

# KIC 004449034

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004449034-01	OBS	0625.01	38.138616	142.298201	1206.5	3.741	60.3	58.6	2.34	6481	13.19	137.45

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004449034-01	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.

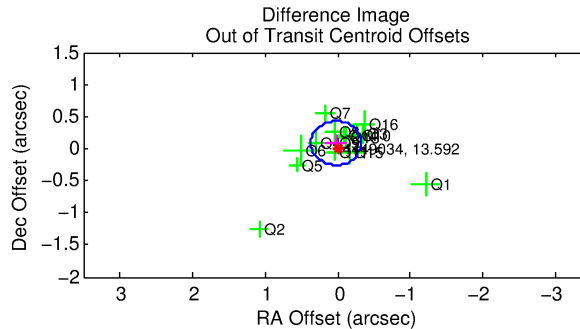
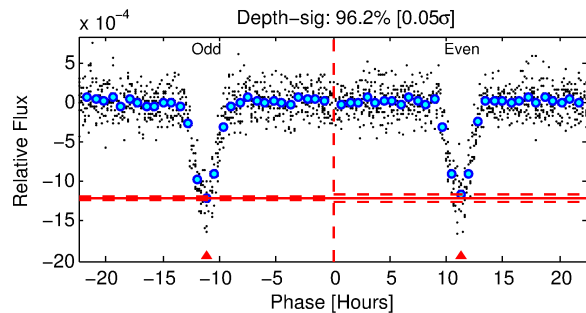
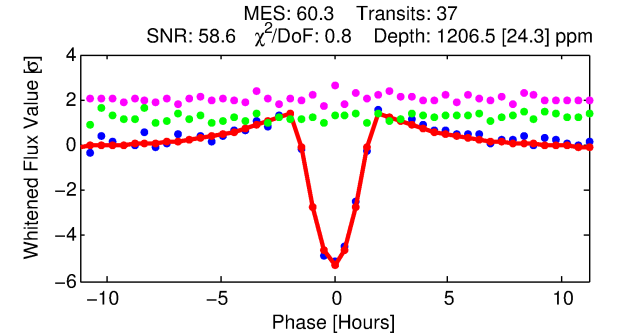
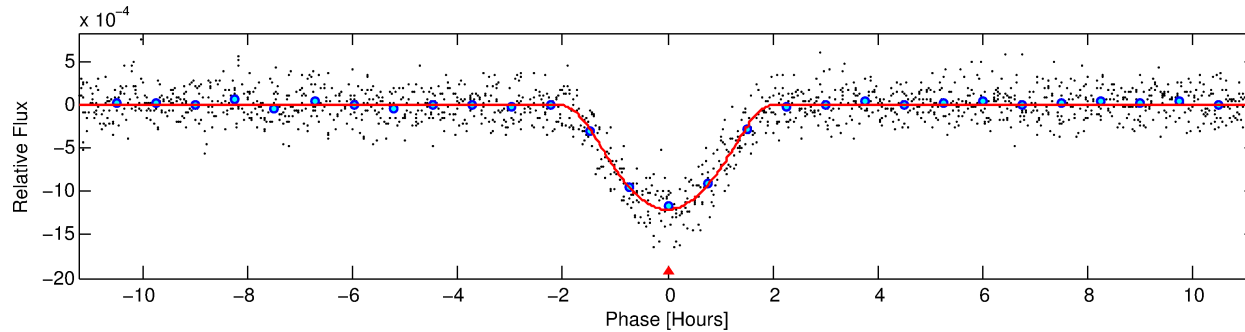
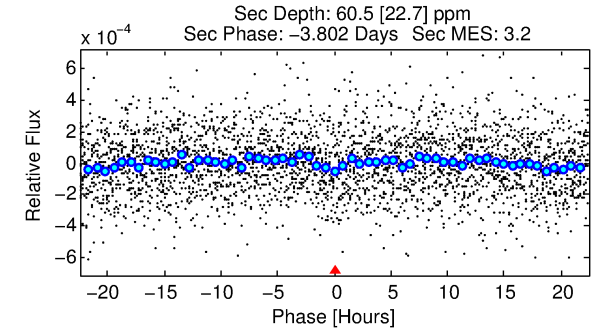
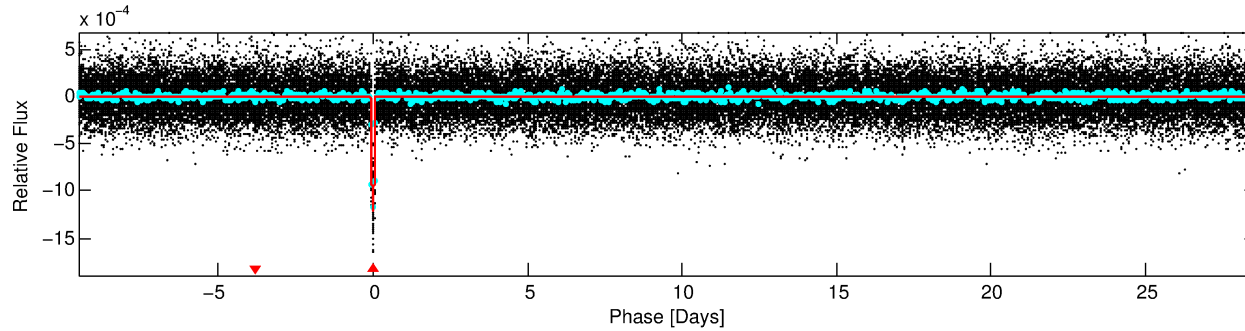
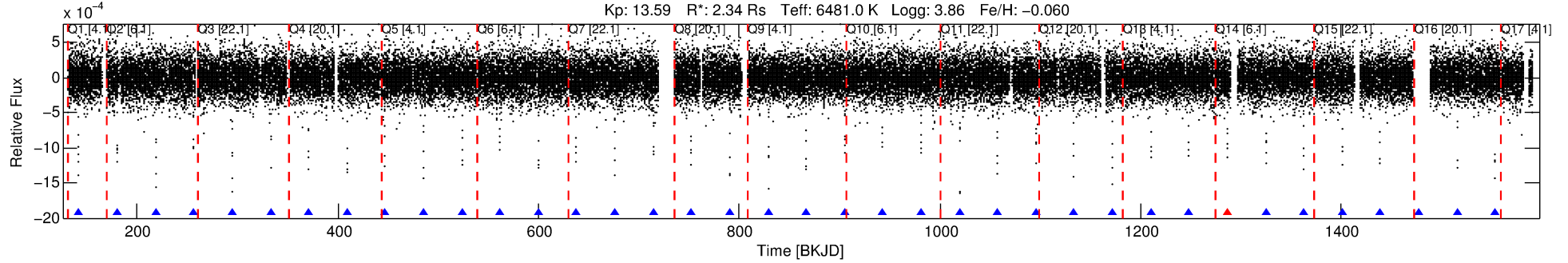
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004449034-01

No Significant Match Found

# DV One-Page Summary

KIC: 4449034 Candidate: 1 of 1 Period: 38.139 d  
KOI: K00625.01 Corr: 0.990



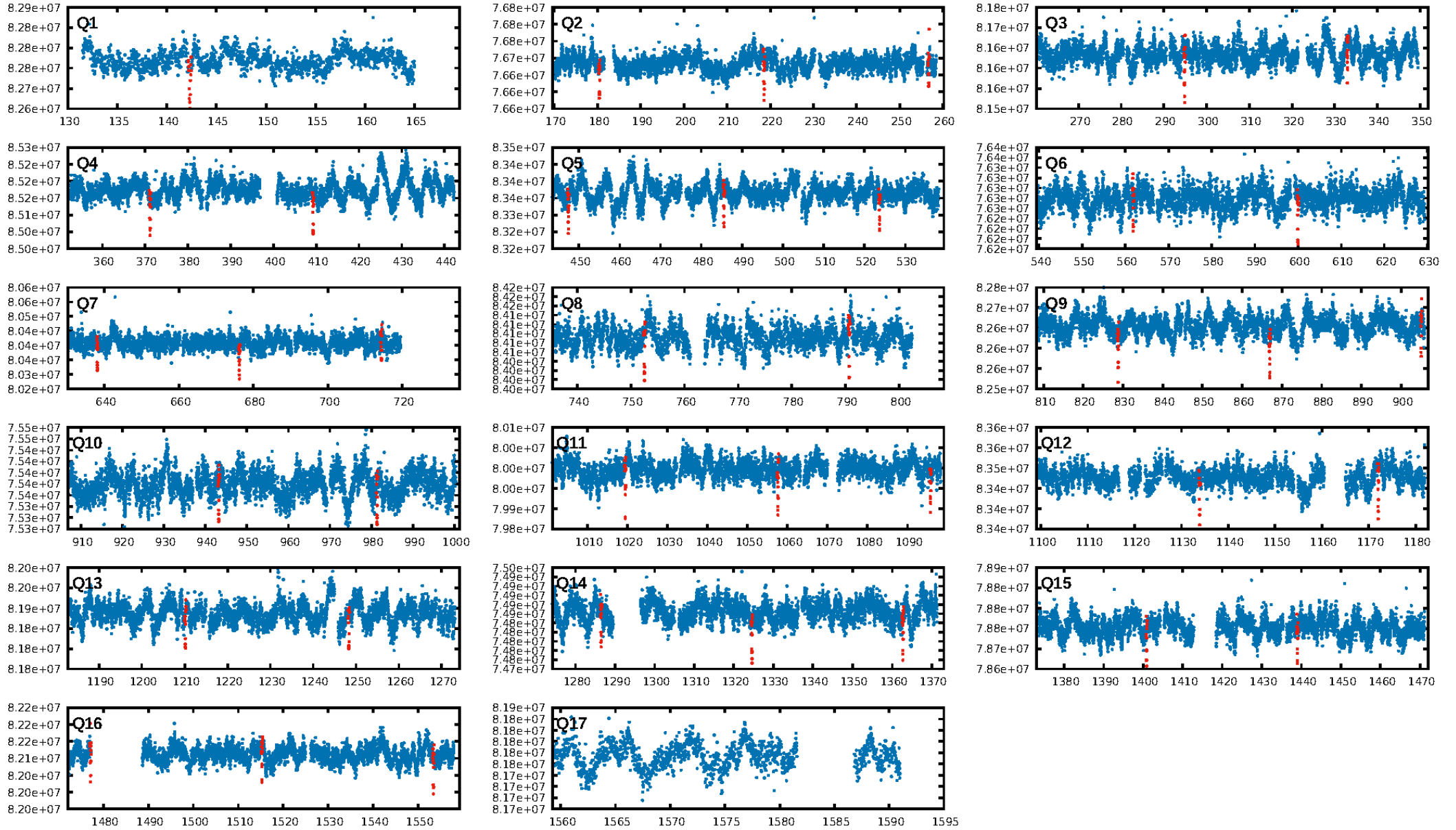
## DV Fit Results:

Period = 38.13862 [0.00006] d  
Epoch = 142.2982 [0.0012] BKJD  
Rp/R\* = 0.0516 [0.0160]  
a/R\* = 28.35 [2.76]  
b = 0.99 [0.03]  
Seff = 137.45 [96.47]  
Teq = 873 [153] K  
Rp = 13.19 [7.18] Re  
a = 0.2513 [0.1081] AU  
Ag = 12.07 [12.08] [0.92σ]  
Teffp = 2516 [464] K [3.36σ]

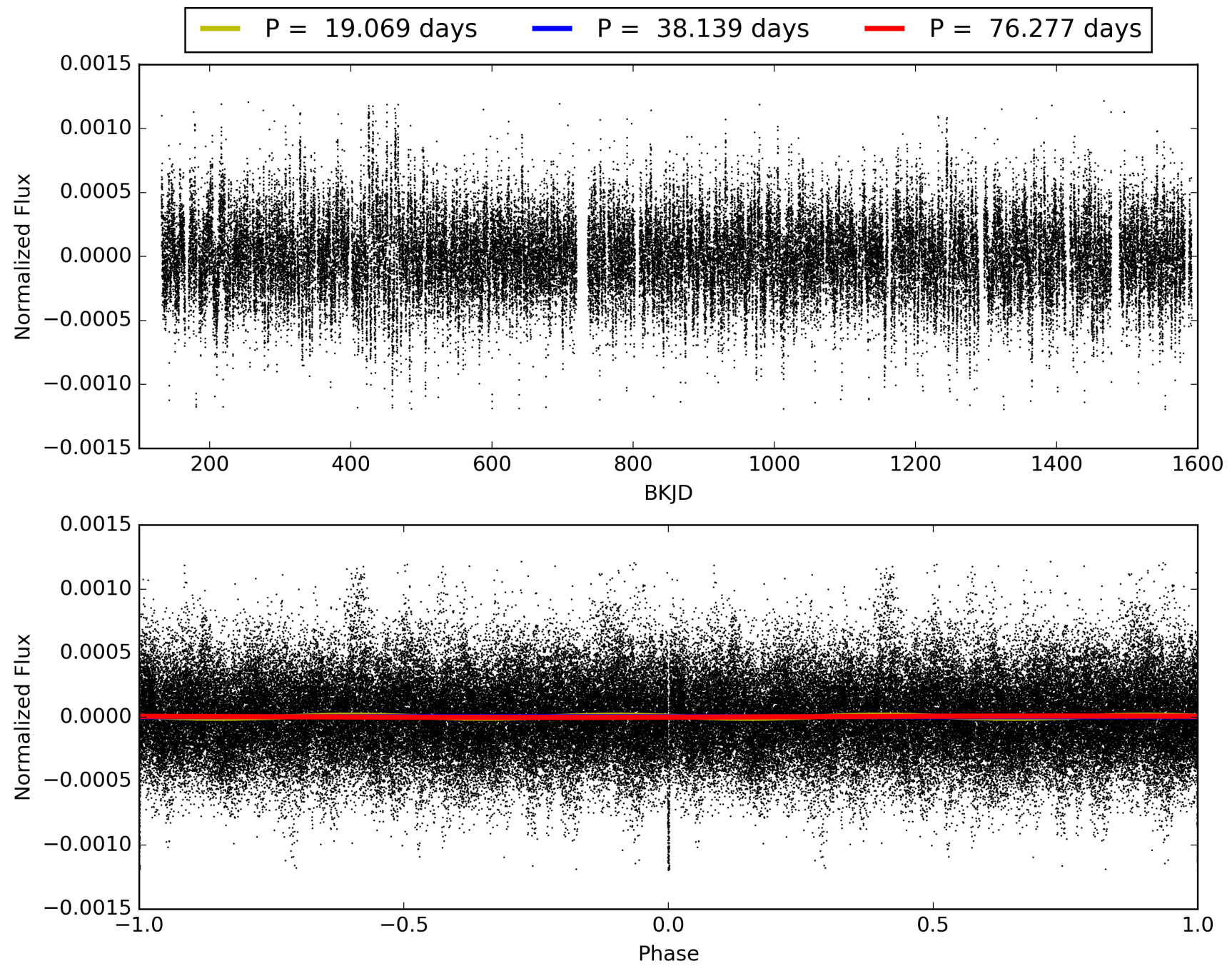
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 98.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 0.97 [35/36]  
GhostDiagnostic-chr: 4.933  
Centroid-sig: 0.0%  
Centroid-so: 0.725 arcsec [3.54σ]  
OotOffset-rm: 0.089 arcsec [0.78σ]  
KicOffset-rm: 0.151 arcsec [1.11σ]  
OotOffset-st: 4/4/3/4 [15]  
KicOffset-st: 4/4/3/4 [15]  
DiffImageQuality-fgm: 1.00 [15/15]  
DiffImageOverlap-fno: 1.00 [15/15]

