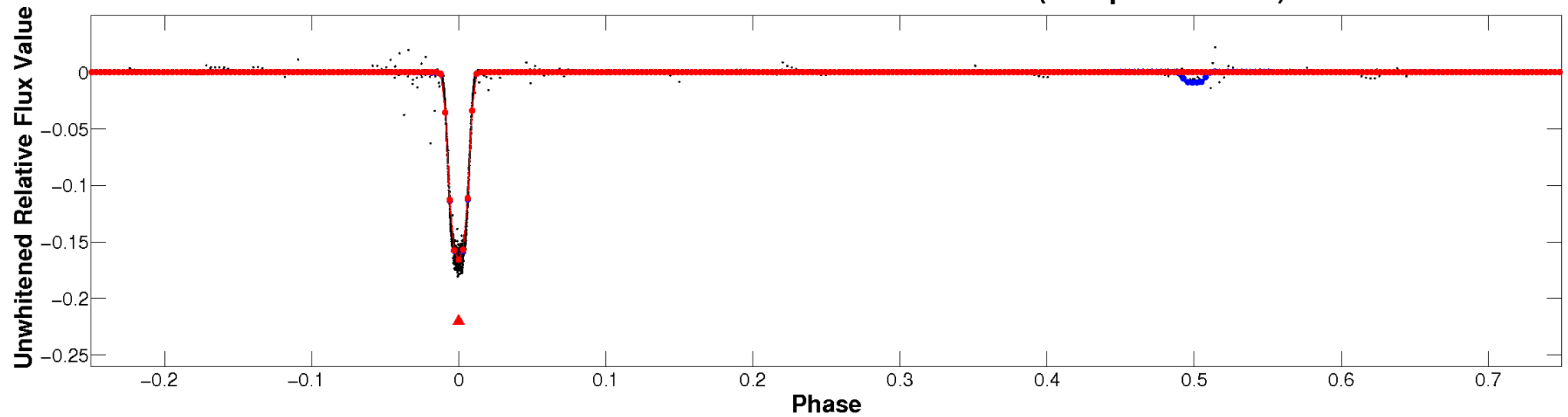
# ALT Odd/Even

TCE 005597970-01

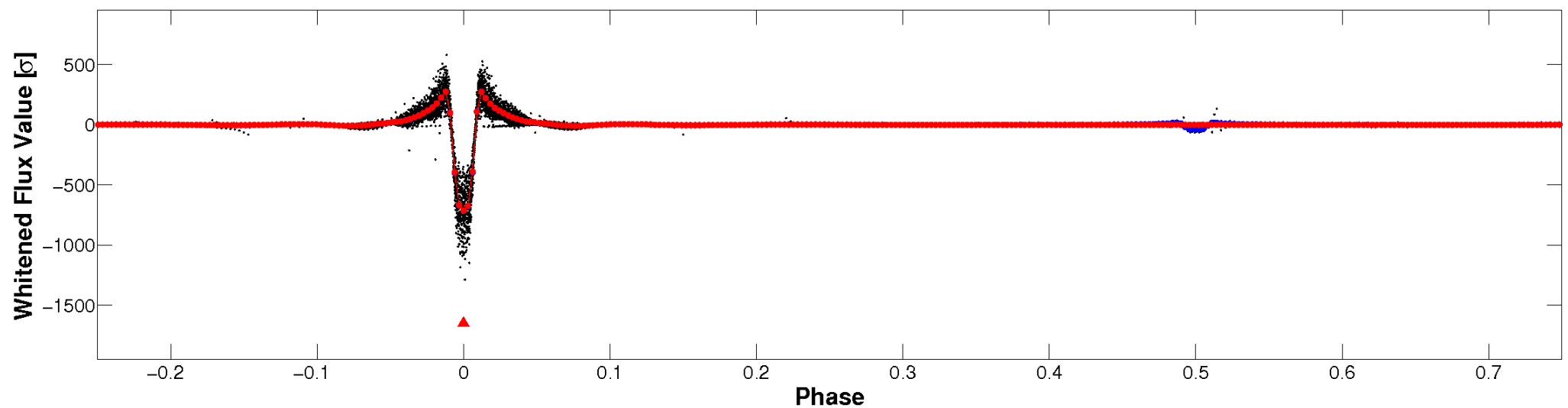


# Non-Whitened Vs. Whitened Light Curve

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

