

# KIC 006364126

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006364126-01	OBS	6690.01	5.242974	132.871738	106.3	16.988	10.1	11.3	0.77	5047	1.28	113.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006364126-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH

**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.

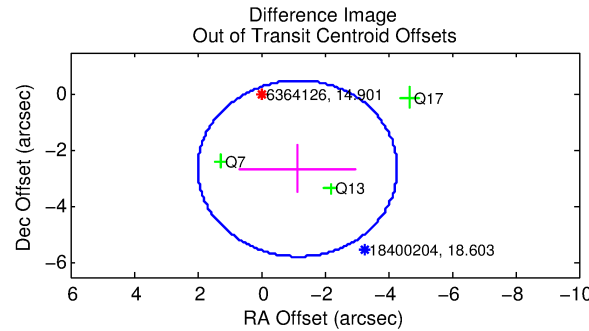
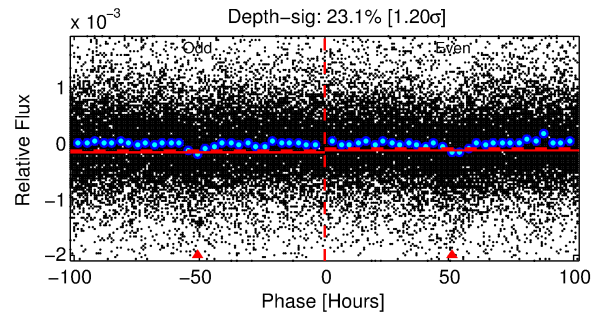
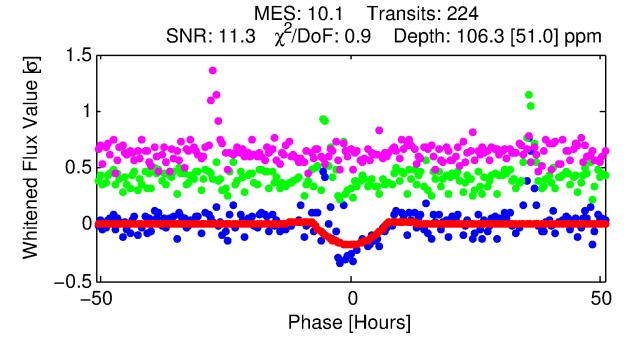
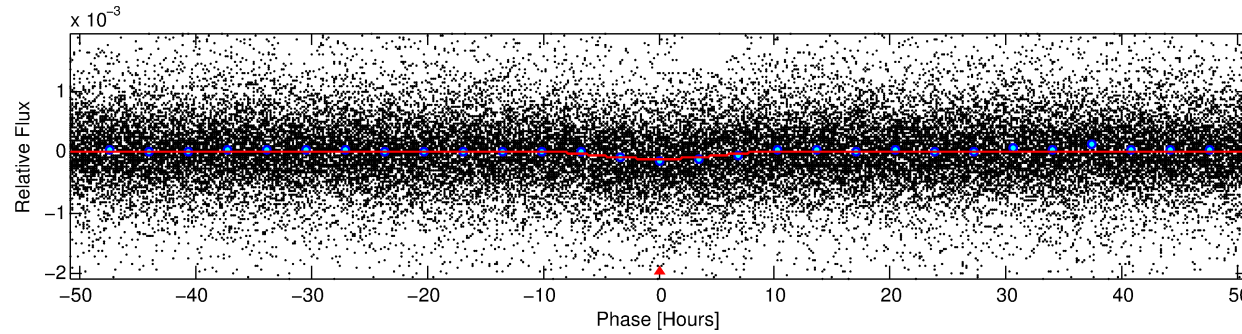
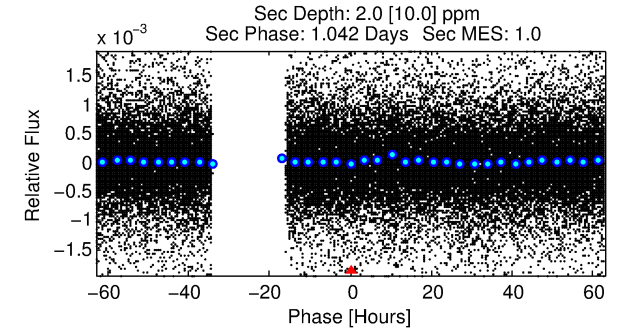
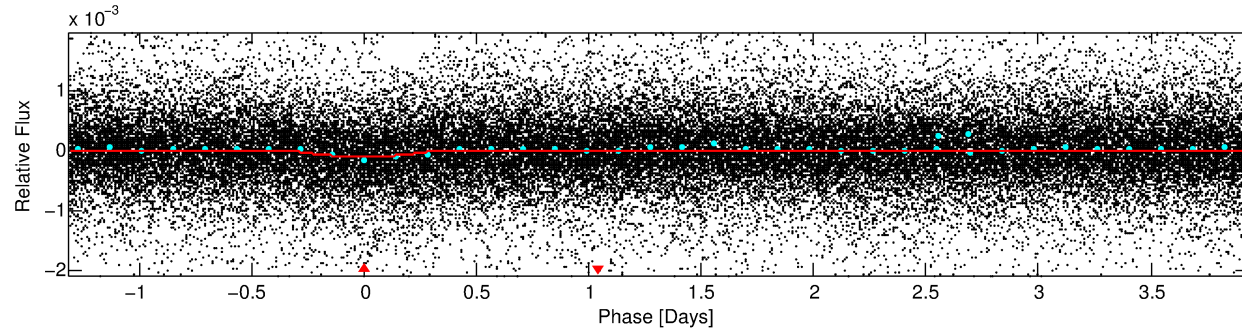
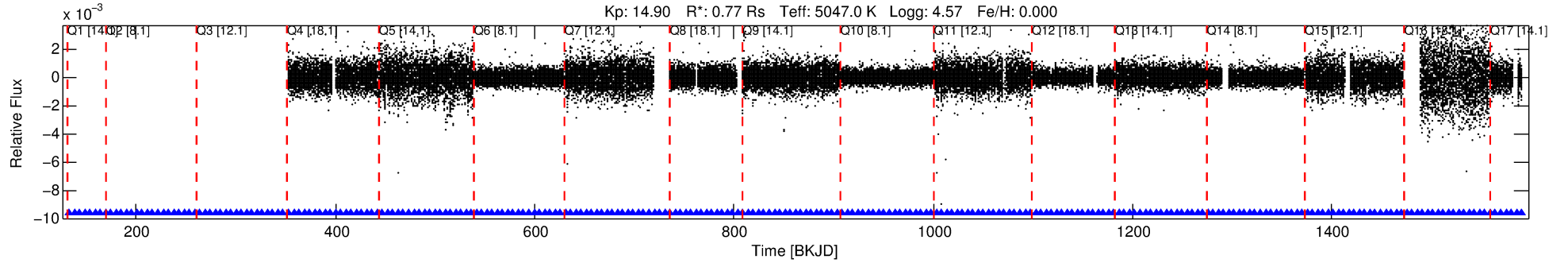
## Ephemeris Match Information For 006364126-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
006364126-01	6364126	006364071-01	6364071	1:1	88.0	22	0	14.38	14.90	0.28	Direct-PRF	1	1.88	2.05

