

# KIC 008047428

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008047428-01	OBS	4747.01	92.264366	146.421122	312.5	8.655	10.3	10.6	1.28	6084	2.49	11.44

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008047428-01	OBS	PC	0.98	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.

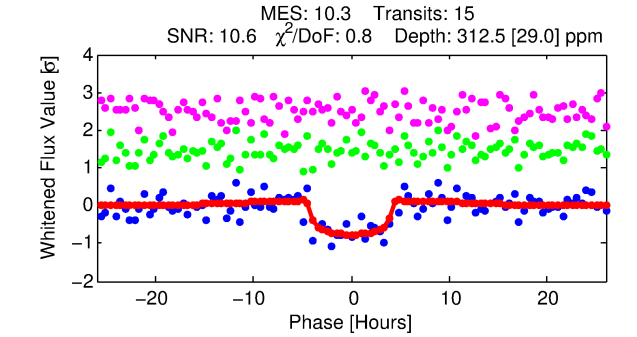
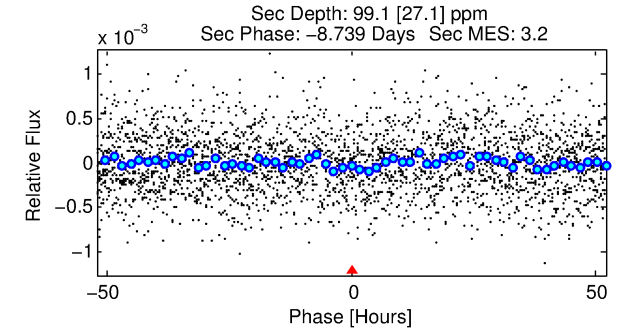
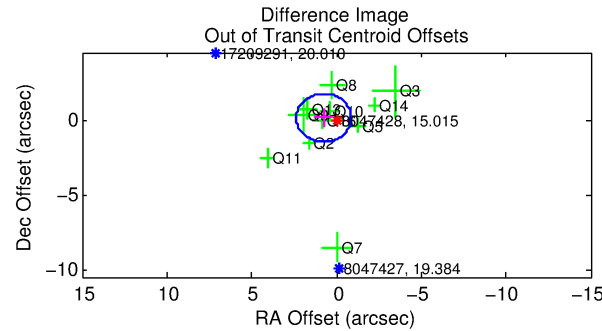
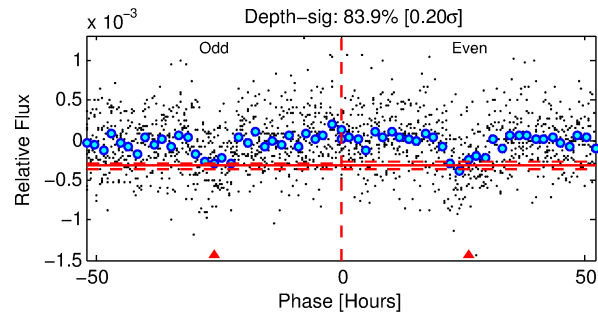
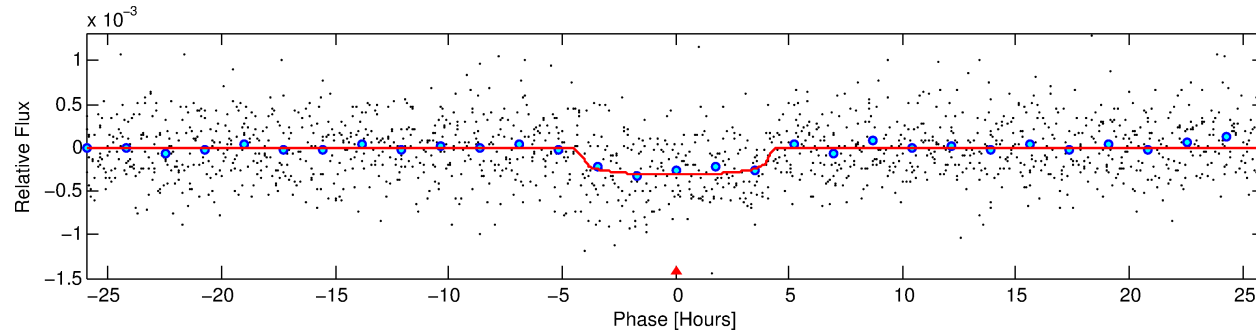
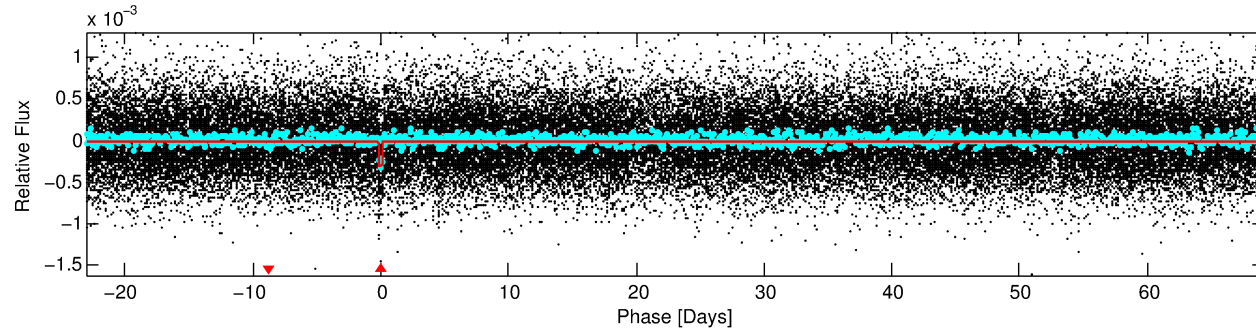
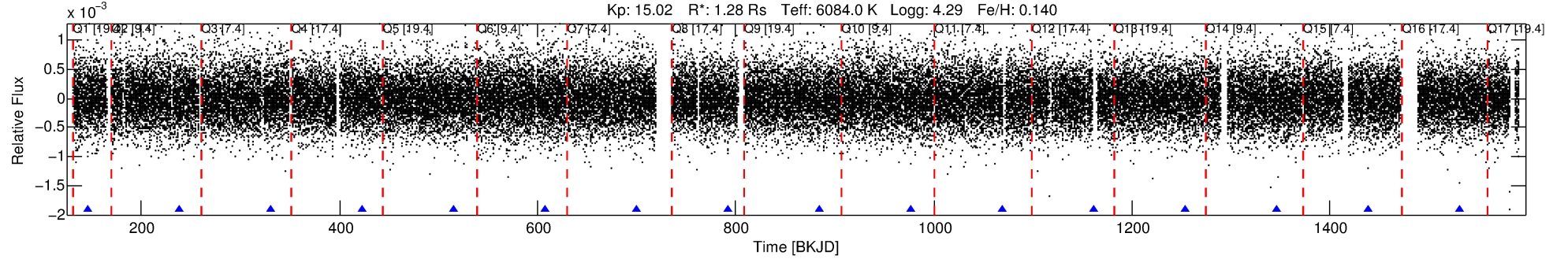
## Ephemeris Match Information For 008047428-01

No Significant Match Found

# DV One-Page Summary

KIC: 8047428 Candidate: 1 of 1 Period: 92.264 d

KOI: K04747.01 Corr: 0.937



## DV Fit Results:

Period = 92.26437 [0.00139] d  
Epoch = 146.4211 [0.0122] BKJD  
Rp/R\* = 0.0178 [0.0071]  
a/R\* = 53.58 [102.29]  
b = 0.78 [0.99]  
Seff = 11.44 [2.62]  
Teff = 469 [27] K  
Rp = 2.49 [1.09] Re  
a = 0.4203 [0.0636] AU  
Ag = 1556.46 [1358.83] [1.14 $\sigma$ ]  
Teffp = 4554 [964] K [4.24 $\sigma$ ]

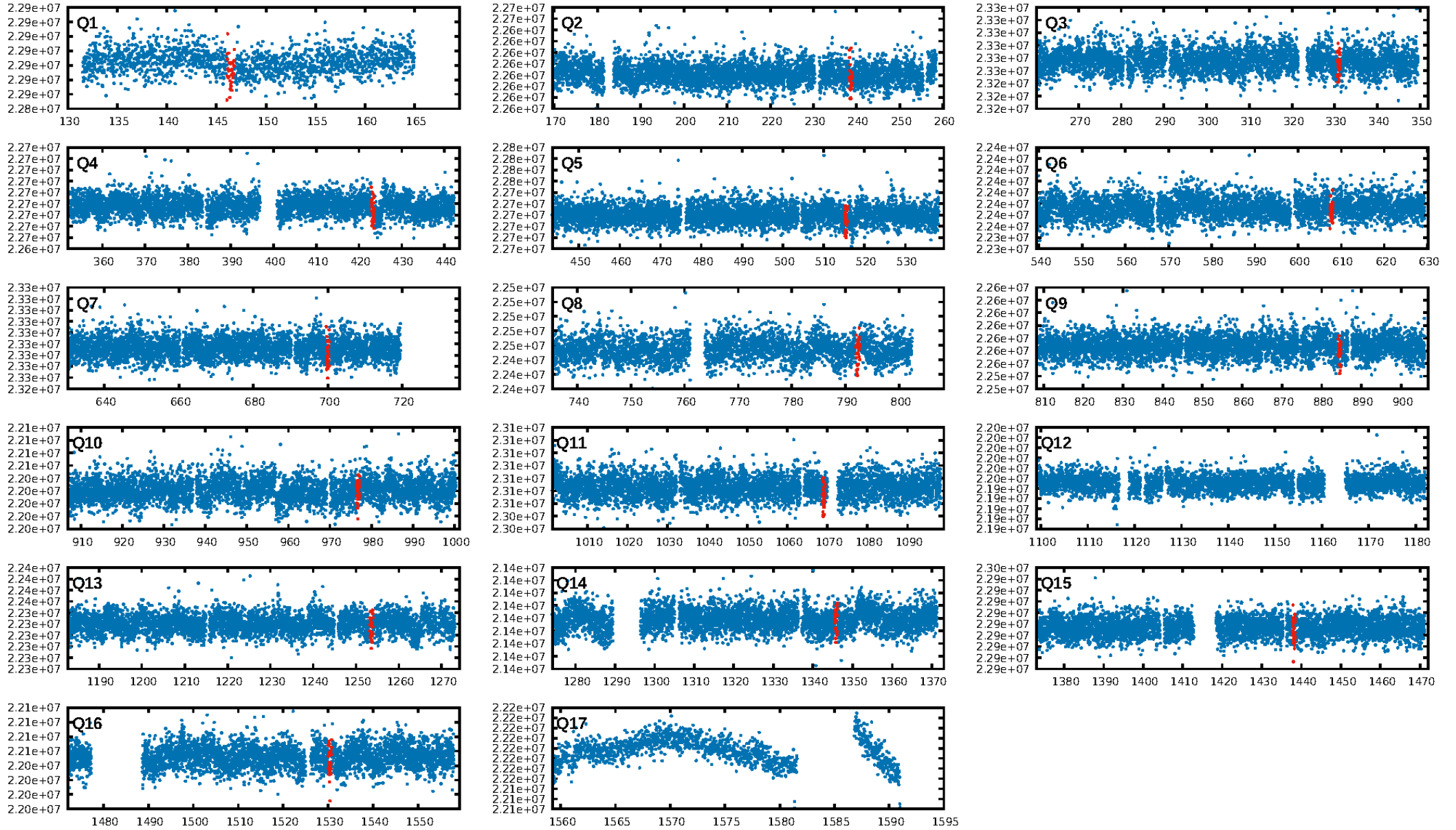
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 88.3%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 6.26e-23  
RollingBand-fgt: 1.00 [14/14]  
GhostDiagnostic-chr: 9.108  
Centroid-sig: 10.0%  
Centroid-so: 1.305 arcsec [1.12 $\sigma$ ]  
OotOffset-rm: 0.772 arcsec [1.43 $\sigma$ ]  
KicOffset-rm: 0.875 arcsec [1.41 $\sigma$ ]  
OotOffset-st: 3/3/2/3 [11]  
KicOffset-st: 3/3/2/3 [11]  
DiffImageQuality-fgm: 0.73 [8/11]  
DiffImageOverlap-fno: 1.00 [15/15]