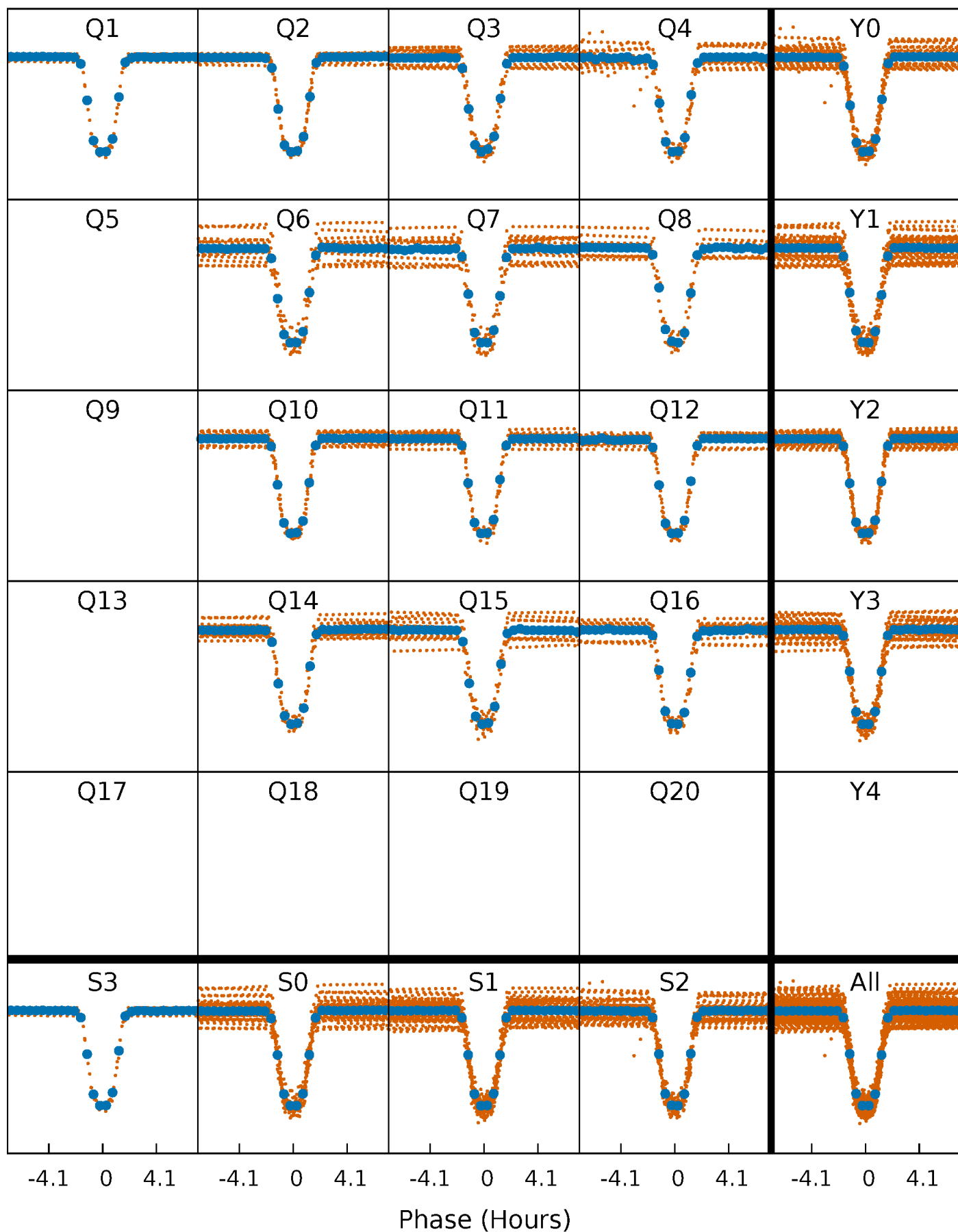


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

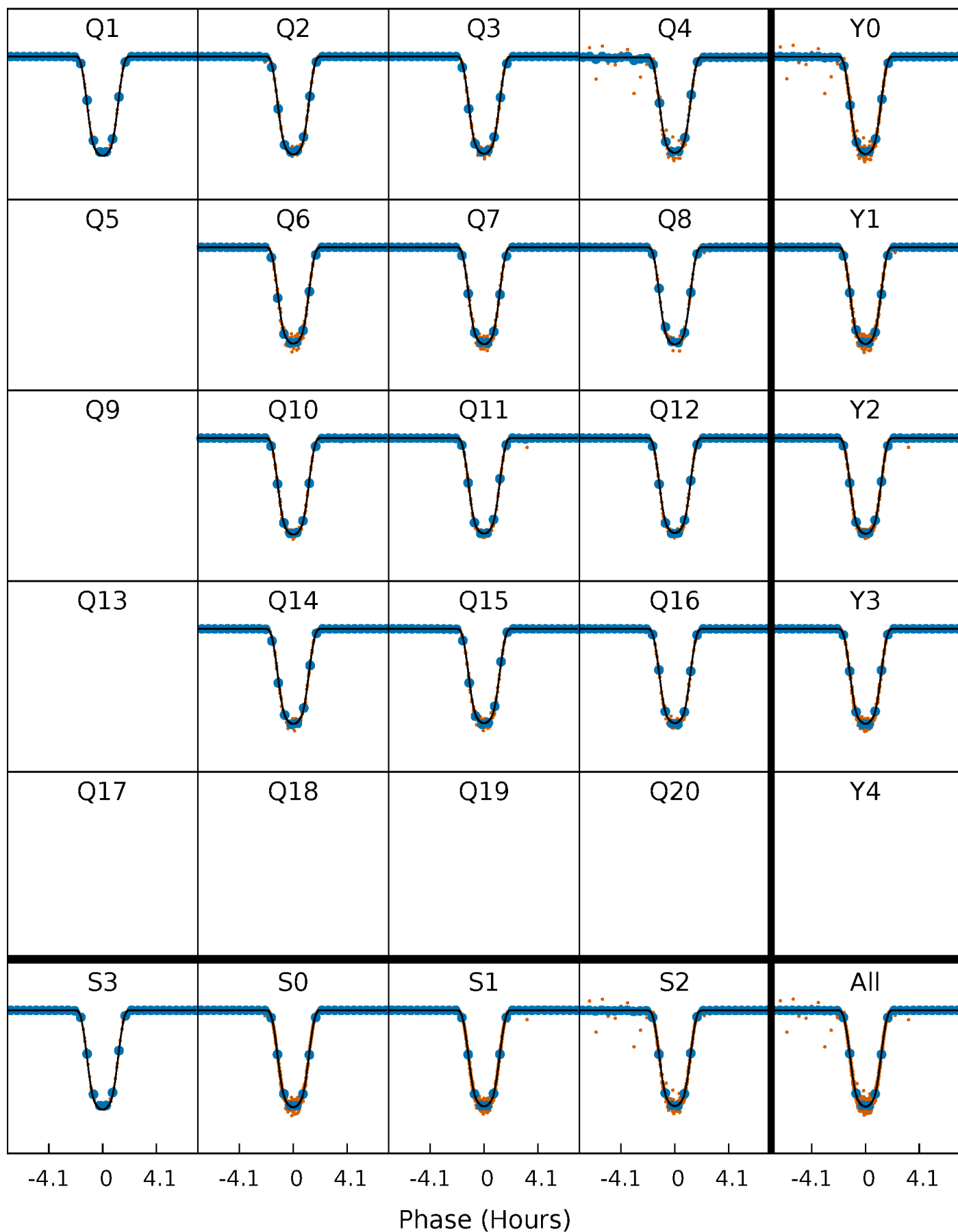
TCE 005597970-01 P= 6.717383 Days  $T_0=137.209969$  (BKJD)