**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 6364126 Candidate: 1 of 1 Period: 5.243 d  
KOI: K06690.01 Corr: 0.864



## DV Fit Results:

Period = 5.24297 [0.00031] d  
Epoch = 132.8717 [0.0516] BKJD  
Rp/R\* = 0.0154 [0.0099]  
a/R\* = 1.13 [0.07]  
b = 0.99 [0.02]  
Seff = 113.17 [21.31]  
Teq = 832 [39] K  
Rp = 1.28 [0.84] Re  
a = 0.0549 [0.0050] AU  
Ag = 1.97 [10.39] [0.09σ]  
Teffp = 1523 [2012] K [0.34σ]

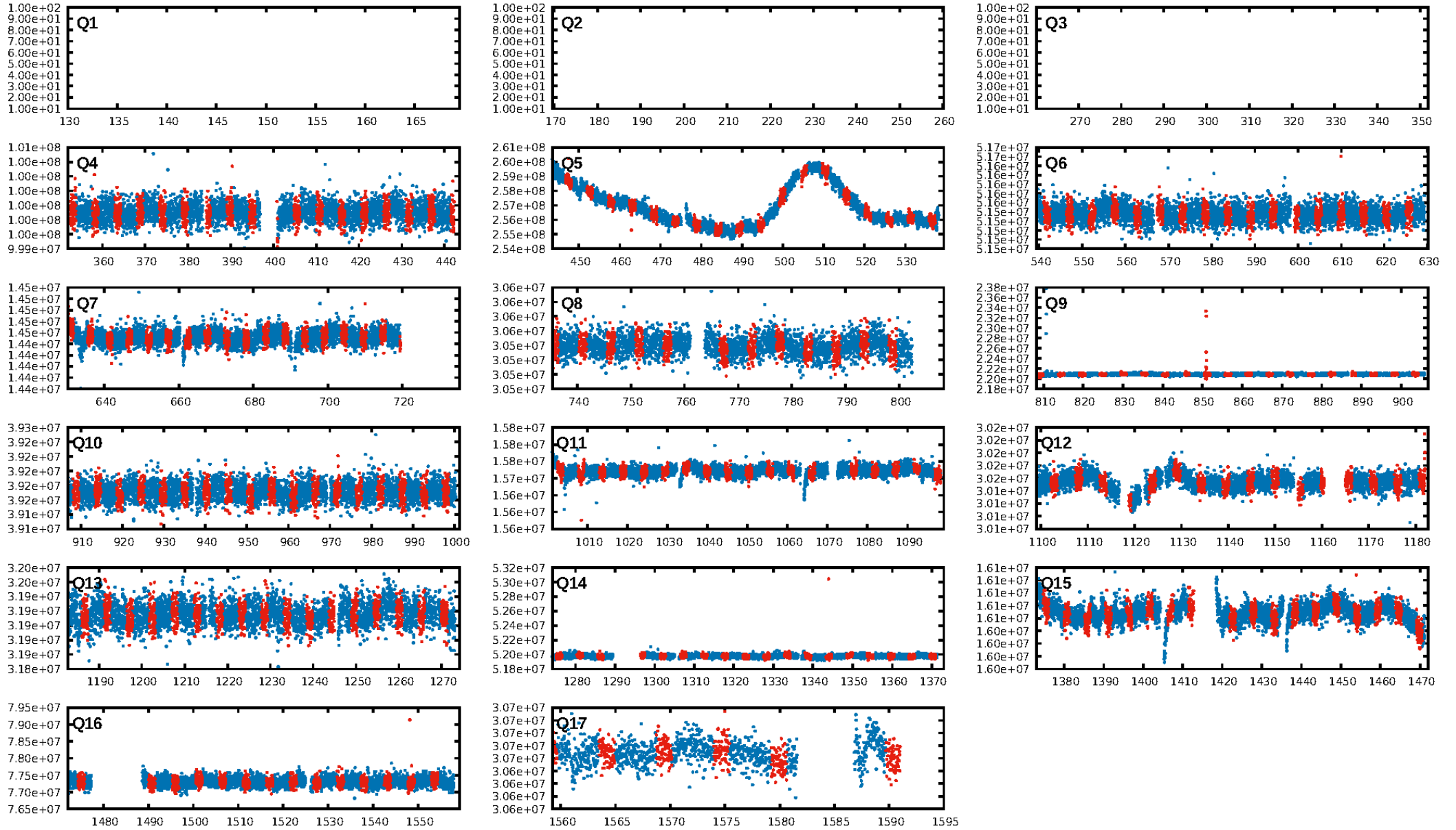
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 8.81e-22  
RollingBand-fgt: 1.00 [218/218]  
GhostDiagnostic-chr: -0.2321  
Centroid-sig: 0.0%  
Centroid-so: 2.266 arcsec [6.61σ]  
OotOffset-rm: 2.878 arcsec [2.75σ]  
KicOffset-rm: 3.677 arcsec [1.54σ]  
OotOffset-st: 0/1/0/2 [3]  
KicOffset-st: 1/1/1/2 [5]  
DiffImageQuality-fgm: 0.00 [0/5]  
DiffImageOverlap-fno: 1.00 [14/14]

