

# KIC 001865864

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
001865864-01	OBS	4926.01	69.089241	135.445695	467.6	6.177	7.6	7.4	0.70	4848	1.53	2.88

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001865864-01	OBS	PC	0.52	0	0	0	0	CENT_UNCERTAIN

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

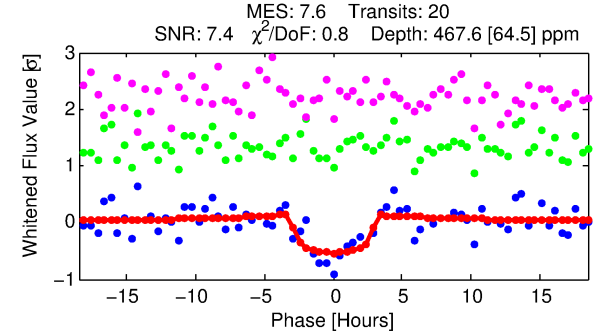
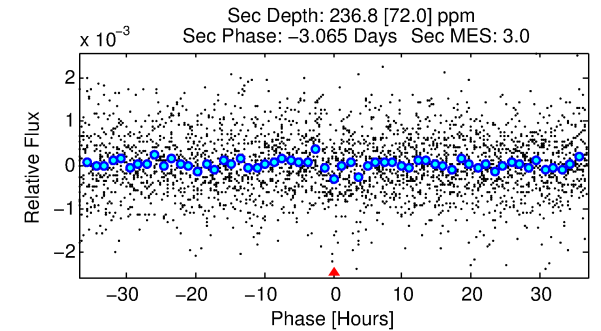
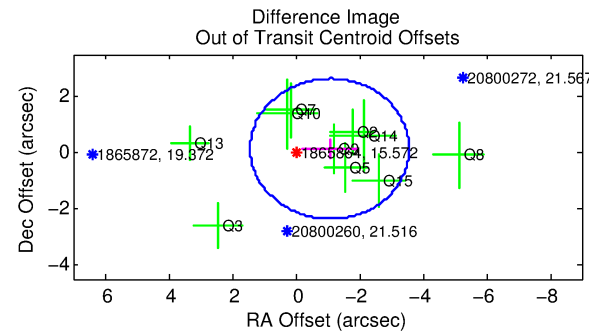
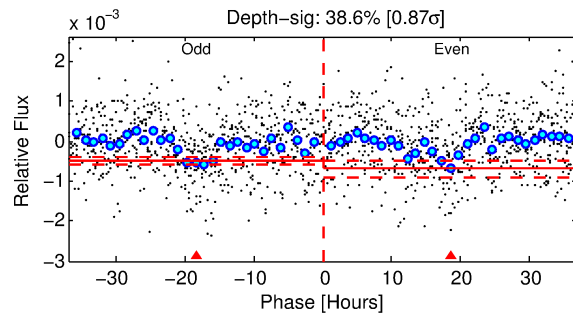
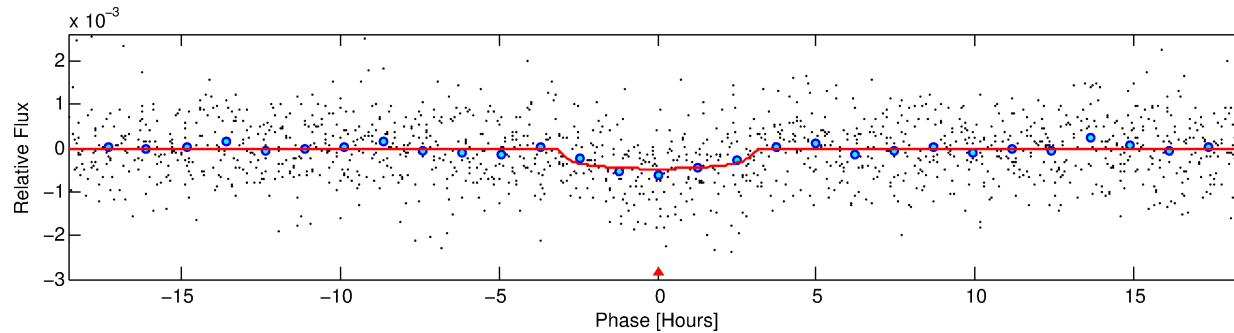
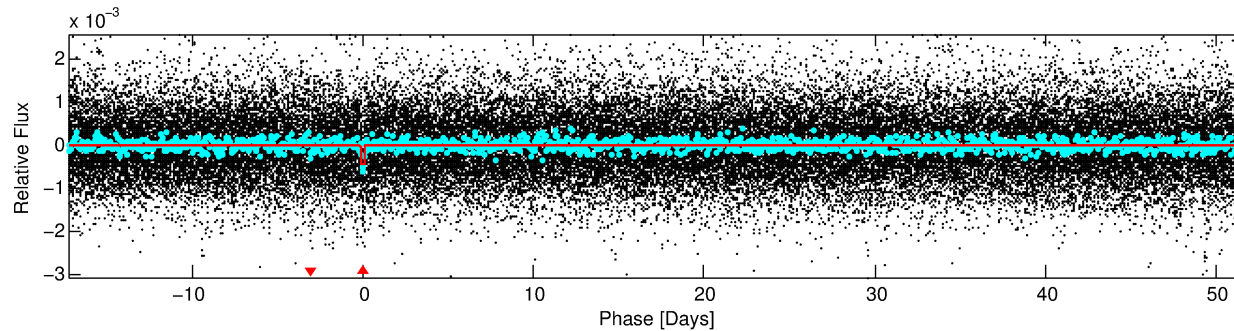
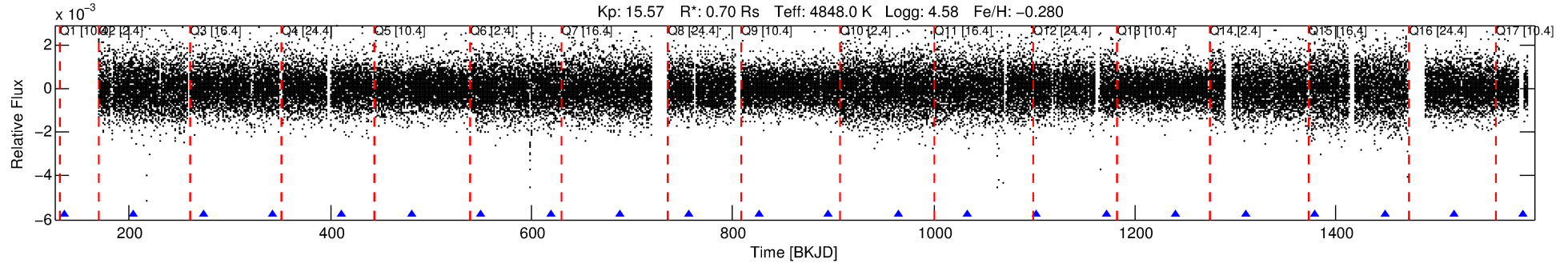
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 001865864-01

No Significant Match Found

# DV One-Page Summary

KIC: 1865864 Candidate: 1 of 1 Period: 69.089 d  
KOI: K04926.01 Corr: 0.820



## DV Fit Results:

Period = 69.08924 [0.00131] d  
Epoch = 135.4457 [0.0158] BKJD  
Rp/R\* = 0.0201 [0.0336]  
a/R\* = 74.47 [418.56]  
b = 0.53 [7.77]  
Seff = 2.88 [0.48]  
Teq = 332 [14] K  
Rp = 1.53 [2.56] Re  
a = 0.2894 [0.0234] AU  
Ag = 4660.44 [15656.92] [0.30 $\sigma$ ]  
Teffp = 4243 [3564] K [1.10 $\sigma$ ]

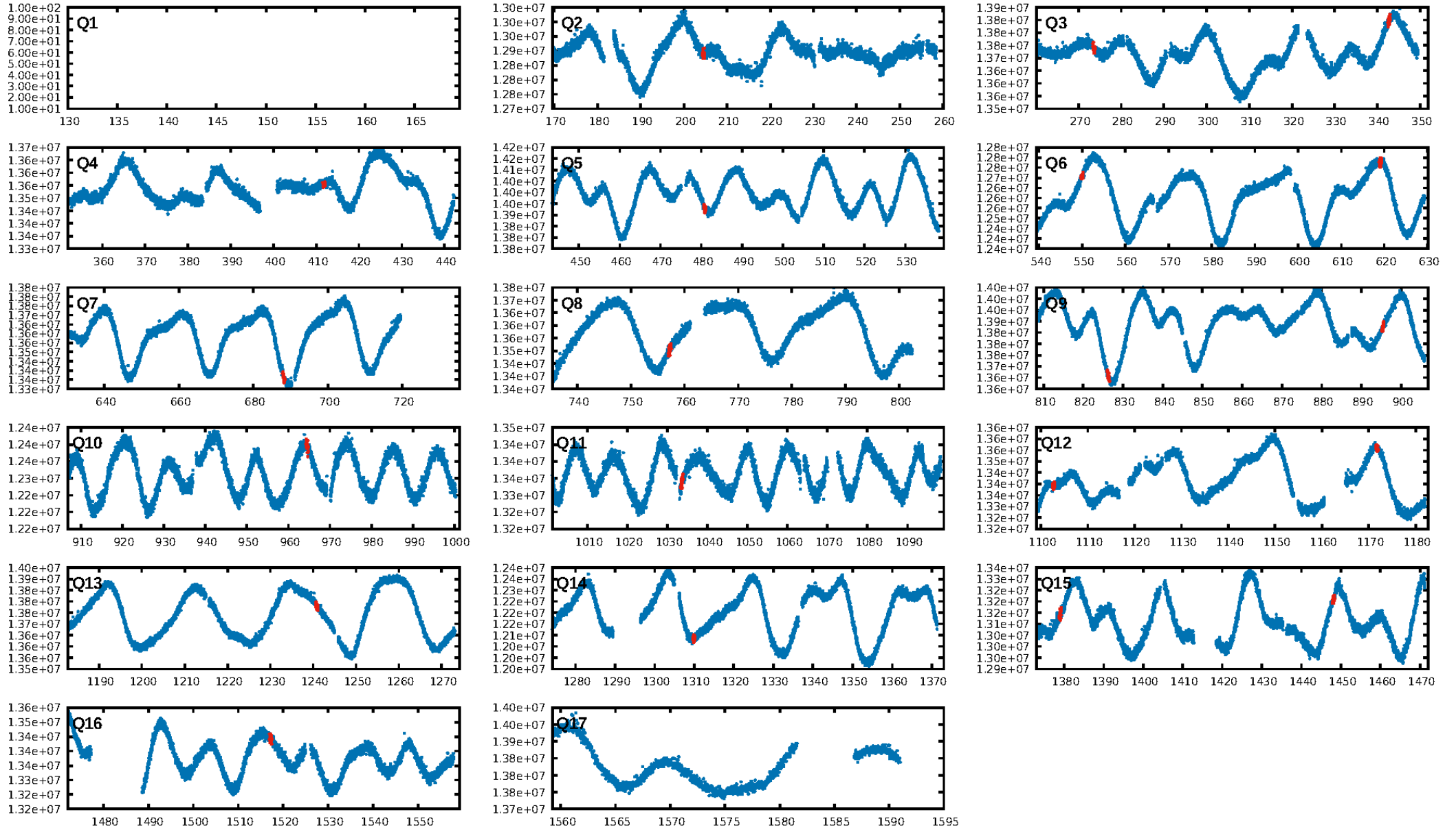
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 97.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.17e-13  
RollingBand-fgt: 1.00 [20/20]  
GhostDiagnostic-chr: -4.106  
Centroid-sig: 26.9%  
Centroid-so: 1.572 arcsec [0.92 $\sigma$ ]  
OotOffset-rm: 1.077 arcsec [1.29 $\sigma$ ]  
KicOffset-rm: 1.028 arcsec [1.30 $\sigma$ ]  
OotOffset-st: 3/3/1/3 [10]  
KicOffset-st: 3/3/1/3 [10]  
DiffImageQuality-fgm: 0.50 [5/10]  
DiffImageOverlap-fno: 1.00 [14/14]