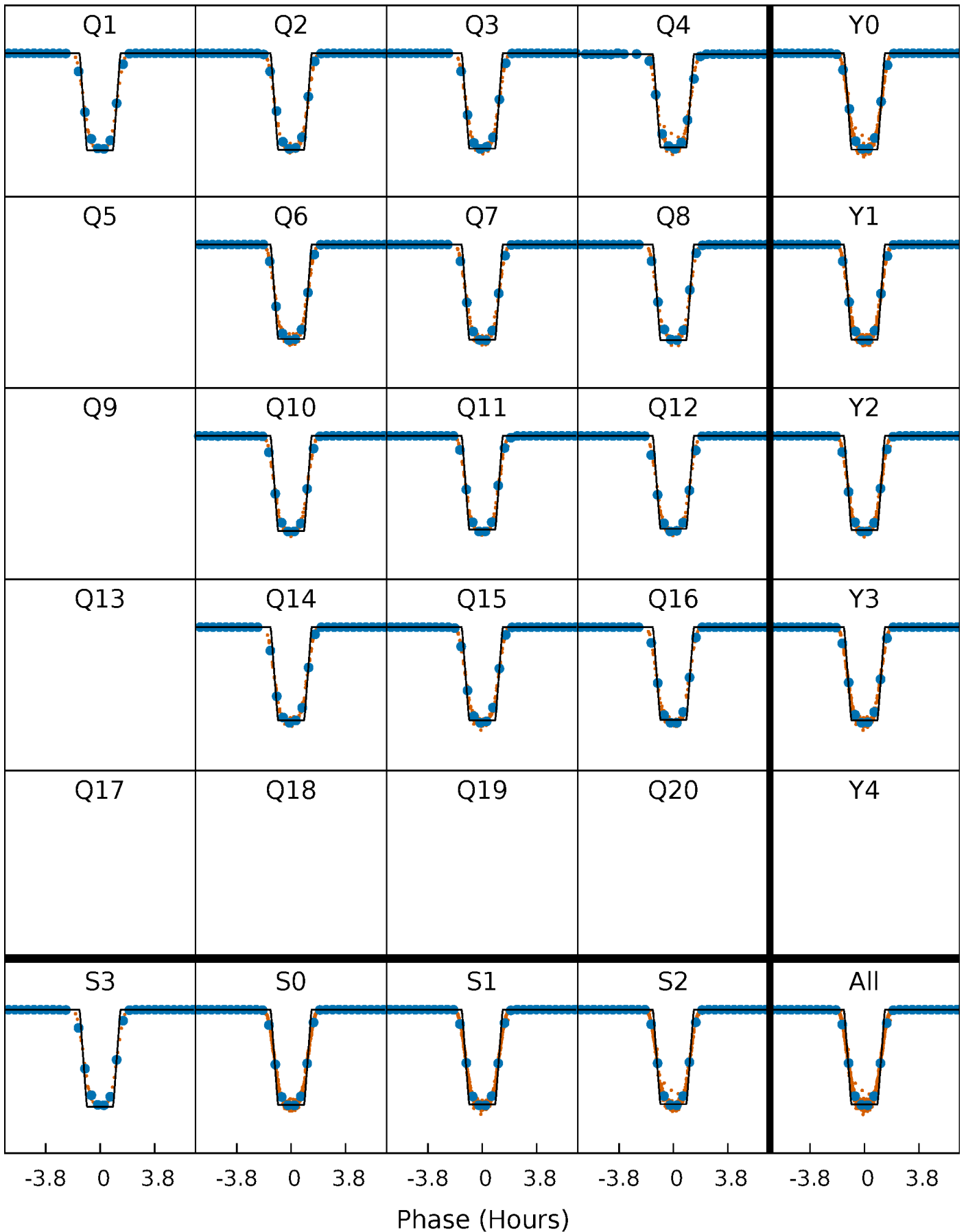
# DV Quarter-Phased Transit Curves

TCE 005597970-01 P= 6.717383 Days  $T_0=137.209969$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

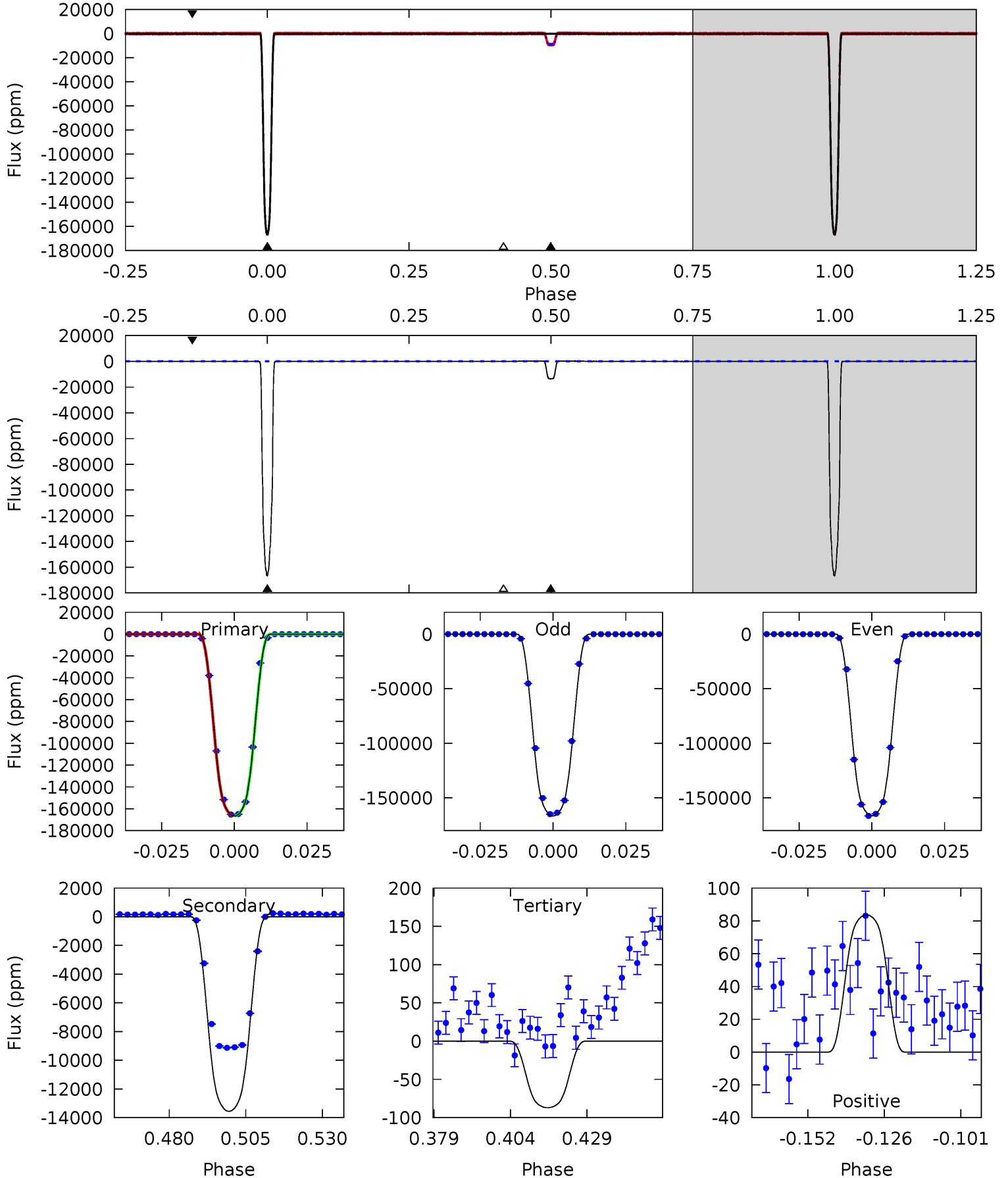
TCE 005597970-01 P= 6.717392 Days  $T_0=137.209070$  (BKJD)