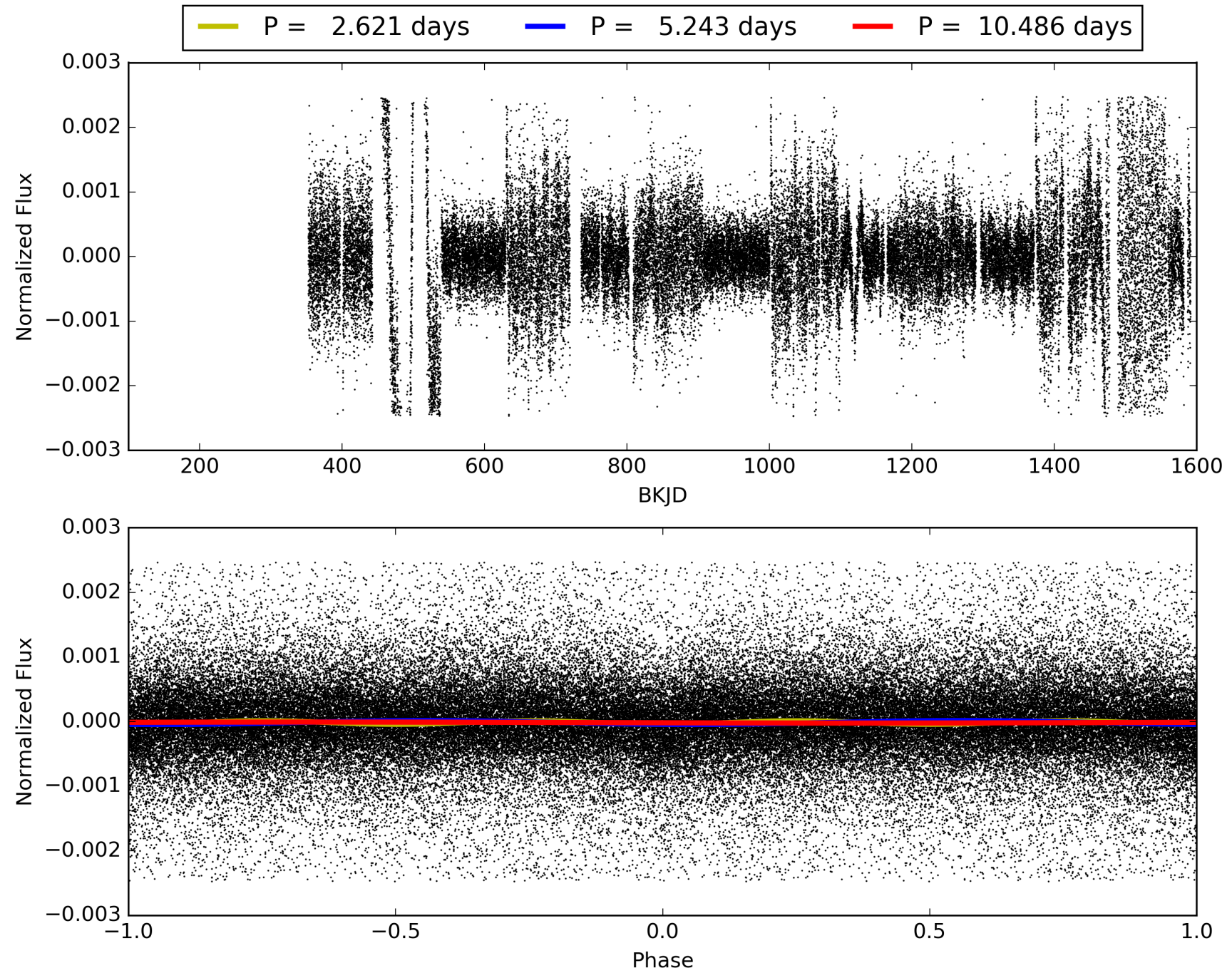
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:40:29 Z