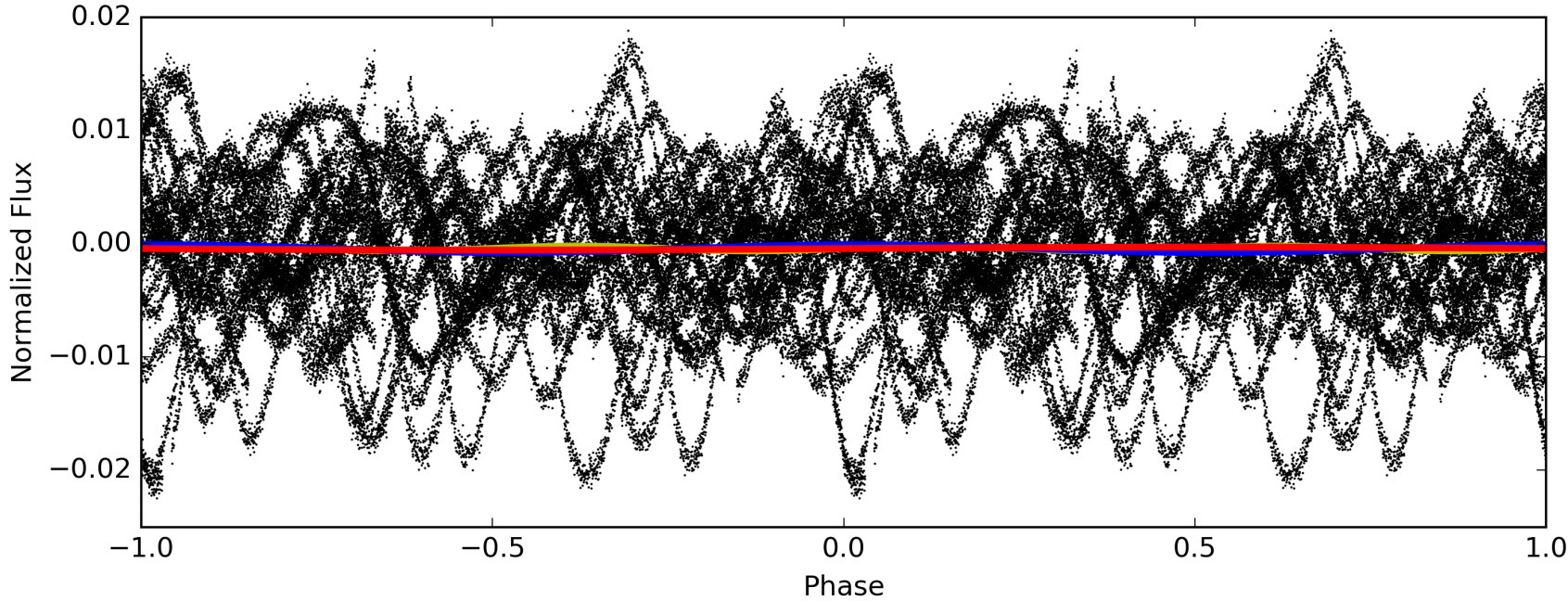
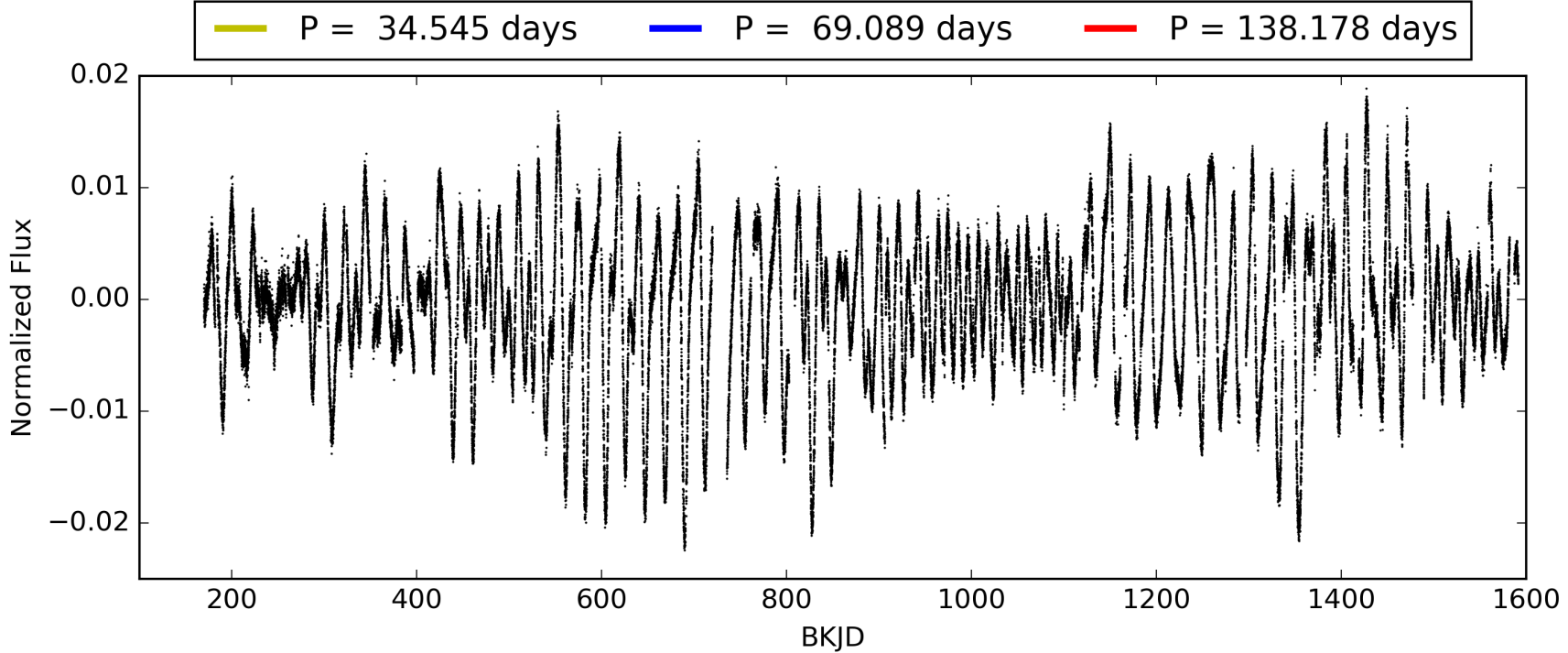
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:24:27 Z