# DV Model-Shift Uniqueness Test

005597970-01, P = 6.717383 Days, E = 130.492586 Days

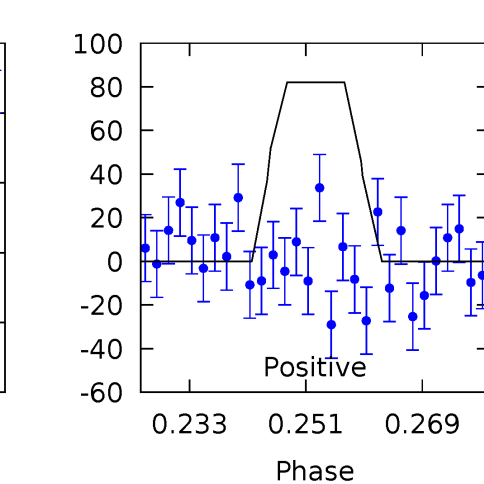
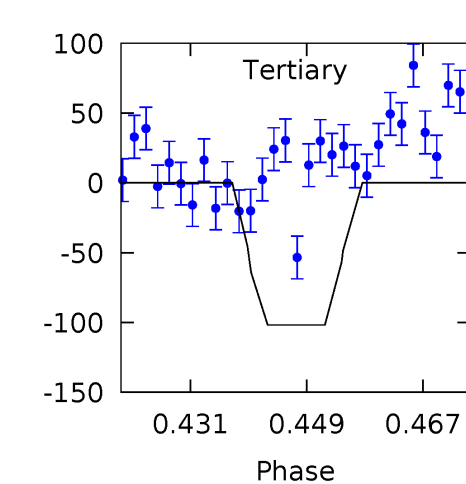
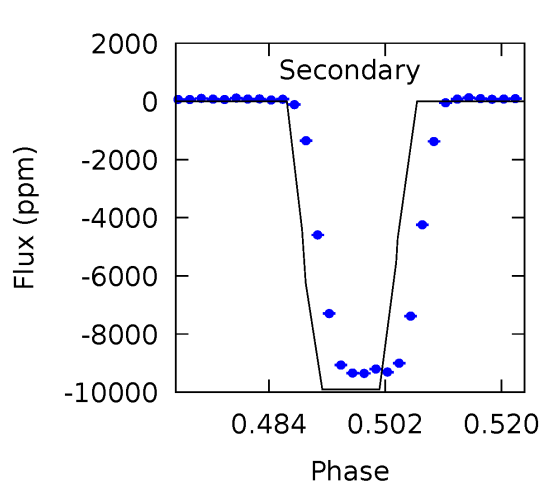
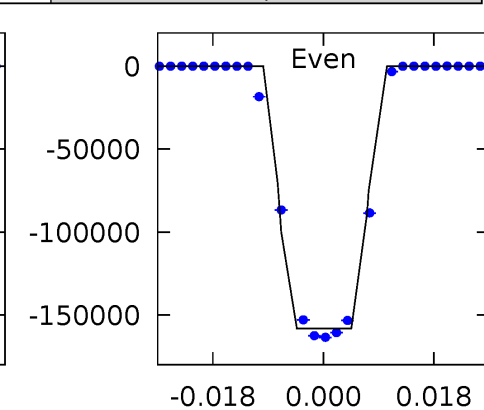
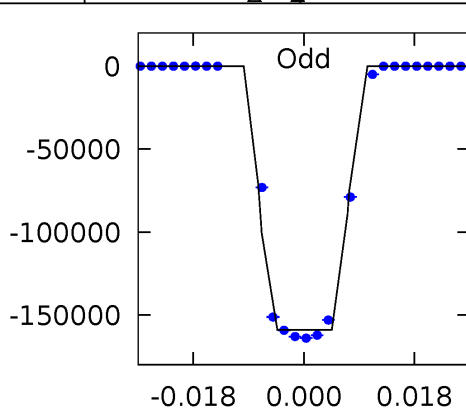
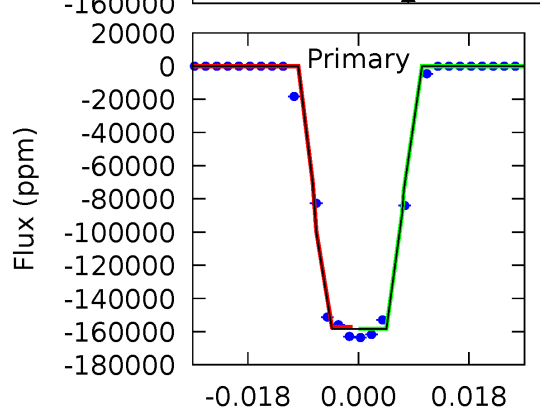
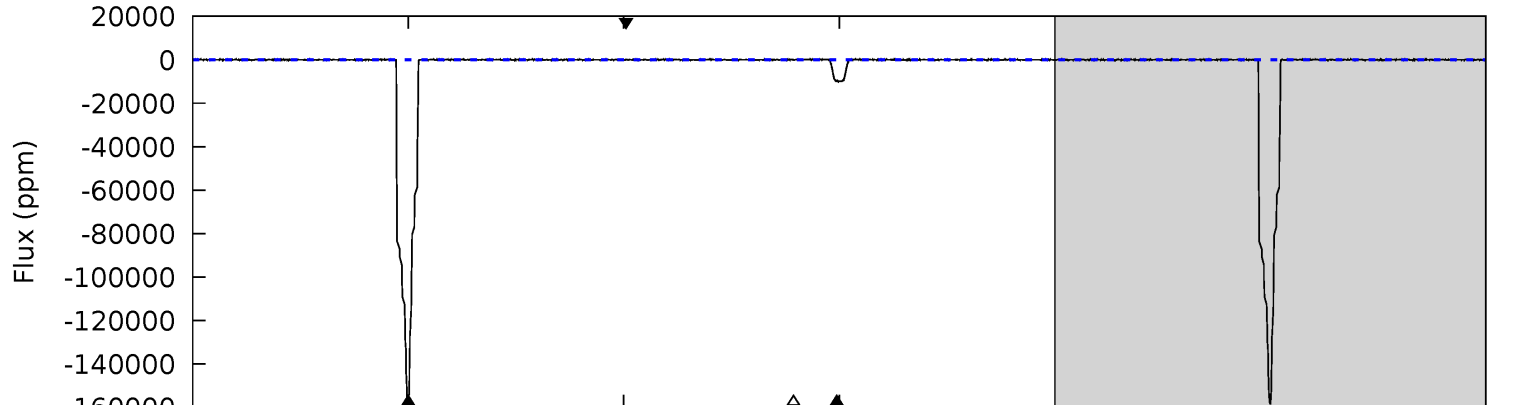
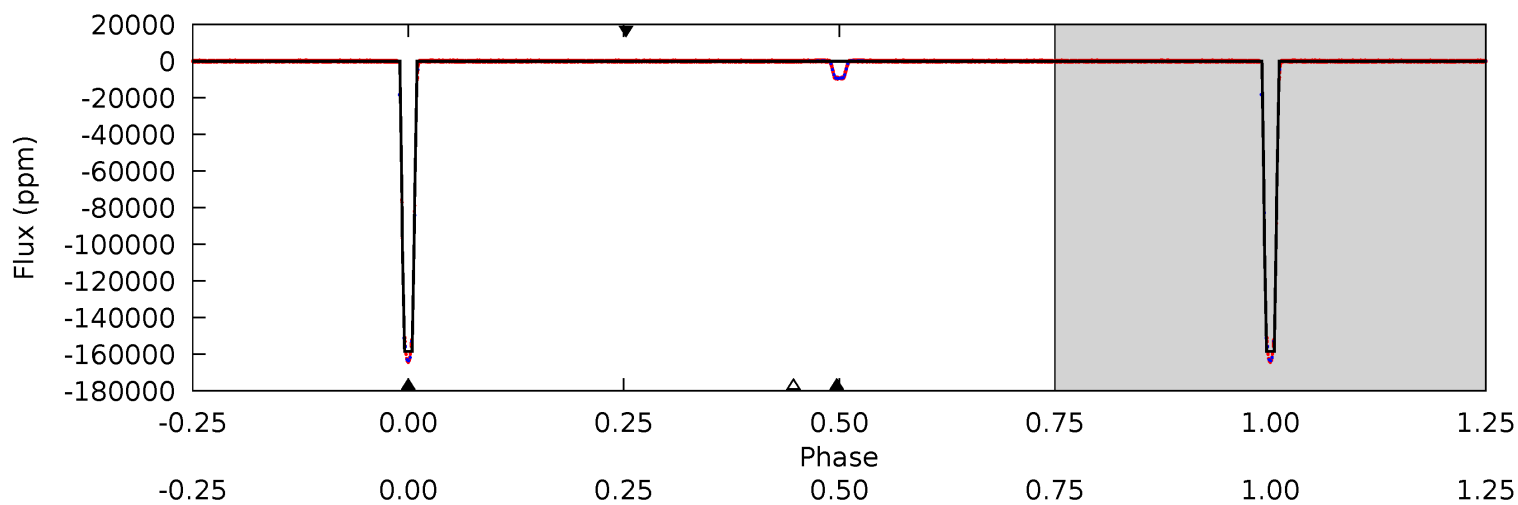
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15828	1288	8.26	7.95	4.85	2.24	5.40	15820	15820	1279	1280	13.5	1.00	0.00	0