# TCE 004449034-01, PDC Light Curves

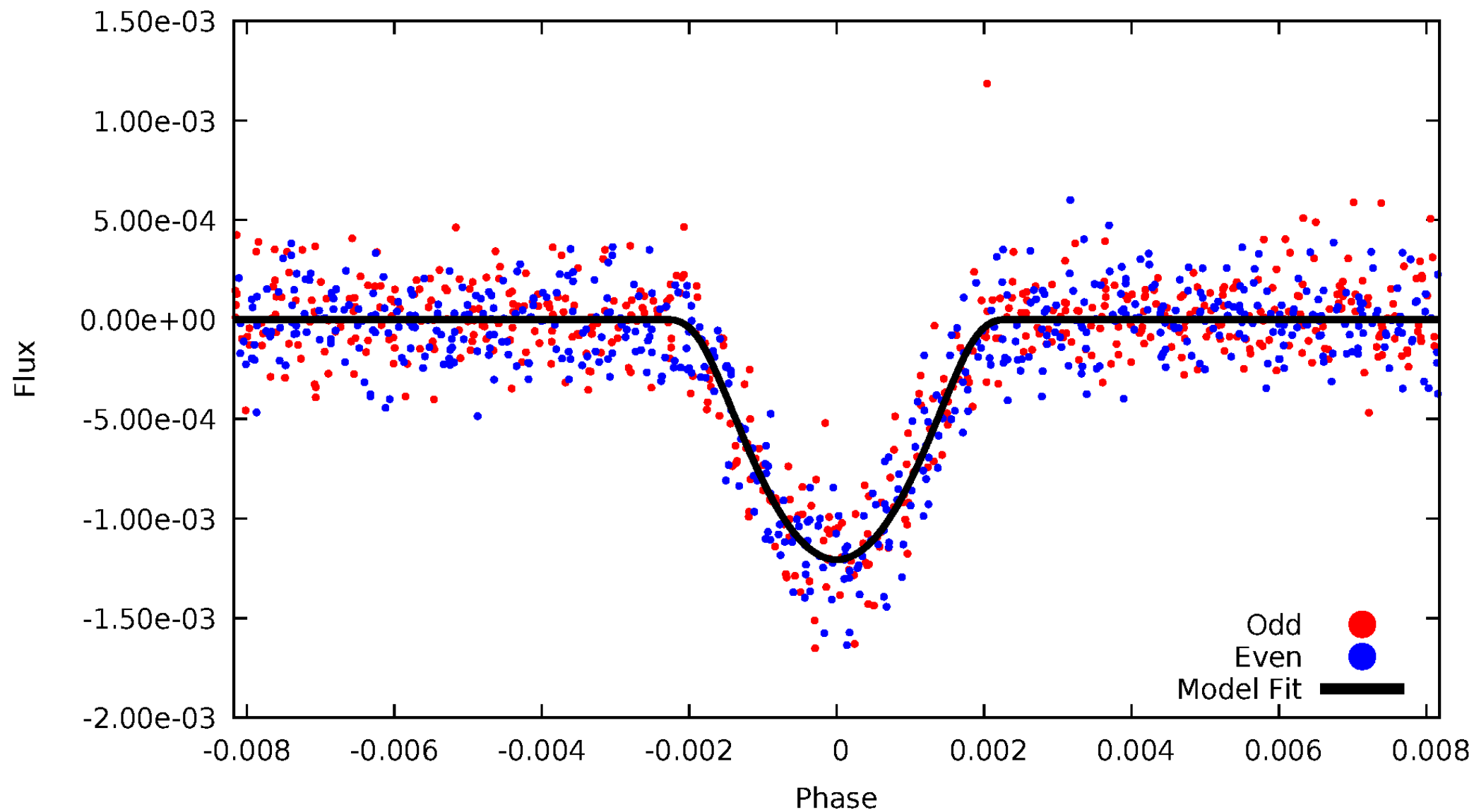


TCE 004449034-01



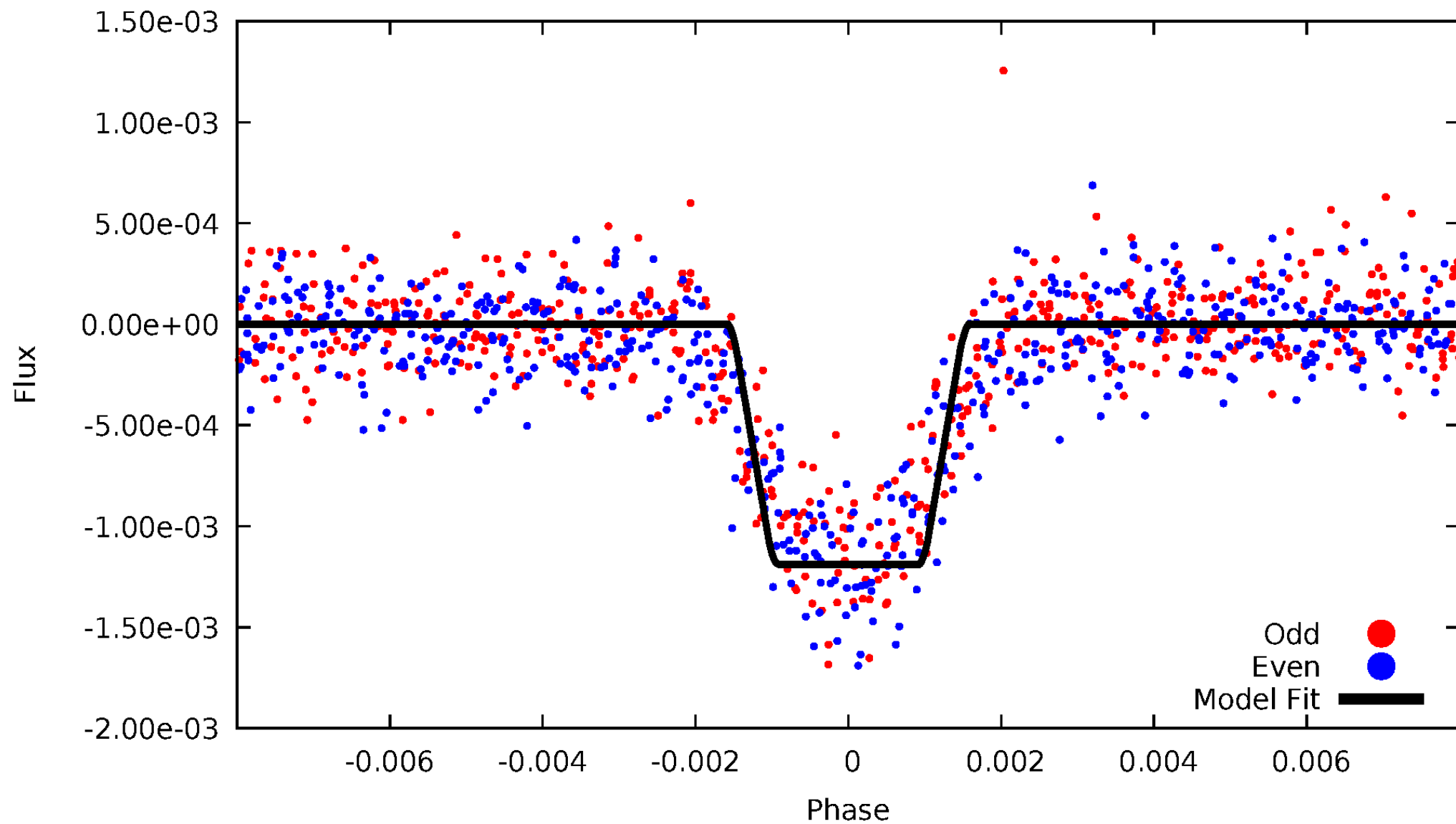
# DV Odd/Even

TCE 004449034-01



# ALT Odd/Even

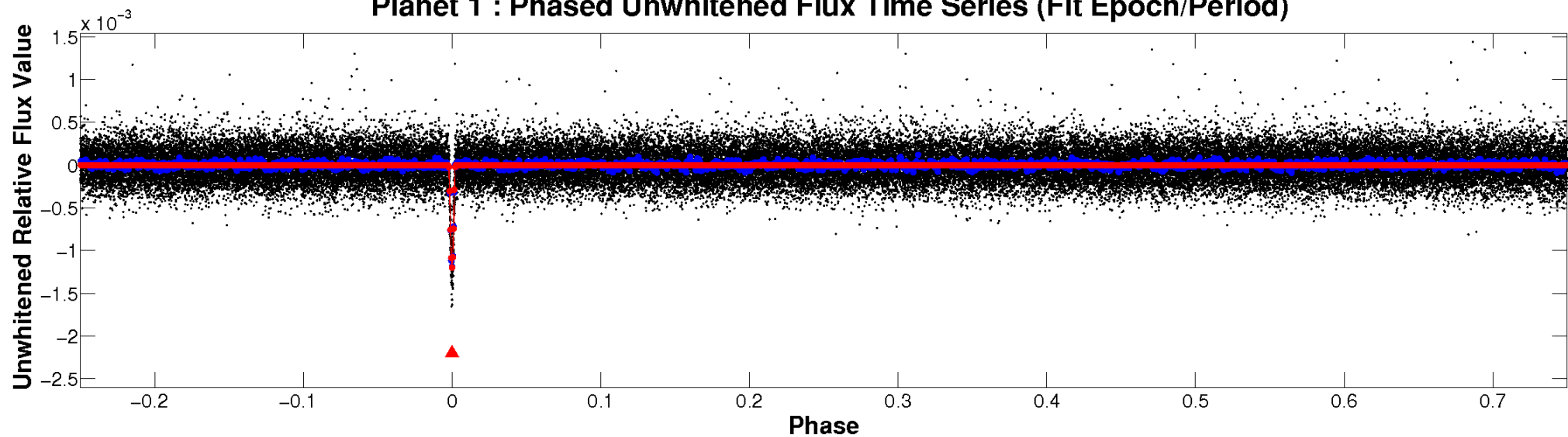
TCE 004449034-01



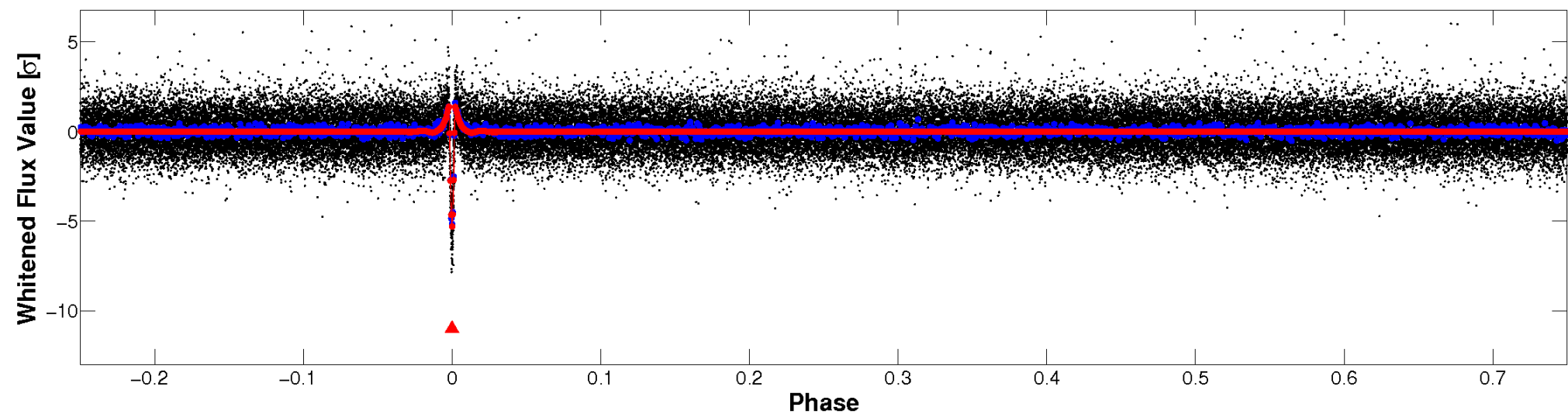


# Non-Whitened Vs. Whitened Light Curve

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

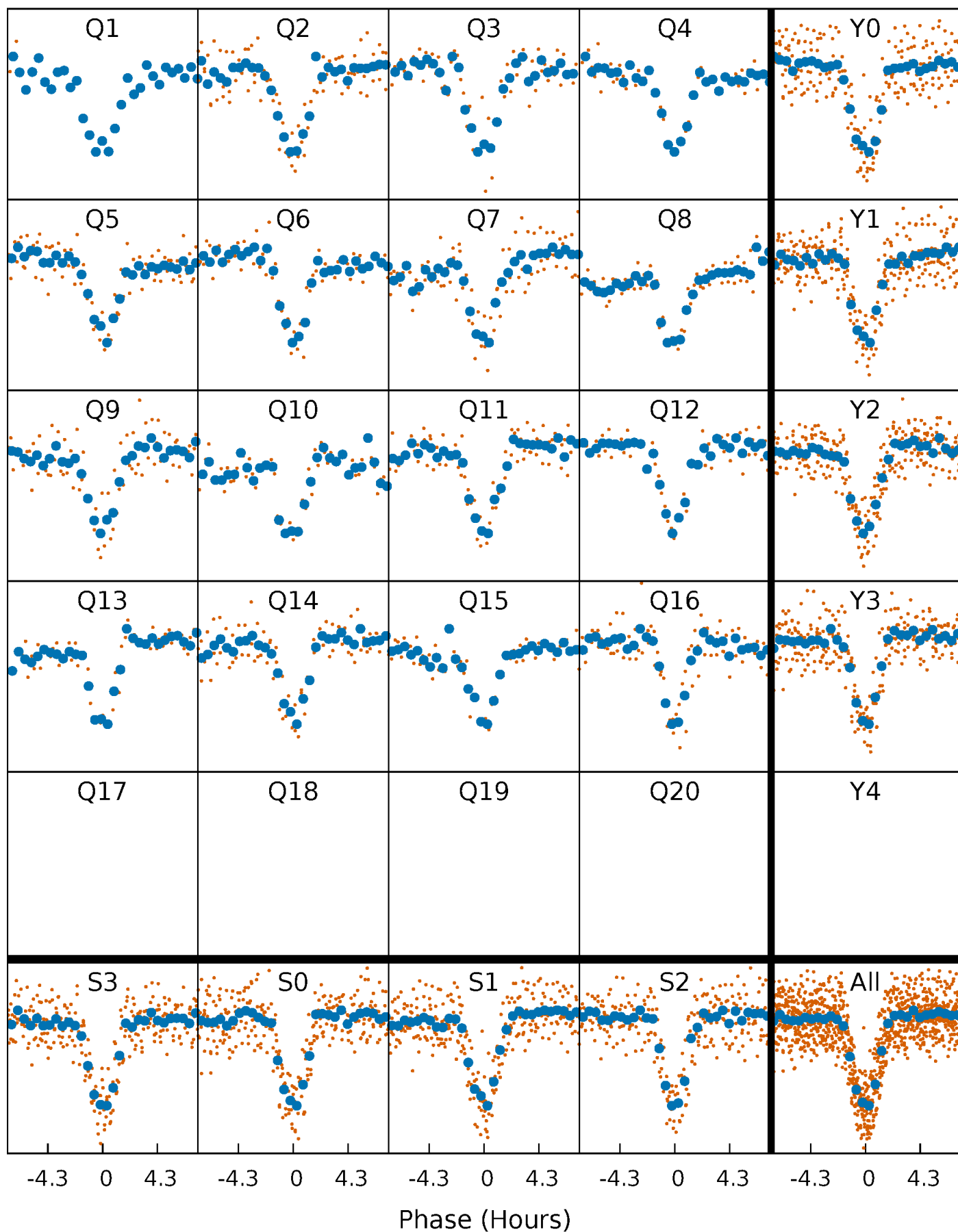


