

# KIC 009468848

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009468848-01	OBS	8183.01	5.887683	135.040736	38.9	3.932	7.2	8.2	0.95	6065	0.69	262.94

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009468848-01	OBS	PC	0.50	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.

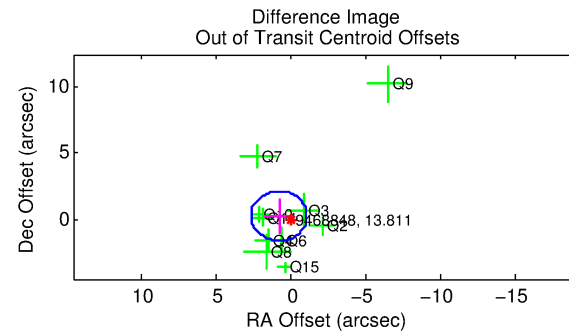
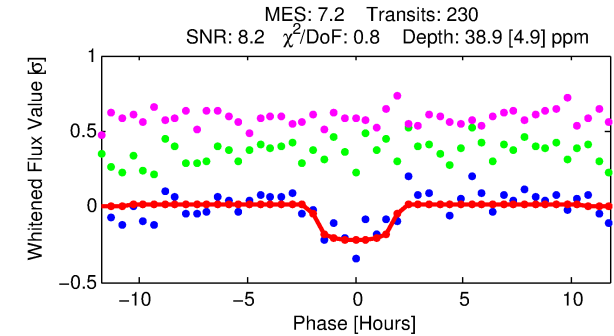
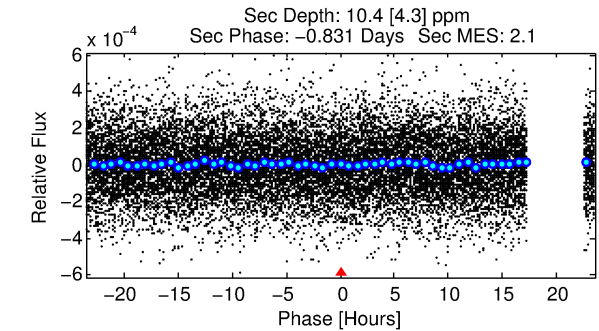
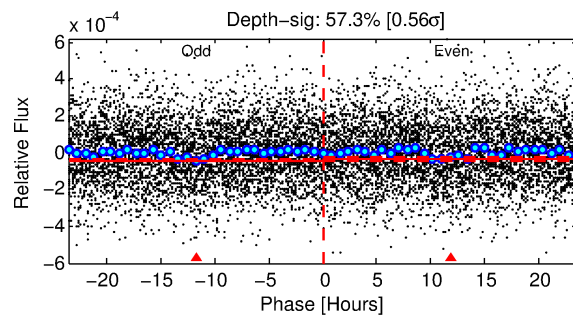
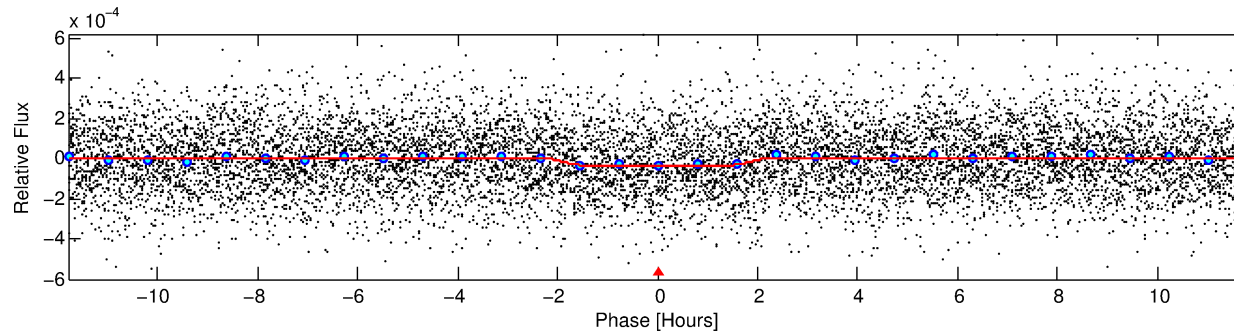
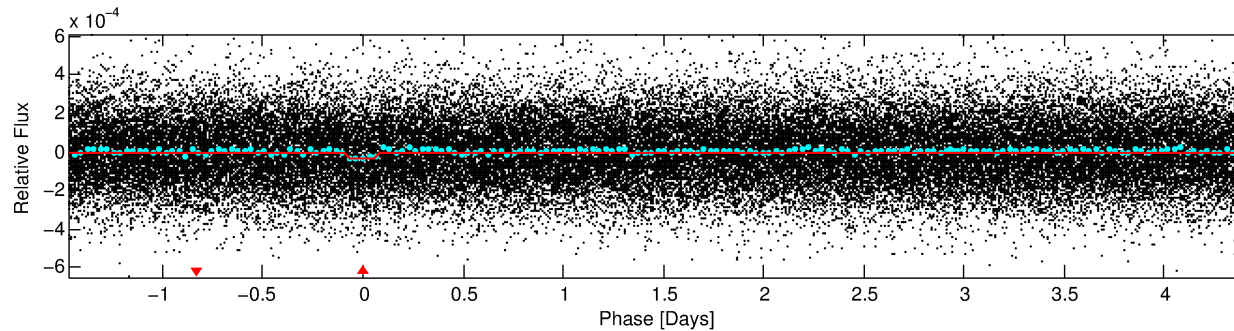
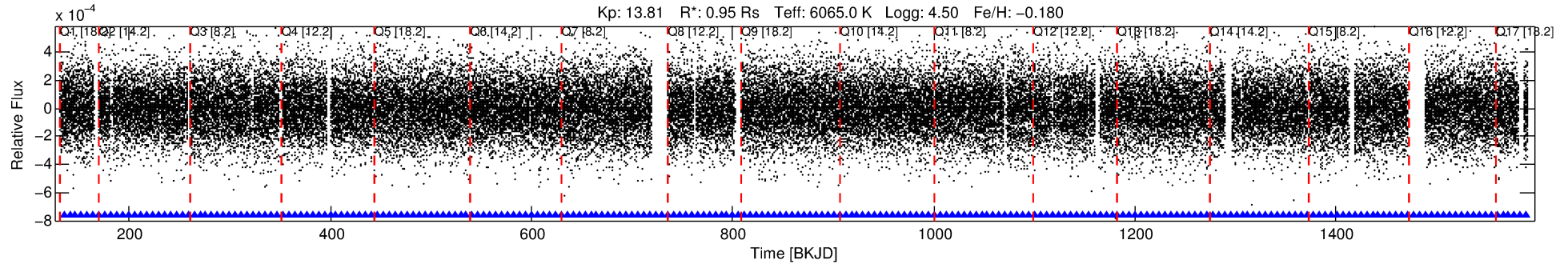
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009468848-01

No Significant Match Found

# DV One-Page Summary

KIC: 9468848 Candidate: 1 of 1 Period: 5.888 d



## DV Fit Results:

Period = 5.88768 [0.00006] d  
Epoch = 135.0407 [0.0080] BKJD  
Rp/R\* = 0.0066 [0.0038]  
a/R\* = 5.64 [16.47]  
b = 0.88 [0.78]  
Seff = 262.94 [110.61]  
Teq = 1027 [108] K  
Rp = 0.69 [0.45] Re  
a = 0.0643 [0.0178] AU  
Ag = 50.50 [65.01] [0.76 $\sigma$ ]  
Teffp = 4232 [1299] K [2.46 $\sigma$ ]

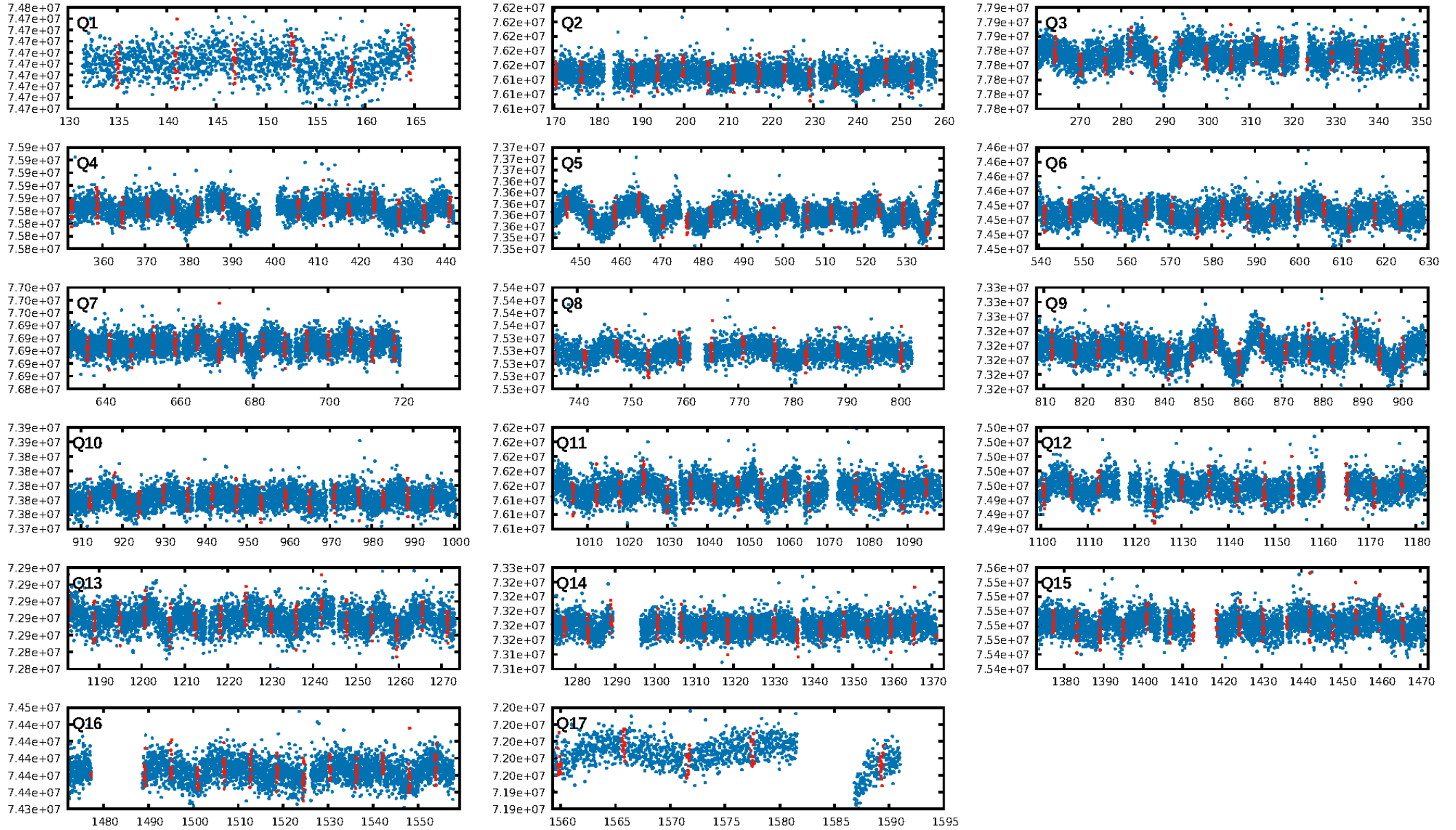
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.33e-13  
RollingBand-fgt: 1.00 [219/219]  
GhostDiagnostic-chr: 3.73  
Centroid-sig: 86.2%  
Centroid-so: 0.543 arcsec [0.37 $\sigma$ ]  
OotOffset-rm: 0.791 arcsec [1.27 $\sigma$ ]  
KicOffset-rm: 0.777 arcsec [1.28 $\sigma$ ]  
OotOffset-st: 4/3/2/1 [10]  
KicOffset-st: 4/3/2/1 [10]  
DiffImageQuality-fgm: 0.70 [7/10]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 11:52:03 Z