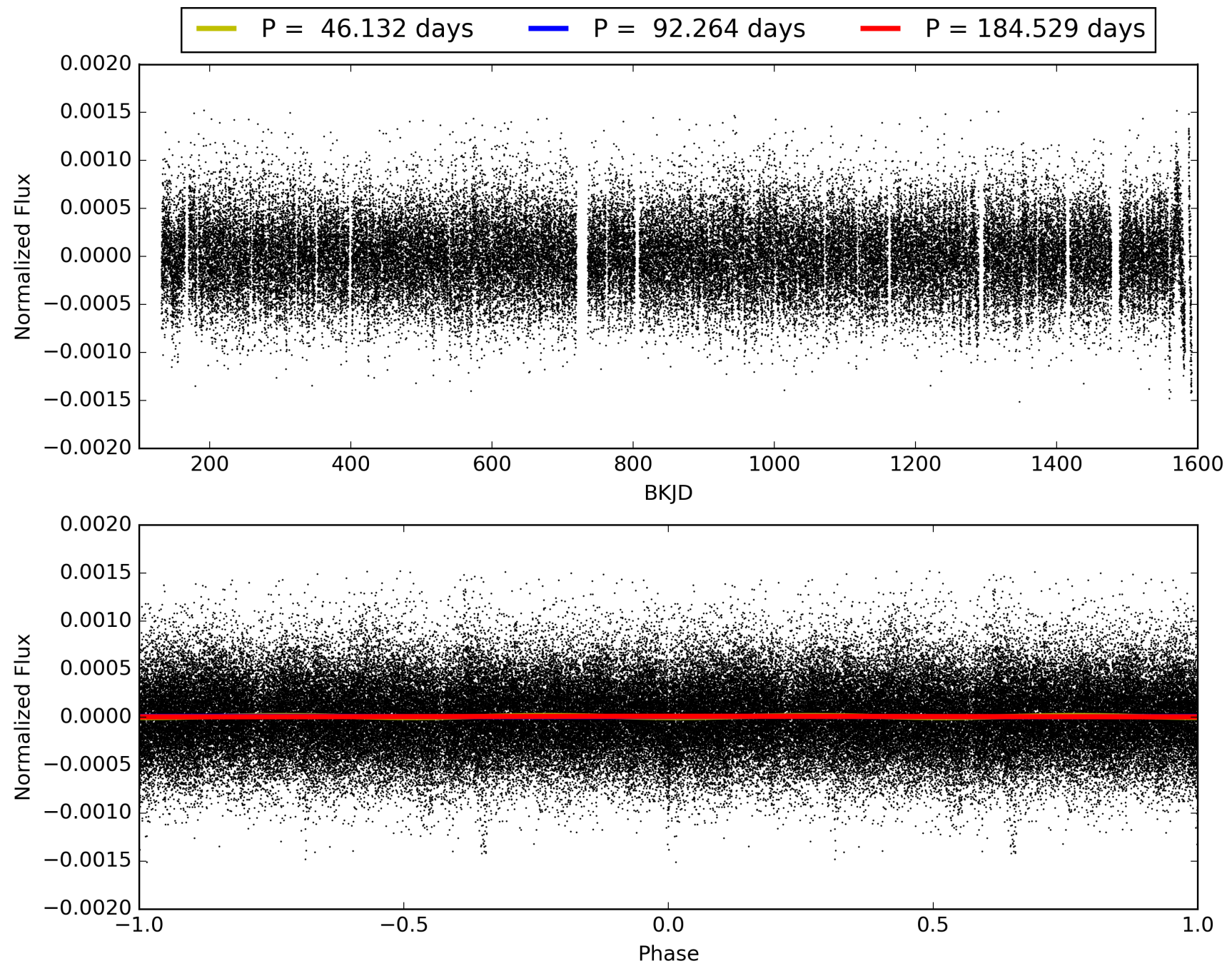
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:00:09 Z