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

# TCE 001865864-01, PDC Light Curves

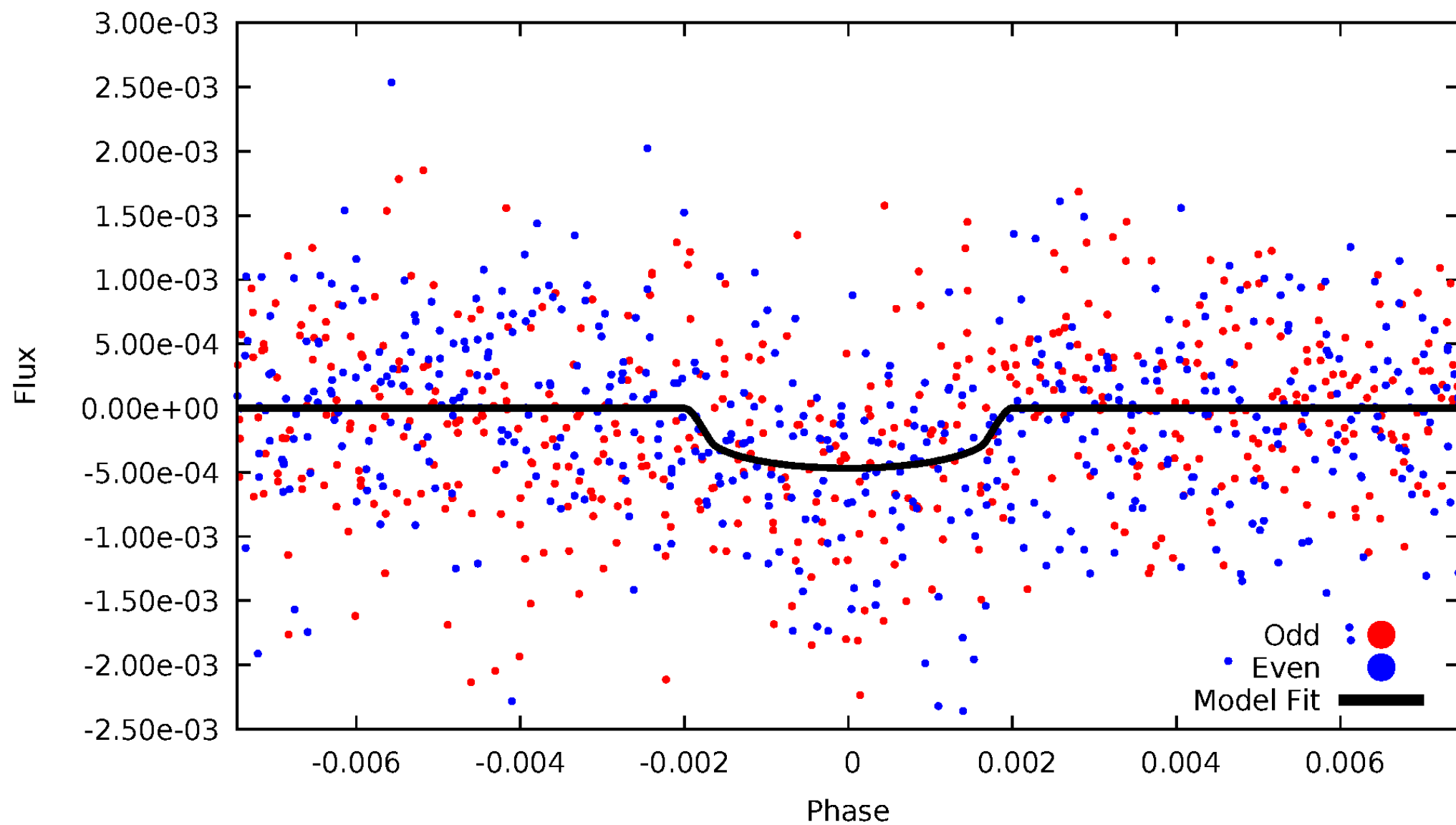


TCE 001865864-01



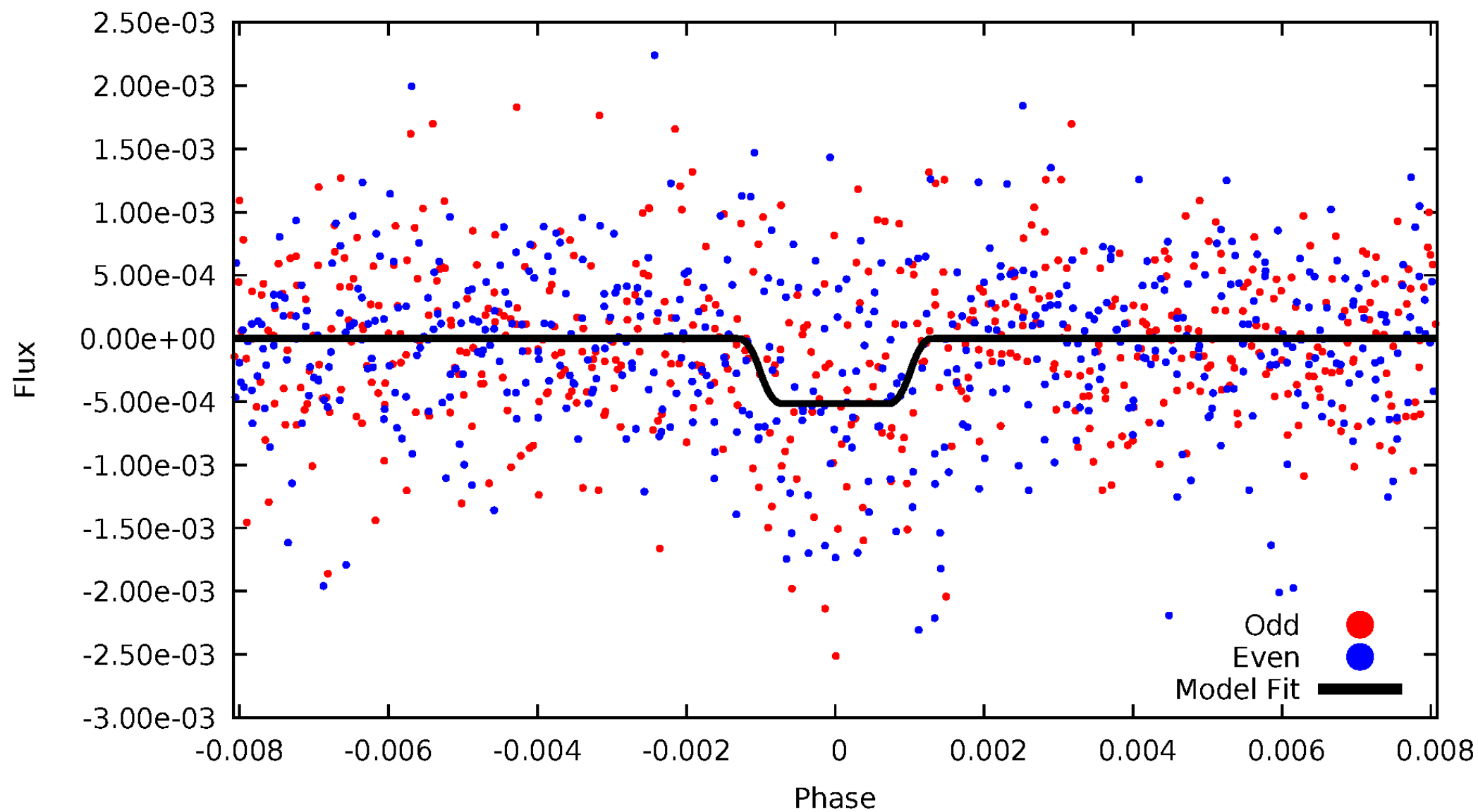
# DV Odd/Even

TCE 001865864-01



# ALT Odd/Even

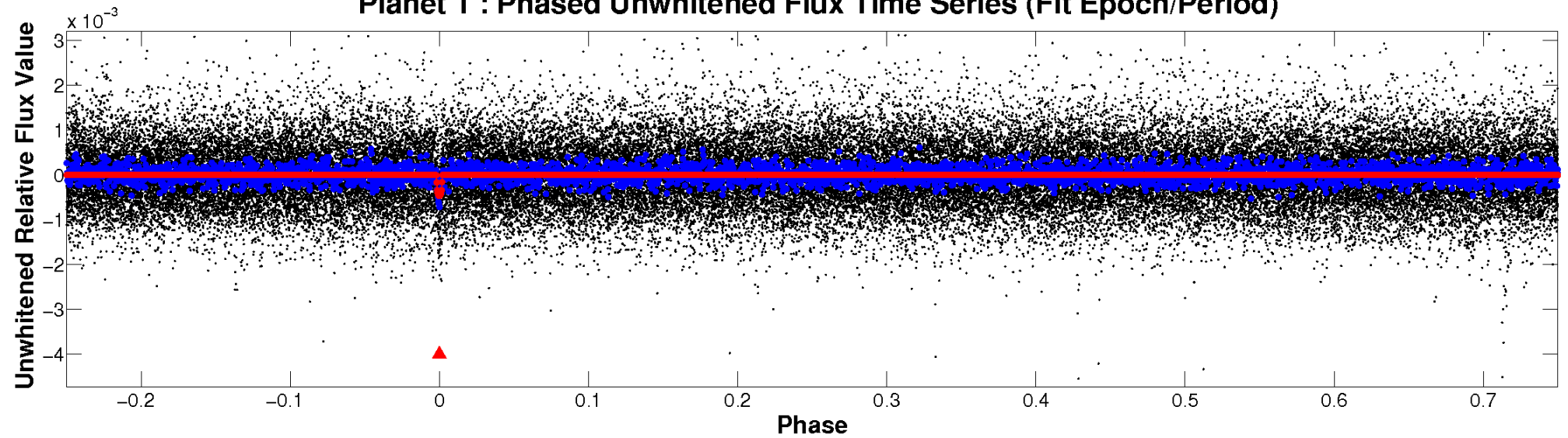
TCE 001865864-01



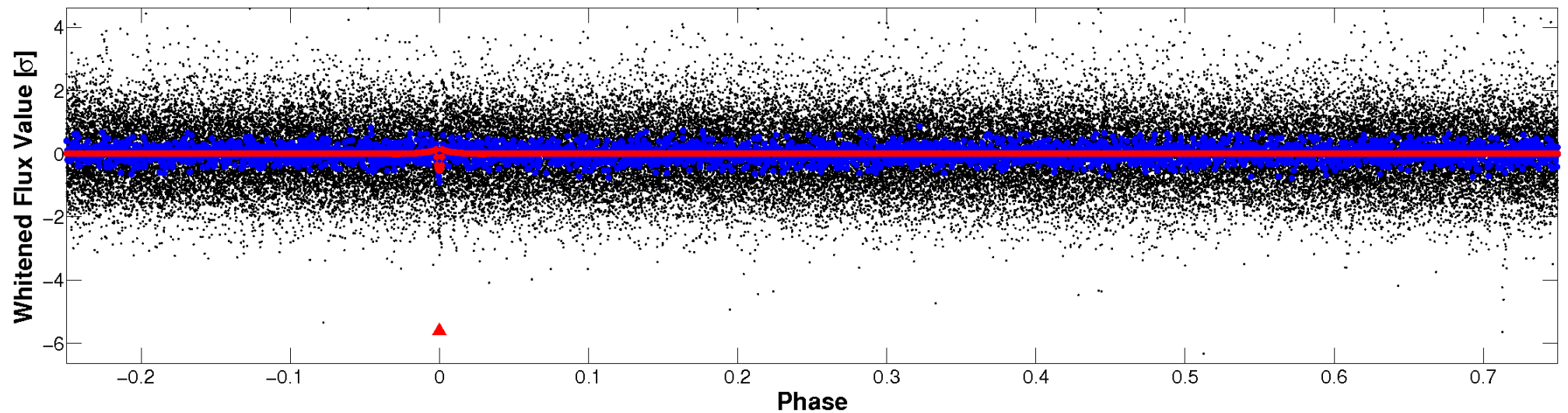


# Non-Whitened Vs. Whitened Light Curve

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