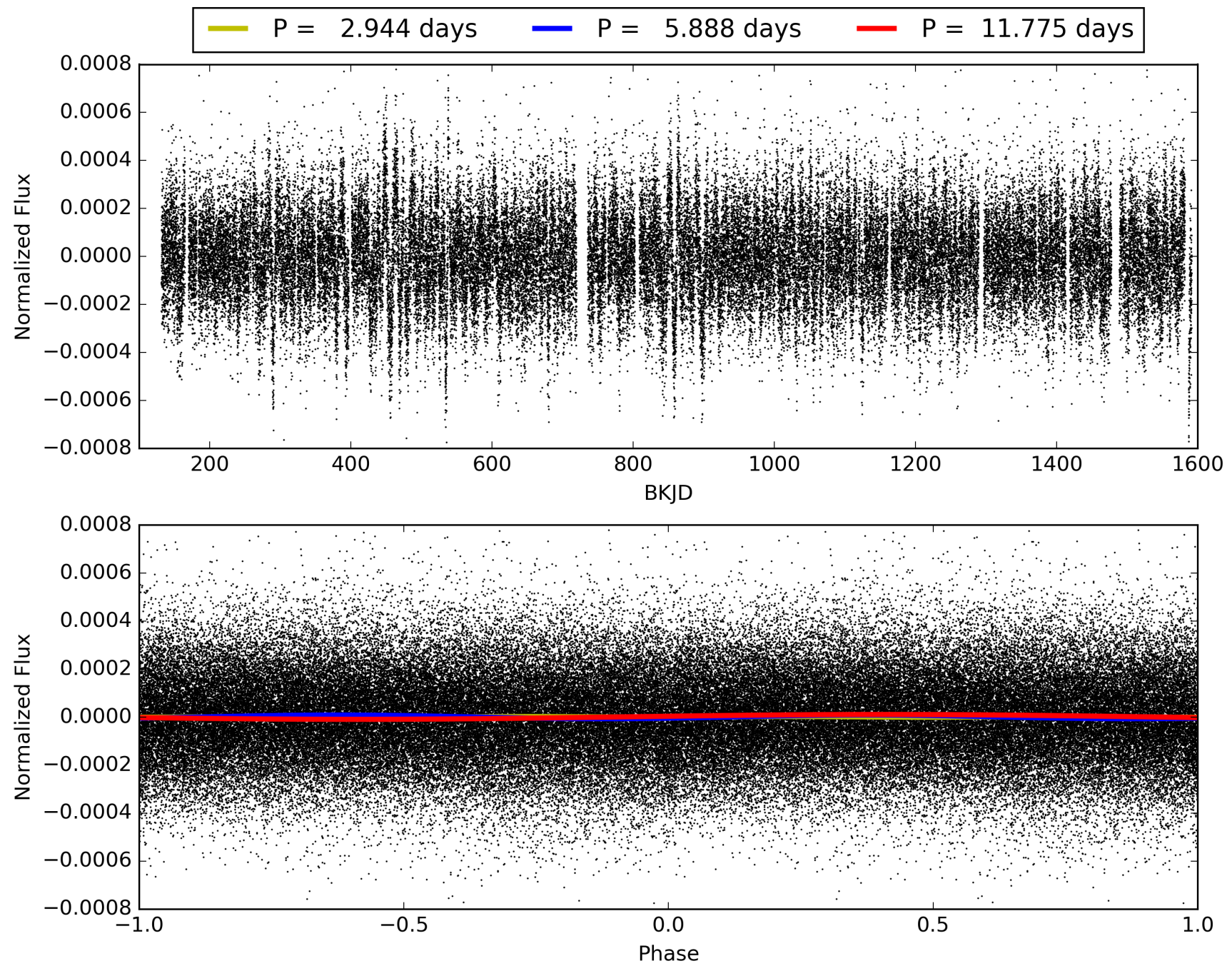
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 009468848-01, PDC Light Curves