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

# TCE 008047428-01, PDC Light Curves

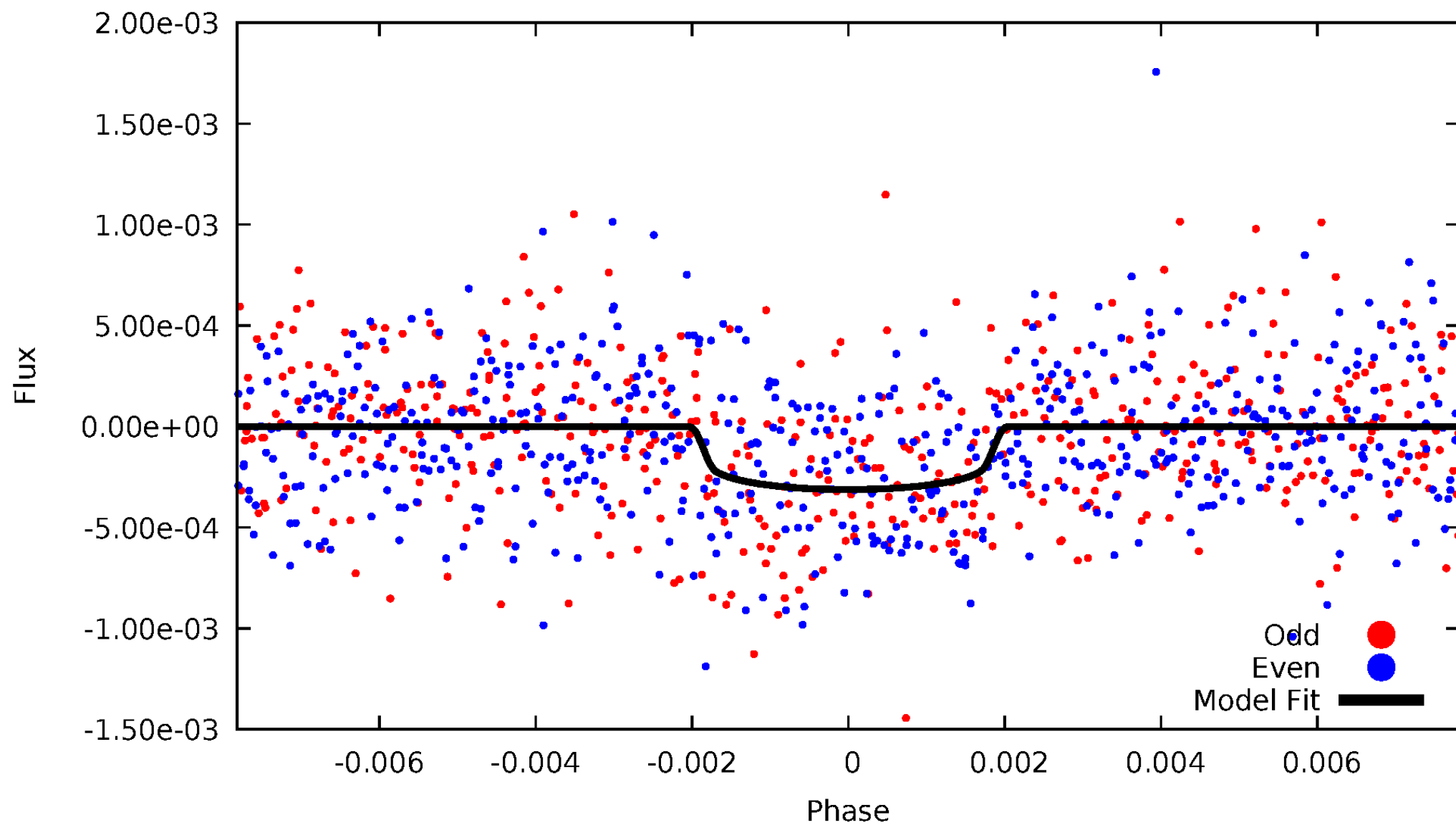


TCE 008047428-01



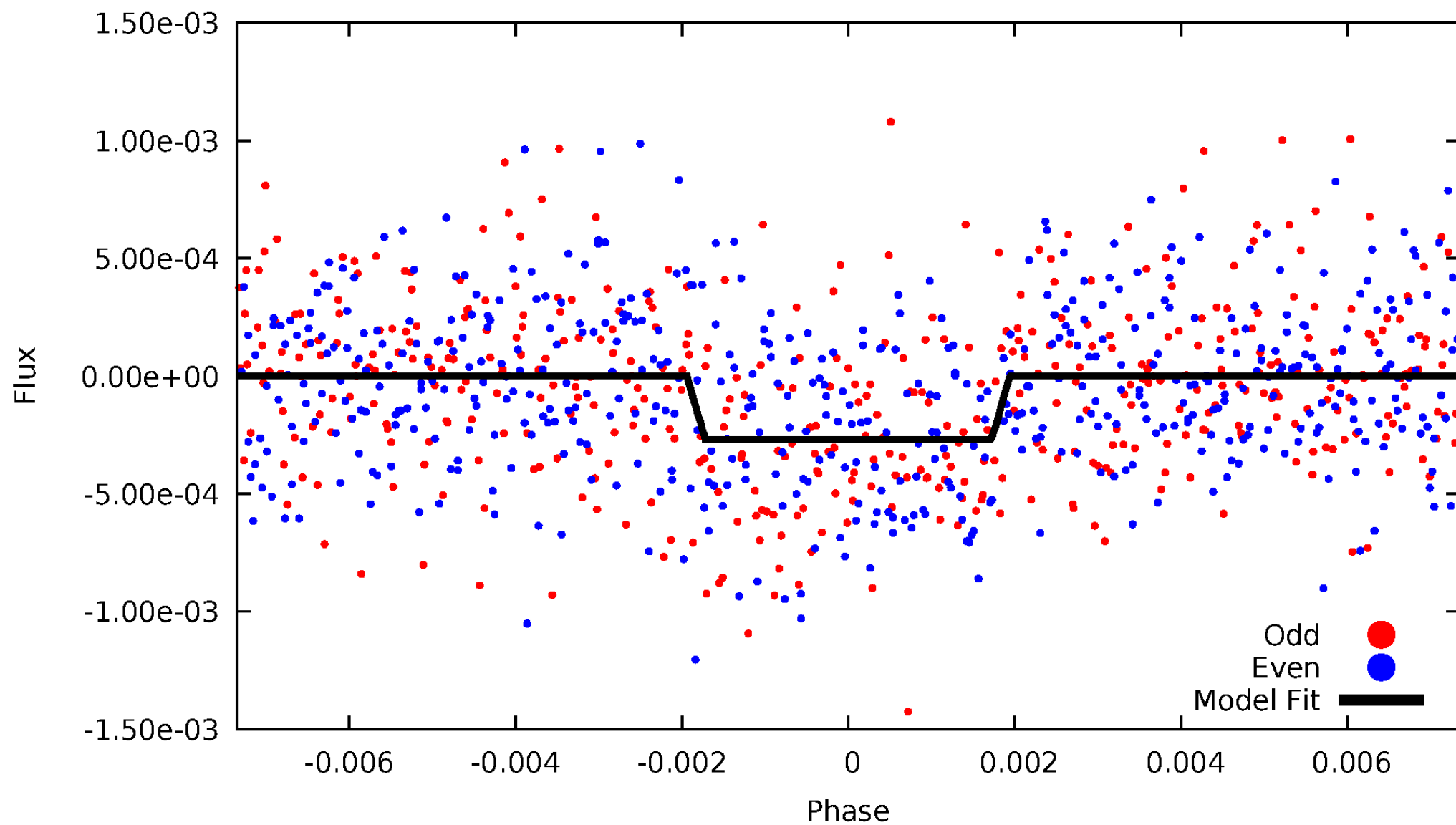
# DV Odd/Even

TCE 008047428-01



# ALT Odd/Even

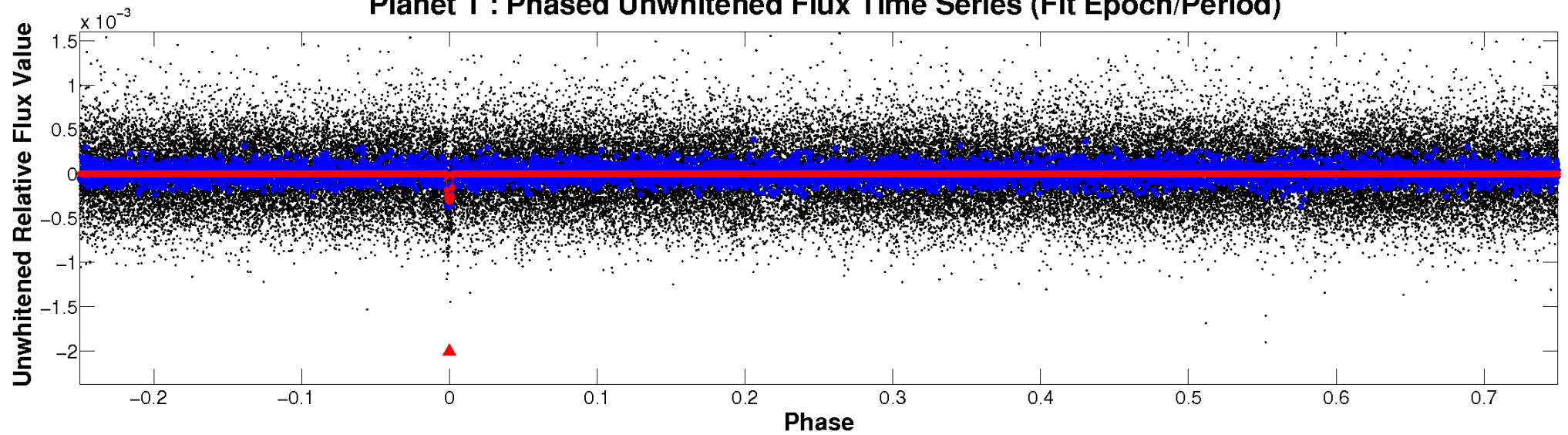
TCE 008047428-01



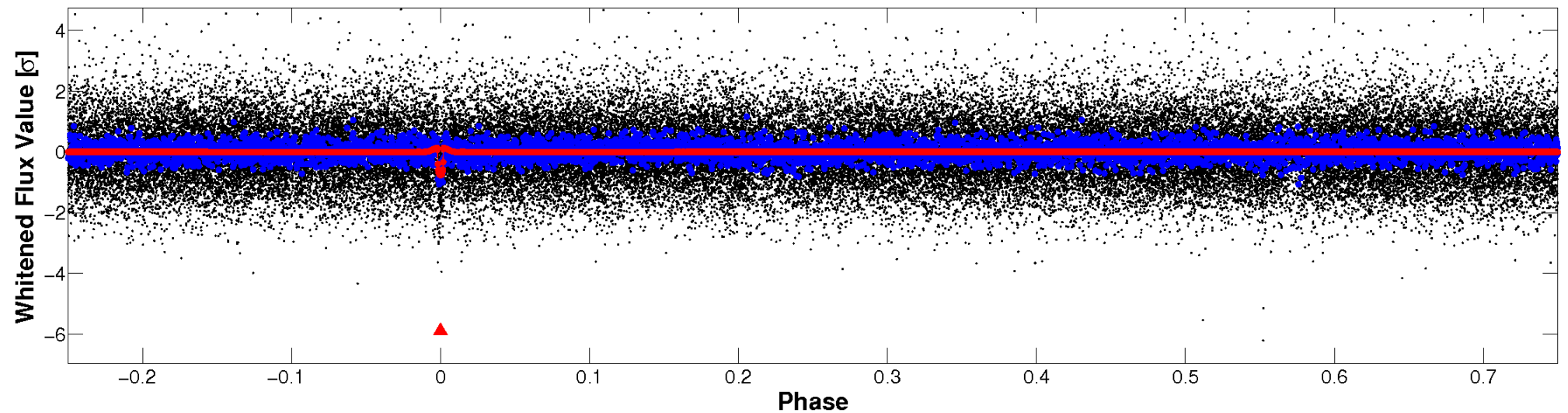


# Non-Whitened Vs. Whitened Light Curve

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

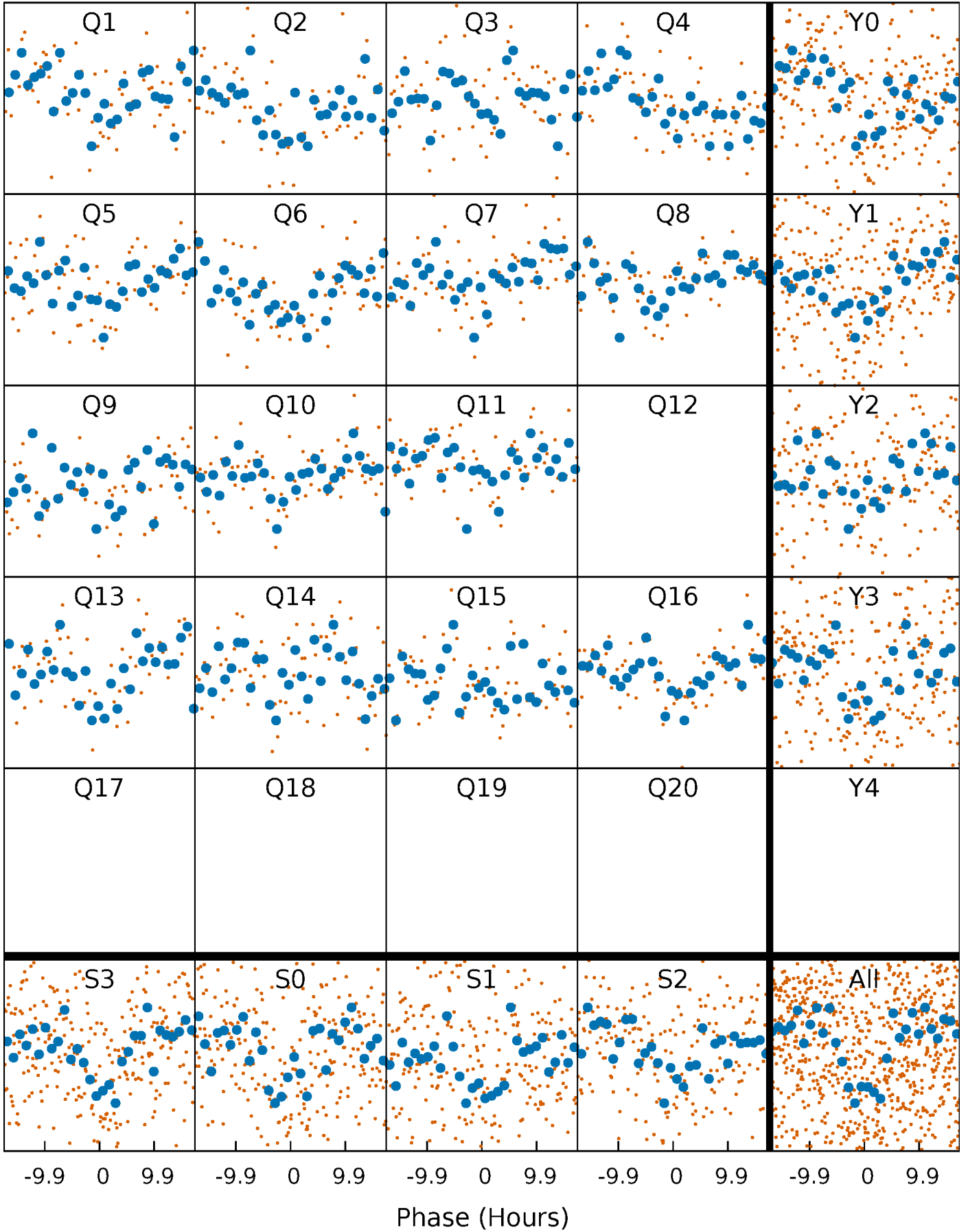