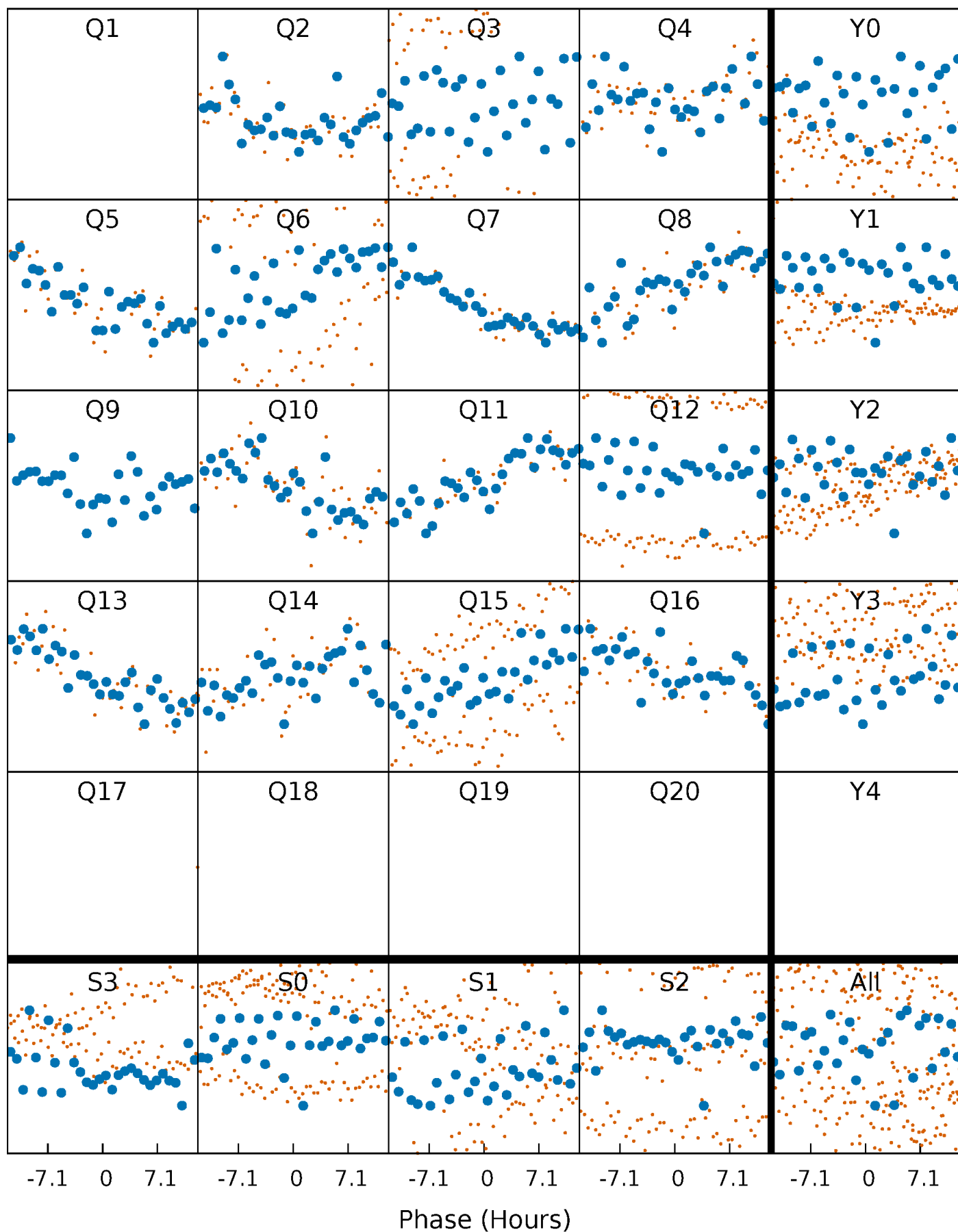


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

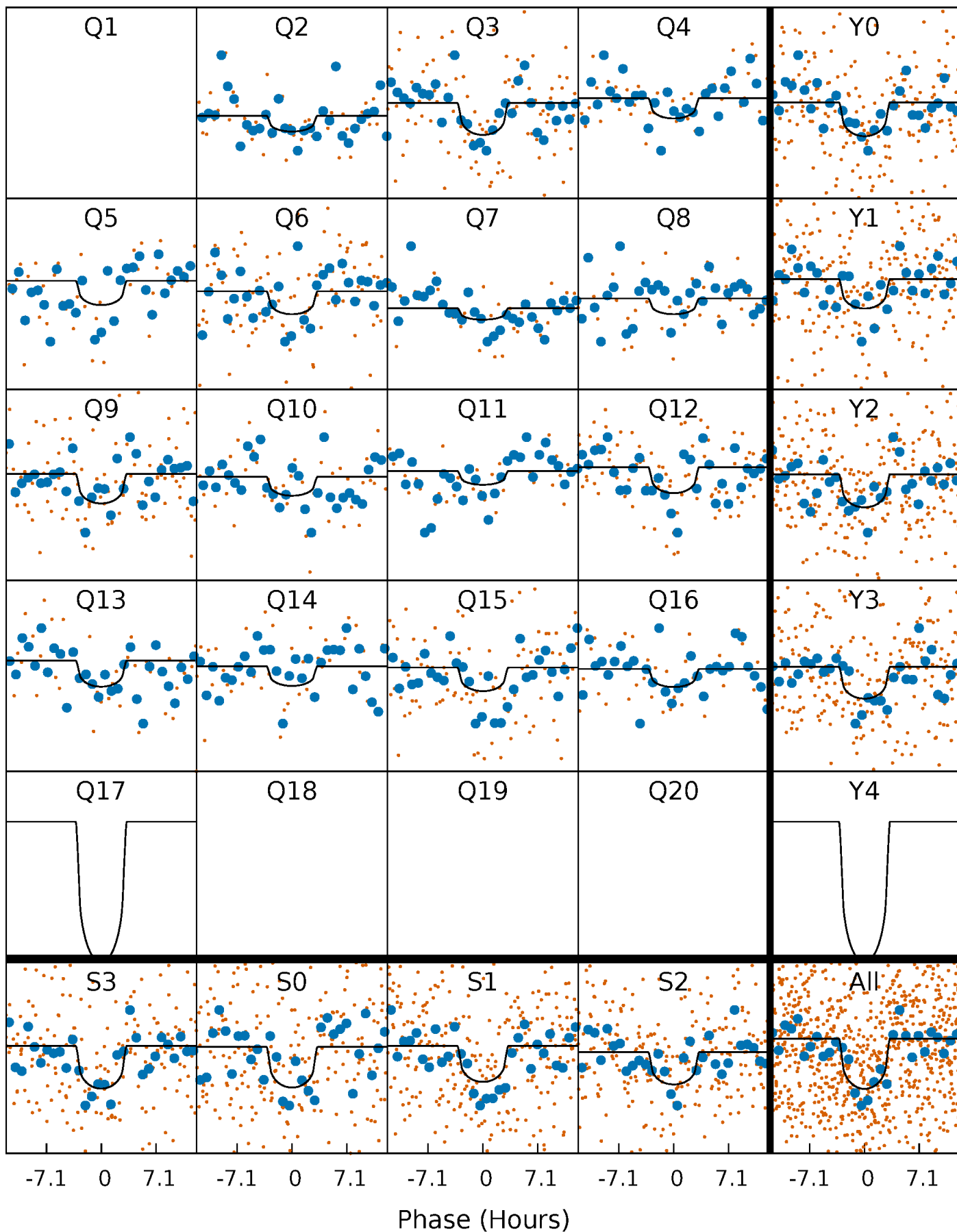
TCE 001865864-01 P= 69.089241 Days  $T_0=135.445695$  (BKJD)





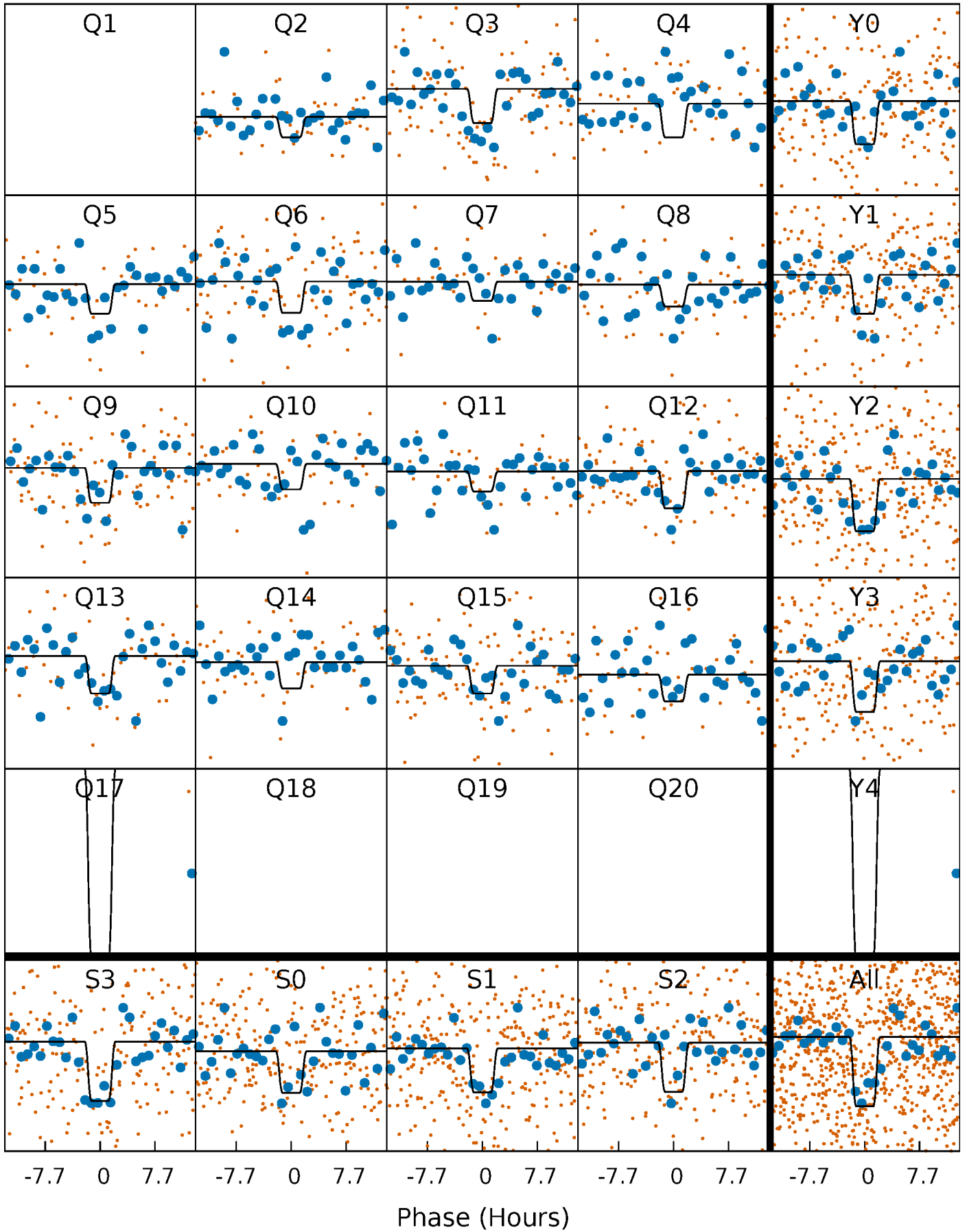
# DV Quarter-Phased Transit Curves

TCE 001865864-01 P= 69.089241 Days  $T_0=135.445695$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