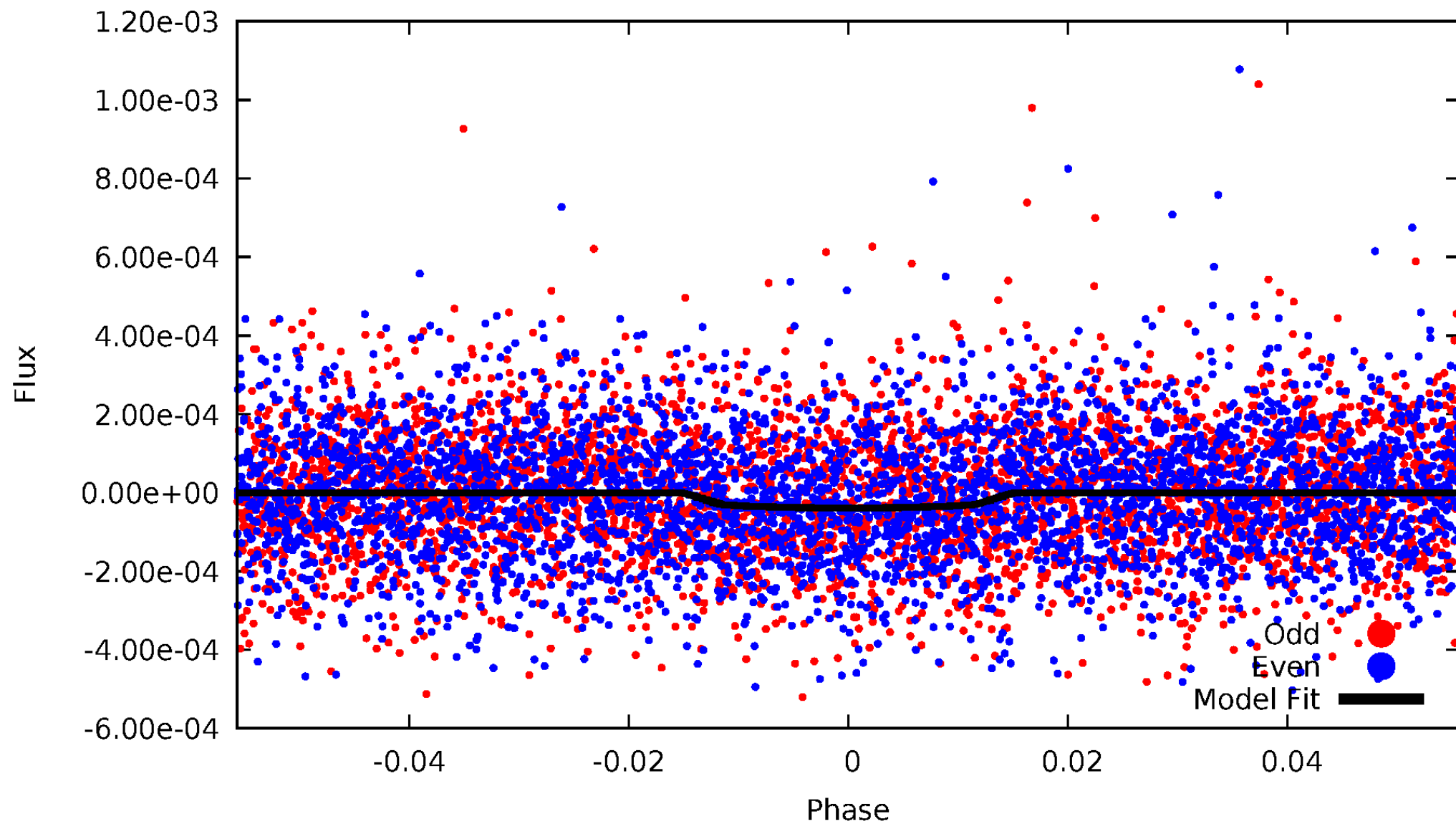


TCE 009468848-01



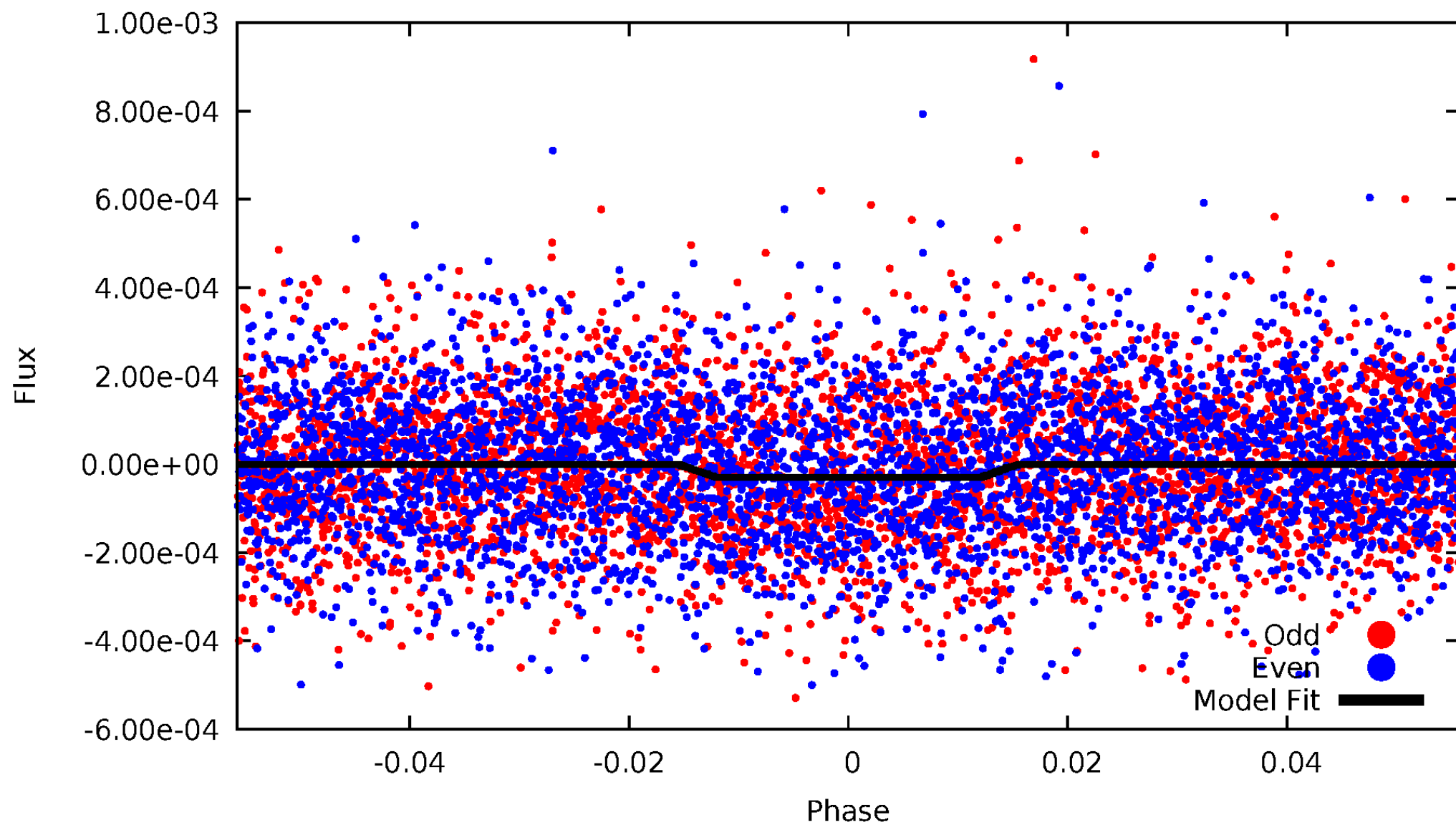
# DV Odd/Even

TCE 009468848-01



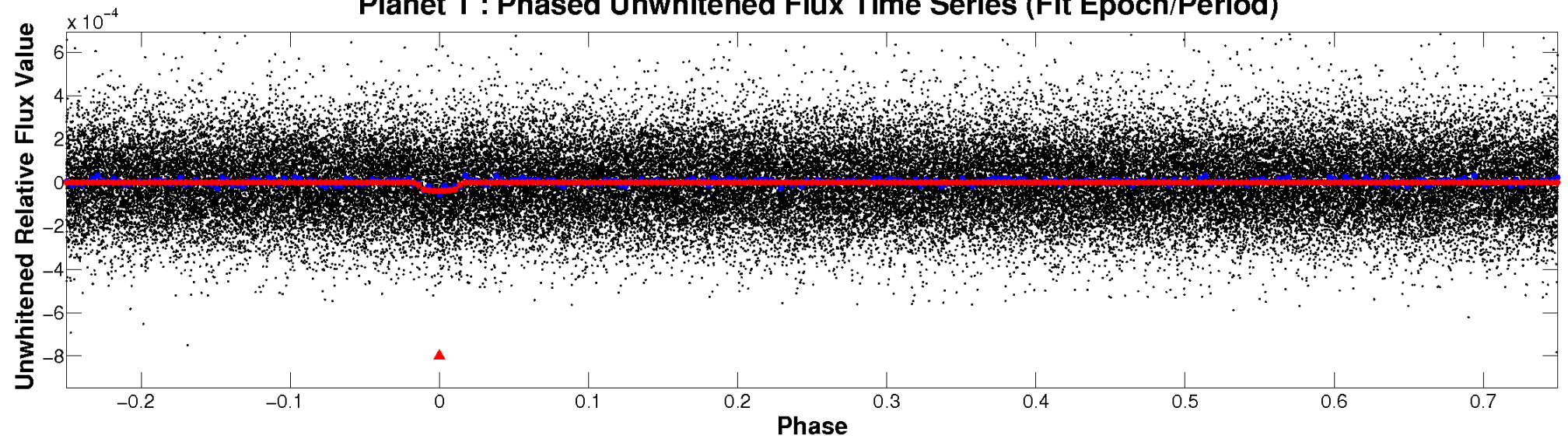
# ALT Odd/Even

TCE 009468848-01

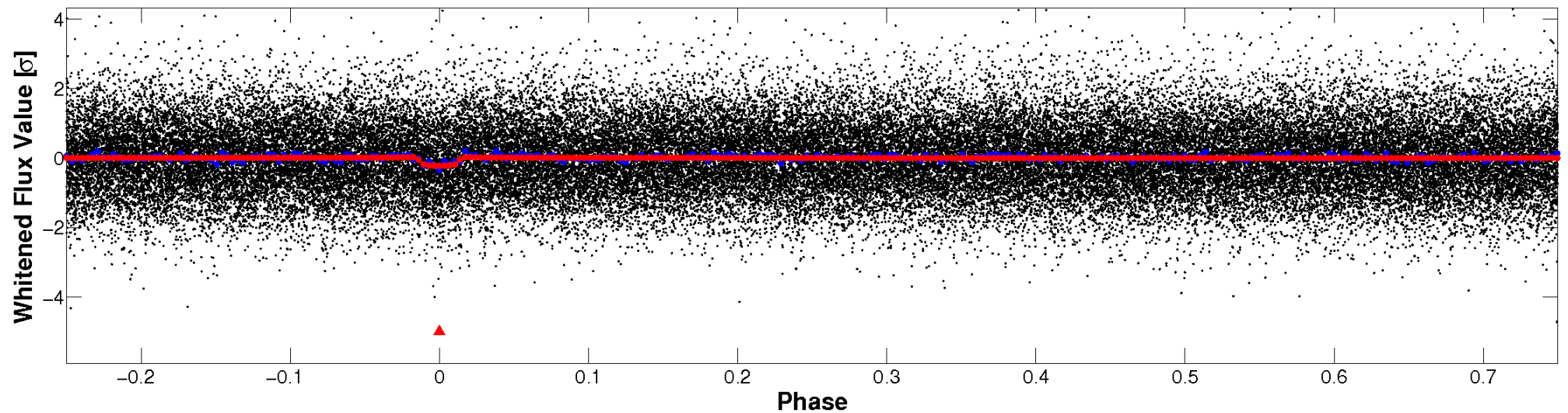


# Non-Whitened Vs. Whitened Light Curve

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



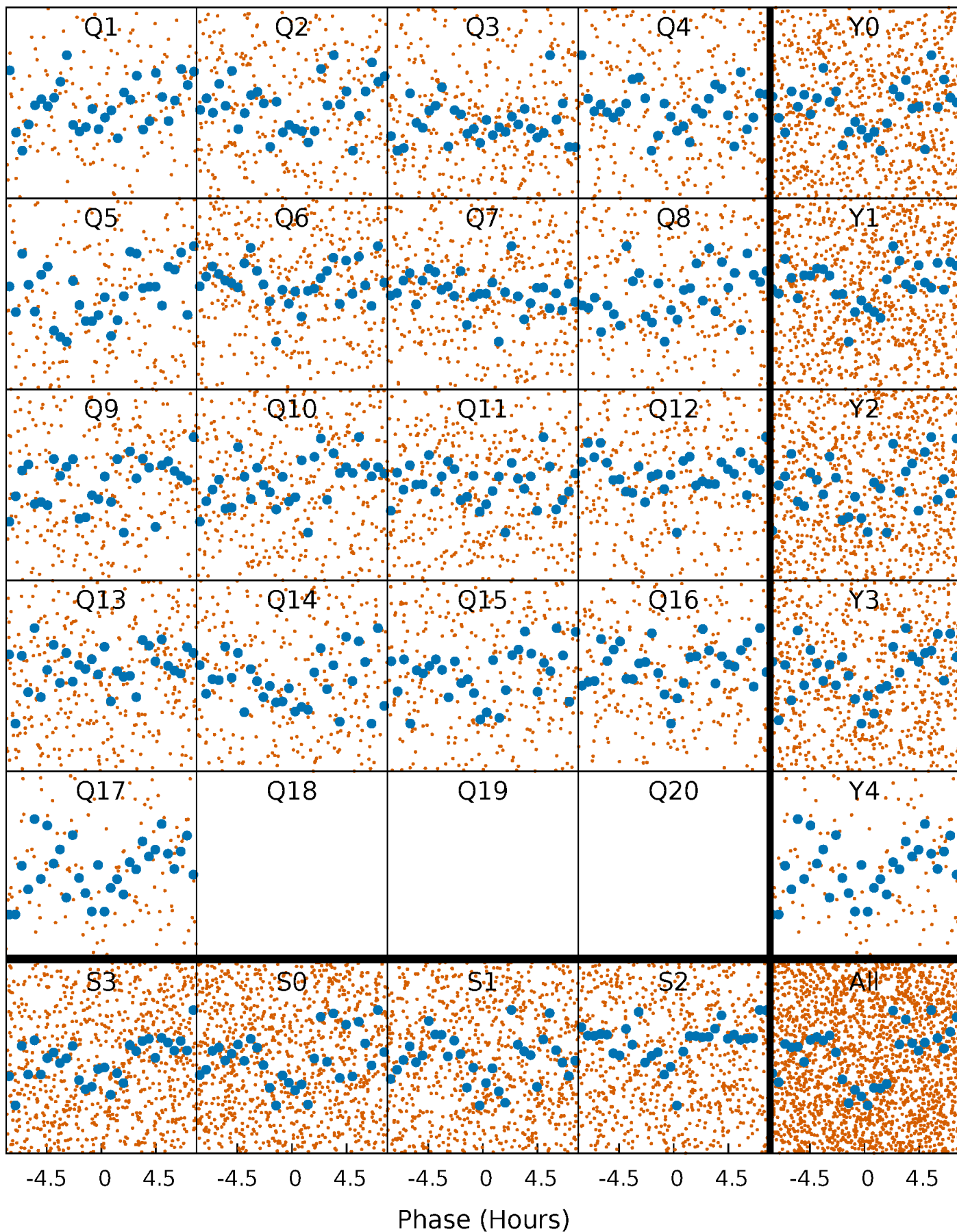
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

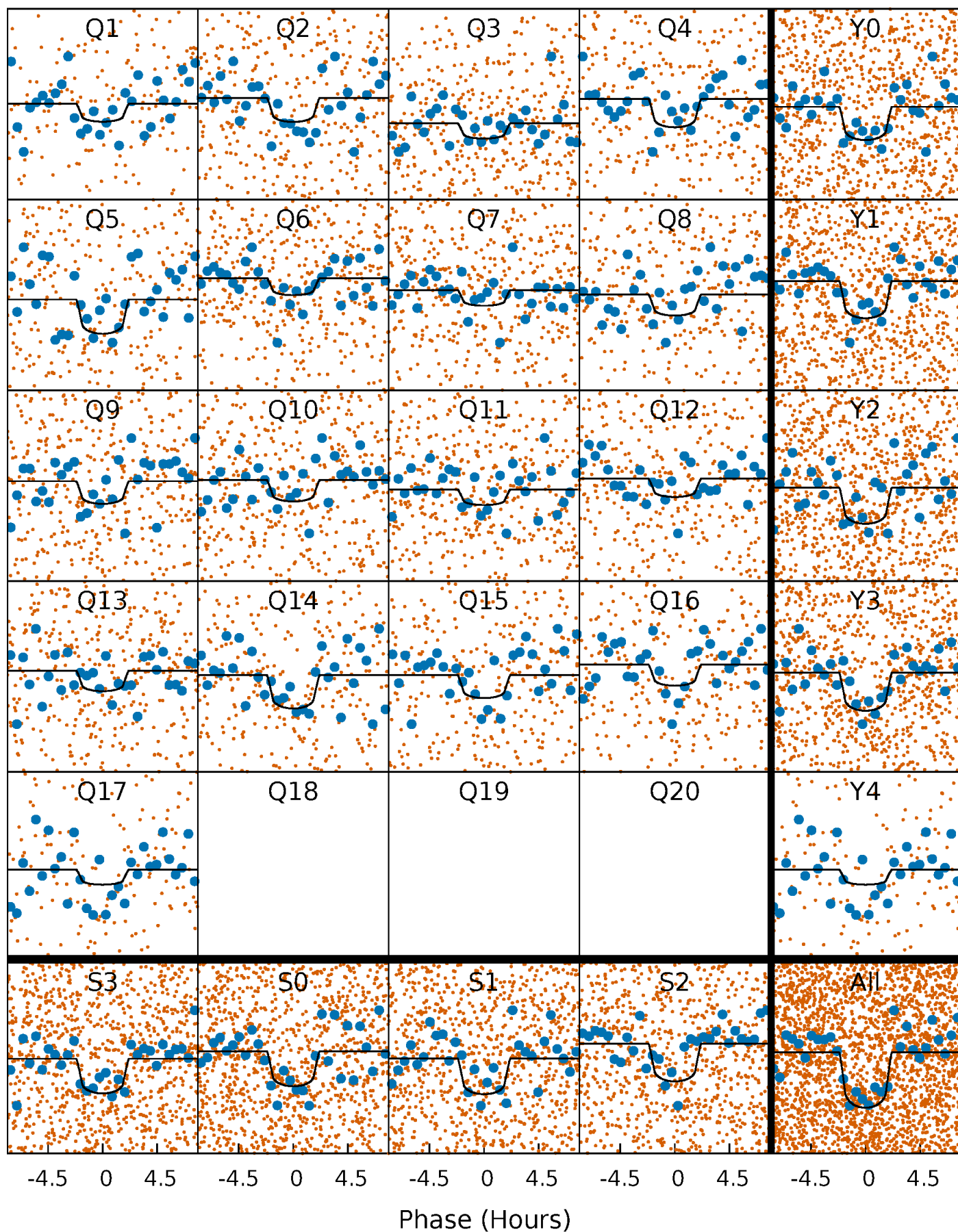
TCE 009468848-01 P= 5.887683 Days  $T_0=135.040736$  (BKJD)