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

# TCE 006364126-01, PDC Light Curves

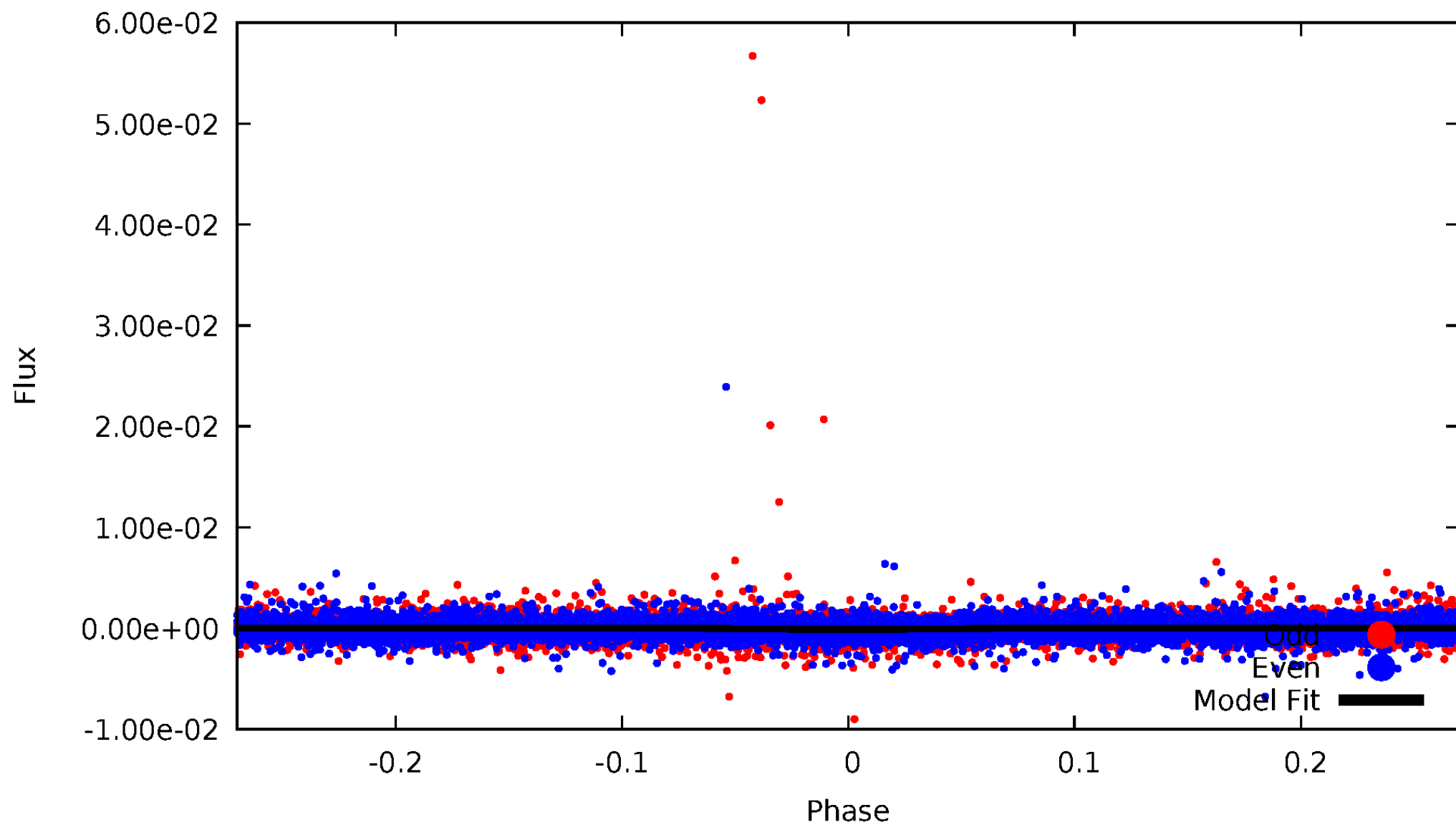


TCE 006364126-01