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

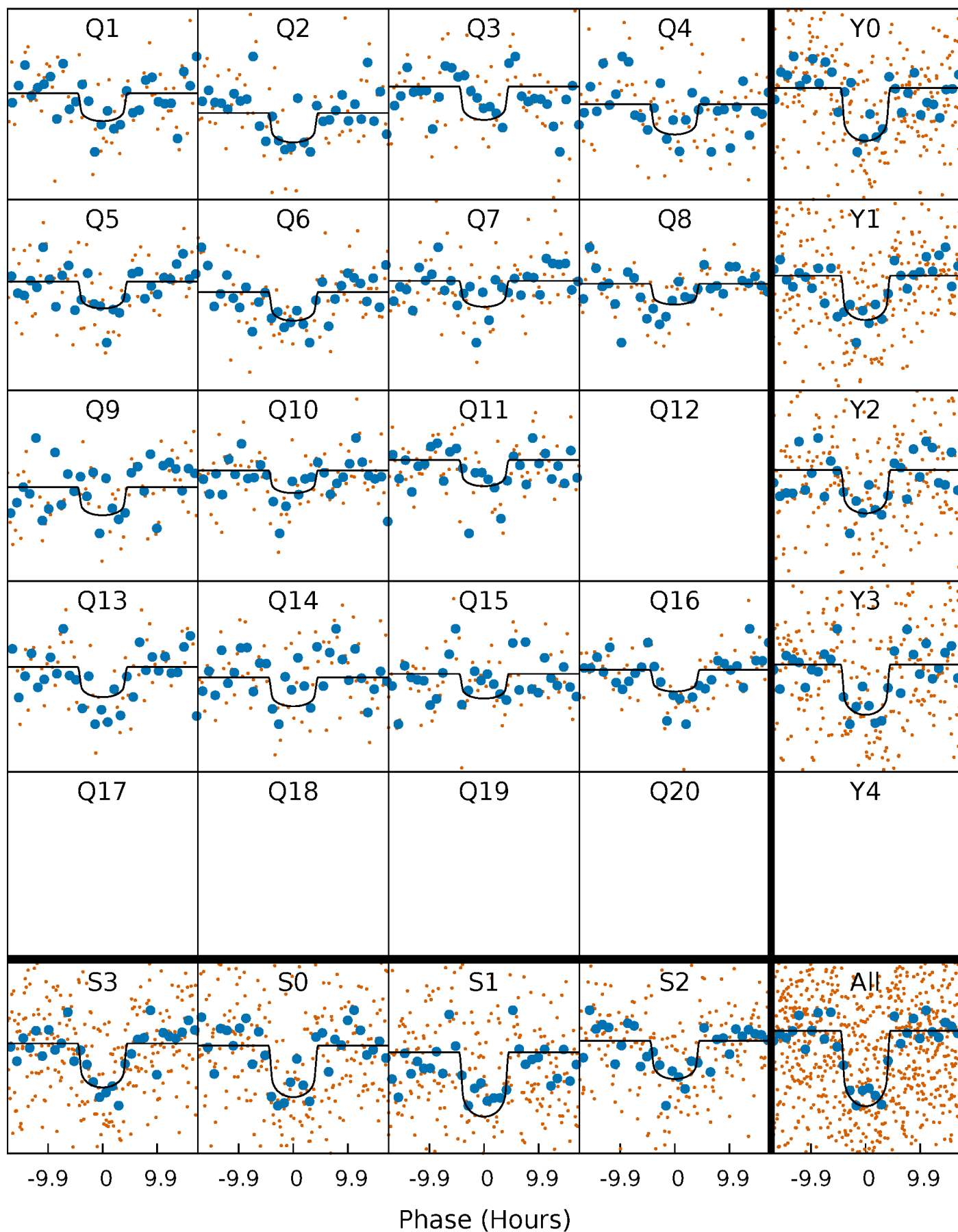
TCE 008047428-01 P= 92.264366 Days  $T_0=146.421122$  (BKJD)





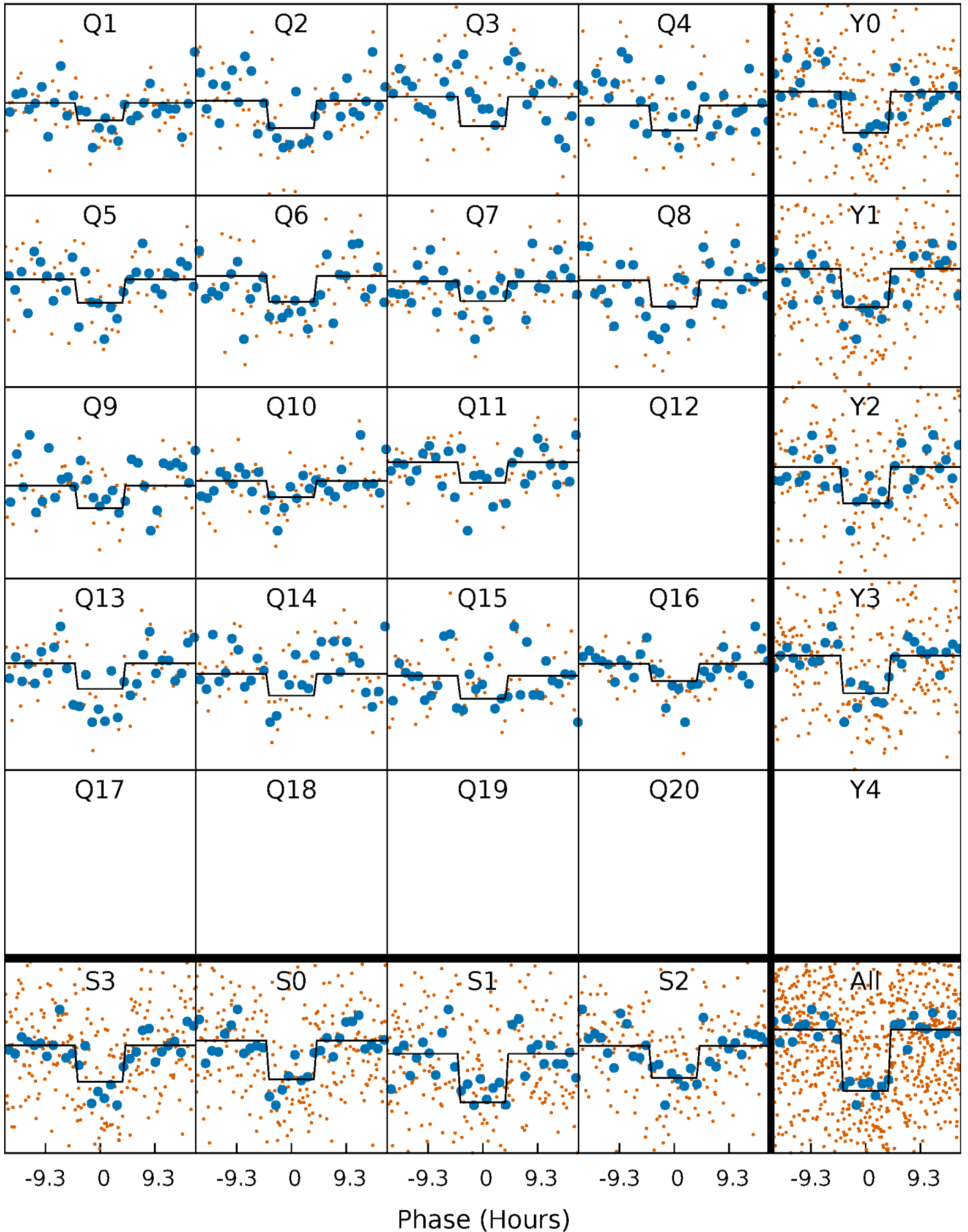
# DV Quarter-Phased Transit Curves

TCE 008047428-01 P= 92.264366 Days  $T_0=146.421122$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

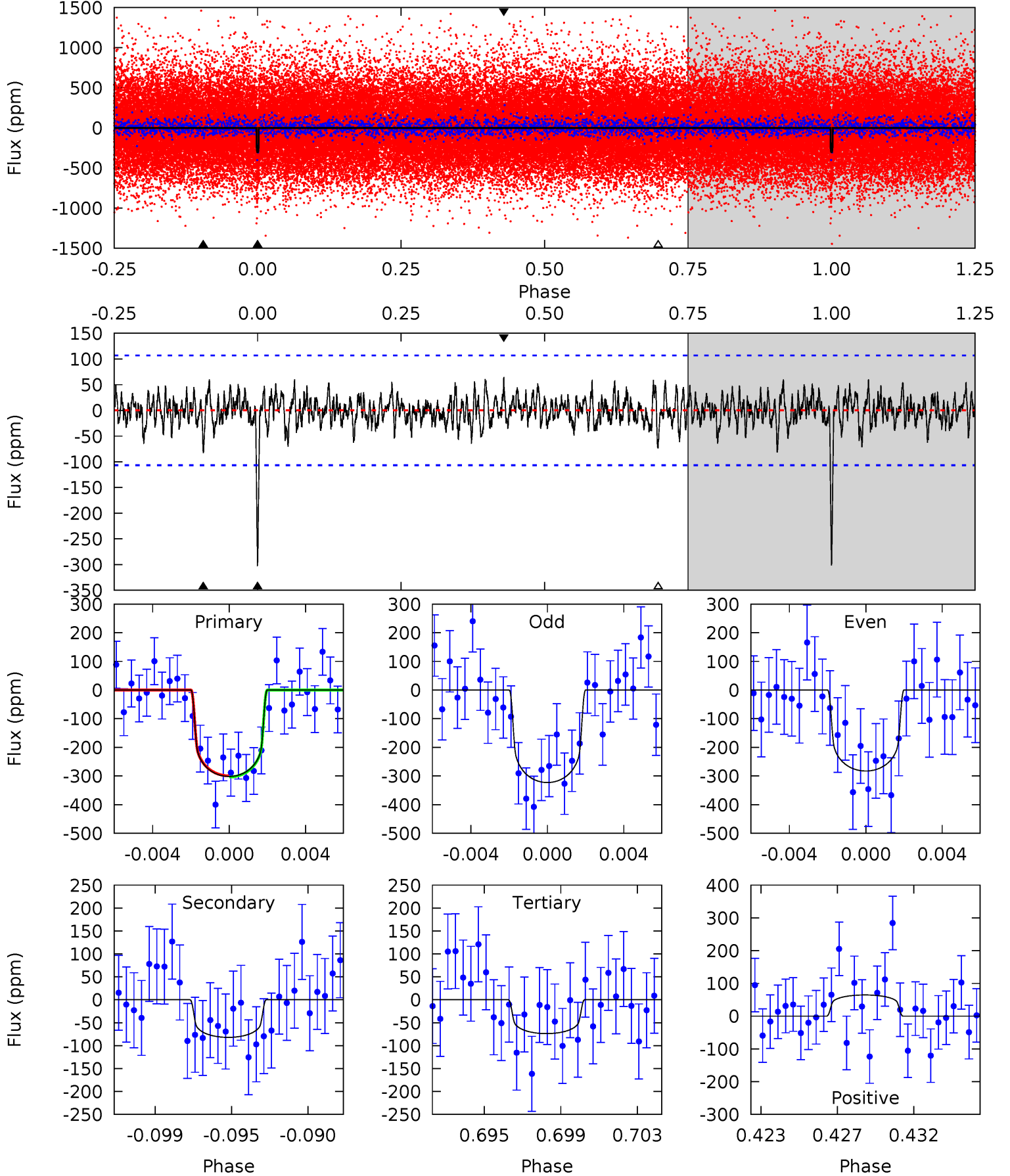
TCE 008047428-01 P= 92.264712 Days  $T_0=146.417678$  (BKJD)