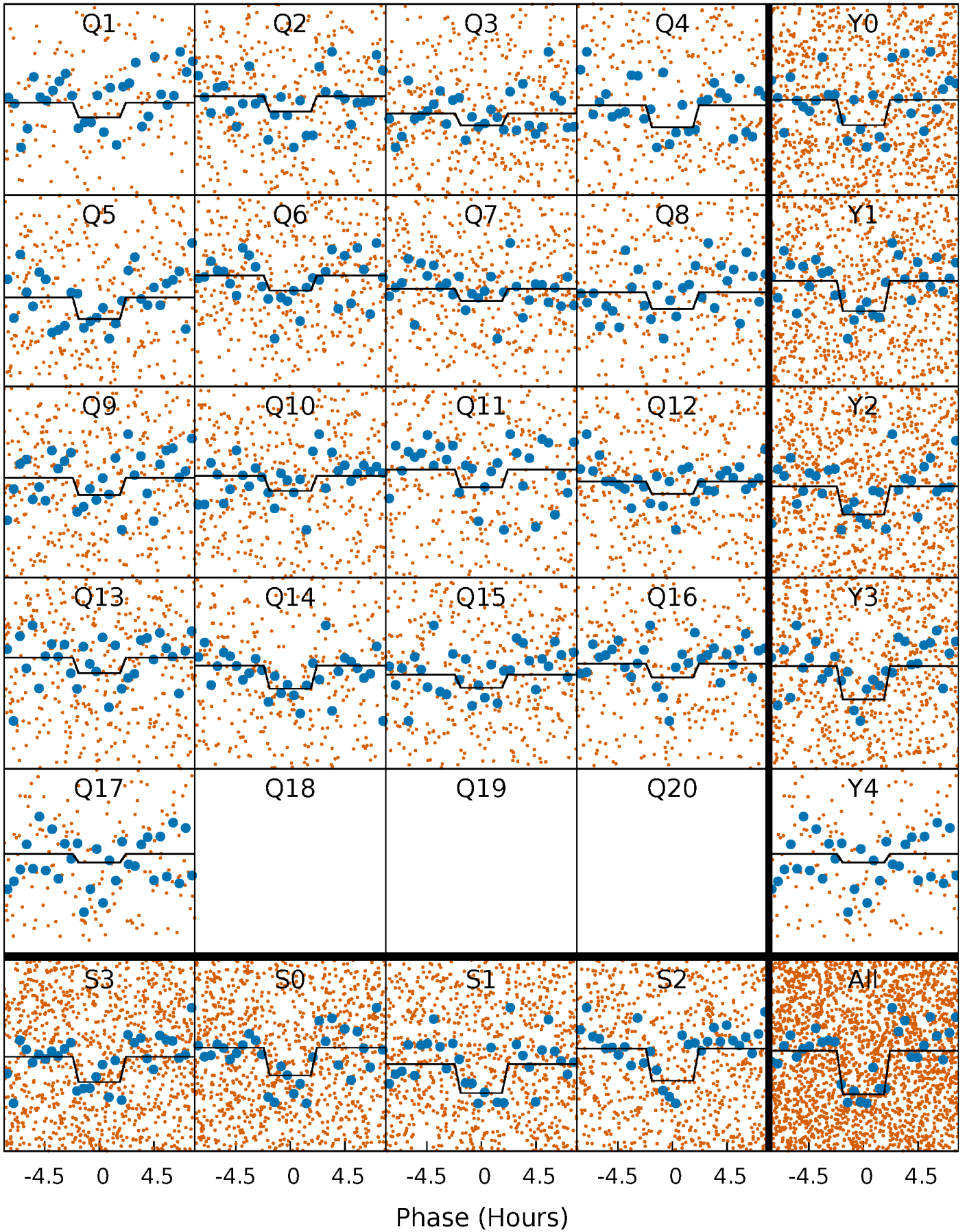
# DV Quarter-Phased Transit Curves

TCE 009468848-01 P= 5.887683 Days  $T_0=135.040736$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

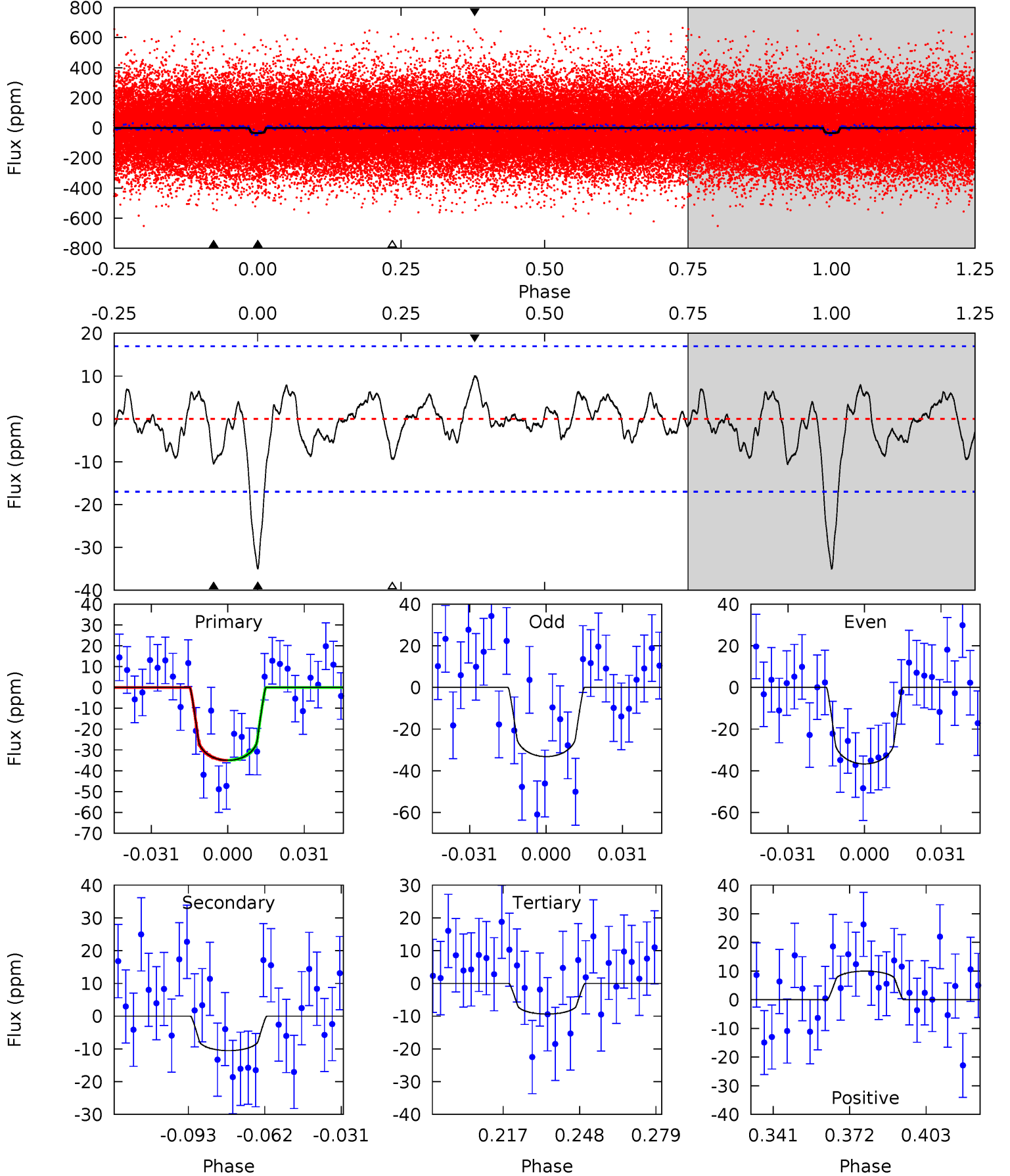
TCE 009468848-01 P= 5.887727 Days  $T_0=135.035781$  (BKJD)



# DV Model-Shift Uniqueness Test

009468848-01, P = 5.887683 Days, E = 129.153053 Days

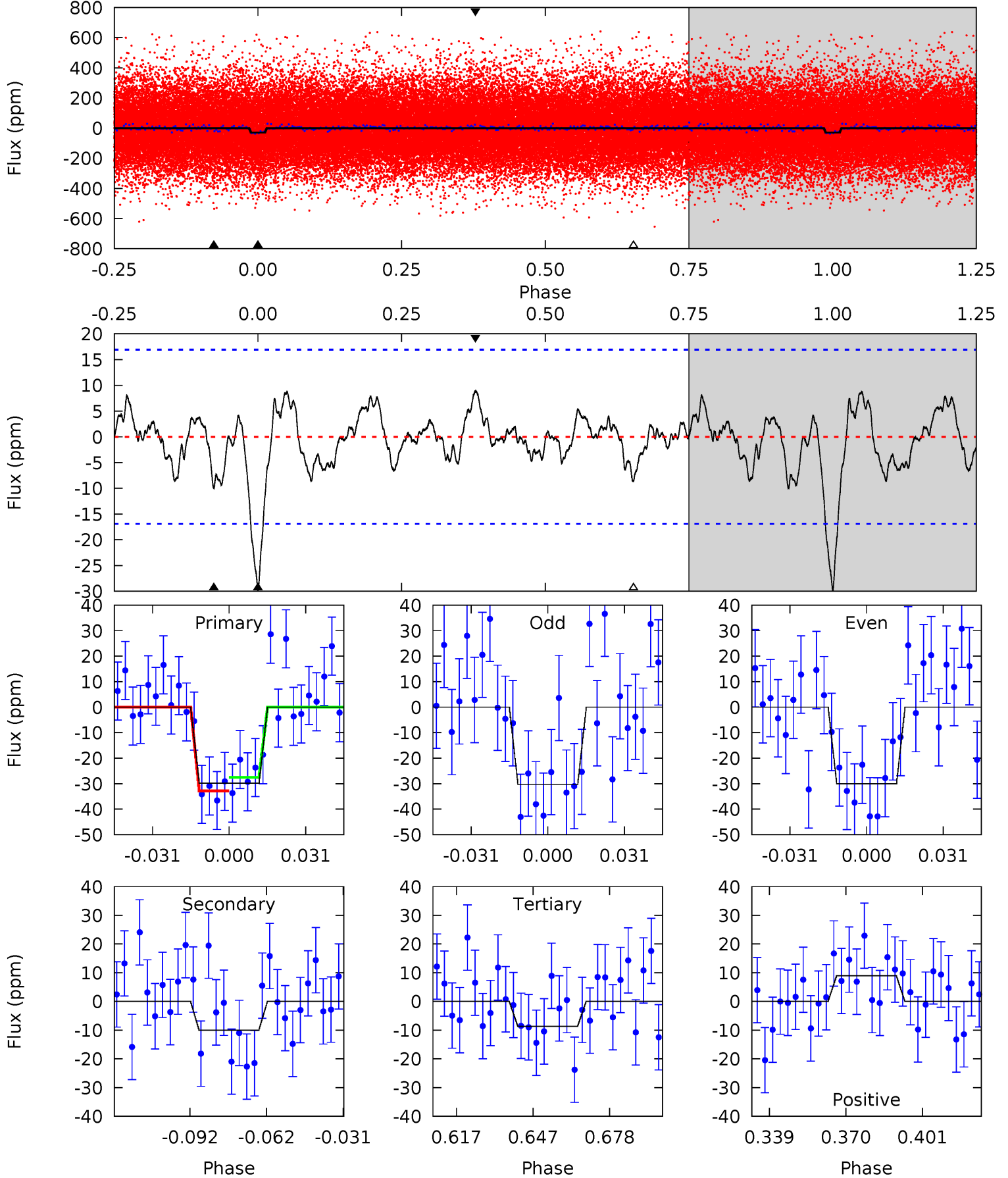
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.91	2.98	2.65	2.83	4.80	2.16	1.08	7.26	7.08	0.33	0.15	0.50	1.00	0.22	0.01