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

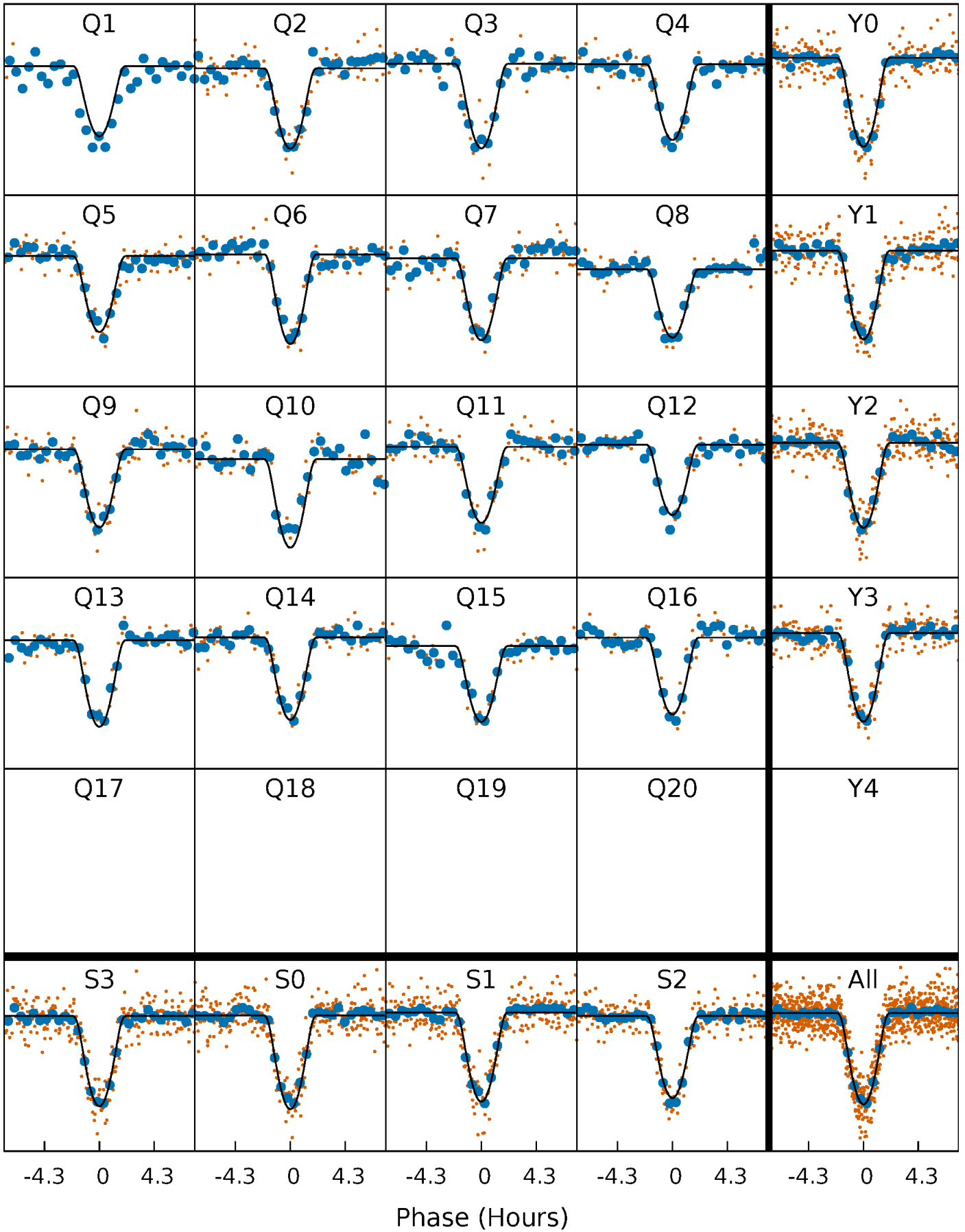
TCE 004449034-01 P= 38.138616 Days  $T_0=142.298201$  (BKJD)





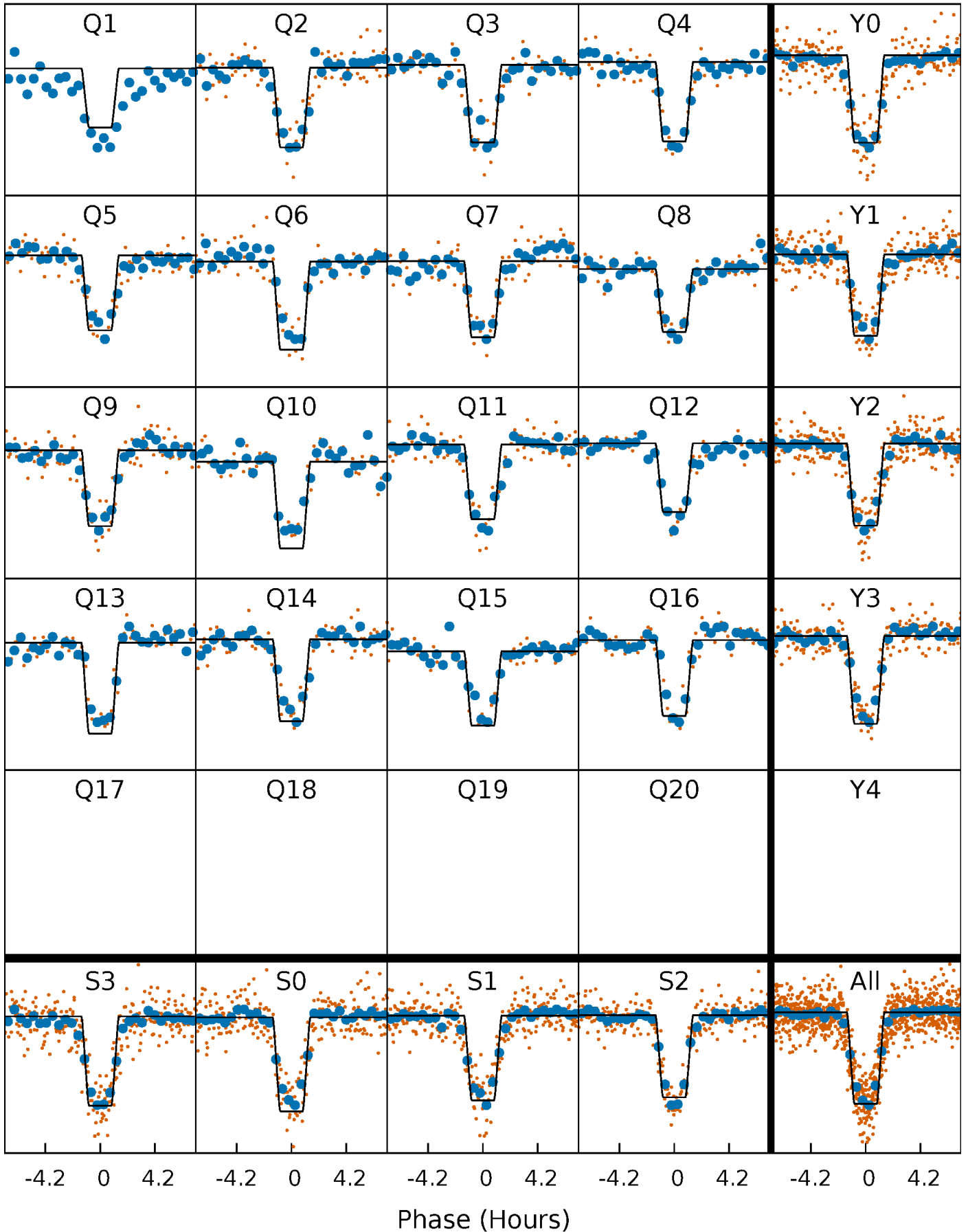
# DV Quarter-Phased Transit Curves

TCE 004449034-01 P= 38.138616 Days  $T_0=142.298201$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

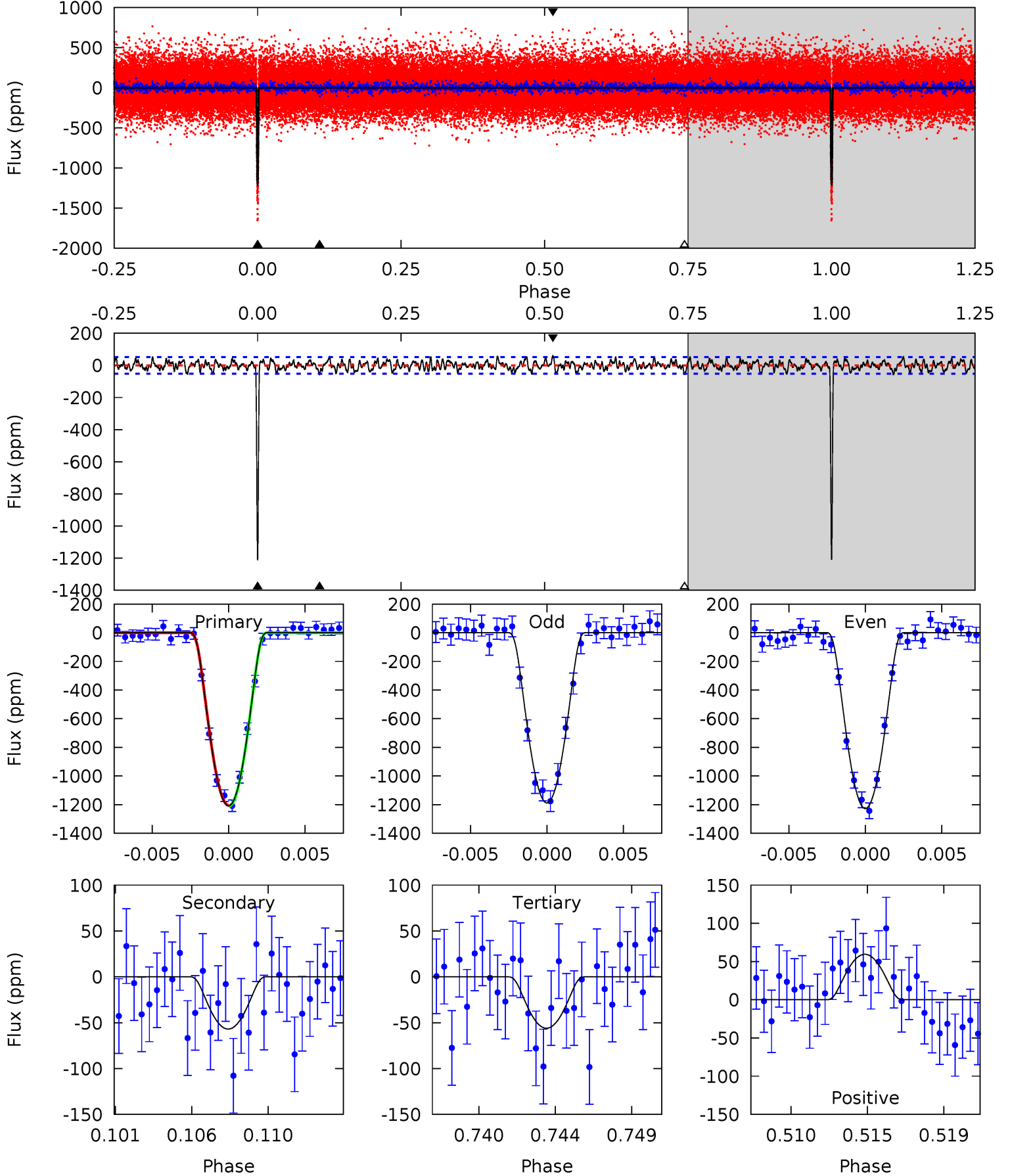
TCE 004449034-01 P= 38.138530 Days  $T_0=142.298974$  (BKJD)