# DV Model-Shift Uniqueness Test

008047428-01, P = 92.264366 Days, E = 54.156756 Days

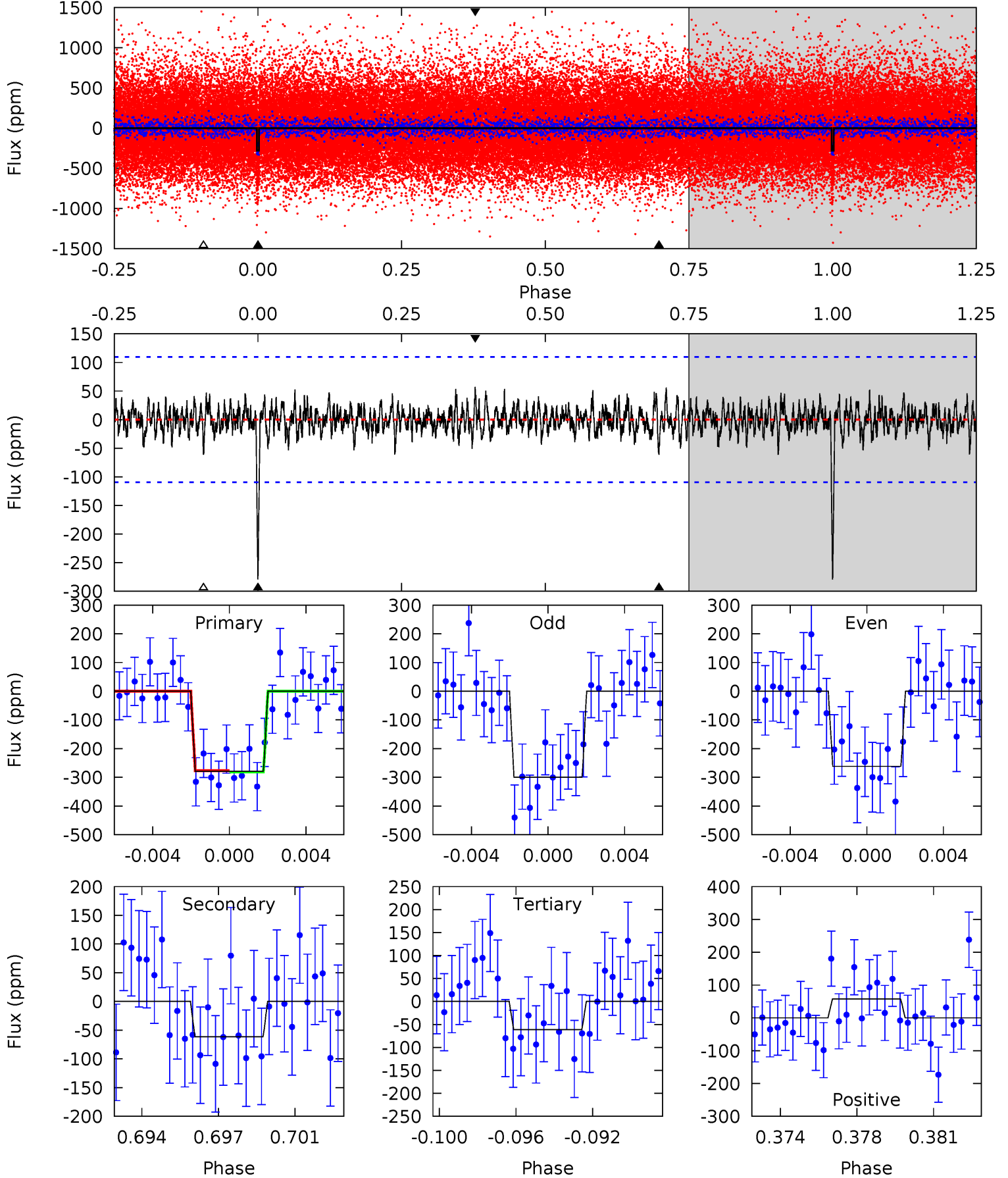
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.7	3.99	3.59	3.14	5.19	2.87	1.10	11.1	11.5	0.40	0.85	0.98	0.91	0.18	0.10



# Alt Model-Shift Uniqueness Test

008047428-01, P = 92.264712 Days, E = 54.152966 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
13.3	2.91	2.91	2.74	5.21	2.89	0.86	10.4	10.5	0.00	0.18	0.90	0.88	0.17	0.12



### Stellar Parameters For KIC 008047428

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6084^{+81}_{-90}$	$4.287^{+0.099}_{-0.121}$	$0.140^{+0.150}_{-0.150}$	$1.283^{+0.230}_{-0.173}$	$1.167^{+0.081}_{-0.089}$	$0.777^{+0.346}_{-0.284}$
	+1%/-1%	+2%/-3%	+107%/-107%	+18%/-13%	+7%/-8%	+45%/-37%
Source	SPE90	SPE90	SPE90	DSEP		

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

### Secondary Eclipse Parameters for KIC 008047428-01 / KOI 4747.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-82 \pm 21$	$2.53^{+0.99}_{-1.04}$	$656^{+31}_{-28}$	$4511^{+1207}_{-584}$	$1286^{+2512}_{-707}$
Alt.	$-61 \pm 21$	$2.33^{+1.16}_{-0.98}$	$658^{+30}_{-25}$	$4382^{+1097}_{-631}$	$1081^{+2248}_{-636}$

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

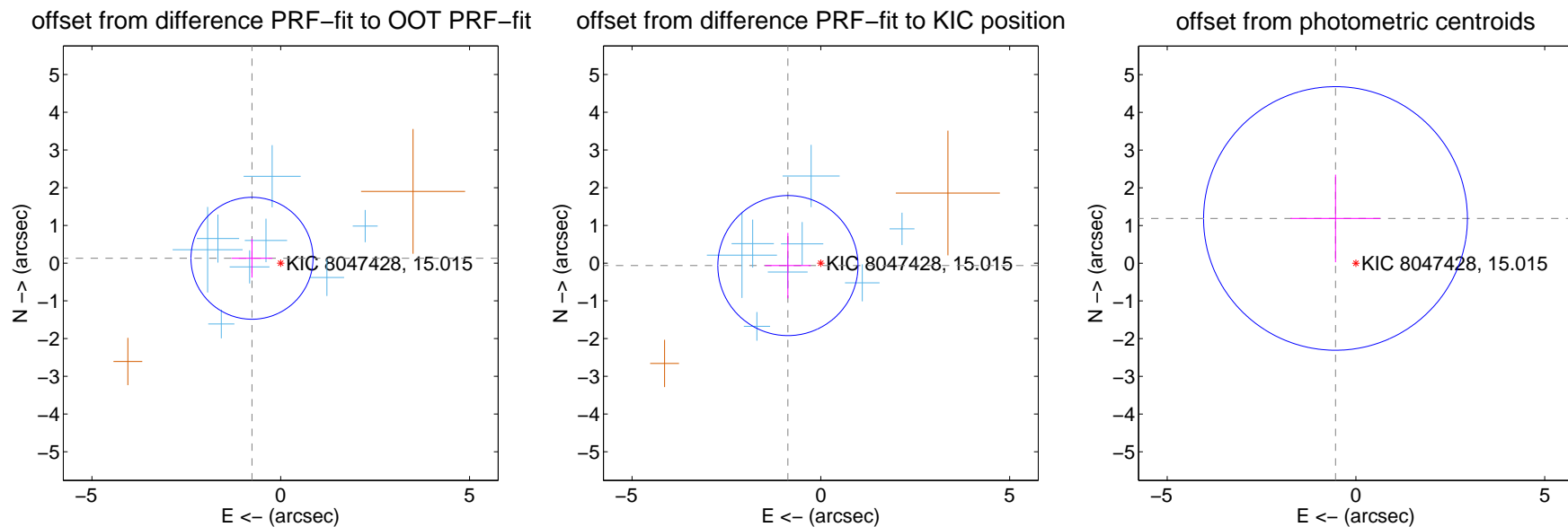
## DV Centroid Data

Supplemental centroid analysis for 008047428-01. Kepler magnitude: 15.02. Transit SNR 10.57