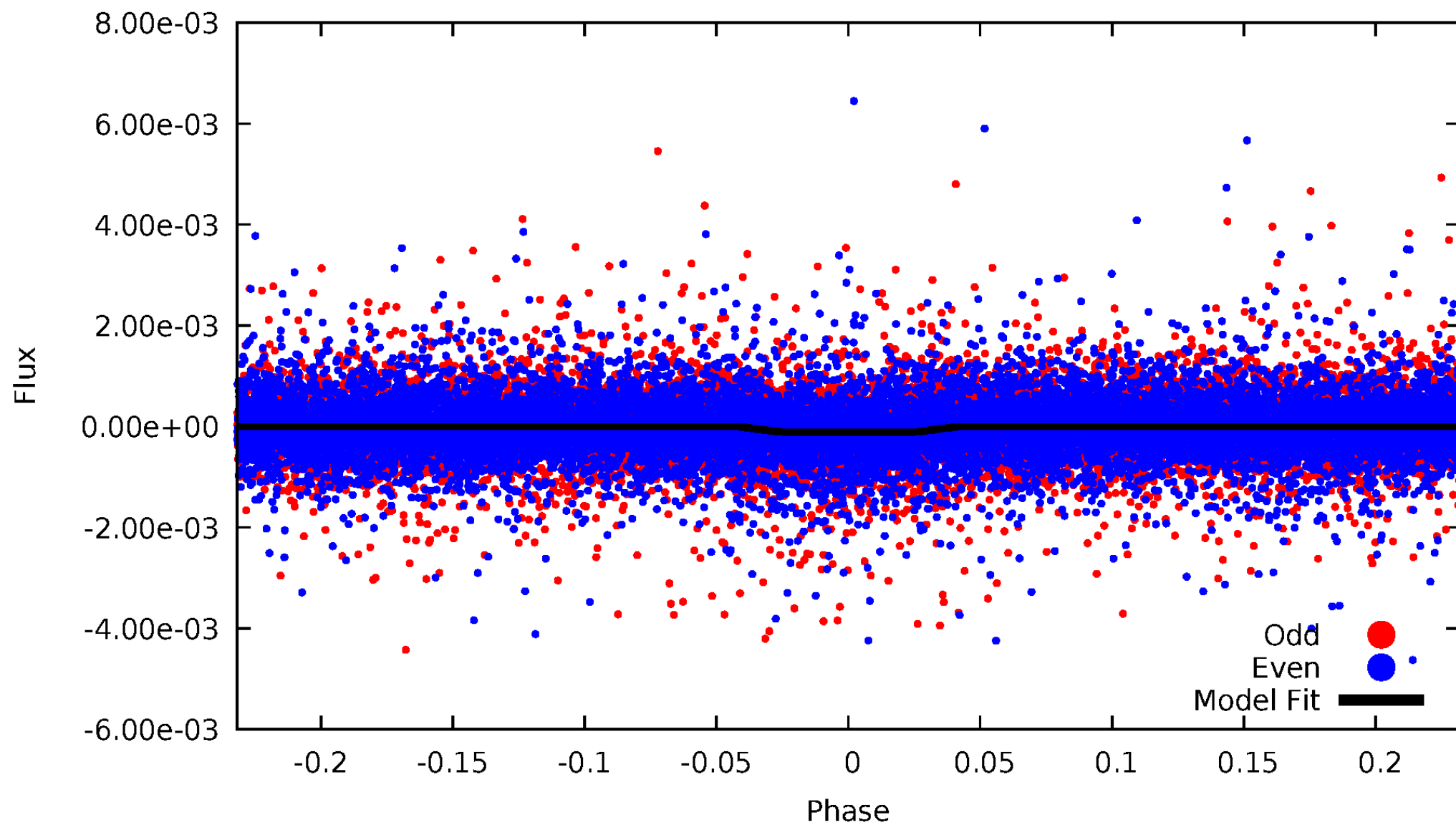
# DV Odd/Even

TCE 006364126-01



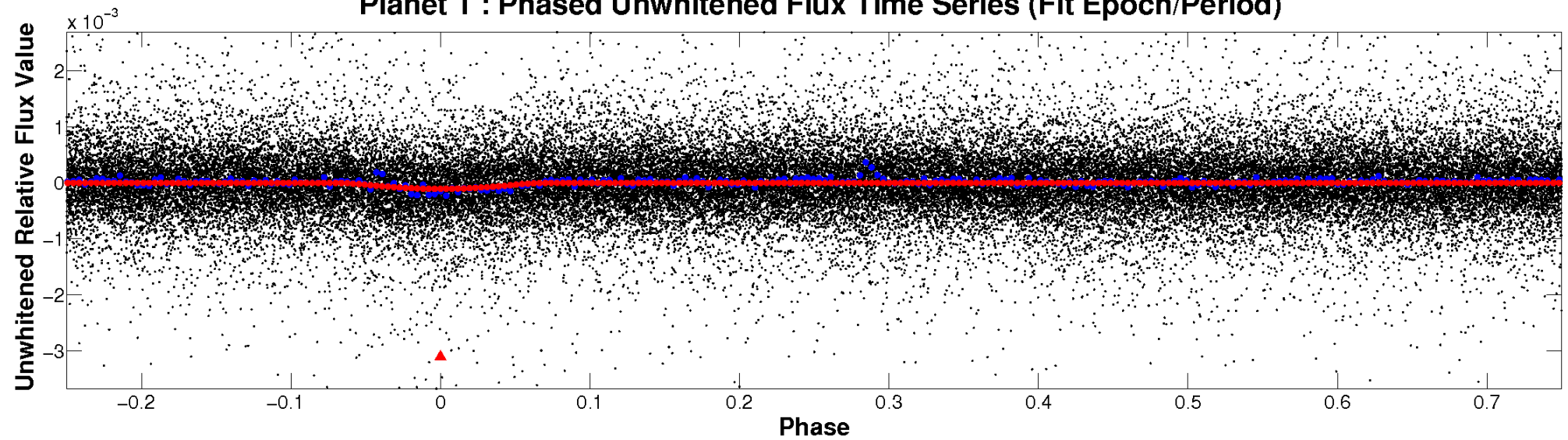
# ALT Odd/Even

TCE 006364126-01

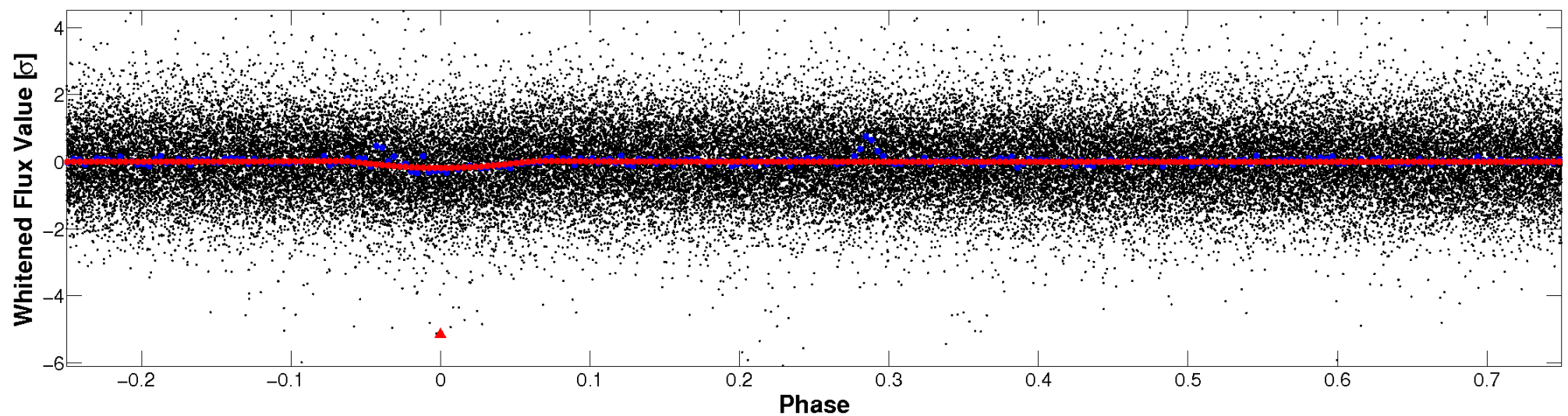