# Alt Model-Shift Uniqueness Test

009468848-01, P = 5.887727 Days, E = 129.148054 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
8.47	2.86	2.47	2.55	4.81	2.16	1.06	6.00	5.92	0.38	0.31	0.03	0.94	0.23	0.75





### Stellar Parameters For KIC 009468848

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6065^{+163}_{-181}$	$4.495^{+0.052}_{-0.221}$	$-0.180^{+0.250}_{-0.300}$	$0.947^{+0.310}_{-0.097}$	$1.022^{+0.140}_{-0.140}$	$1.695^{+0.377}_{-0.941}$
	+3%/-3%	+1%/-5%	+139%/-167%	+33%/-10%	+14%/-14%	+22%/-56%
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 009468848-01 / KOI 8183.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-11 \pm 4$	$0.76^{+0.39}_{-0.40}$	$1472^{+111}_{-67}$	$4348^{+1795}_{-676}$	$40^{+147}_{-24}$
Alt.	$-10 \pm 4$	$0.66^{+0.40}_{-0.35}$	$1463^{+111}_{-65}$	$4532^{+1812}_{-798}$	$50^{+171}_{-32}$

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

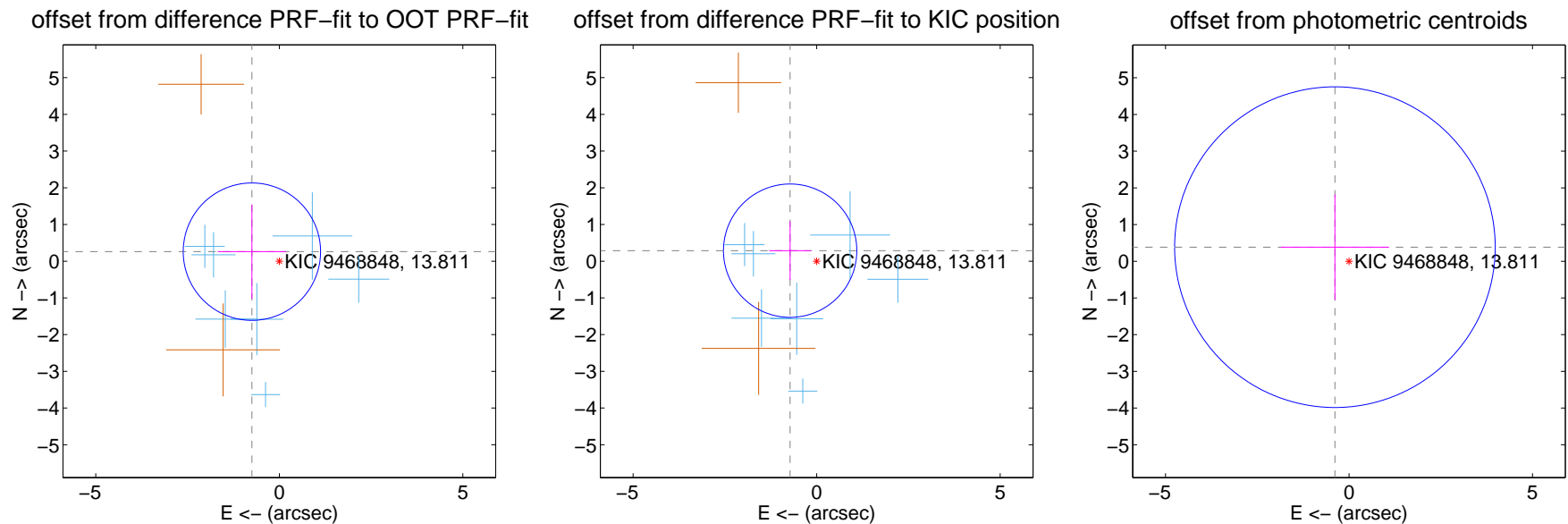
## DV Centroid Data

Supplemental centroid analysis for 009468848-01. Kepler magnitude: 13.81. Transit SNR 8.19

There are 7 quarters with good PRF difference image offsets

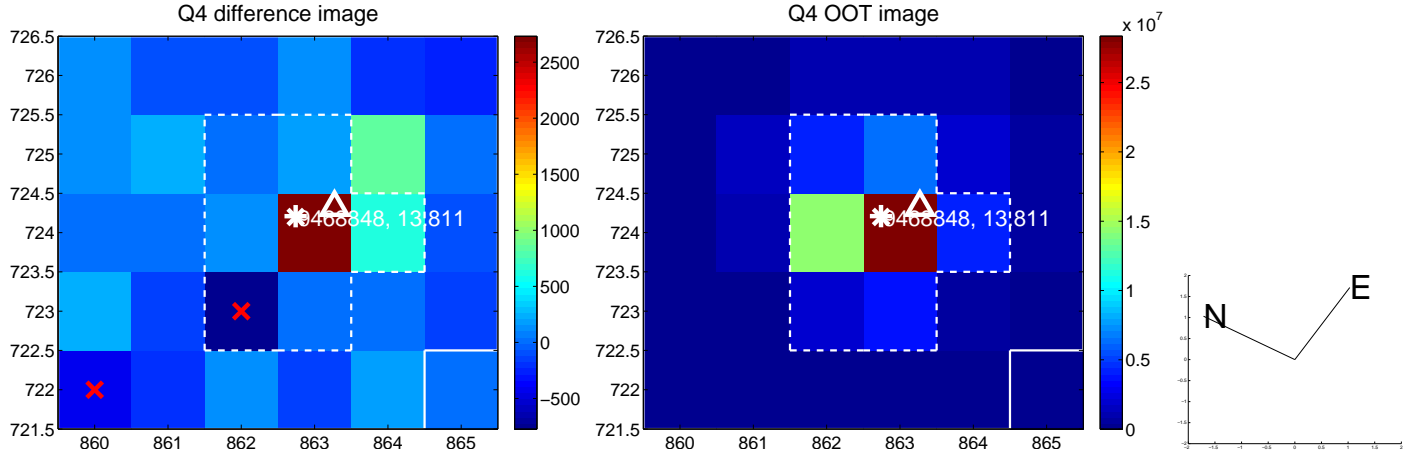
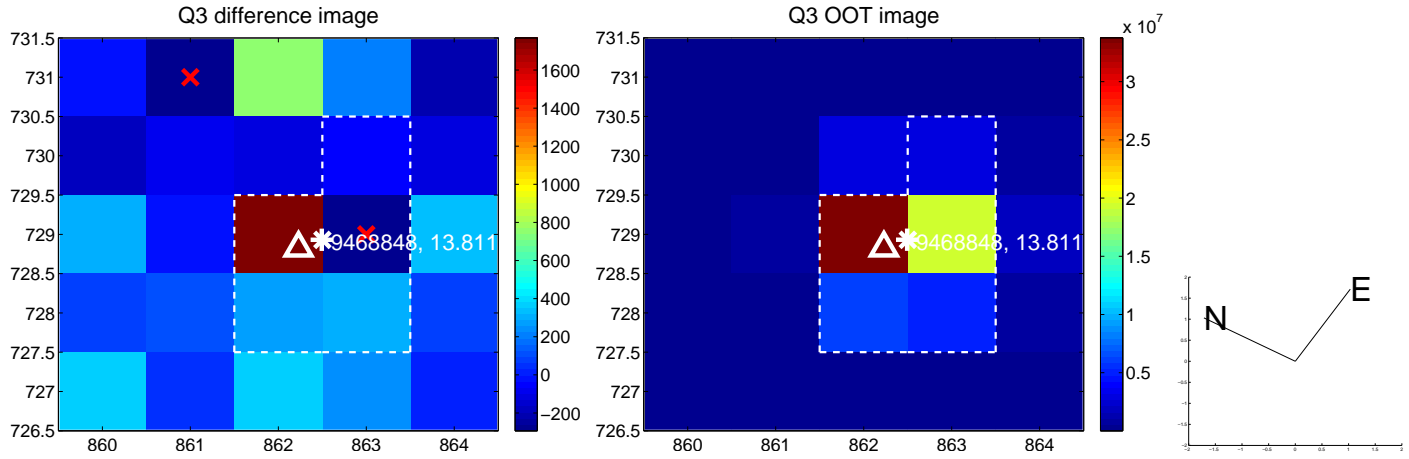
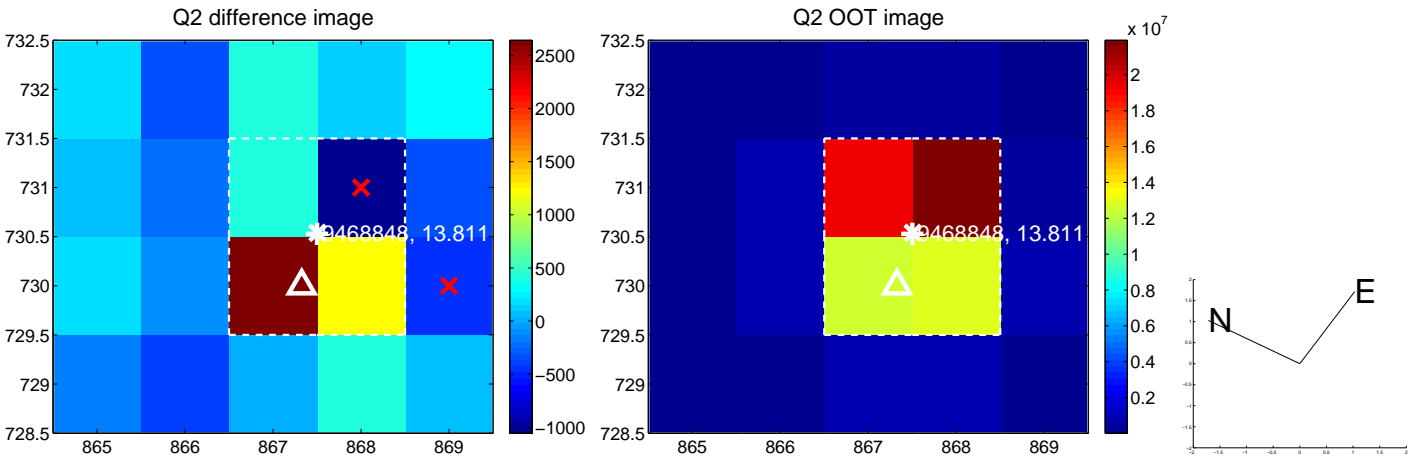
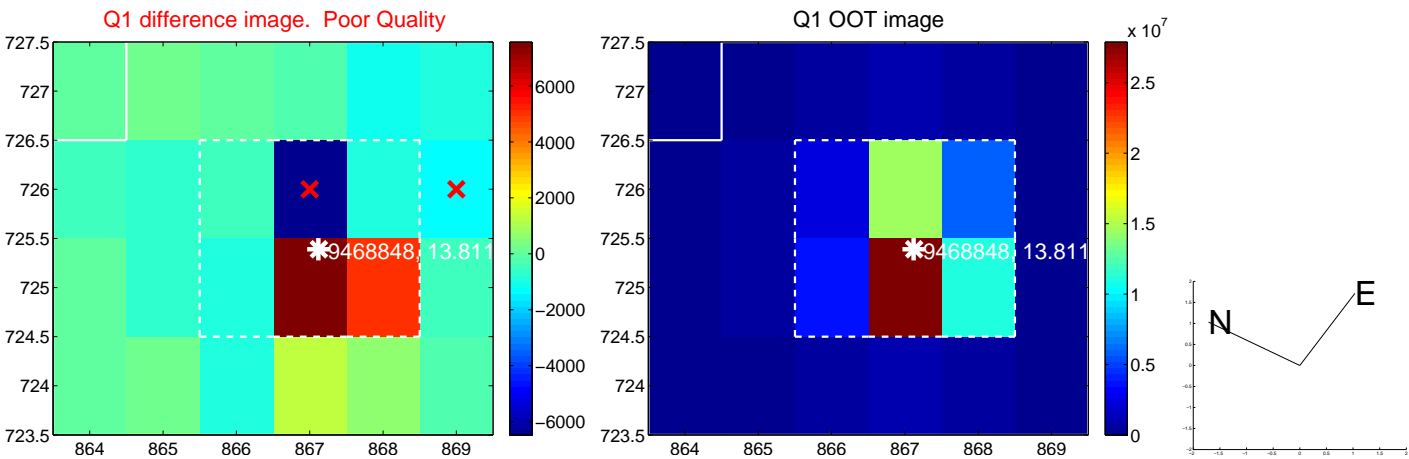
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.791 \pm 0.624$	1.27	$0.747 \pm 0.934$	$0.260 \pm 1.285$
PRF-fit source offset from KIC position	$0.777 \pm 0.605$	1.28	$0.723 \pm 0.570$	$0.286 \pm 0.793$
photometric centroid source offset	$0.54 \pm 1.46$	0.37	$0.38 \pm 1.47$	$0.38 \pm 1.44$