There are 8 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

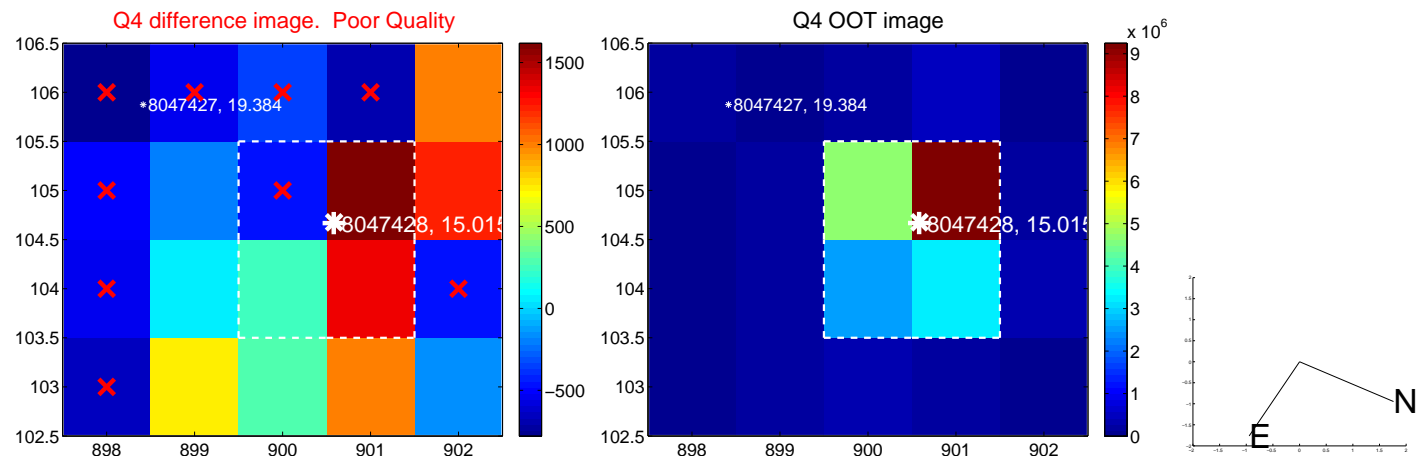
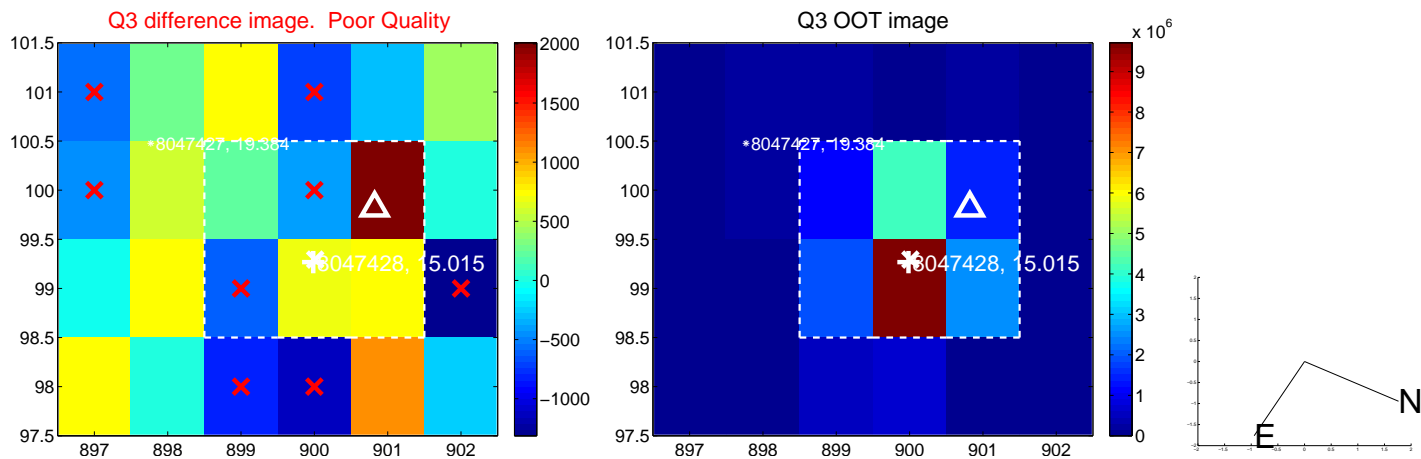
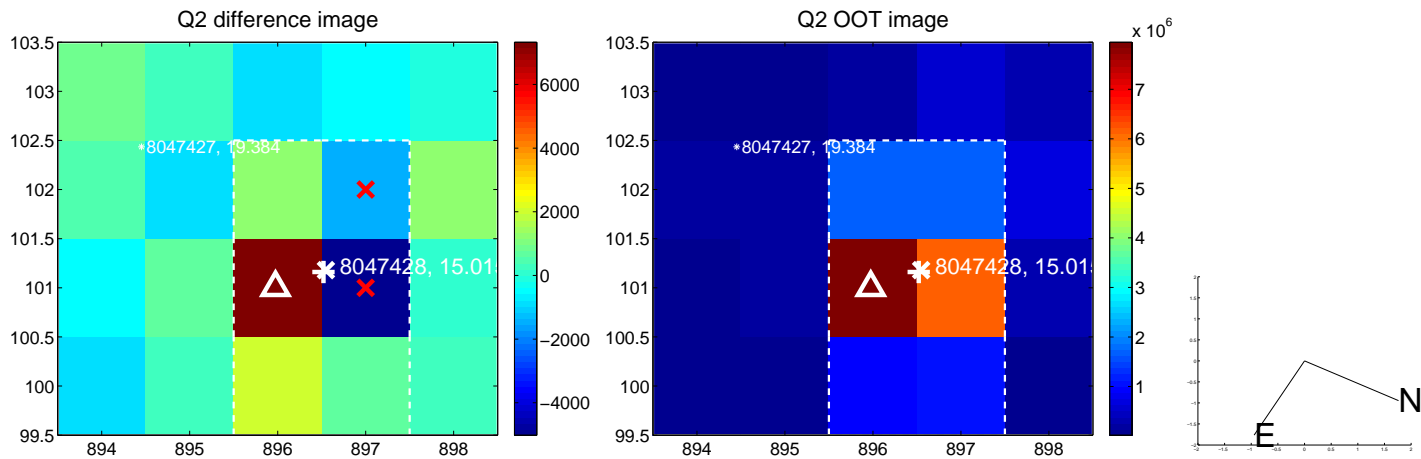
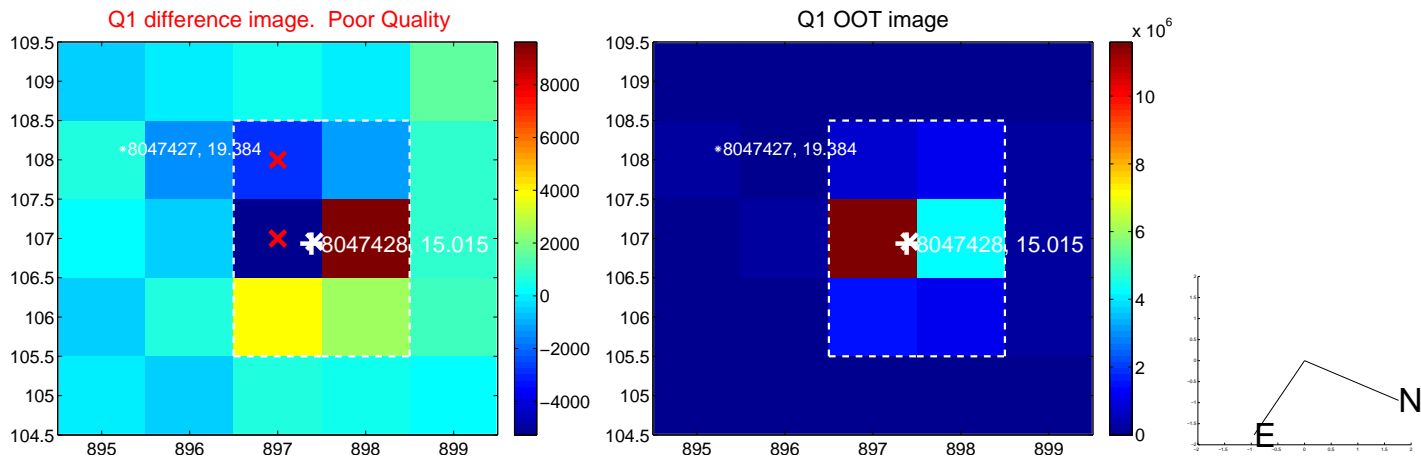
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.772 \pm 0.539$	1.43	$0.762 \pm 0.539$	$0.129 \pm 0.513$
PRF-fit source offset from KIC position	$0.875 \pm 0.619$	1.41	$0.872 \pm 0.606$	$-0.064 \pm 0.868$
photometric centroid source offset	$1.30 \pm 1.16$	1.12	$0.54 \pm 1.19$	$1.19 \pm 1.16$



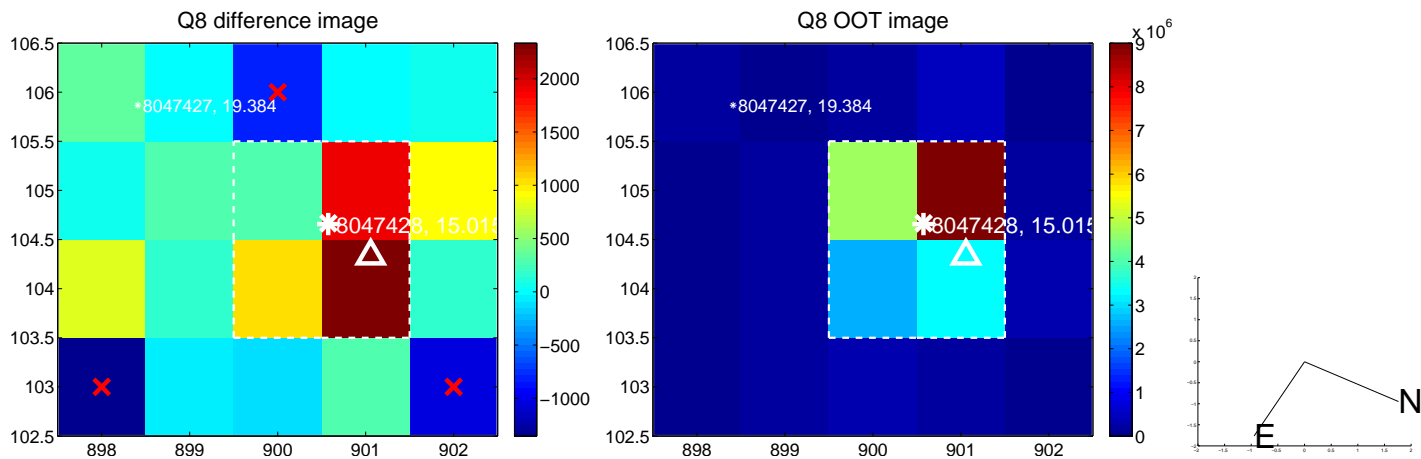
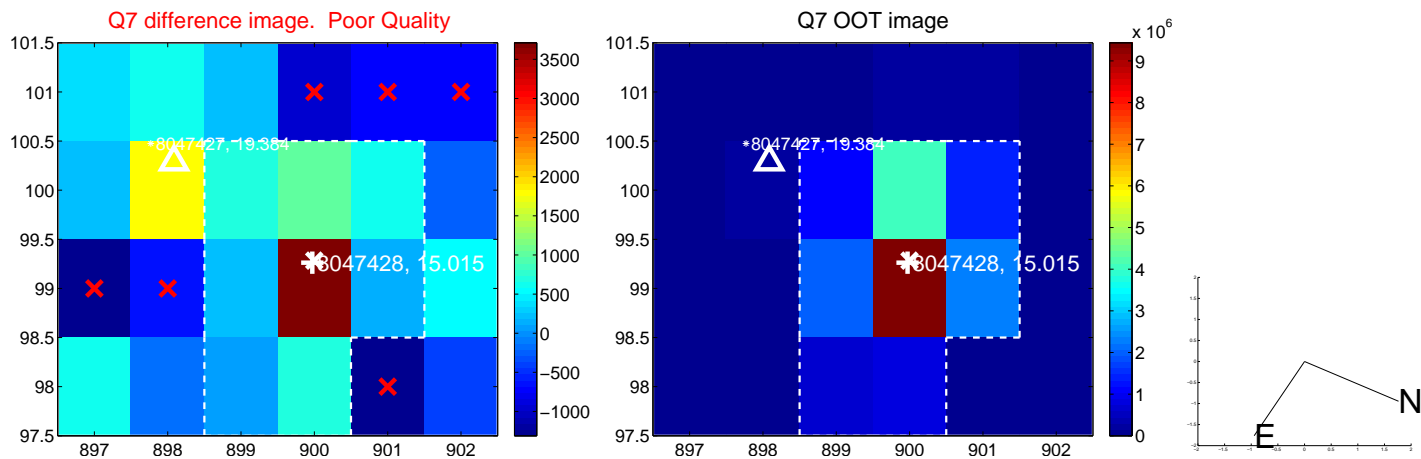
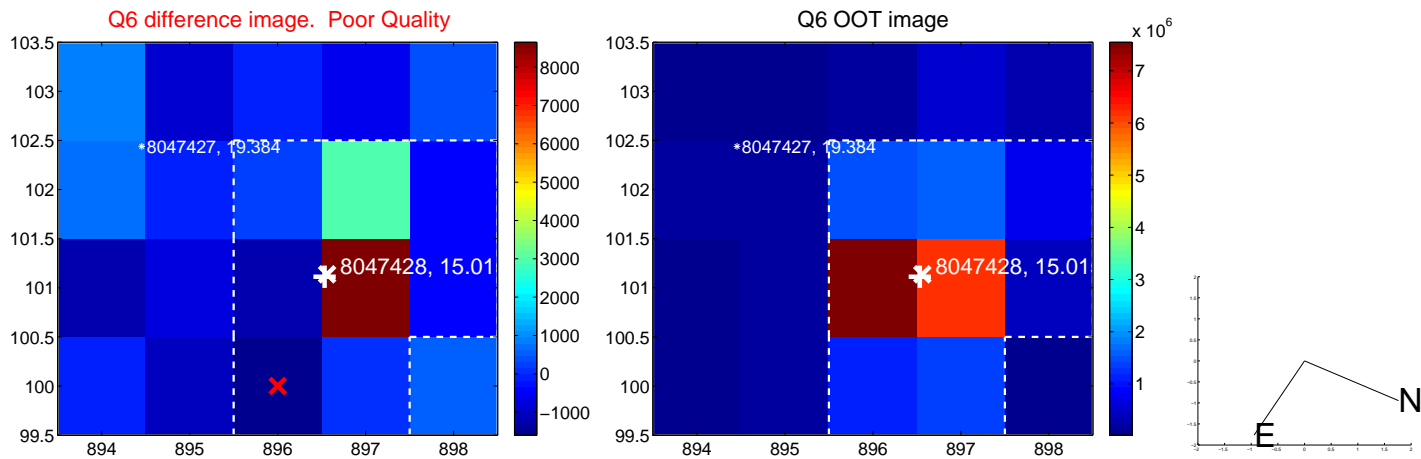
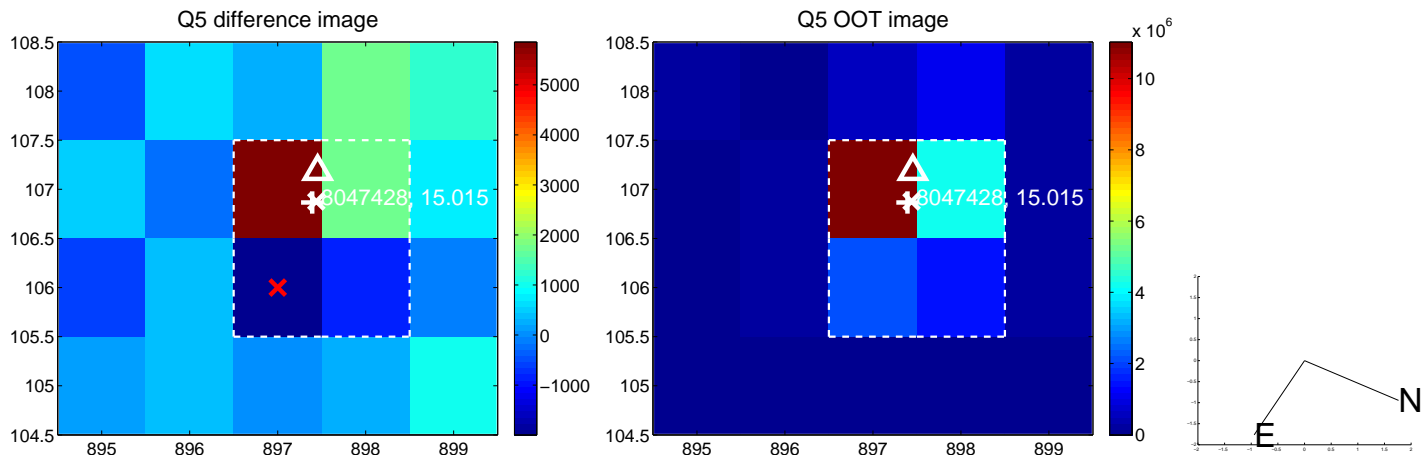
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