# Non-Whitened Vs. Whitened Light Curve

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

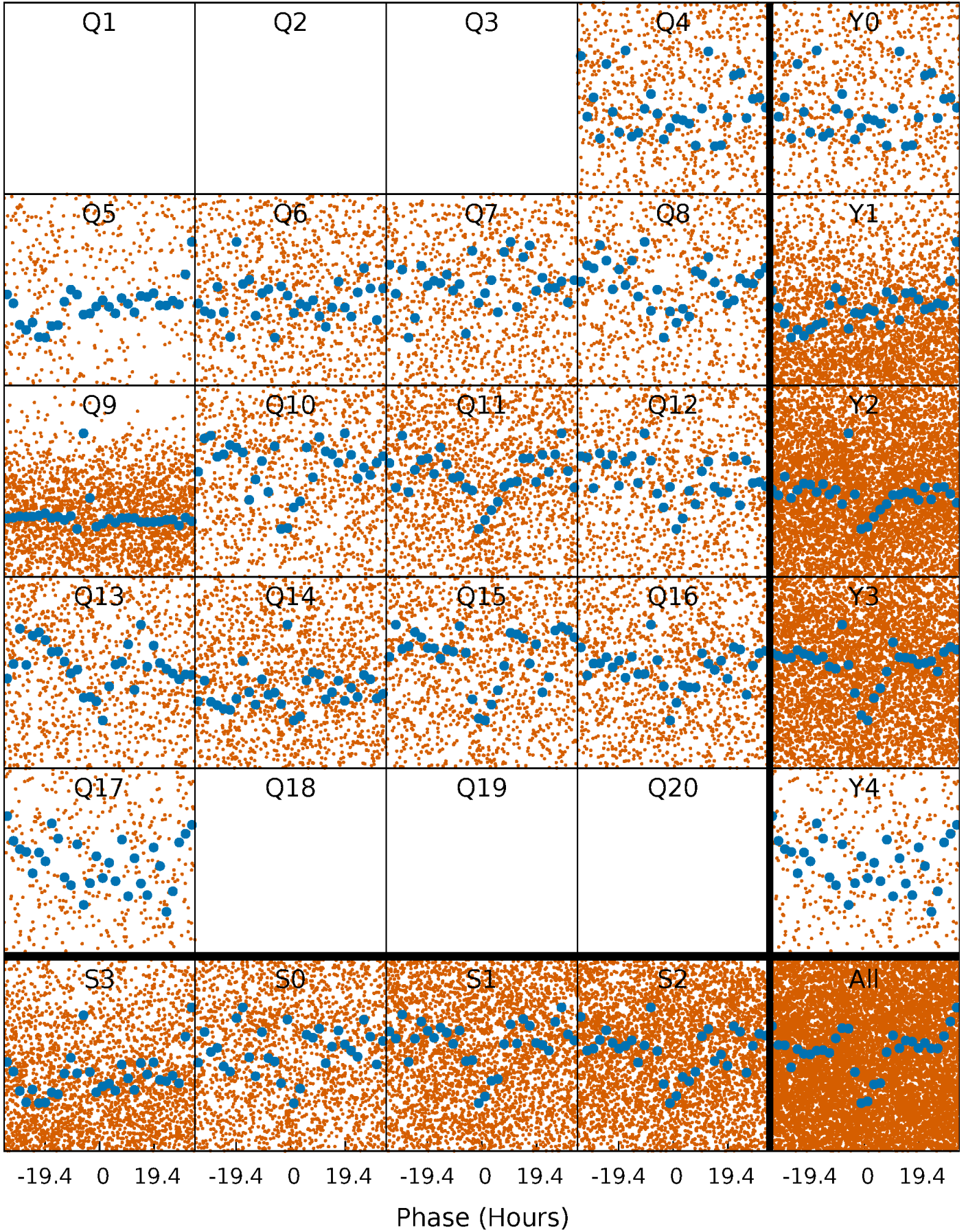