# DV Model-Shift Uniqueness Test

004449034-01, P = 38.138616 Days, E = 104.159585 Days

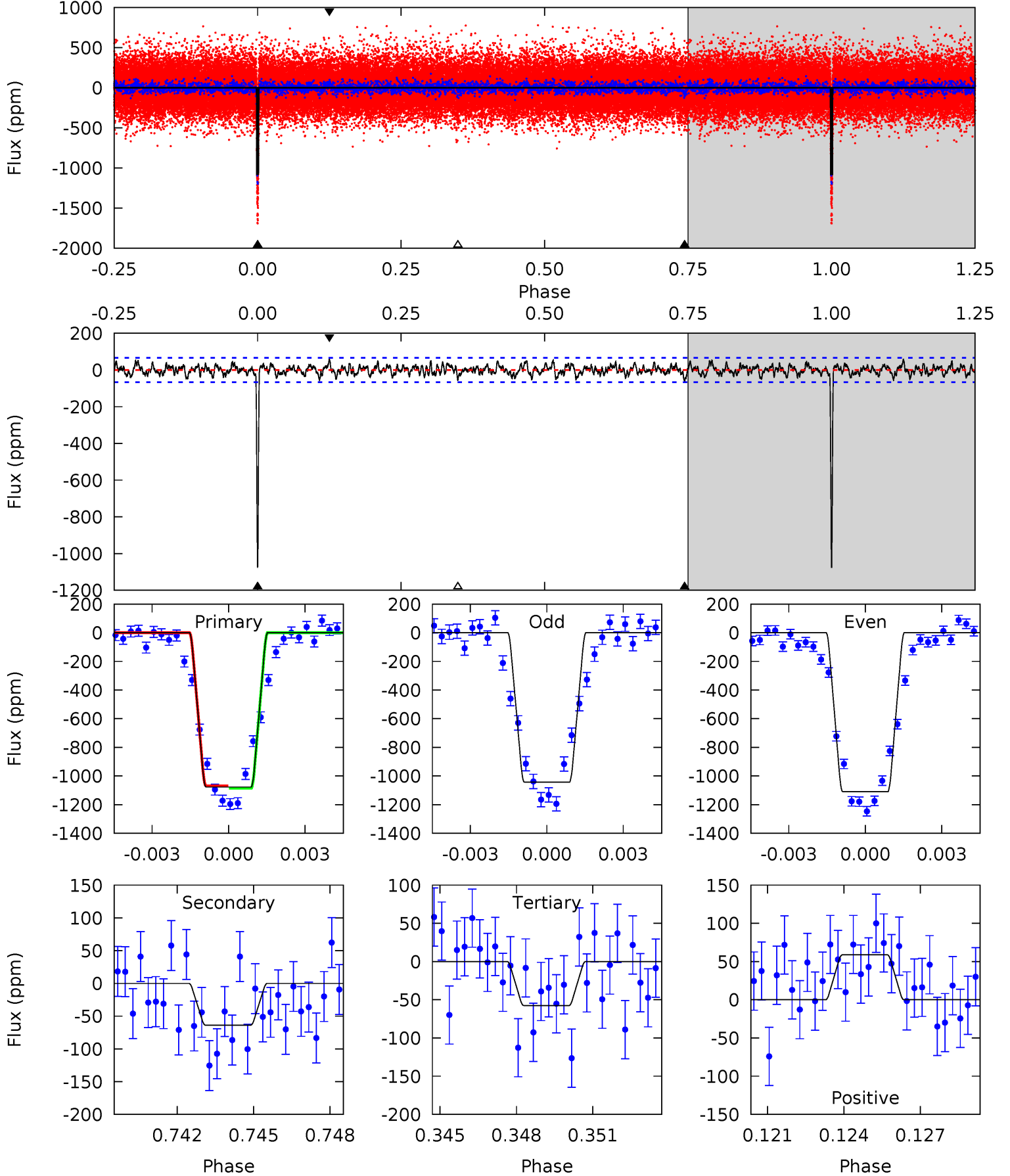
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
119.9	5.65	5.56	5.90	5.17	2.83	2.10	114.4	114.0	0.09	-0.25	1.96	0.99	0.05	0.37



# Alt Model-Shift Uniqueness Test

004449034-01, P = 38.138530 Days, E = 104.160444 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
85.5	5.06	4.57	4.66	5.25	2.96	1.58	80.9	80.9	0.49	0.40	2.64	1.00	0.05	0.64



### Stellar Parameters For KIC 004449034

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6481^{+155}_{-214}$	$3.861^{+0.405}_{-0.135}$	$-0.060^{+0.250}_{-0.300}$	$2.343^{+0.563}_{-1.046}$	$1.456^{+0.197}_{-0.338}$	$0.160^{+0.587}_{-0.065}$
	+2%/-3%	+10%/-3%	+417%/-500%	+24%/-45%	+14%/-23%	+368%/-41%
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 004449034-01 / KOI 0625.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-57 \pm 10$	$12.24^{+5.13}_{-4.30}$	$1199^{+89}_{-132}$	$3074^{+404}_{-244}$	$13^{+18}_{-7}$
Alt.	$-64 \pm 13$	$8.07^{+4.14}_{-3.95}$	$1189^{+90}_{-134}$	$3536^{+939}_{-389}$	$33^{+92}_{-18}$

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

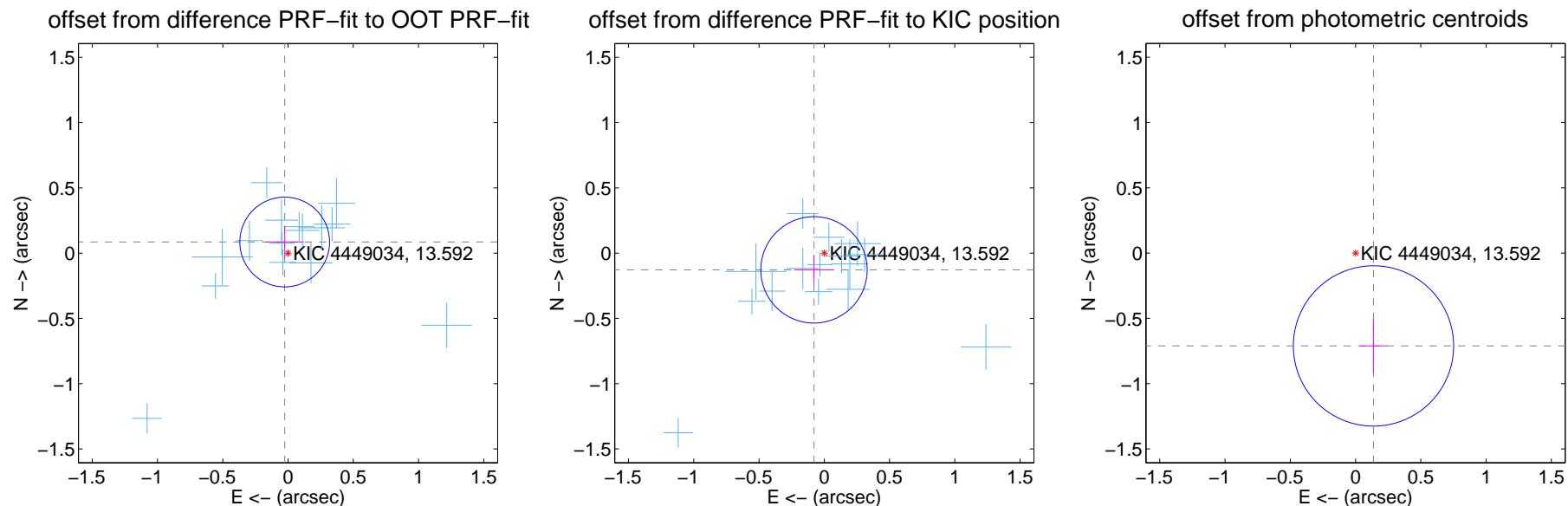
## DV Centroid Data

Supplemental centroid analysis for 004449034-01. Kepler magnitude: 13.59. Transit SNR 58.56