# Alt Model-Shift Uniqueness Test

005597970-01, P = 6.717392 Days, E = 130.491678 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
7167	447.7	4.61	3.71	4.91	2.37	1.31	7162	7163	443.1	444.0	18.8	1.00	0.00	0



### Stellar Parameters For KIC 005597970

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5301^{+185}_{-185}$	$4.416^{+0.139}_{-0.186}$	$0.070^{+0.250}_{-0.300}$	$0.936^{+0.216}_{-0.126}$	$0.833^{+0.107}_{-0.066}$	$1.430^{+0.903}_{-0.679}$
	+3%/-3%	+3%/-4%	+357%/-429%	+23%/-13%	+13%/-8%	+63%/-47%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 005597970-01 / KOI 6014.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-13560 \pm 11$	$37.71^{+5.33}_{-3.20}$	$1240^{+88}_{-76}$	$3452^{+95}_{-83}$	$23^{+4}_{-5}$
Alt.	$-9899 \pm 22$	$41.22^{+5.88}_{-3.32}$	$1238^{+85}_{-72}$	$3197^{+72}_{-70}$	$14^{+3}_{-3}$

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

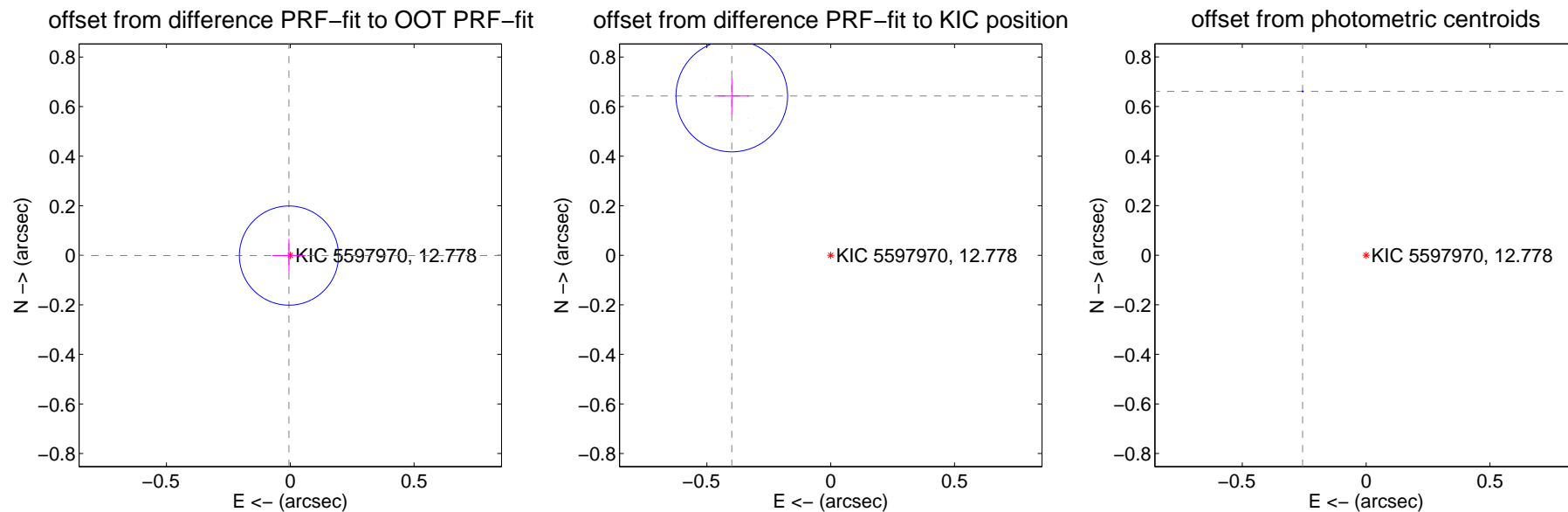
## DV Centroid Data

Supplemental centroid analysis for 005597970-01. Kepler magnitude: 12.78. Transit SNR 9415.74