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



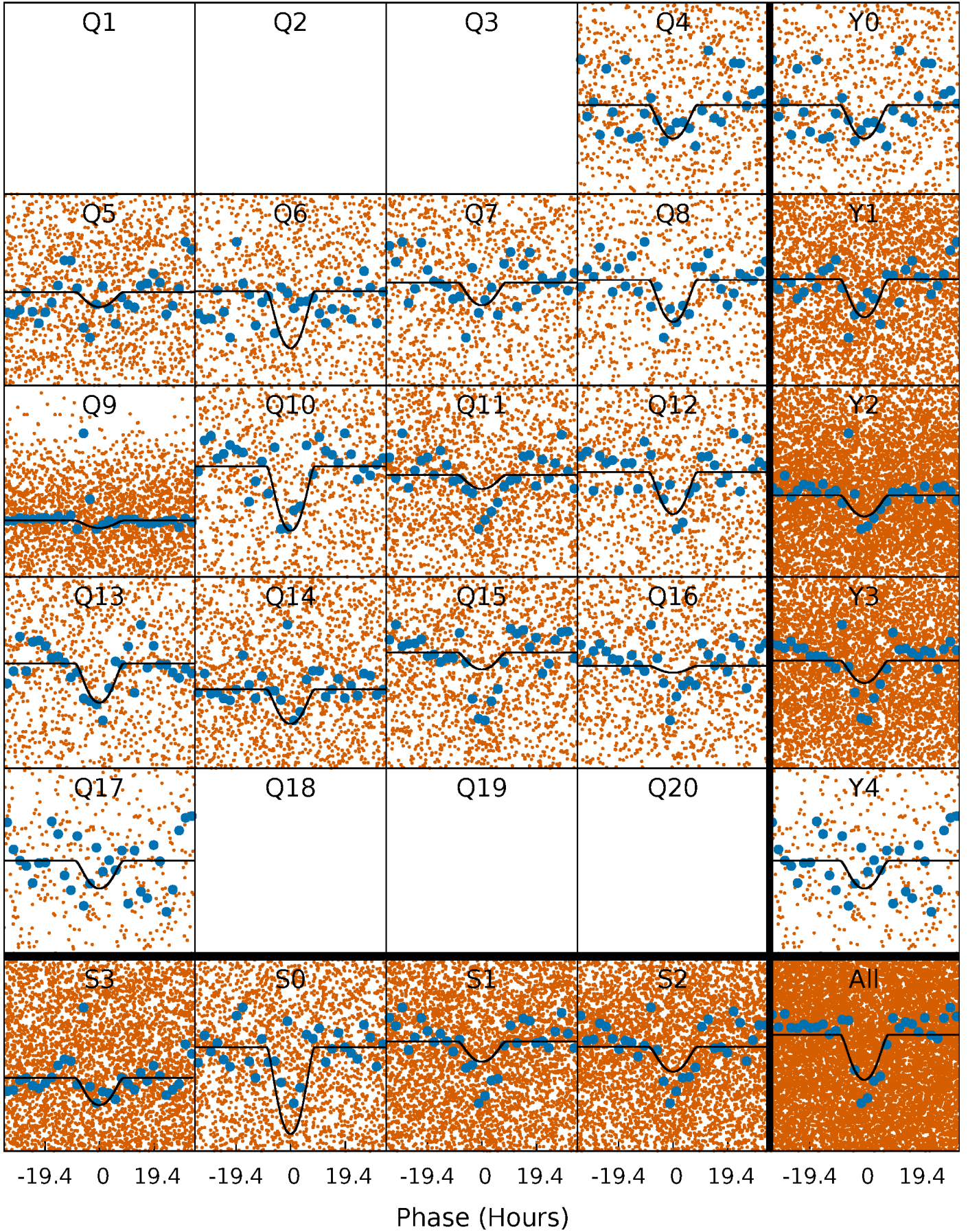
# PDC Quarter-Phased Transit Curves

TCE 006364126-01 P= 5.242974 Days  $T_0=132.871737$  (BKJD)