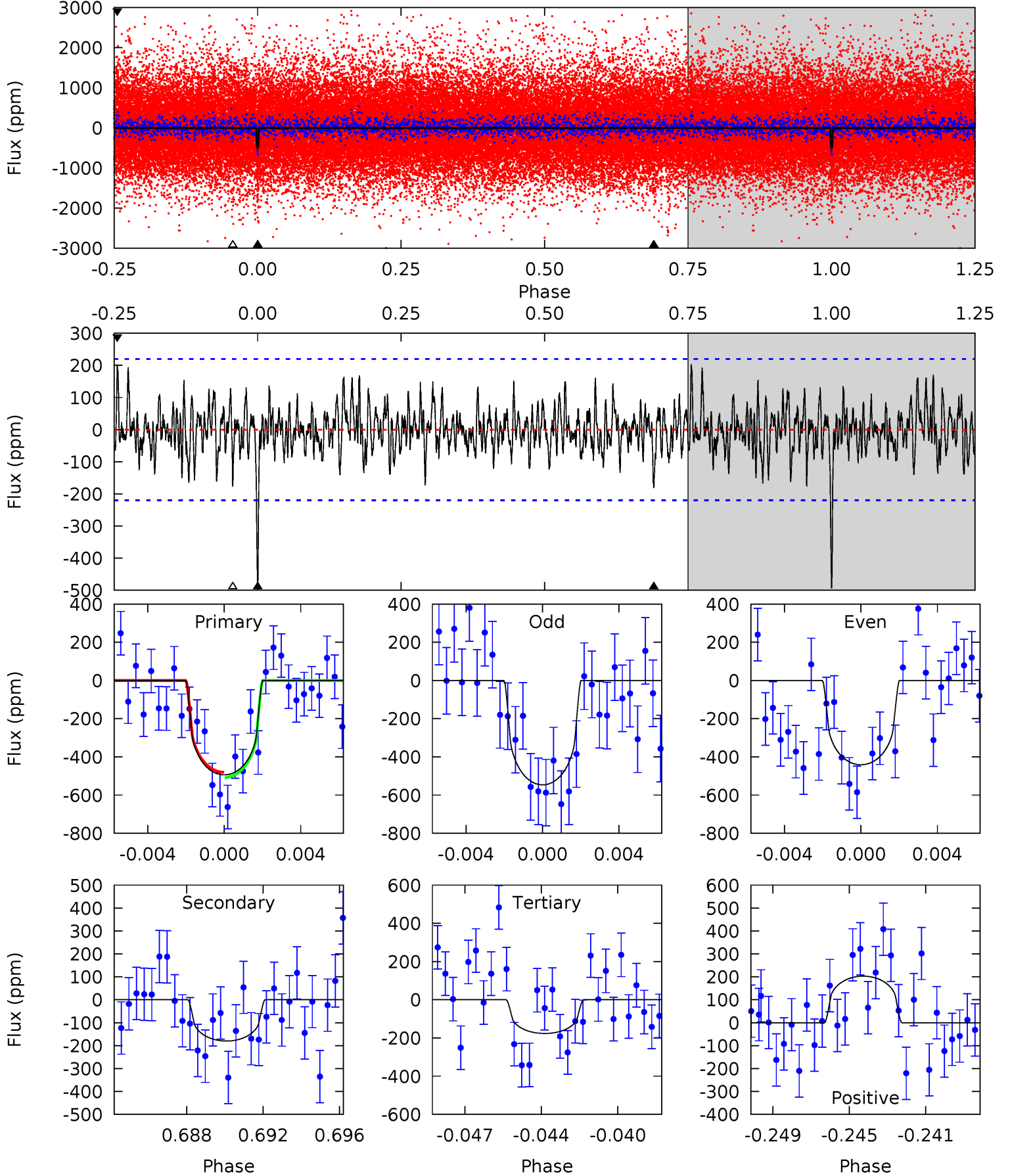
TCE 001865864-01 P= 69.088251 Days  $T_0=135.461960$  (BKJD)



# DV Model-Shift Uniqueness Test

001865864-01, P = 69.089241 Days, E = 135.445695 Days

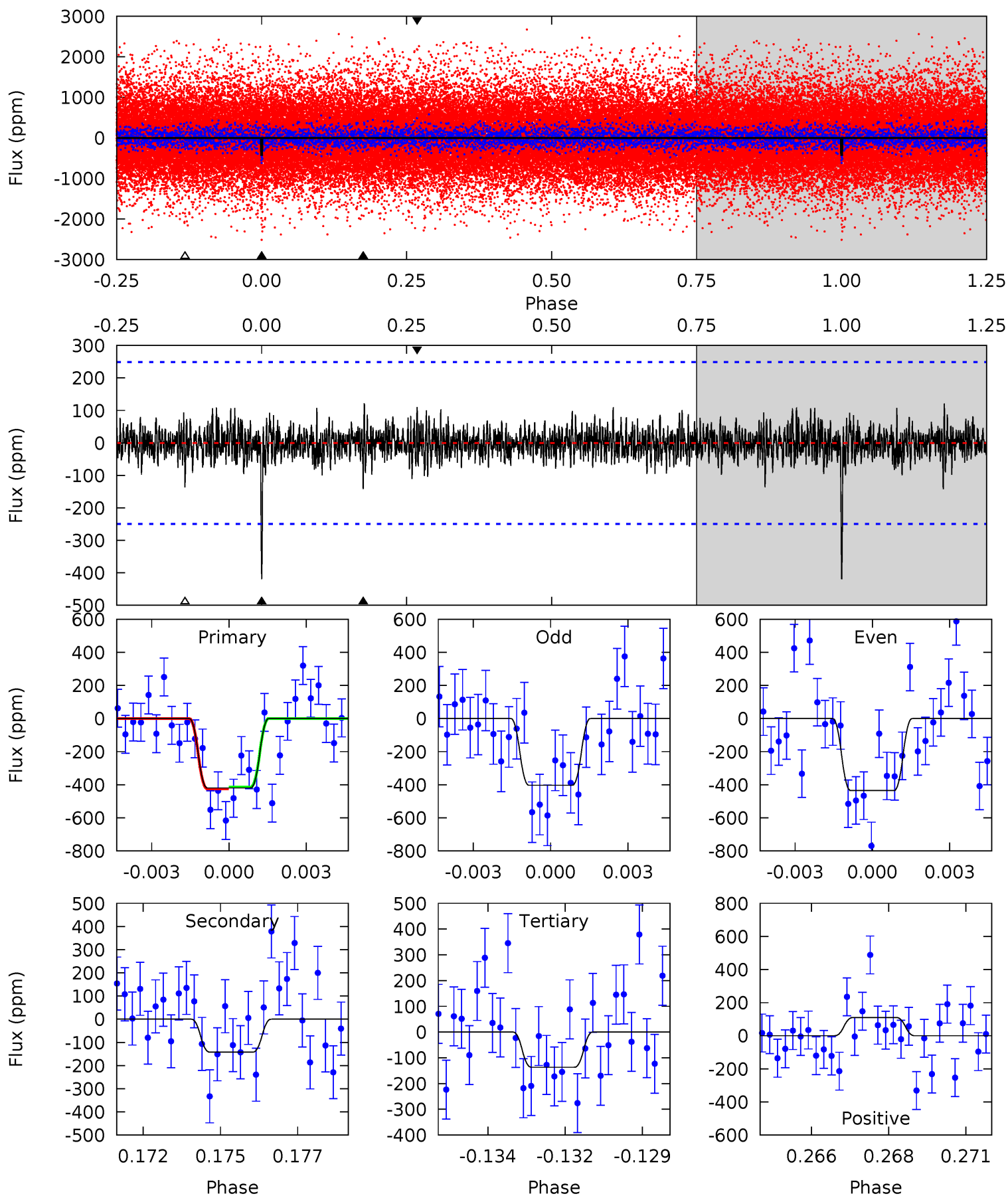
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	4.26	4.17	4.80	5.20	2.88	1.33	7.51	6.89	0.09	-0.54	1.25	1.00	0.29	0.33



# Alt Model-Shift Uniqueness Test

001865864-01, P = 69.088251 Days, E = 135.461960 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
8.89	3.01	2.89	2.33	5.28	3.02	0.74	6.00	6.55	0.12	0.68	0.35	1.00	0.22	0.11



### Stellar Parameters For KIC 001865864

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4848^{+131}_{-146}$	$4.581^{+0.063}_{-0.036}$	$-0.280^{+0.300}_{-0.300}$	$0.698^{+0.062}_{-0.068}$	$0.679^{+0.081}_{-0.047}$	$2.807^{+0.808}_{-0.404}$
	+3%/-3%	+1%/-1%	+107%/-107%	+9%/-10%	+12%/-7%	+29%/-14%
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 001865864-01 / KOI 4926.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-180 \pm 42$	$2.45^{+2.27}_{-1.64}$	$461^{+16}_{-16}$	$3502^{+1736}_{-615}$	$1323^{+10540}_{-959}$
Alt.	$-142 \pm 47$	$2.36^{+2.32}_{-1.59}$	$462^{+16}_{-17}$	$3444^{+1609}_{-644}$	$1171^{+9337}_{-885}$

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

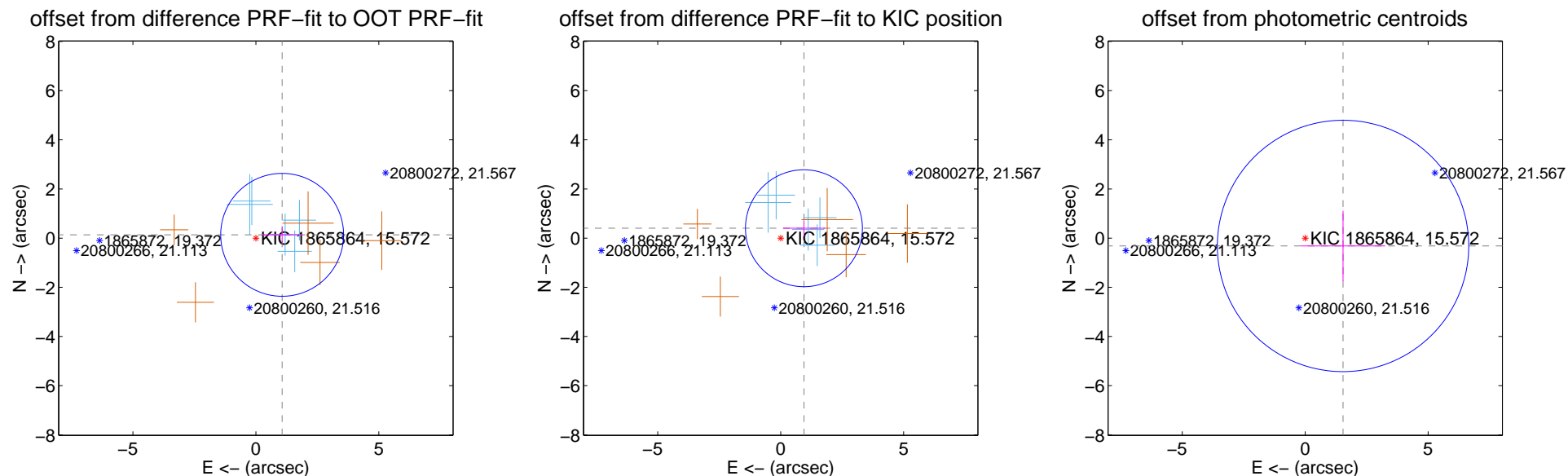
## DV Centroid Data

Supplemental centroid analysis for 001865864-01. Kepler magnitude: 15.57. Transit SNR 7.40