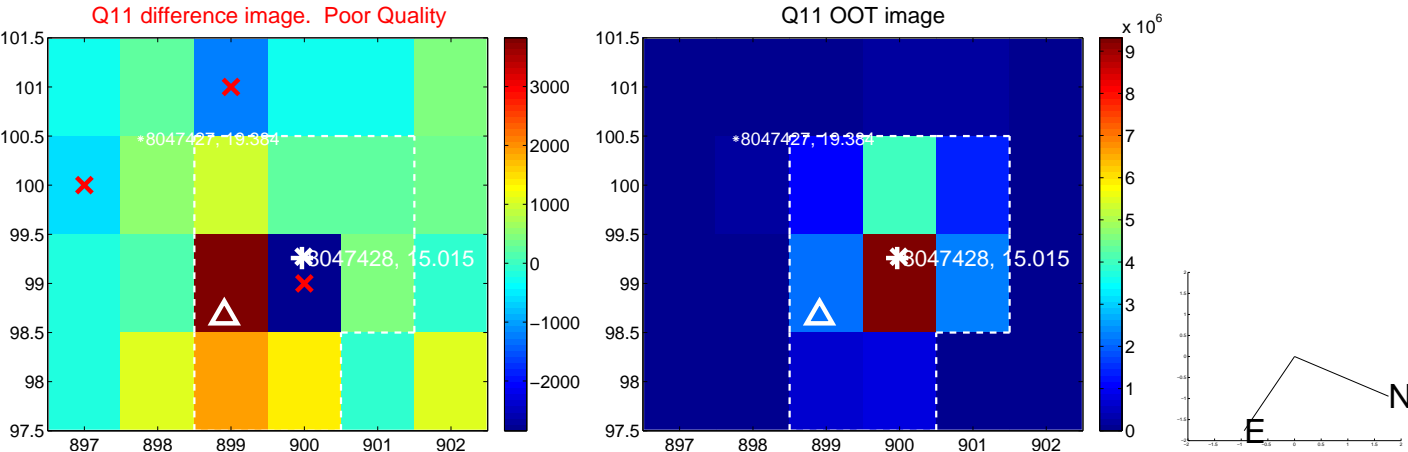
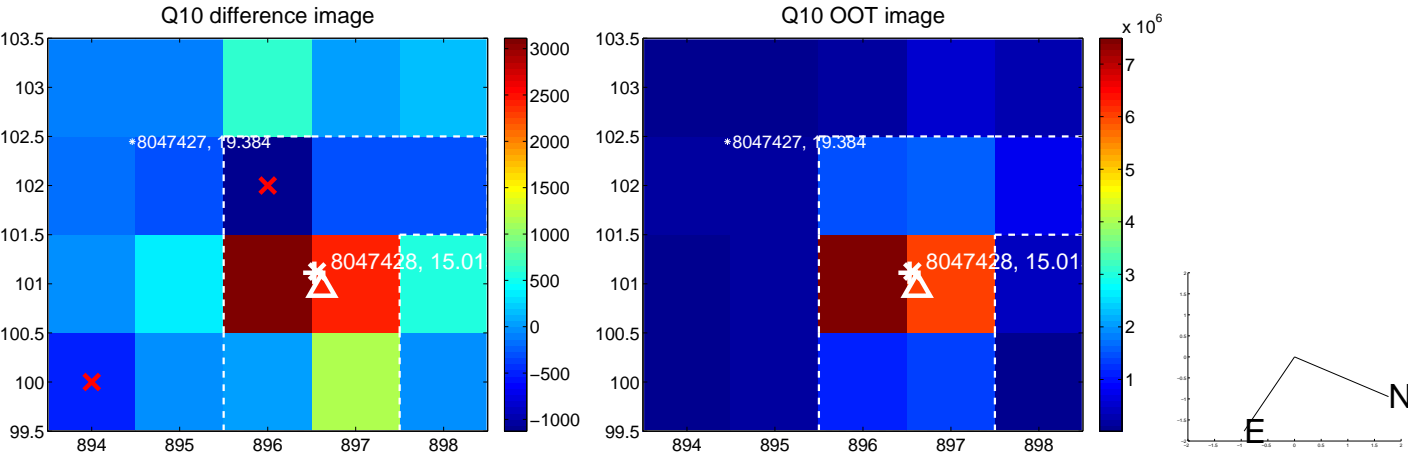
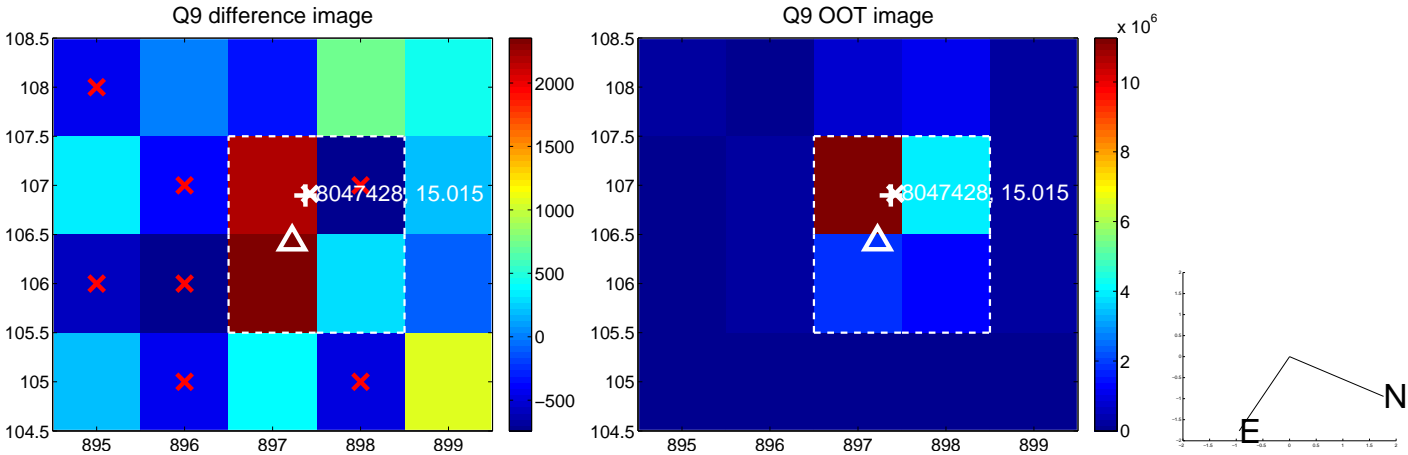
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