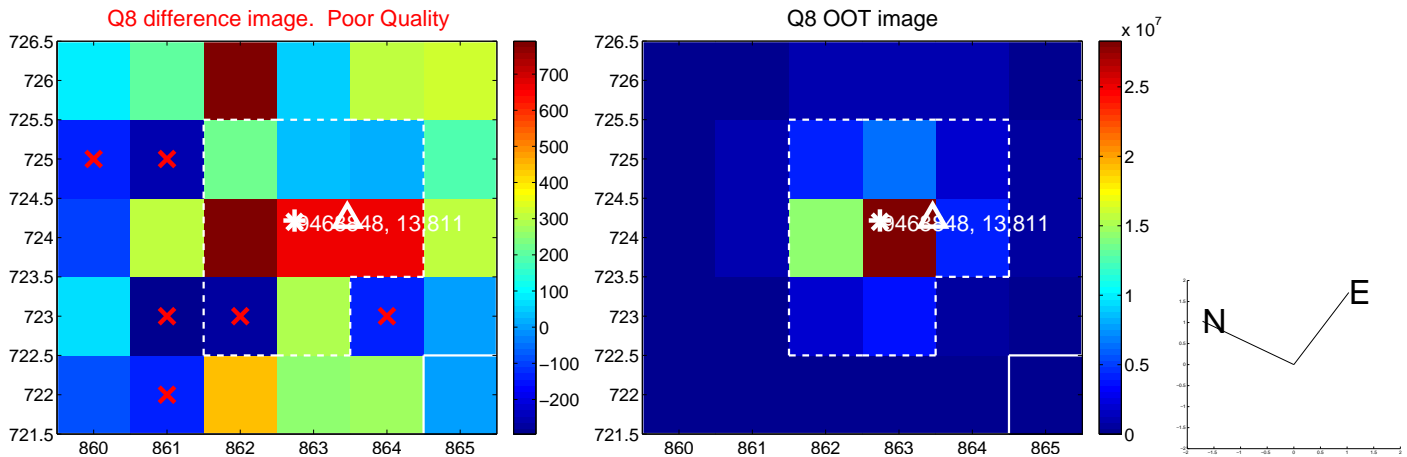
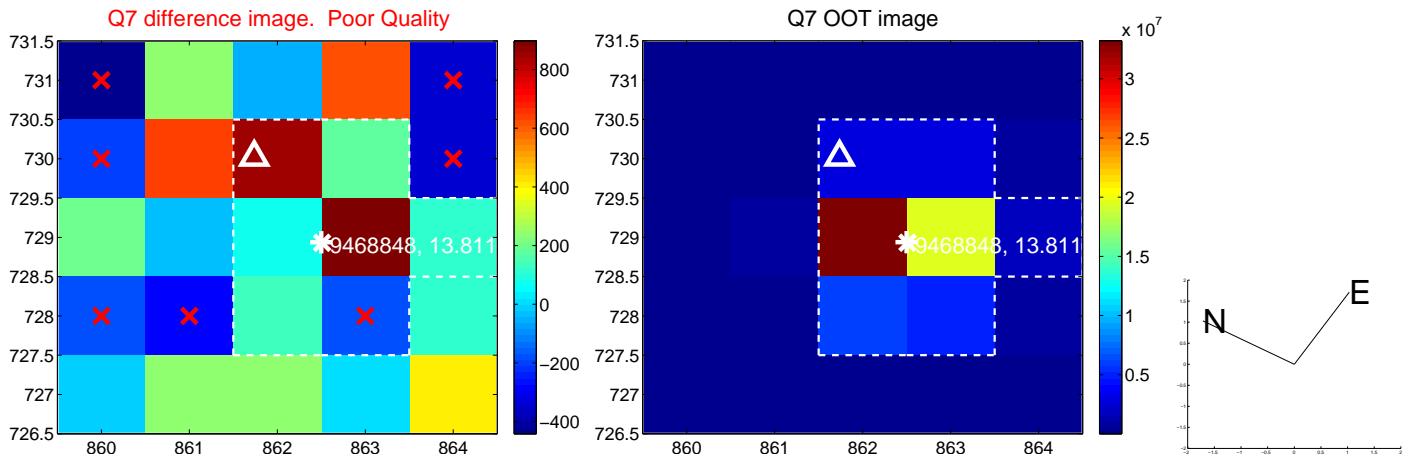
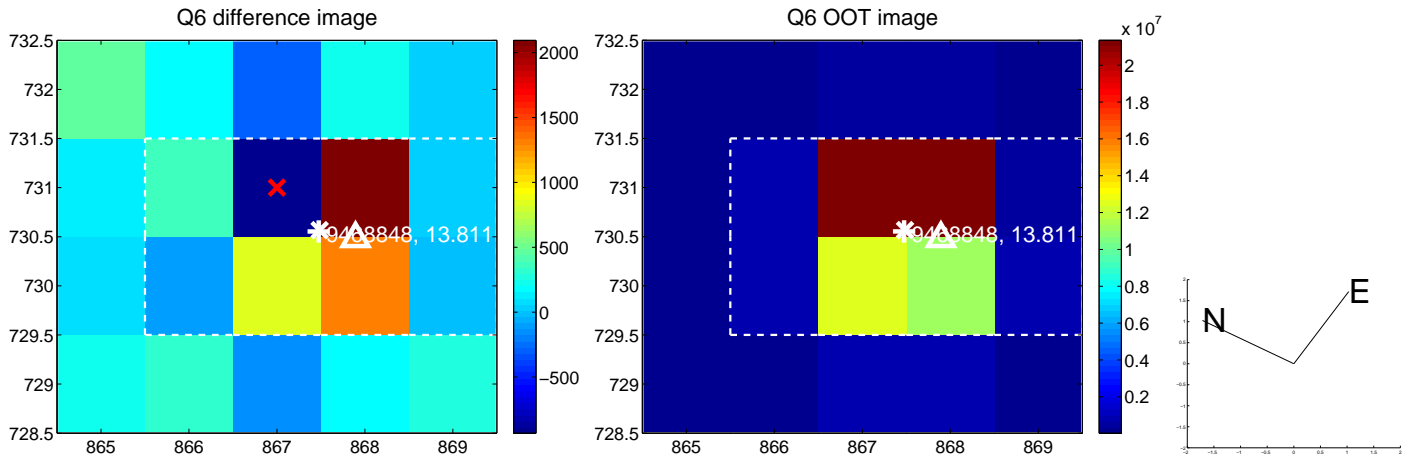
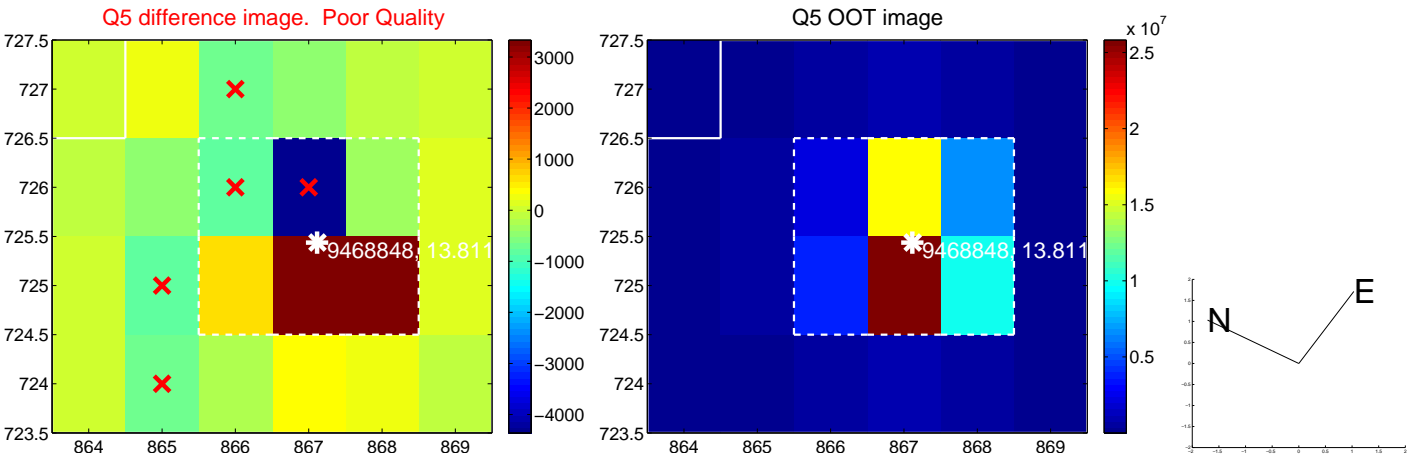