There are 5 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

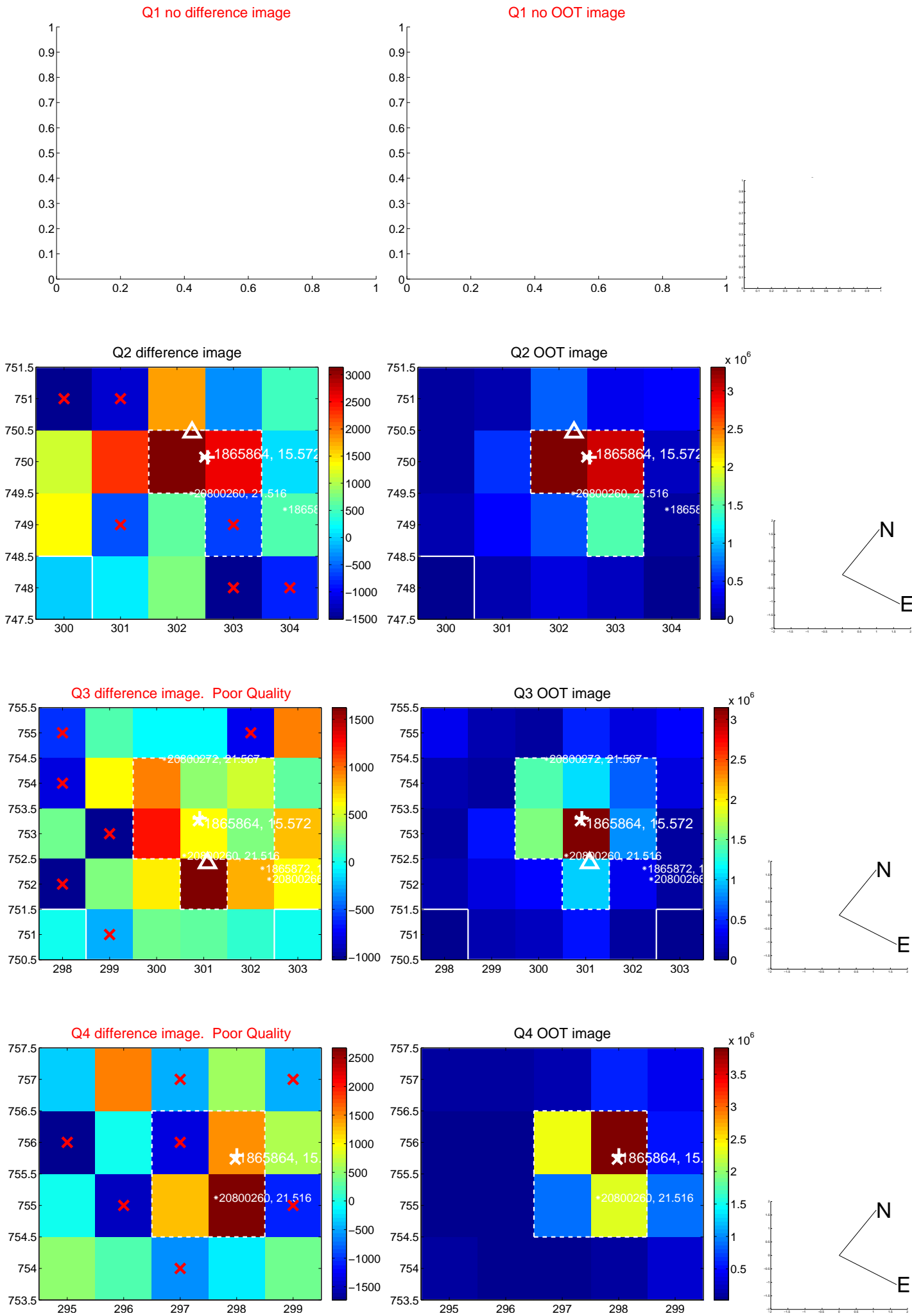
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.077 \pm 0.833$	1.29	$-1.068 \pm 0.839$	$0.135 \pm 0.351$
PRF-fit source offset from KIC position	$1.028 \pm 0.793$	1.30	$-0.946 \pm 0.851$	$0.403 \pm 0.317$
photometric centroid source offset	$1.57 \pm 1.70$	0.92	$-1.54 \pm 1.71$	$-0.32 \pm 1.43$



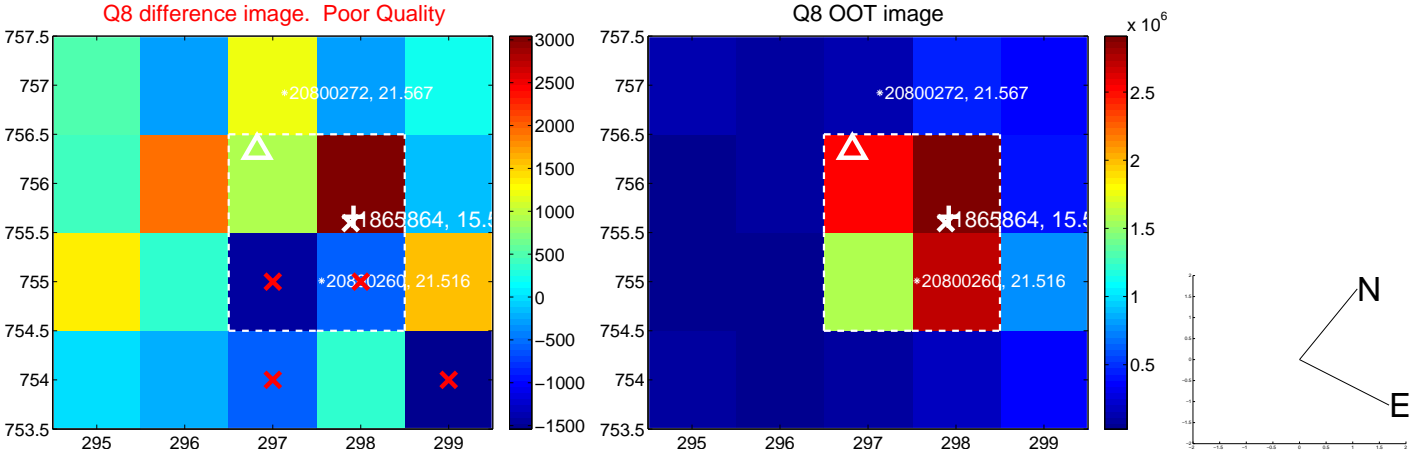
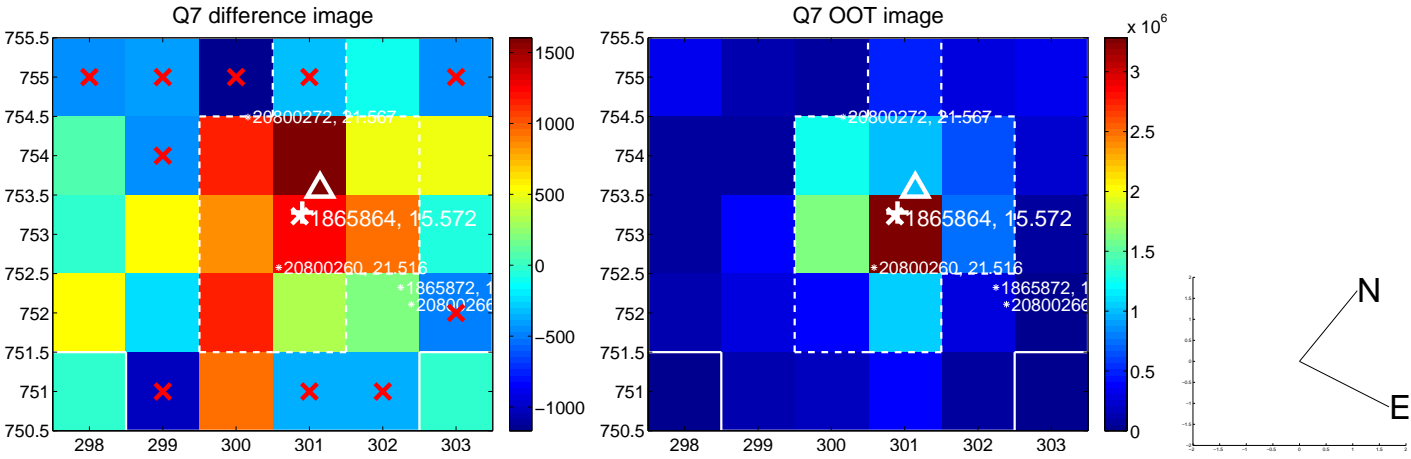
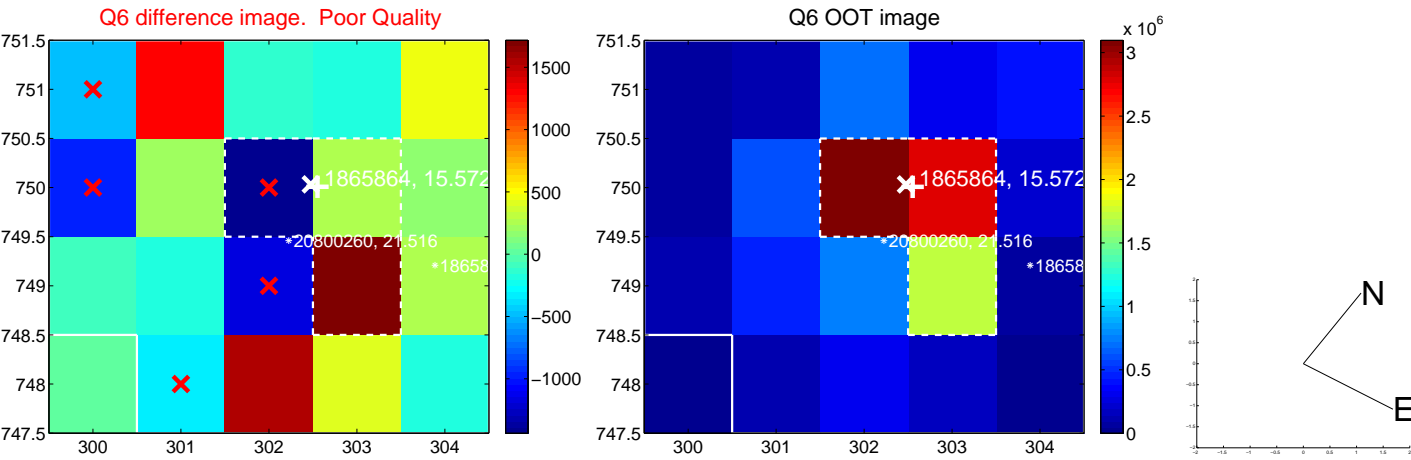
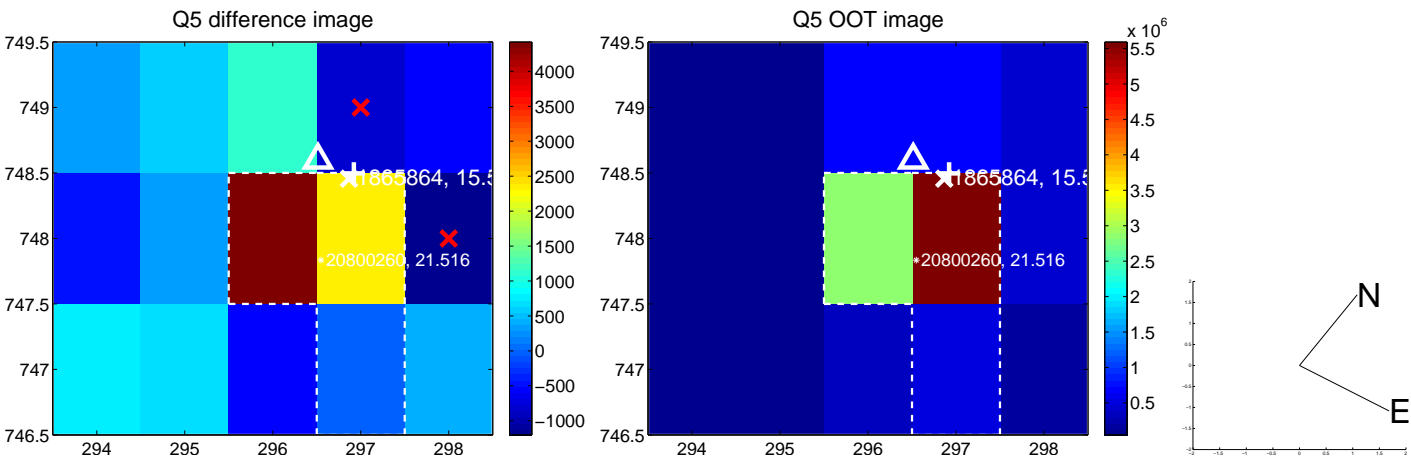
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