There are 15 quarters with good PRF difference image offsets

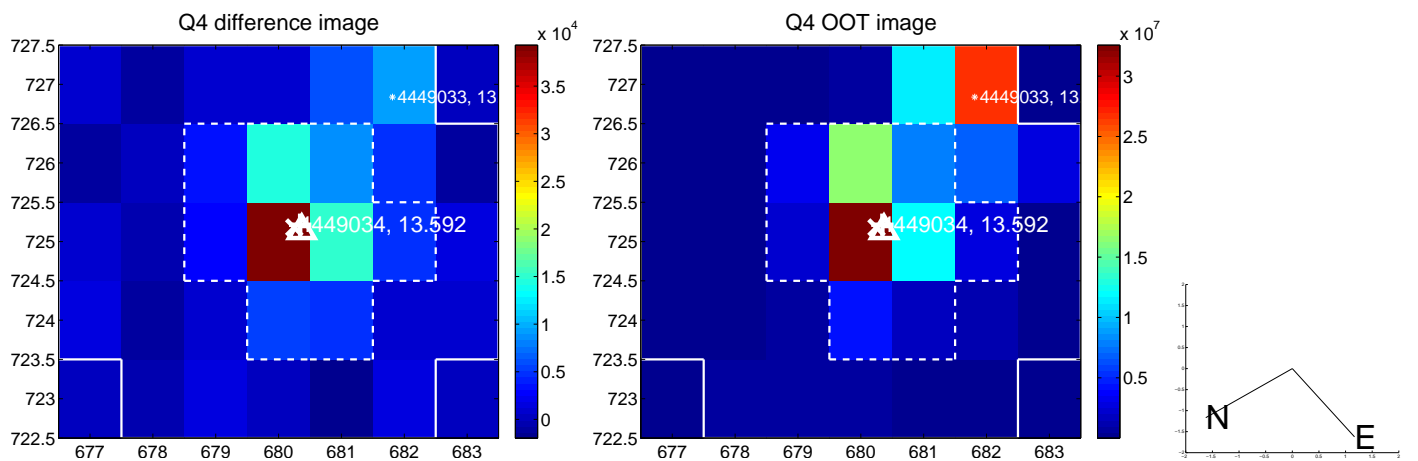
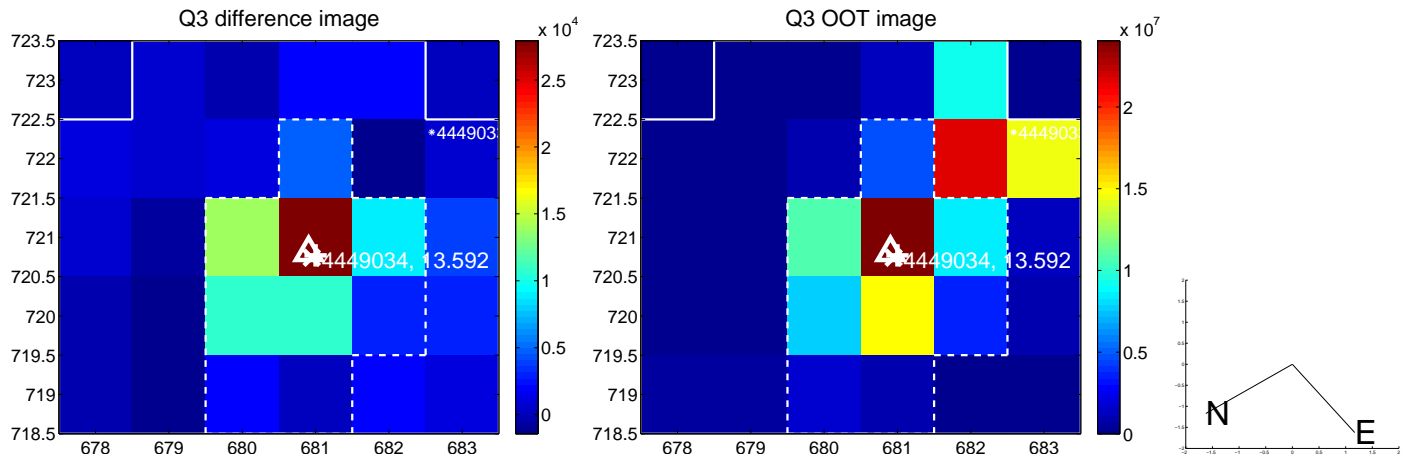
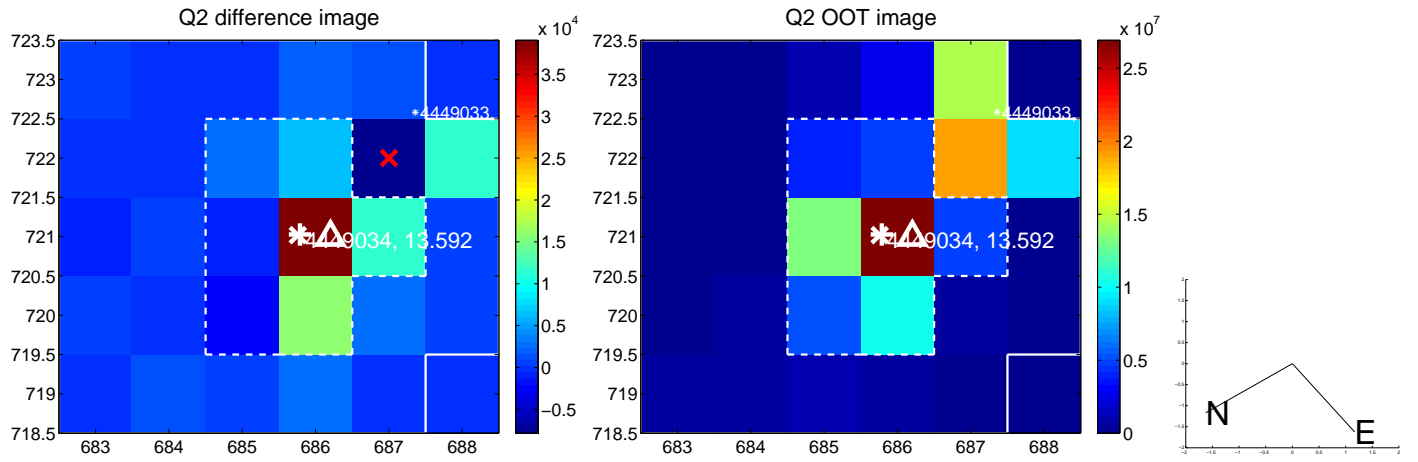
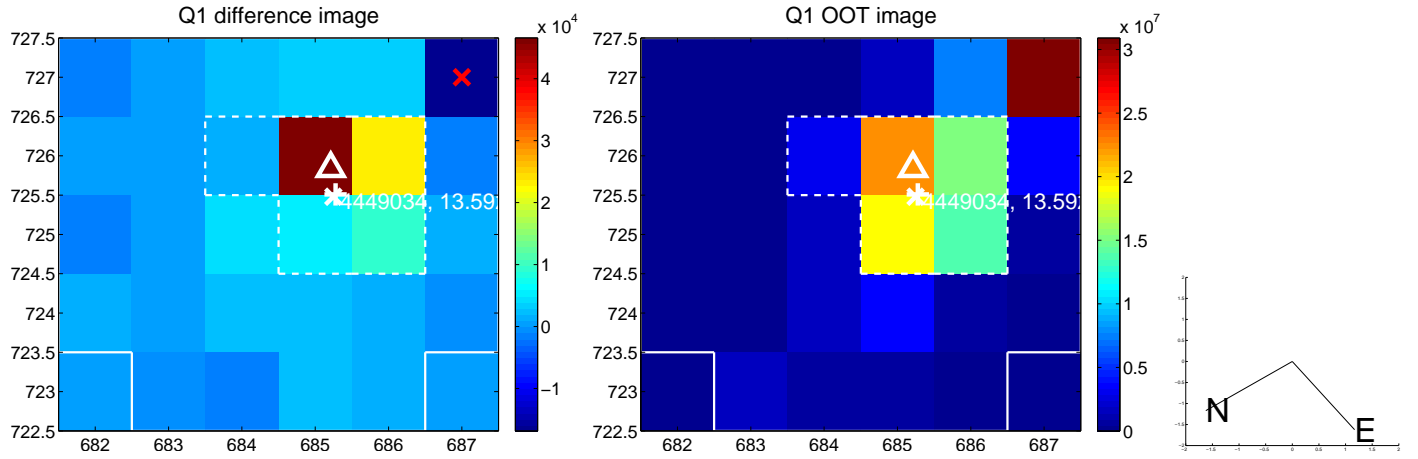
The direct PRF centroid is offset from the target star catalog position by about 0.50 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.089 \pm 0.115$	0.78	$0.025 \pm 0.146$	$0.085 \pm 0.125$
PRF-fit source offset from KIC position	$0.151 \pm 0.136$	1.11	$0.079 \pm 0.152$	$-0.128 \pm 0.114$
photometric centroid source offset	$0.72 \pm 0.20$	3.54	$-0.14 \pm 0.11$	$-0.71 \pm 0.21$