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

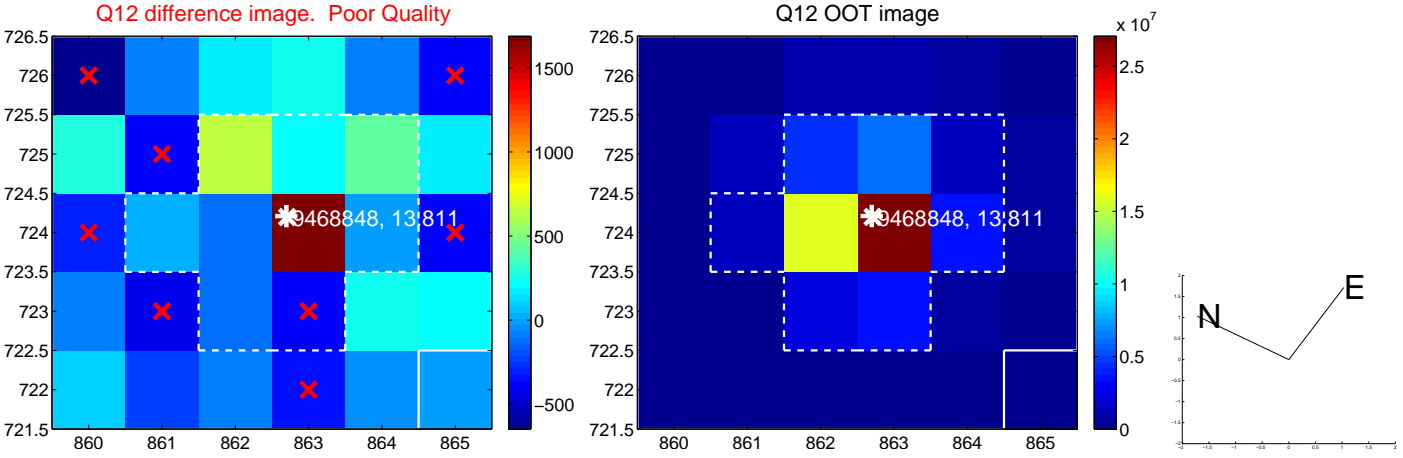
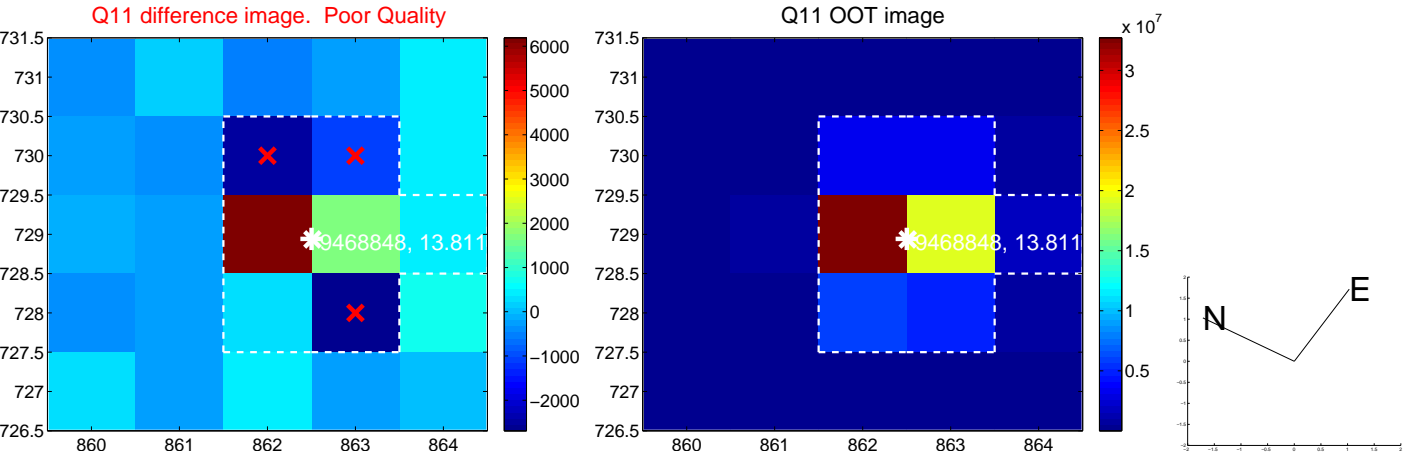
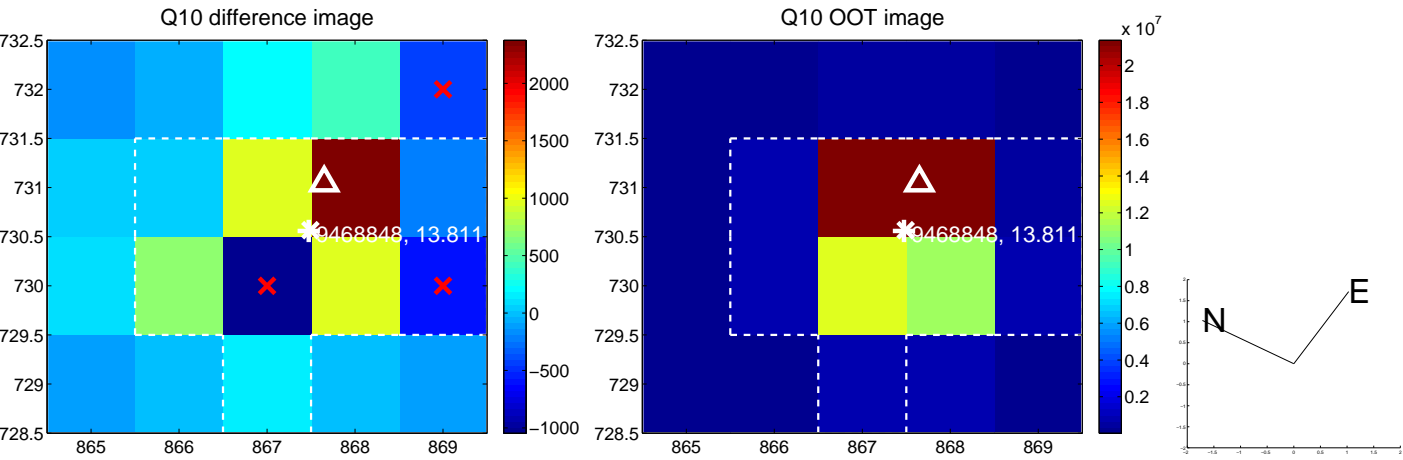
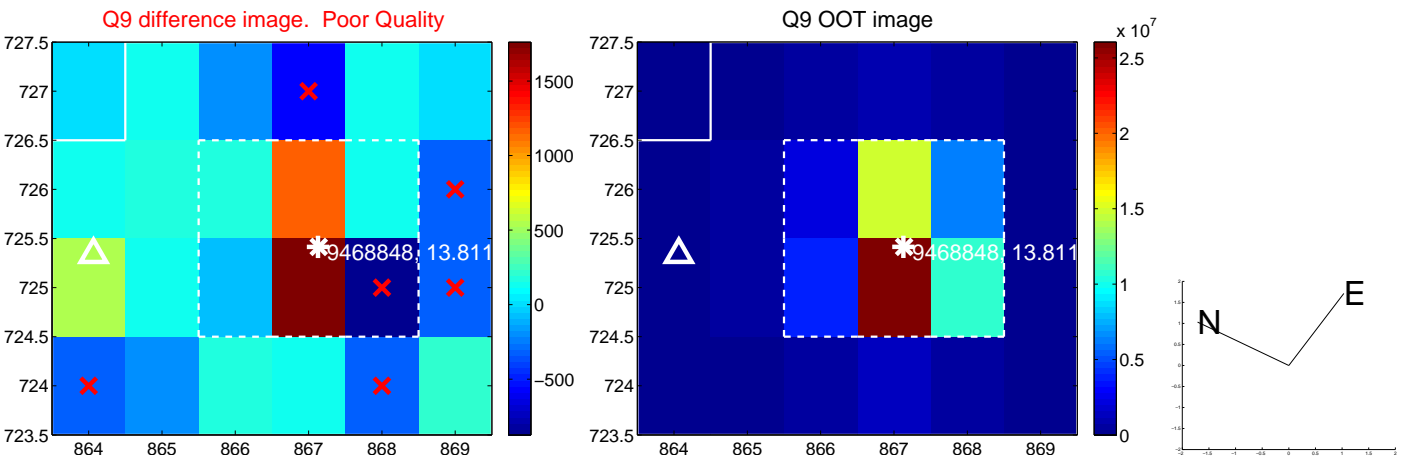