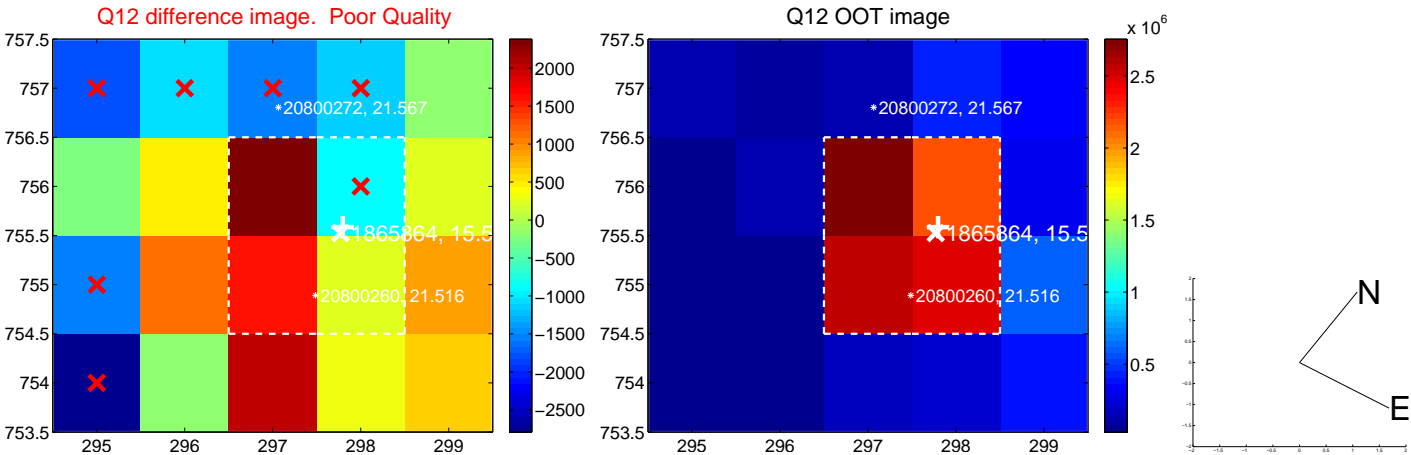
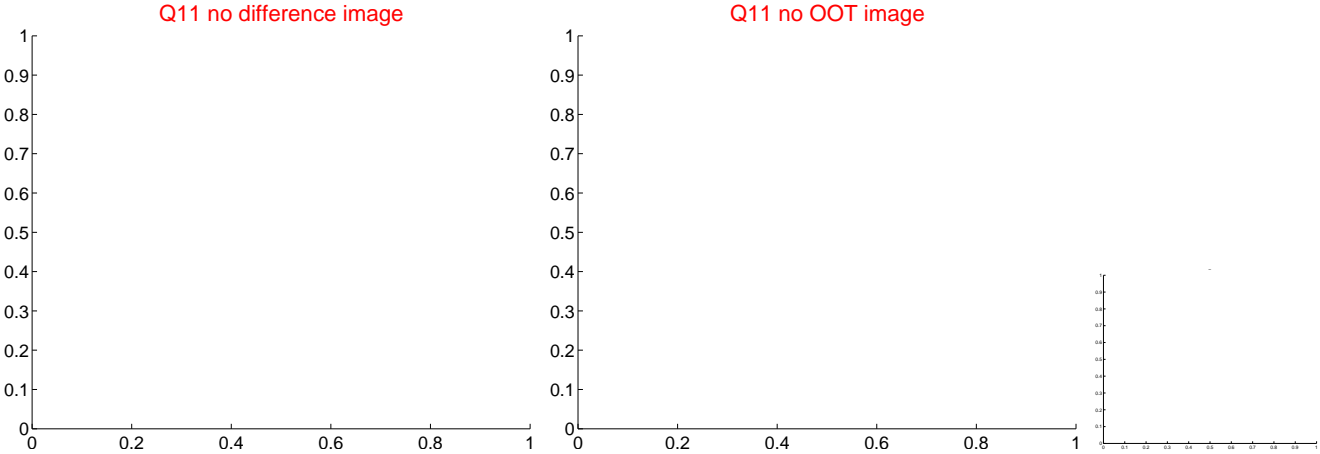
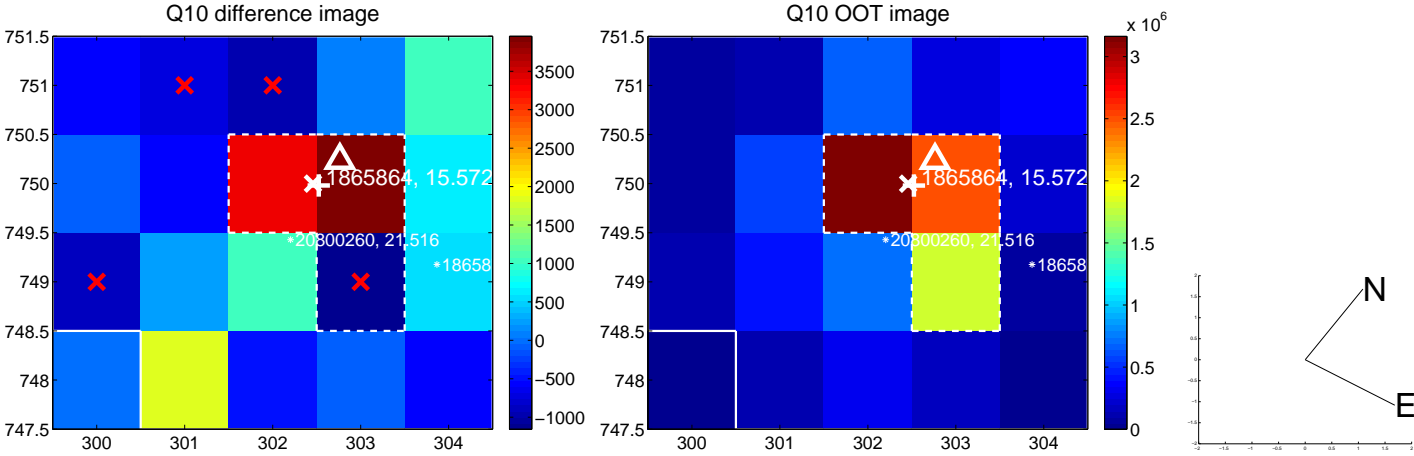
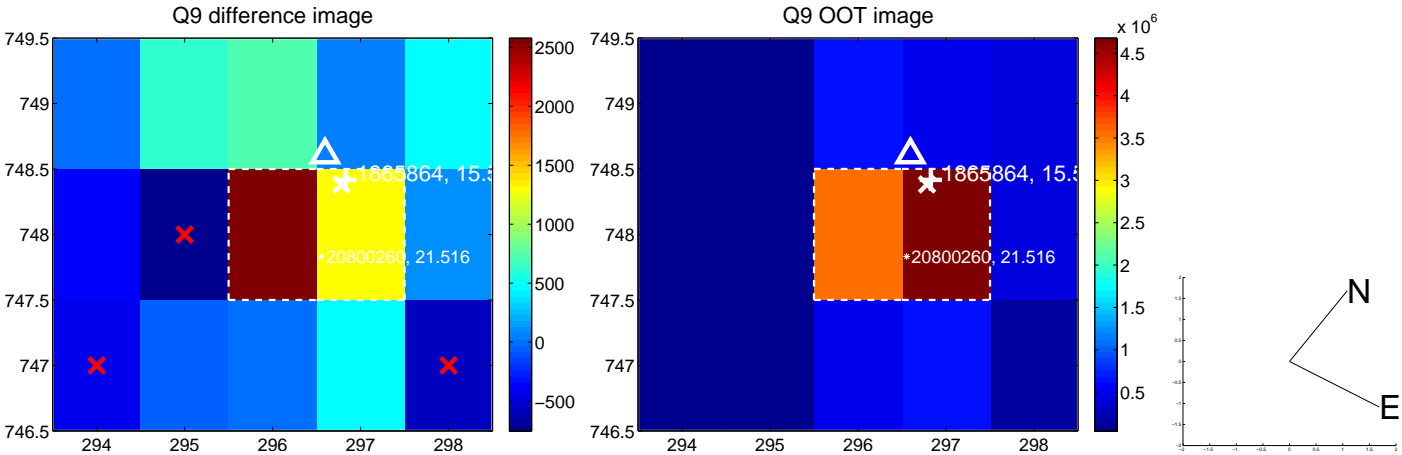
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