There are 13 quarters with good PRF difference image offsets

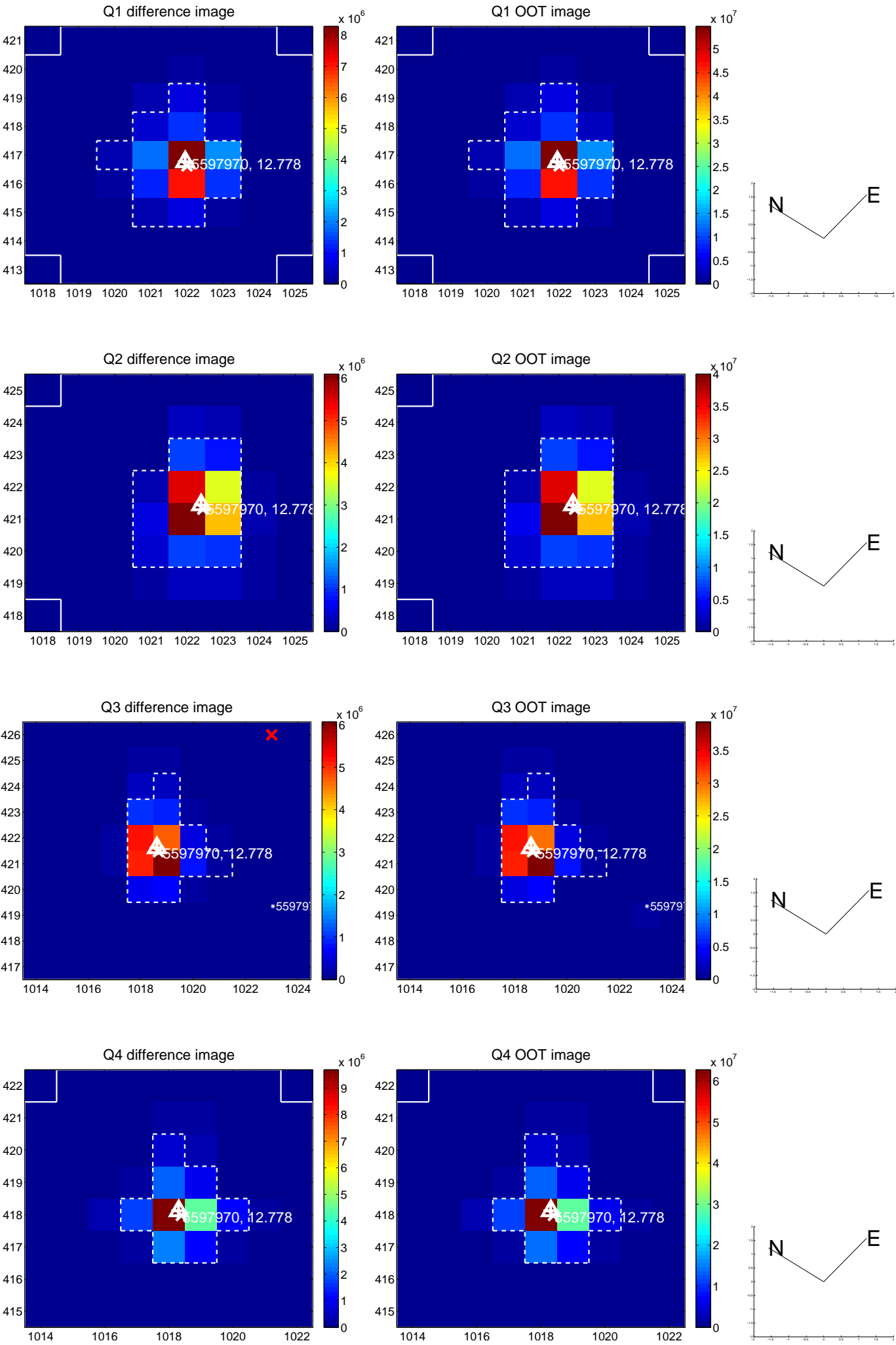
The direct PRF centroid is offset from the target star catalog position by about 0.99 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.005 \pm 0.067$	0.08	$0.005 \pm 0.067$	$-0.001 \pm 0.067$
PRF-fit source offset from KIC position	<b><math>0.757 \pm 0.075</math></b>	<b>10.08</b>	$0.400 \pm 0.070$	$0.643 \pm 0.074$
photometric centroid source offset	<b><math>0.71 \pm 0.00</math></b>	<b>1318.15</b>	$0.26 \pm 0.00$	$0.66 \pm 0.00$