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

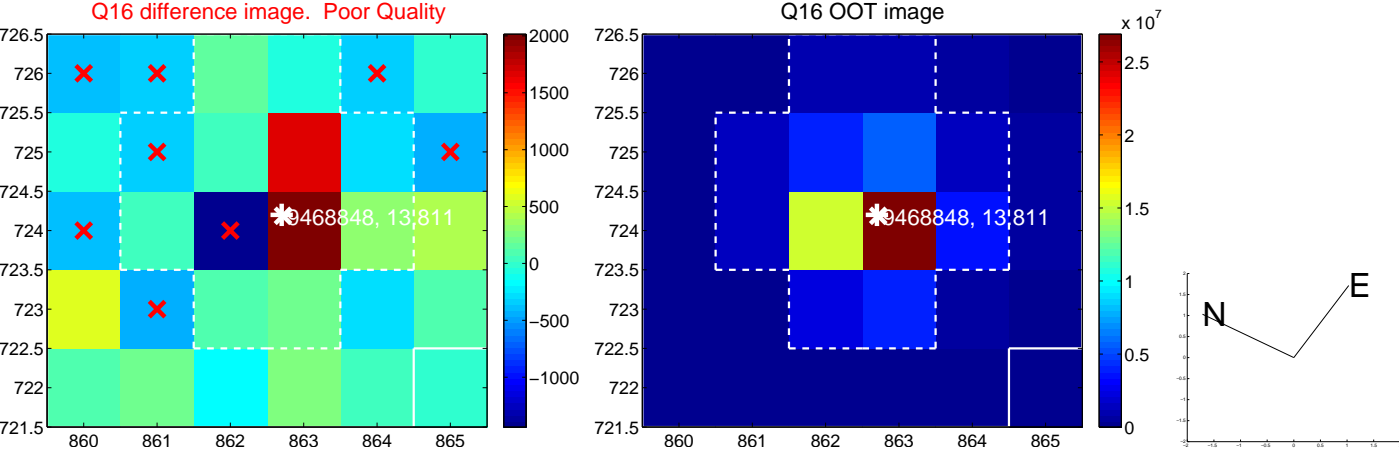
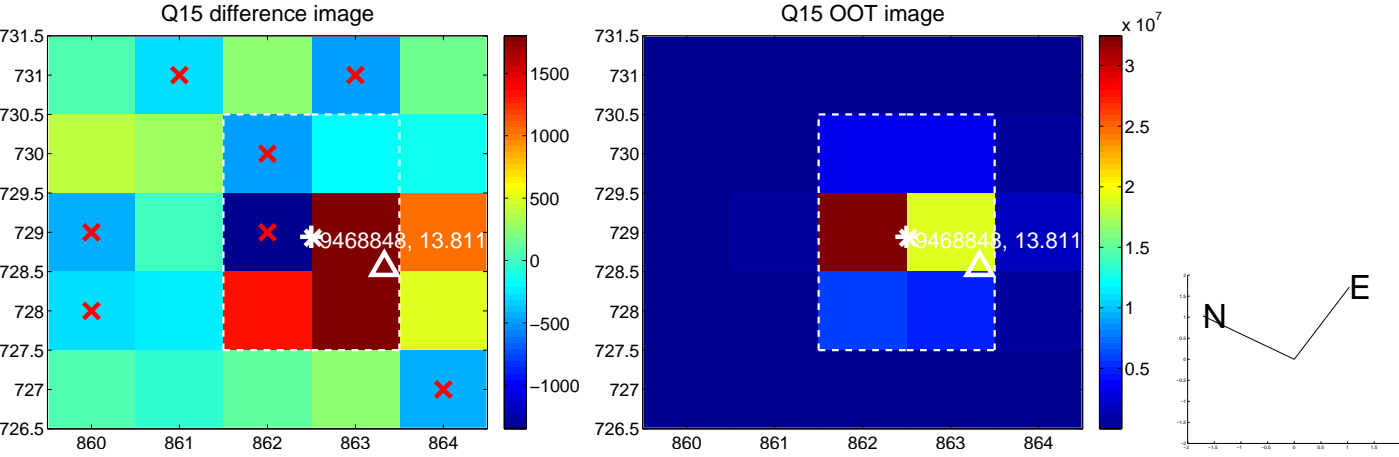
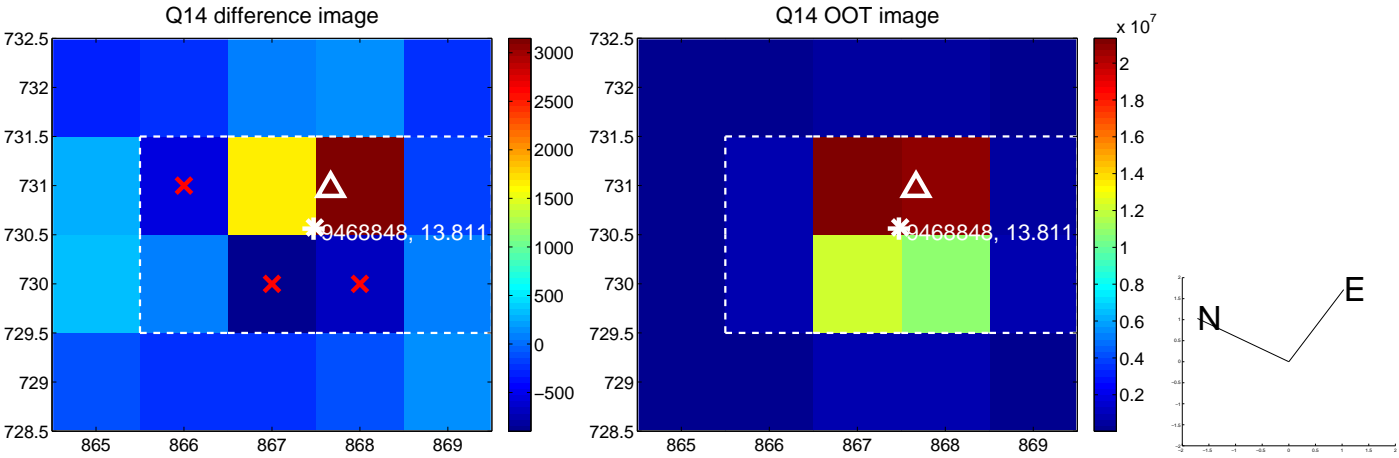
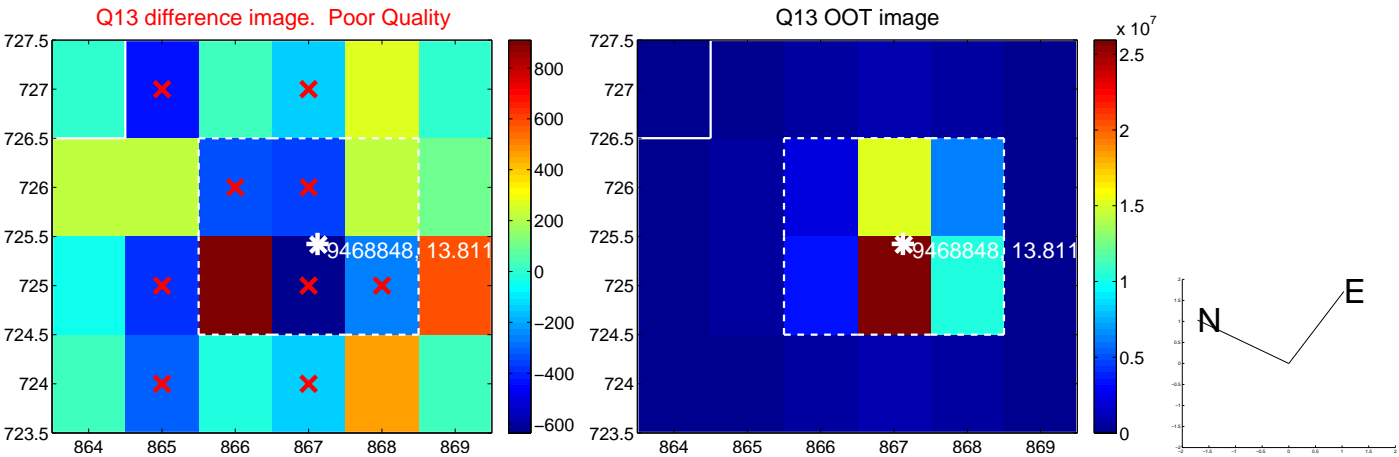




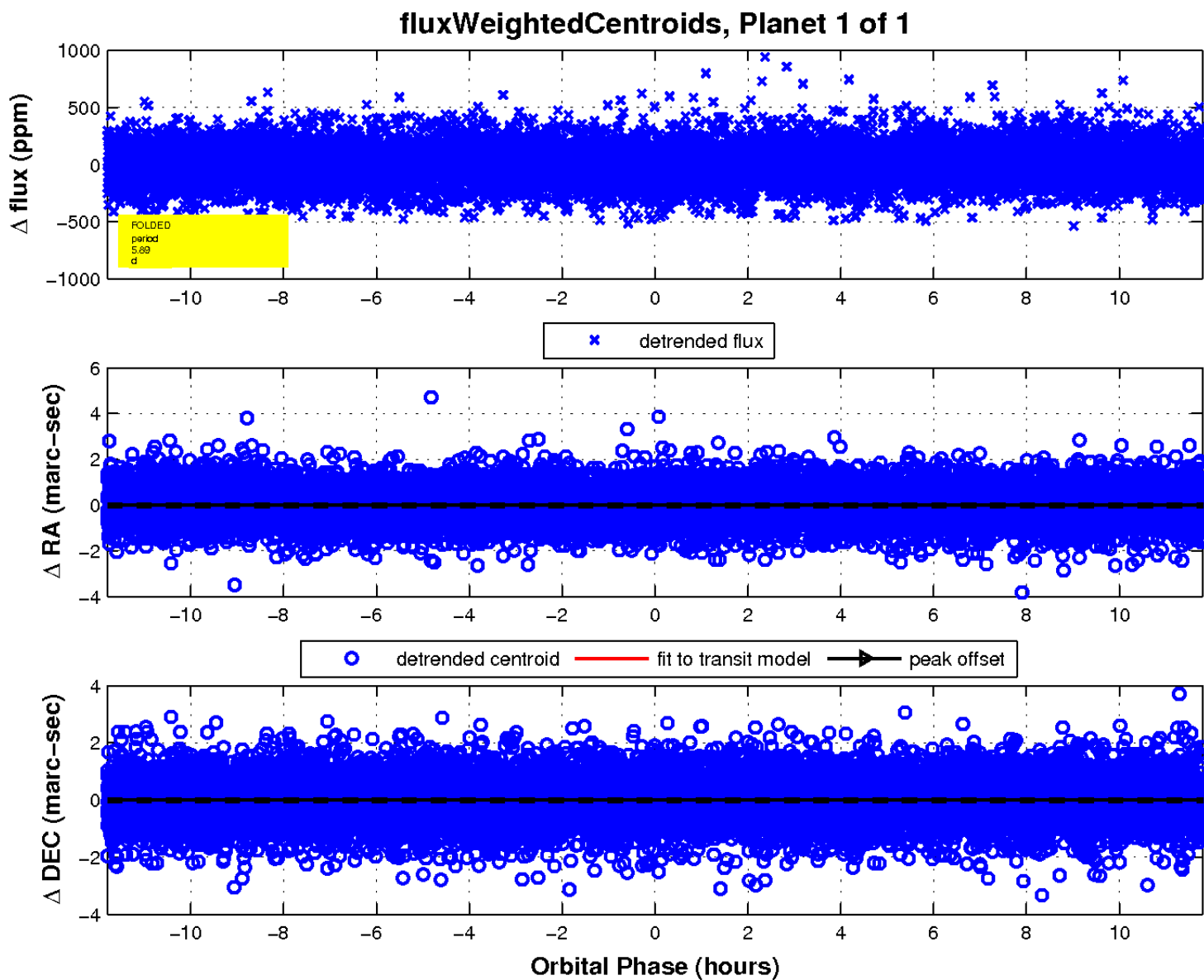
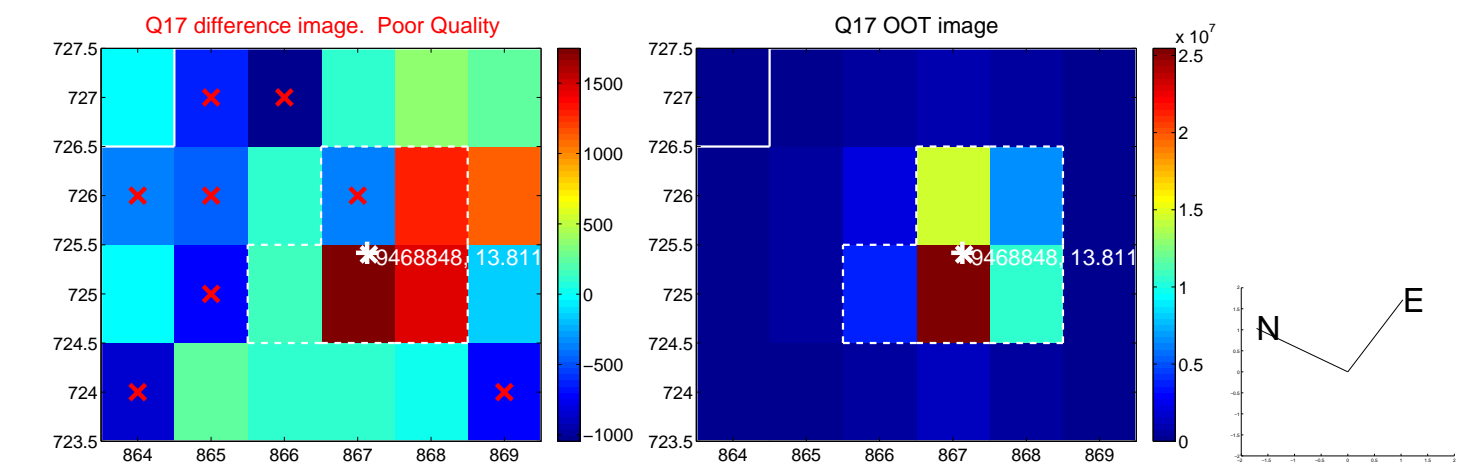
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