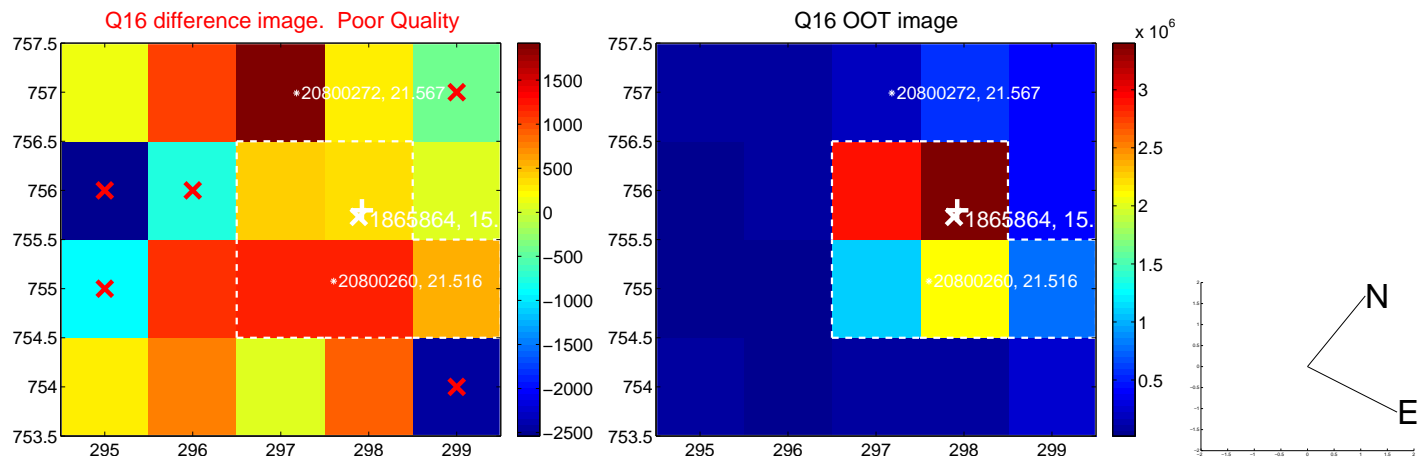
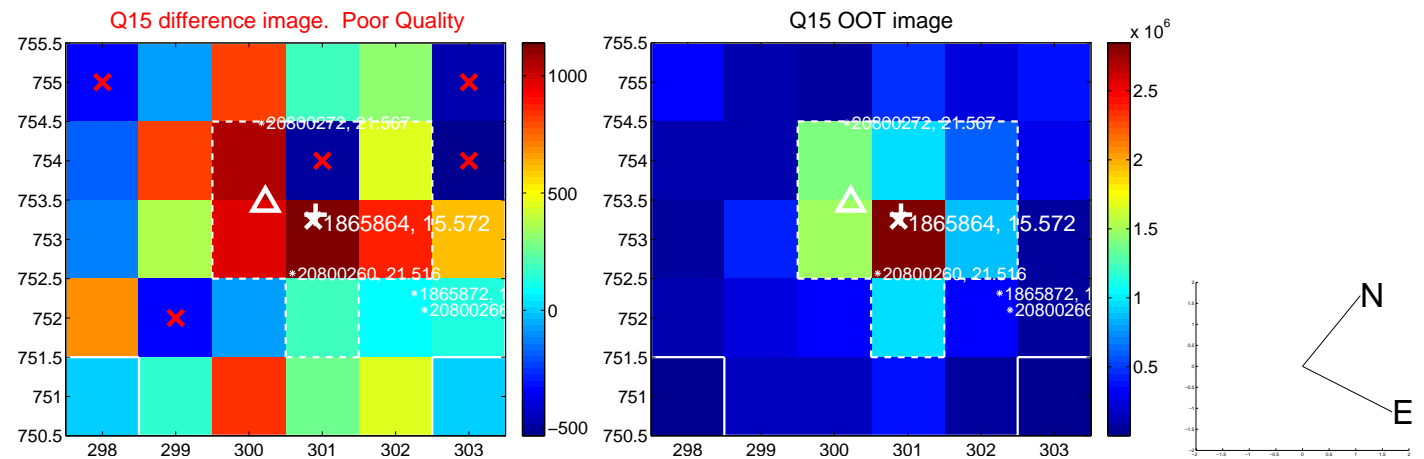
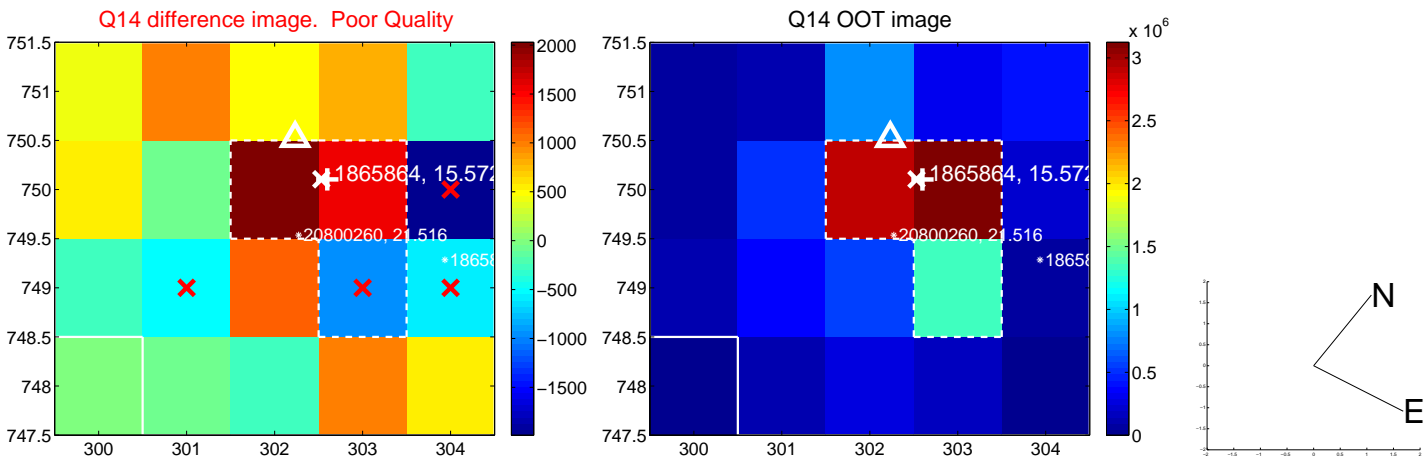
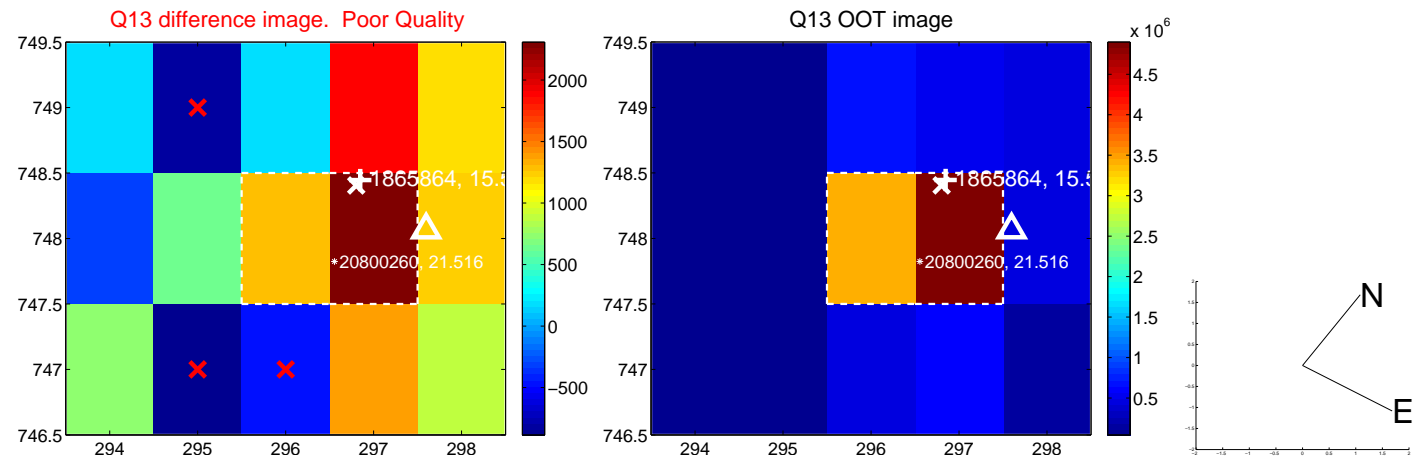
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



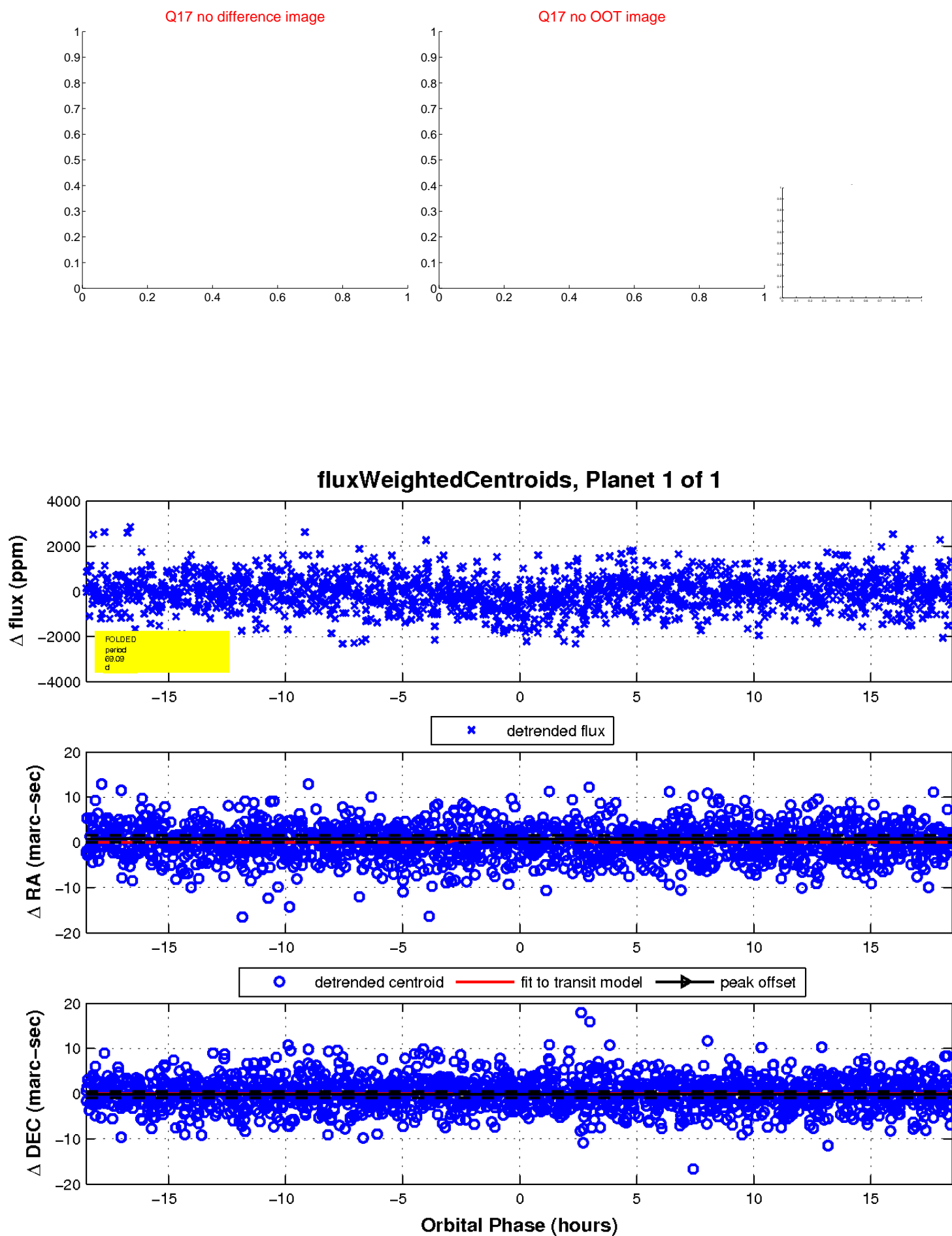
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: 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.



UKIRT Image