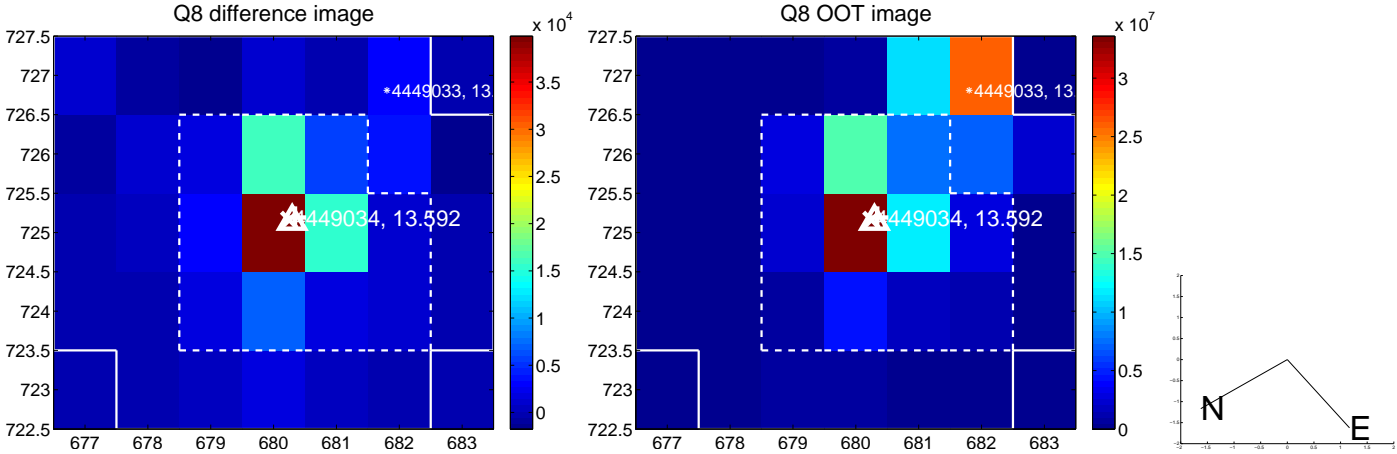
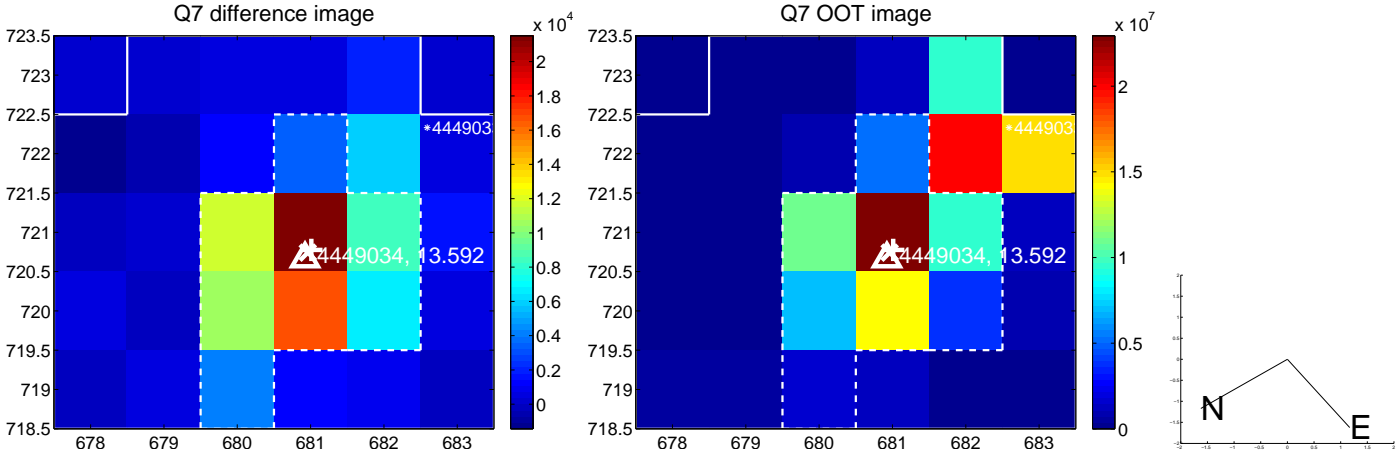
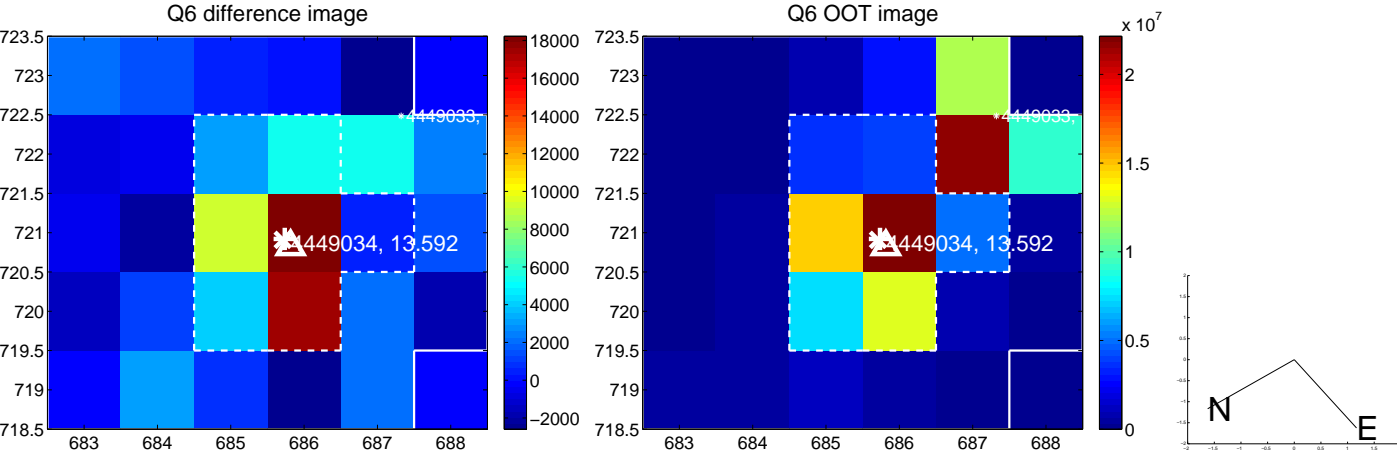
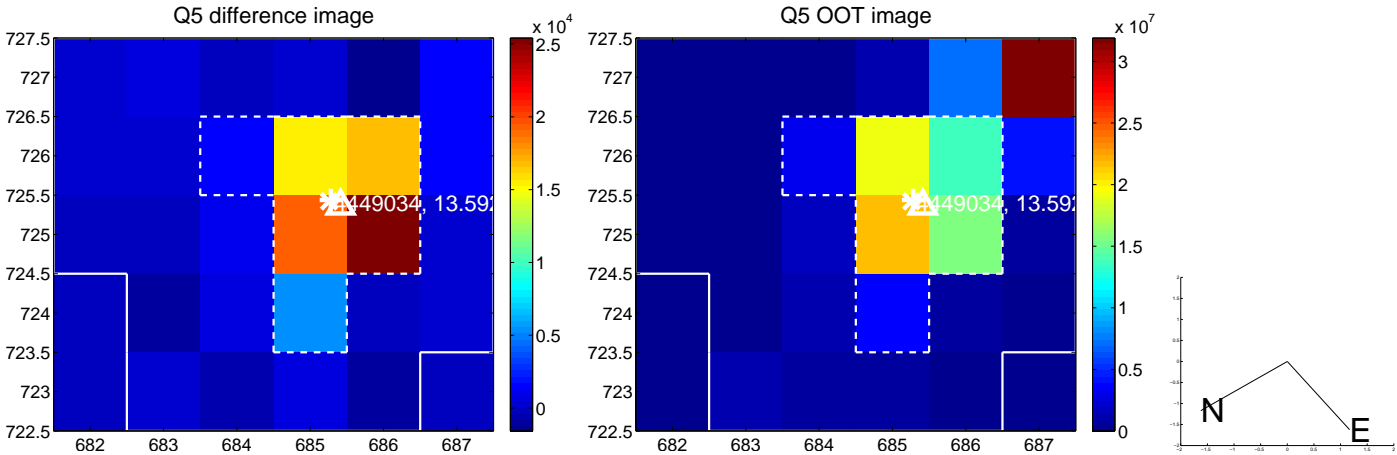
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

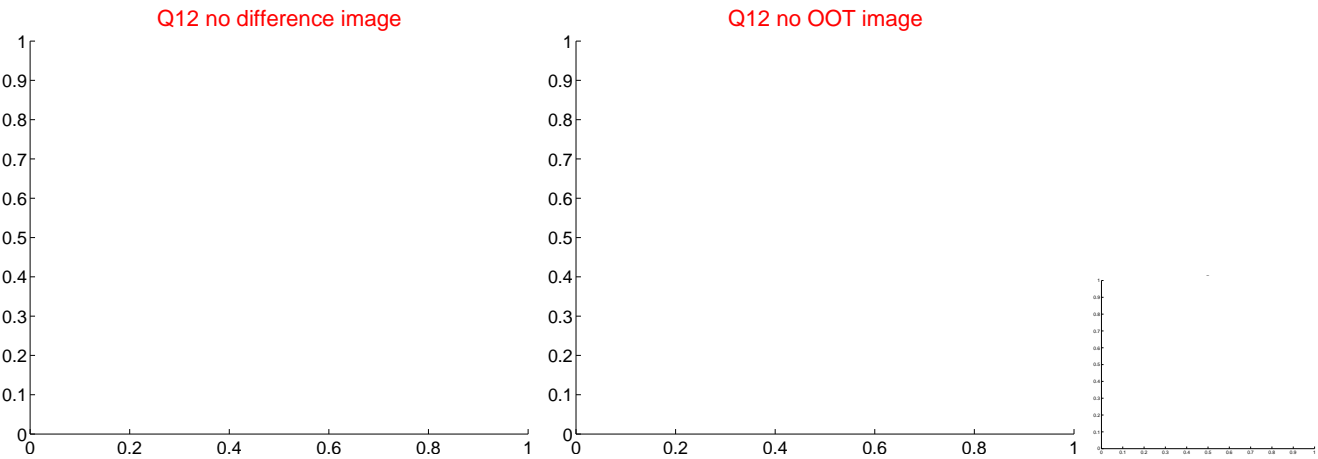
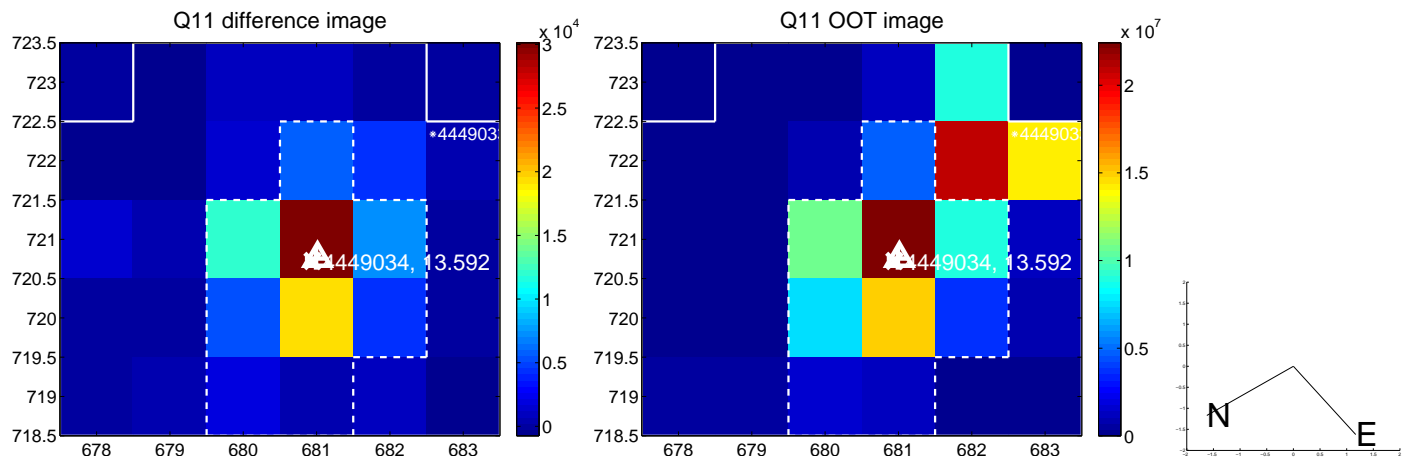
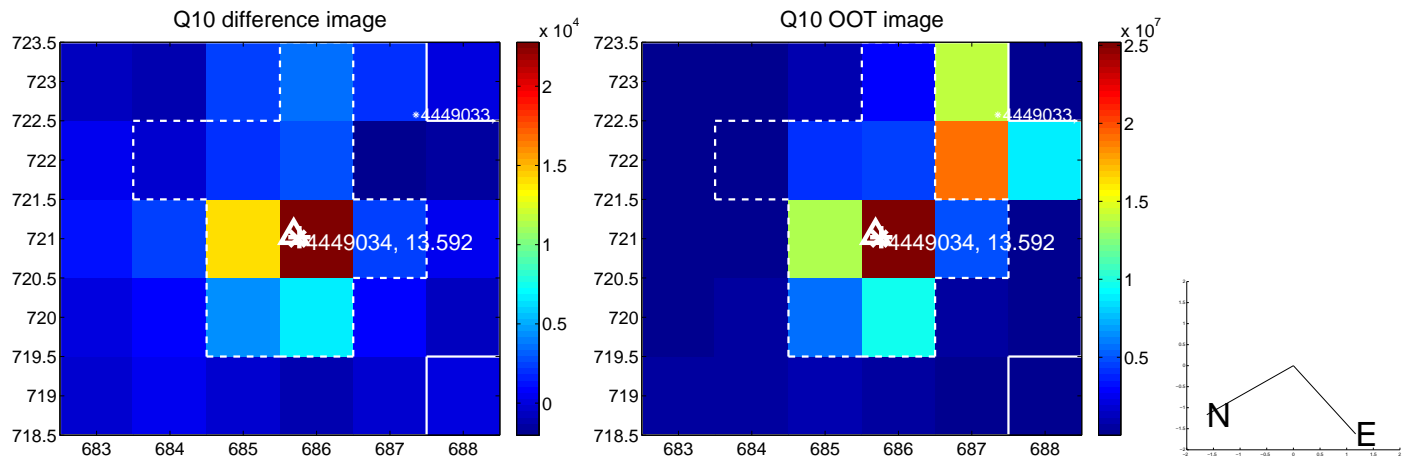
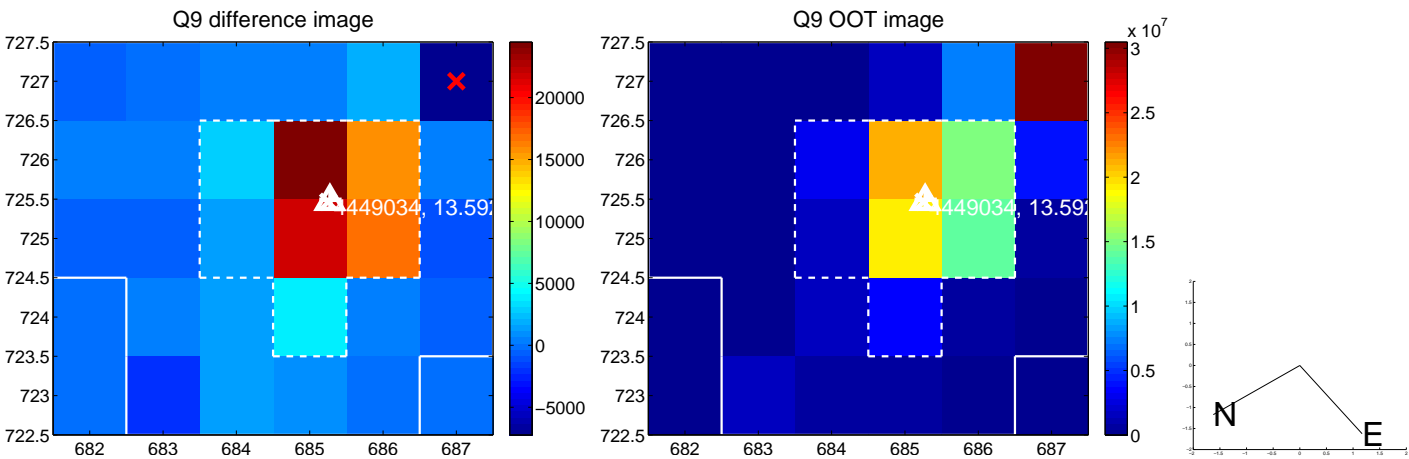