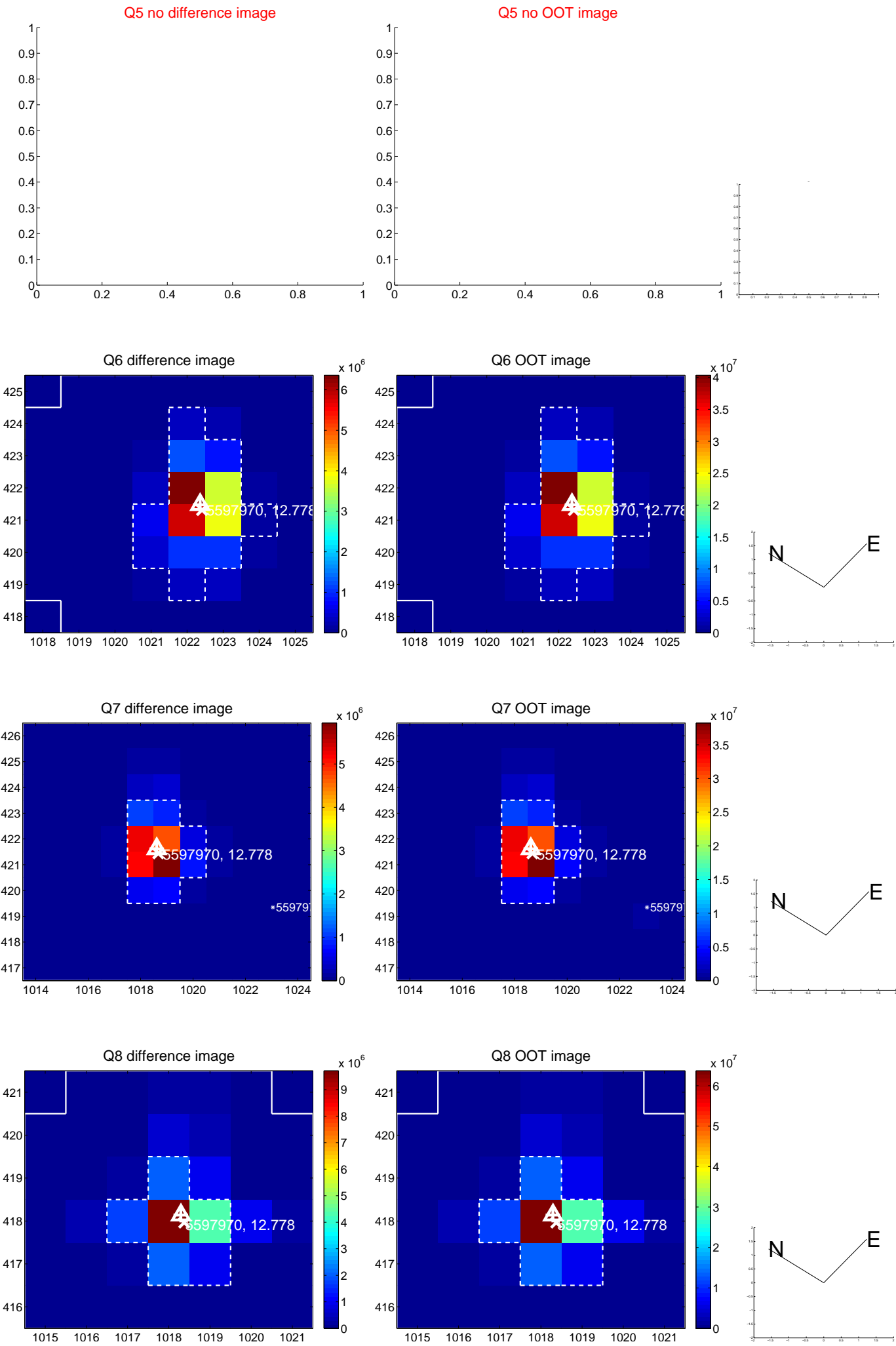


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

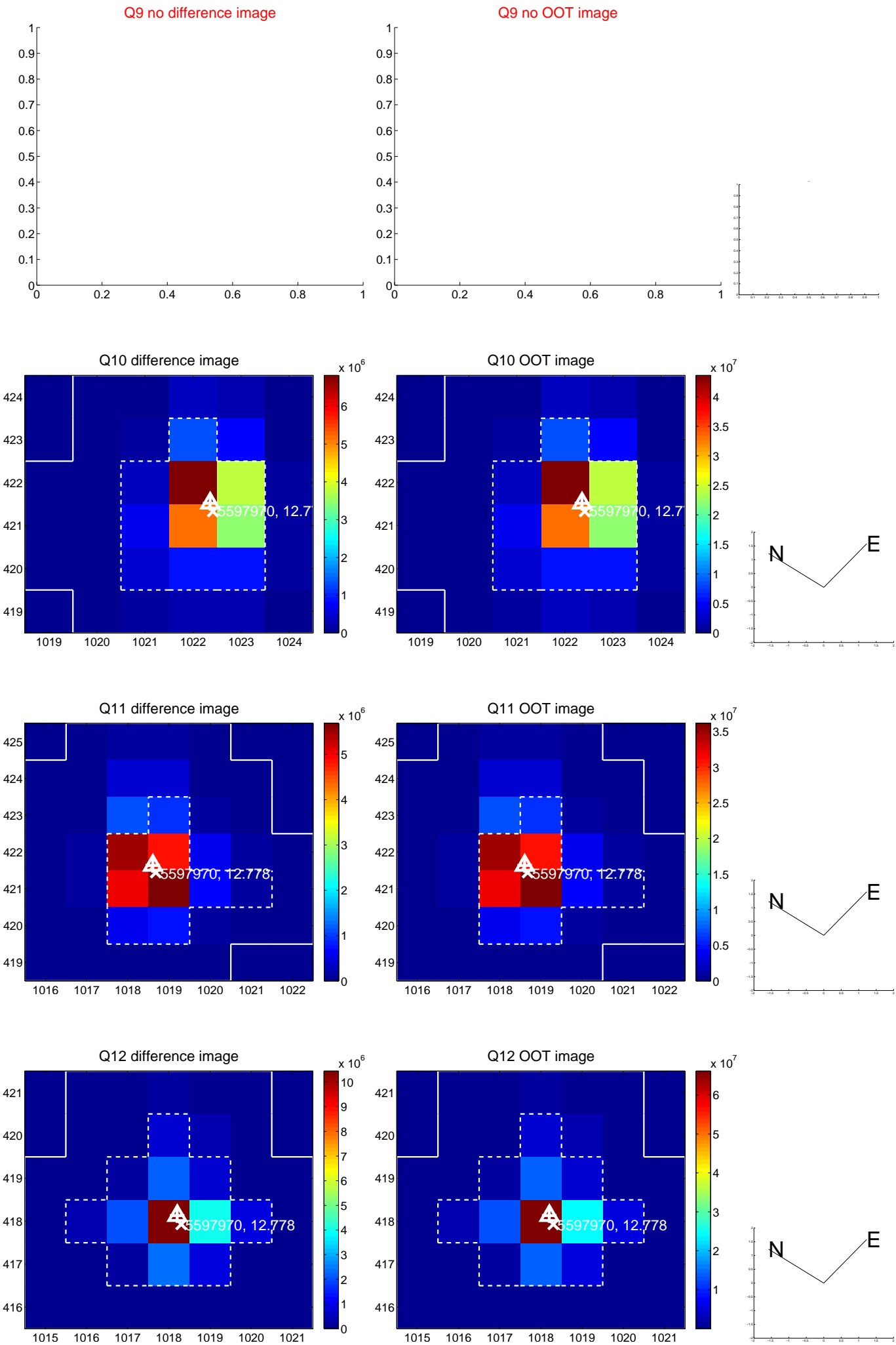


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