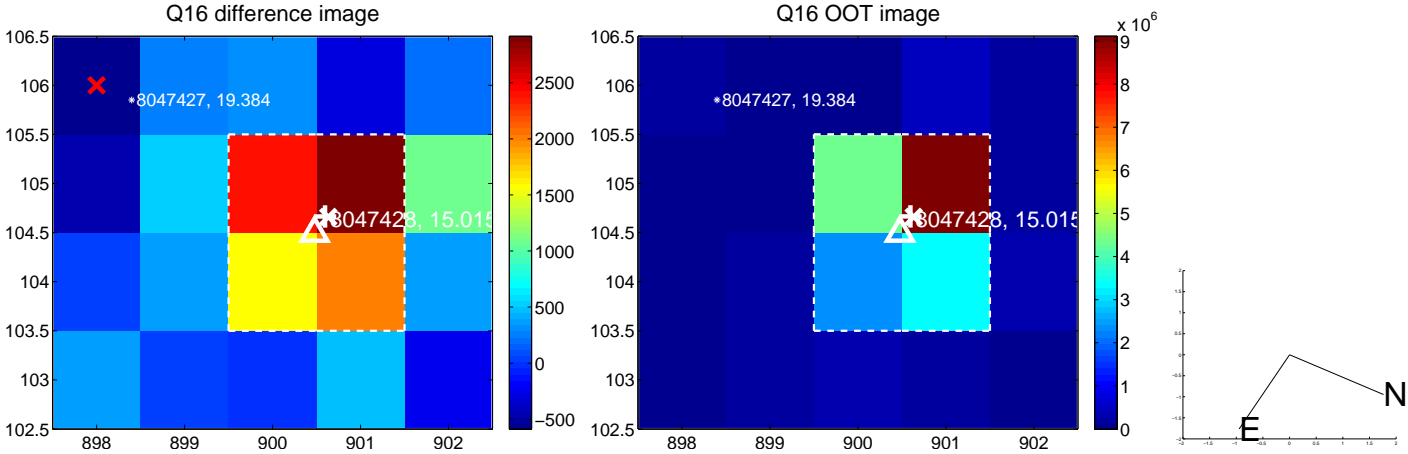
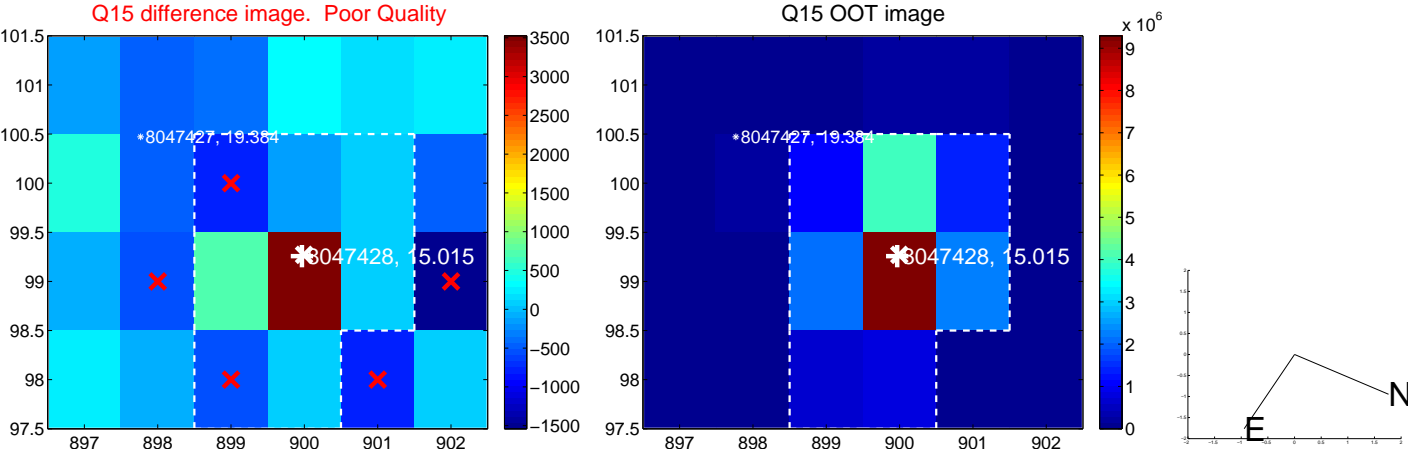
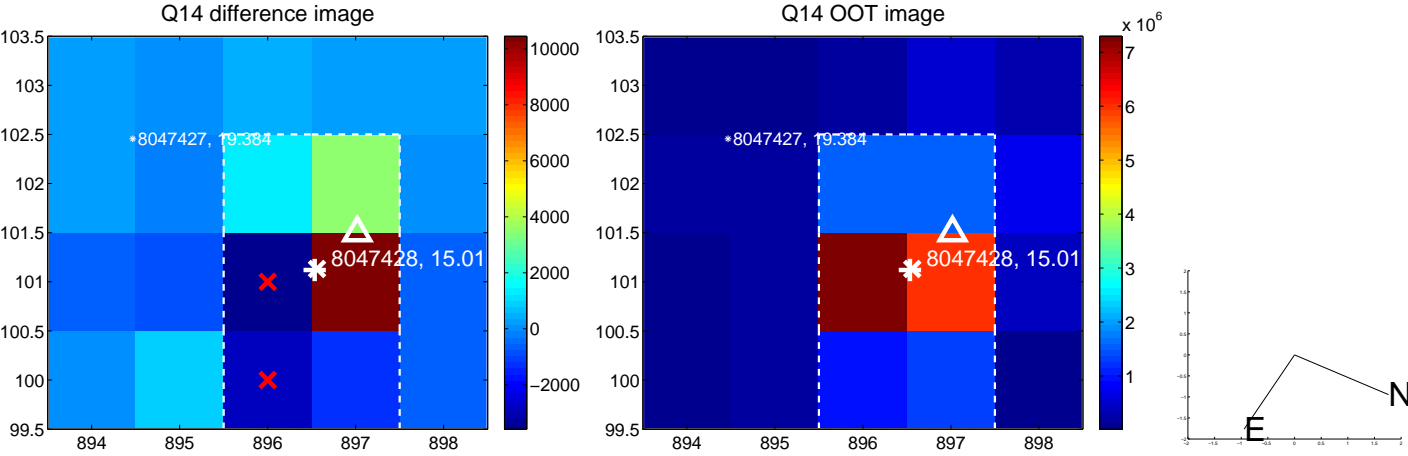
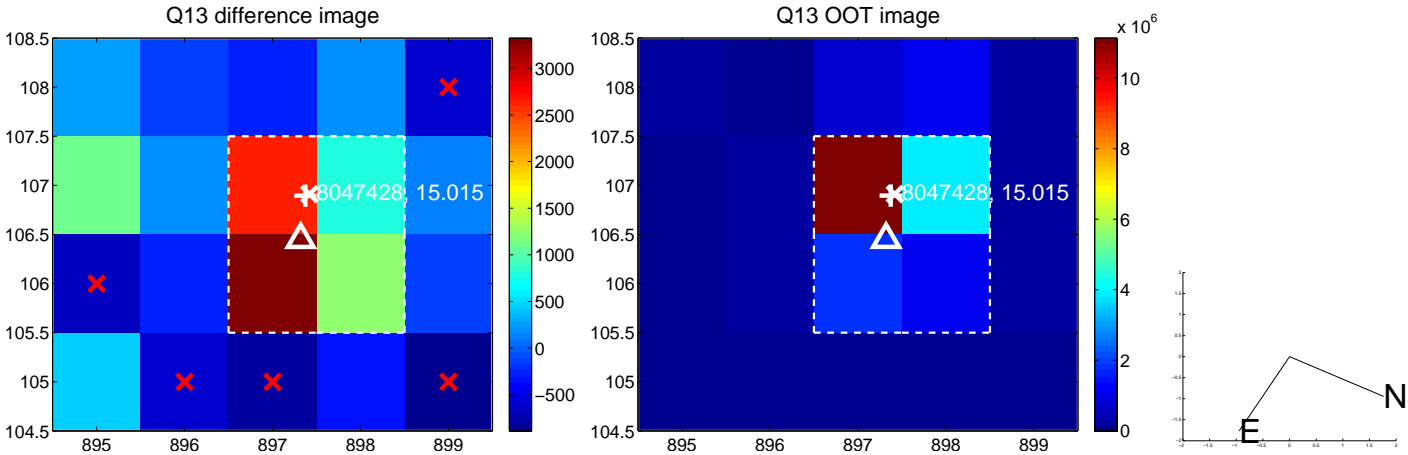
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



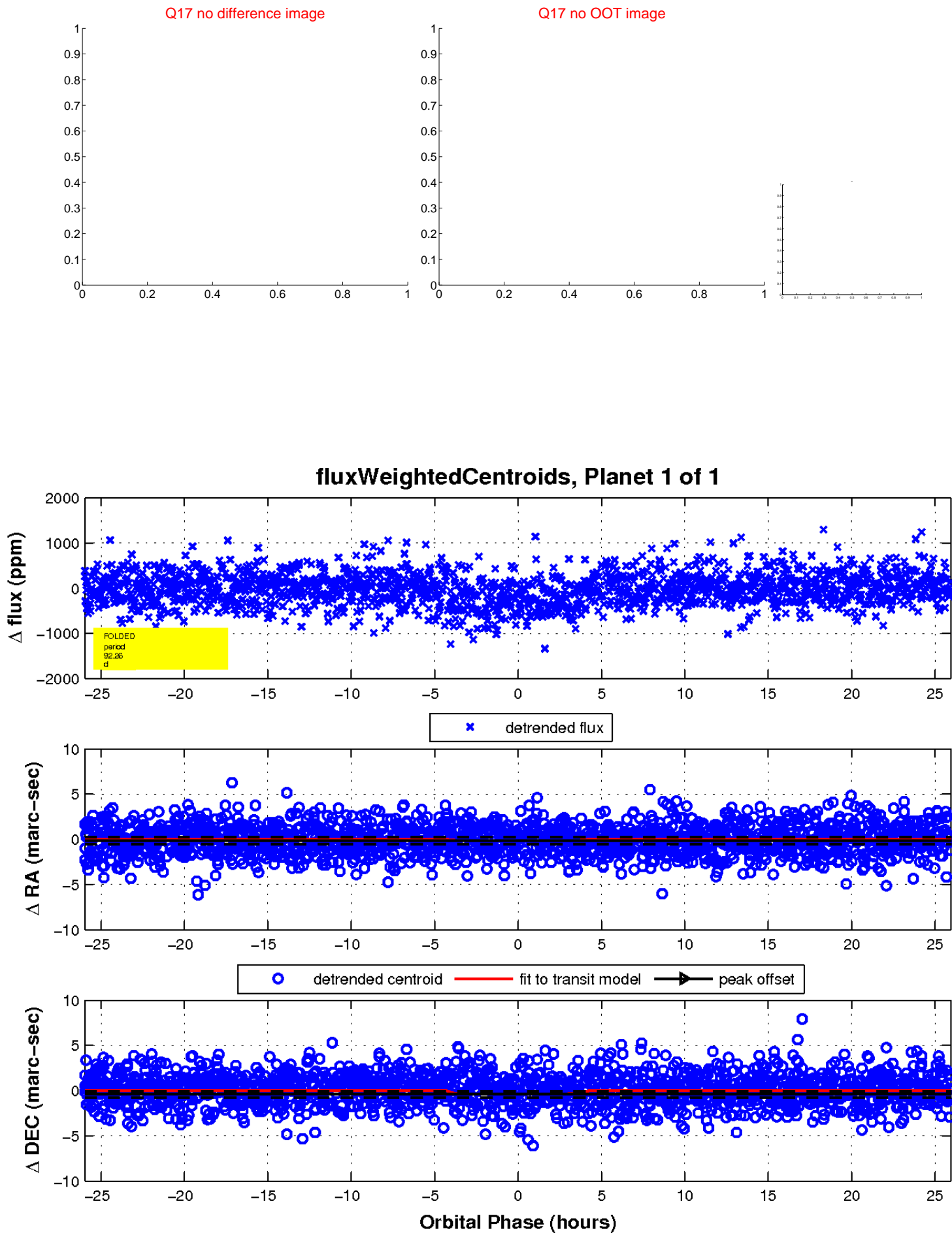
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