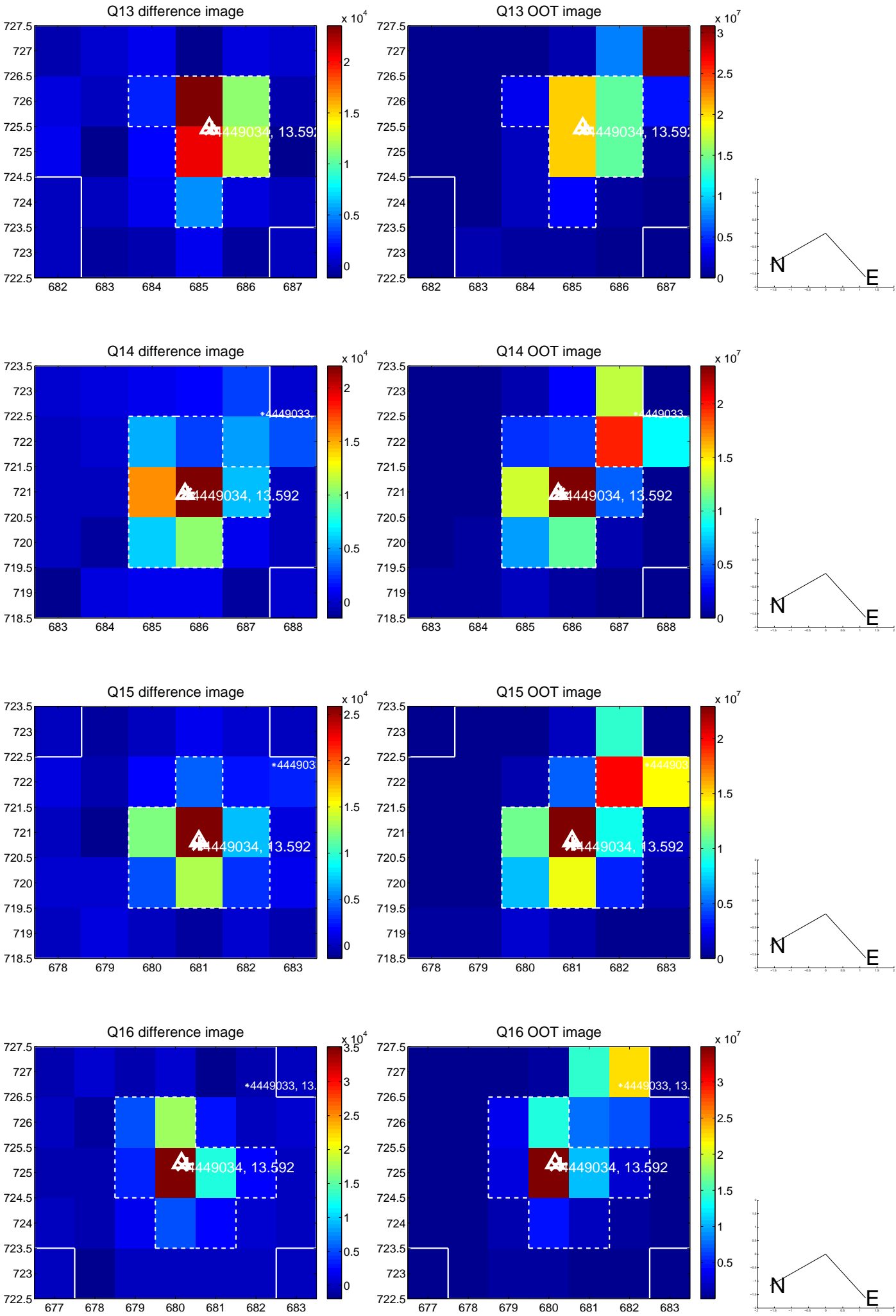
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



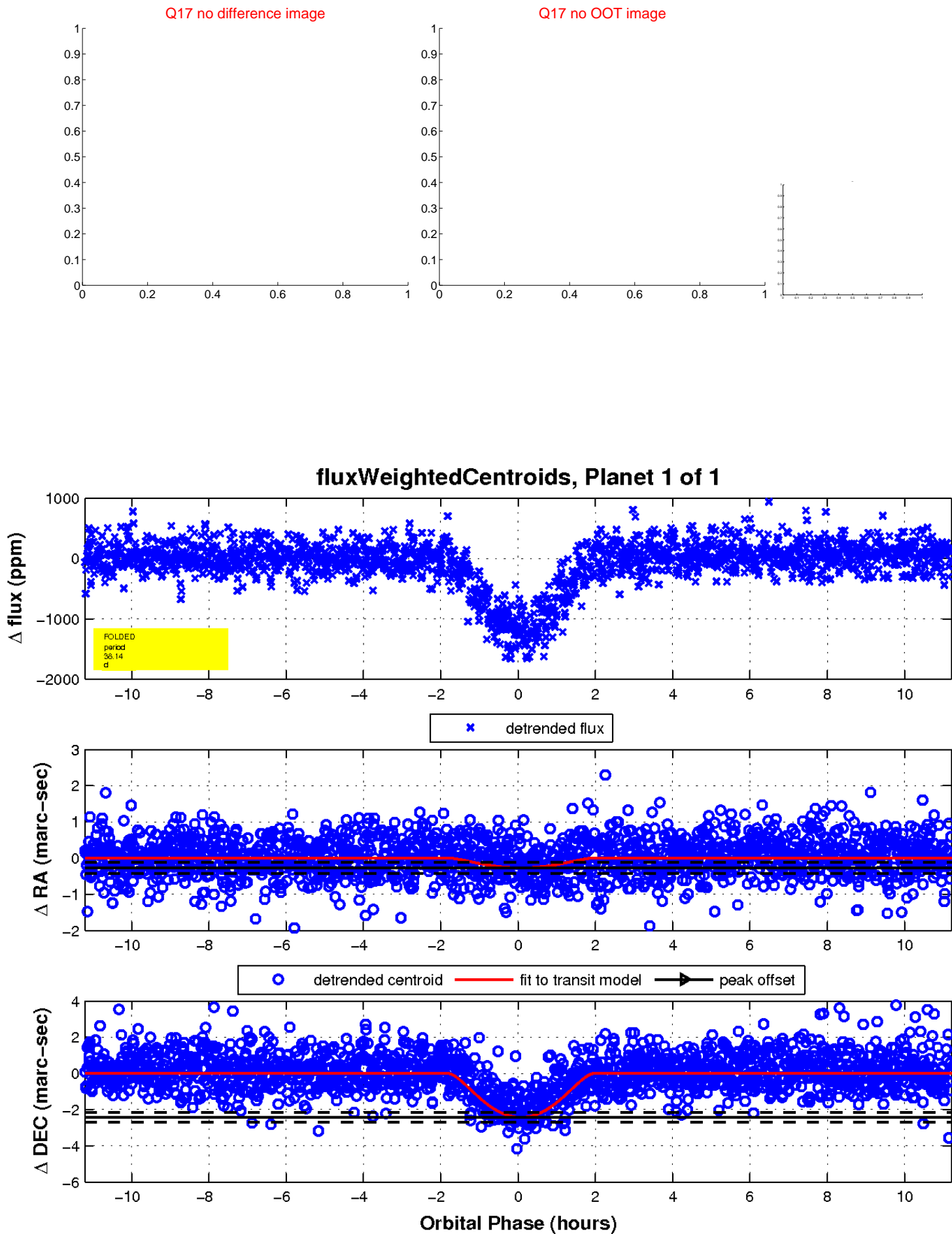
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