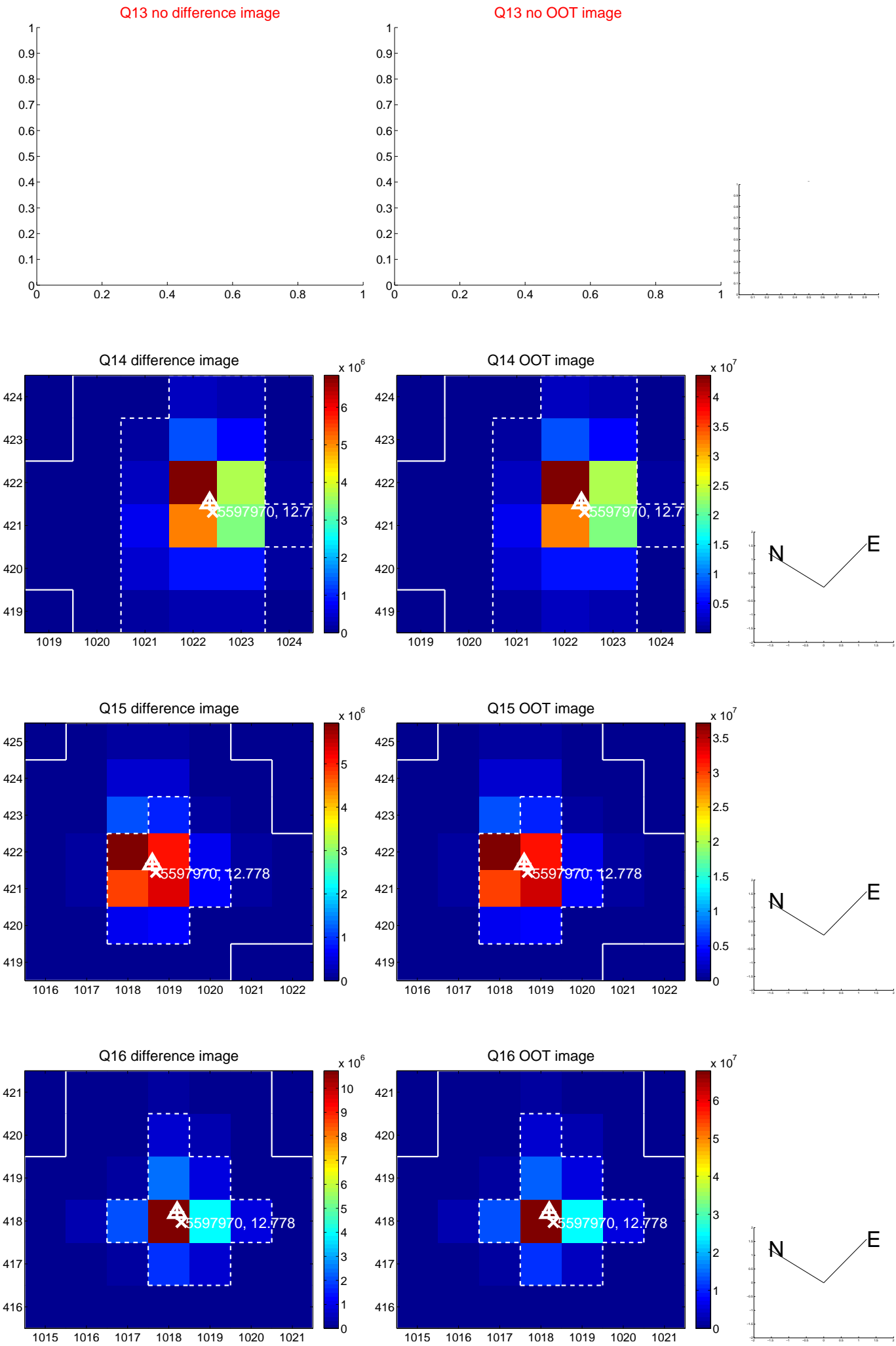




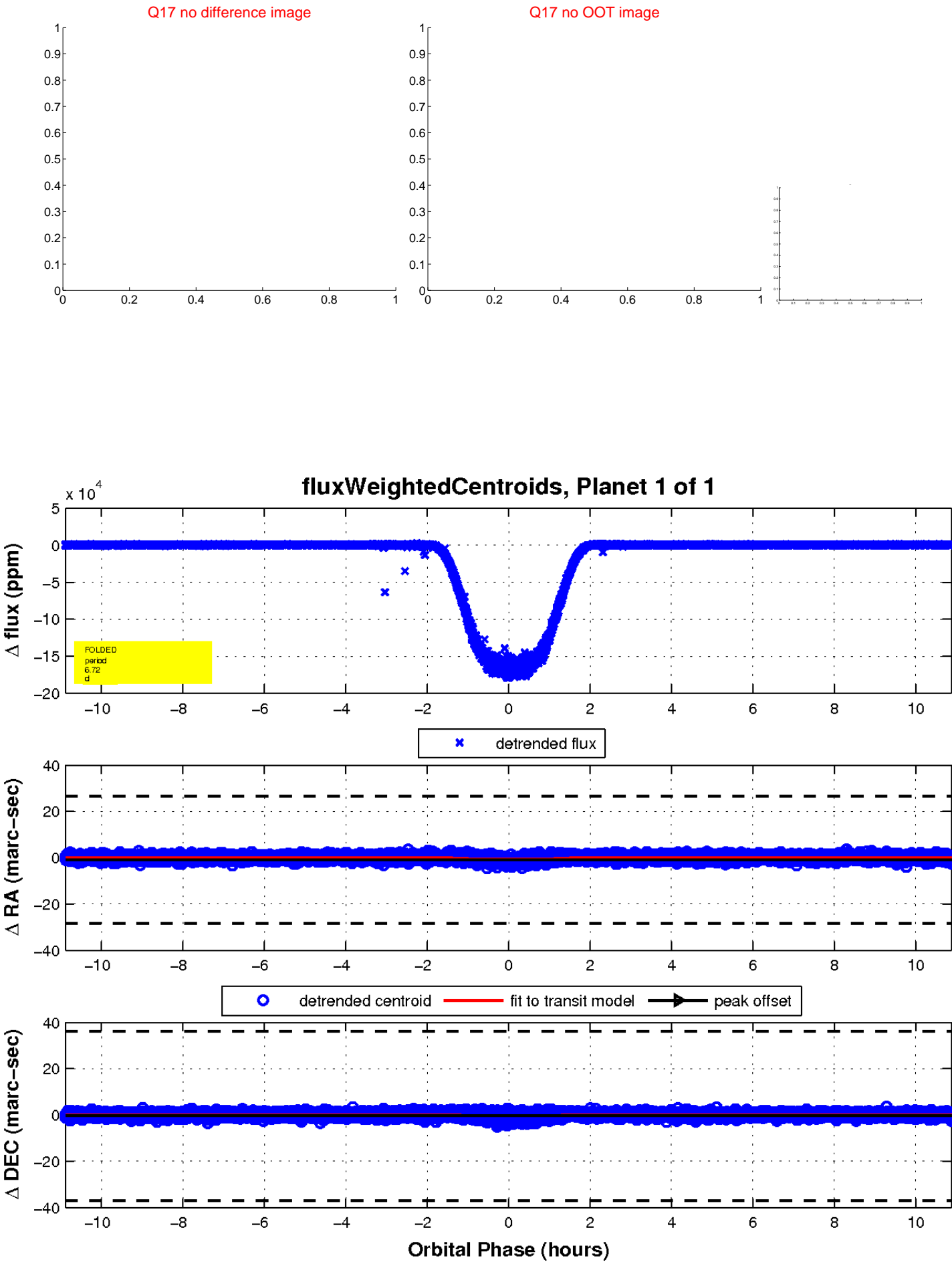
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