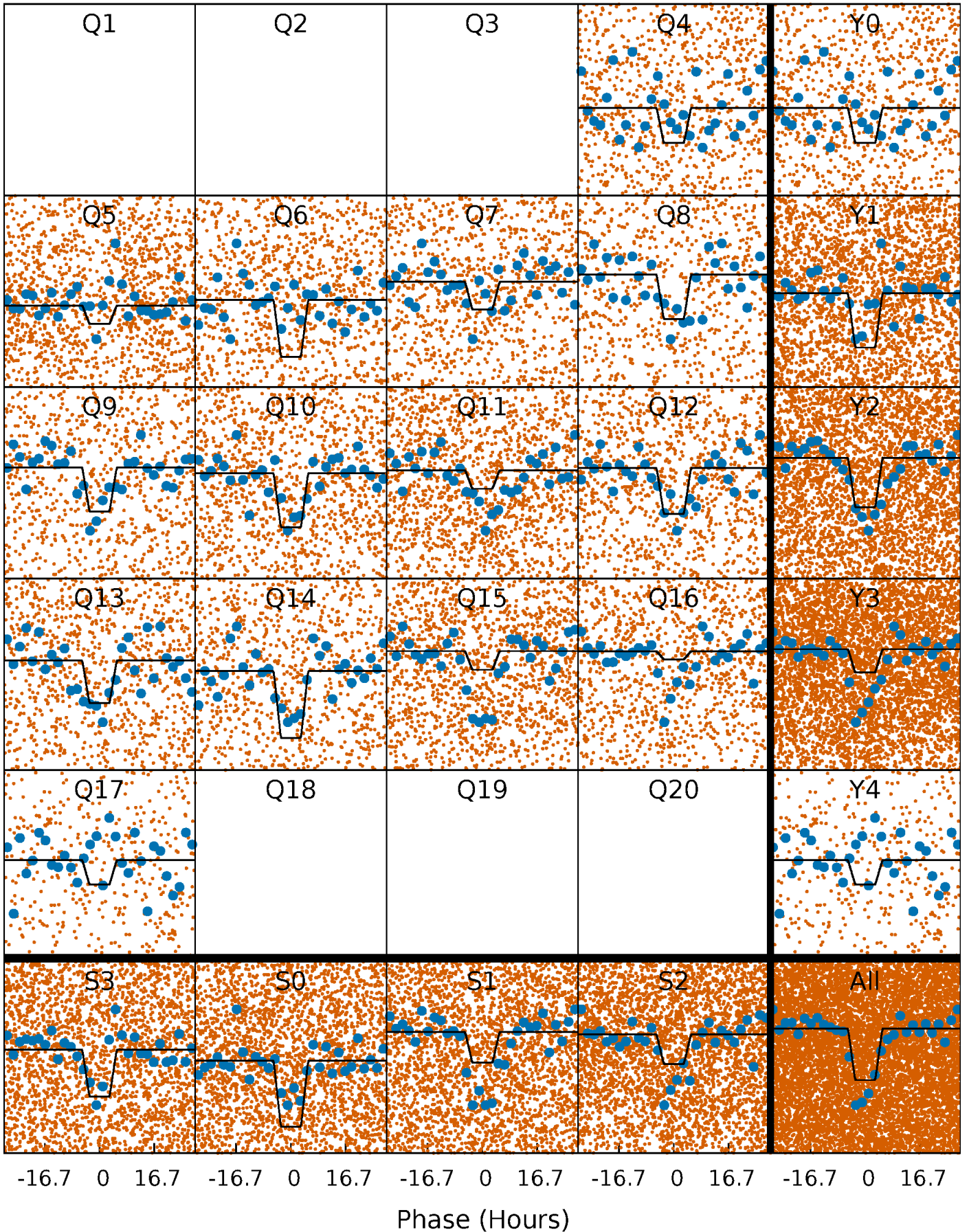
# DV Quarter-Phased Transit Curves

TCE 006364126-01   P= 5.242974 Days    $T_0=132.871737$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

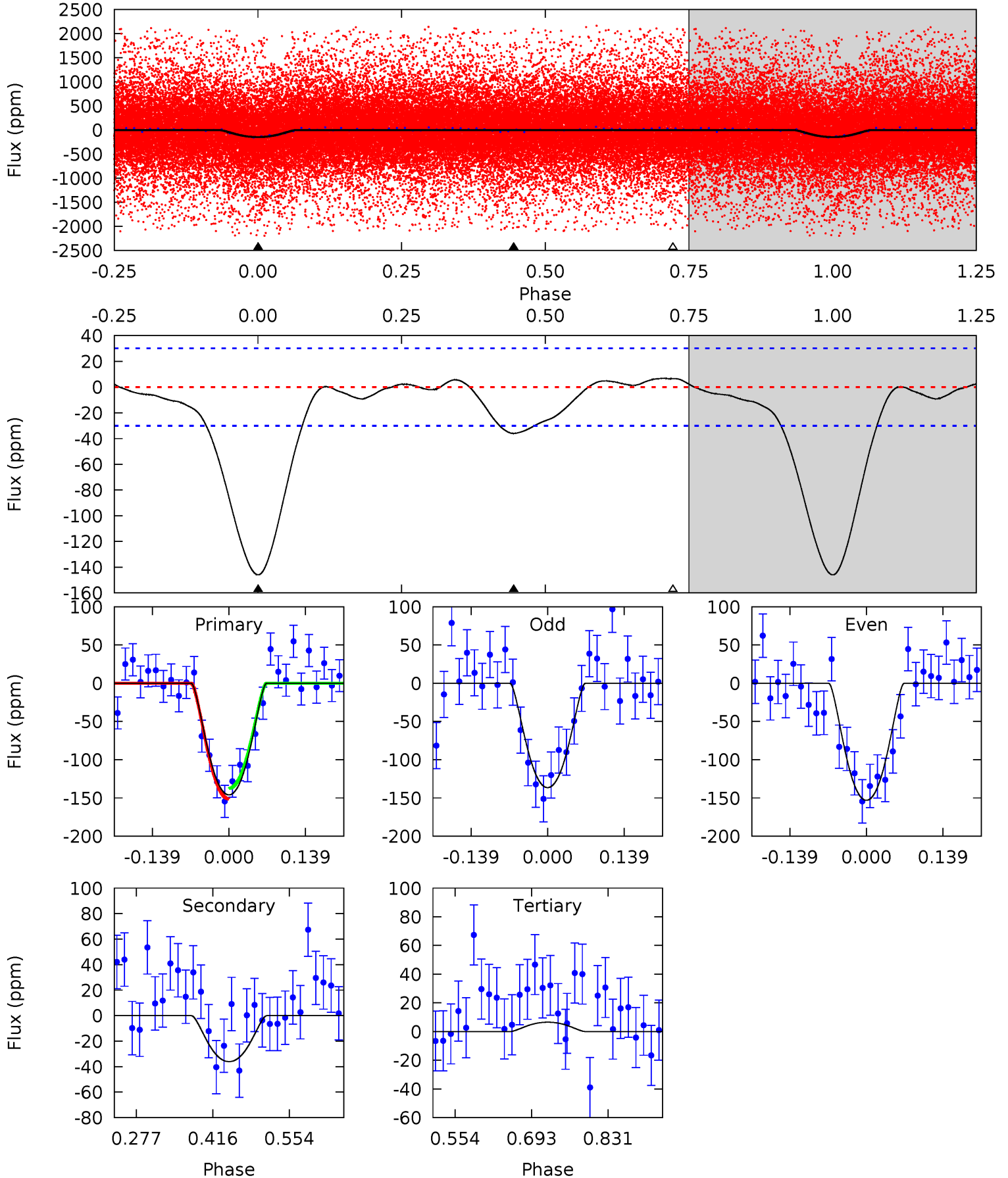
TCE 006364126-01 P= 5.244108 Days  $T_0=132.638908$  (BKJD)



# DV Model-Shift Uniqueness Test

006364126-01, P = 5.242974 Days, E = 132.871737 Days

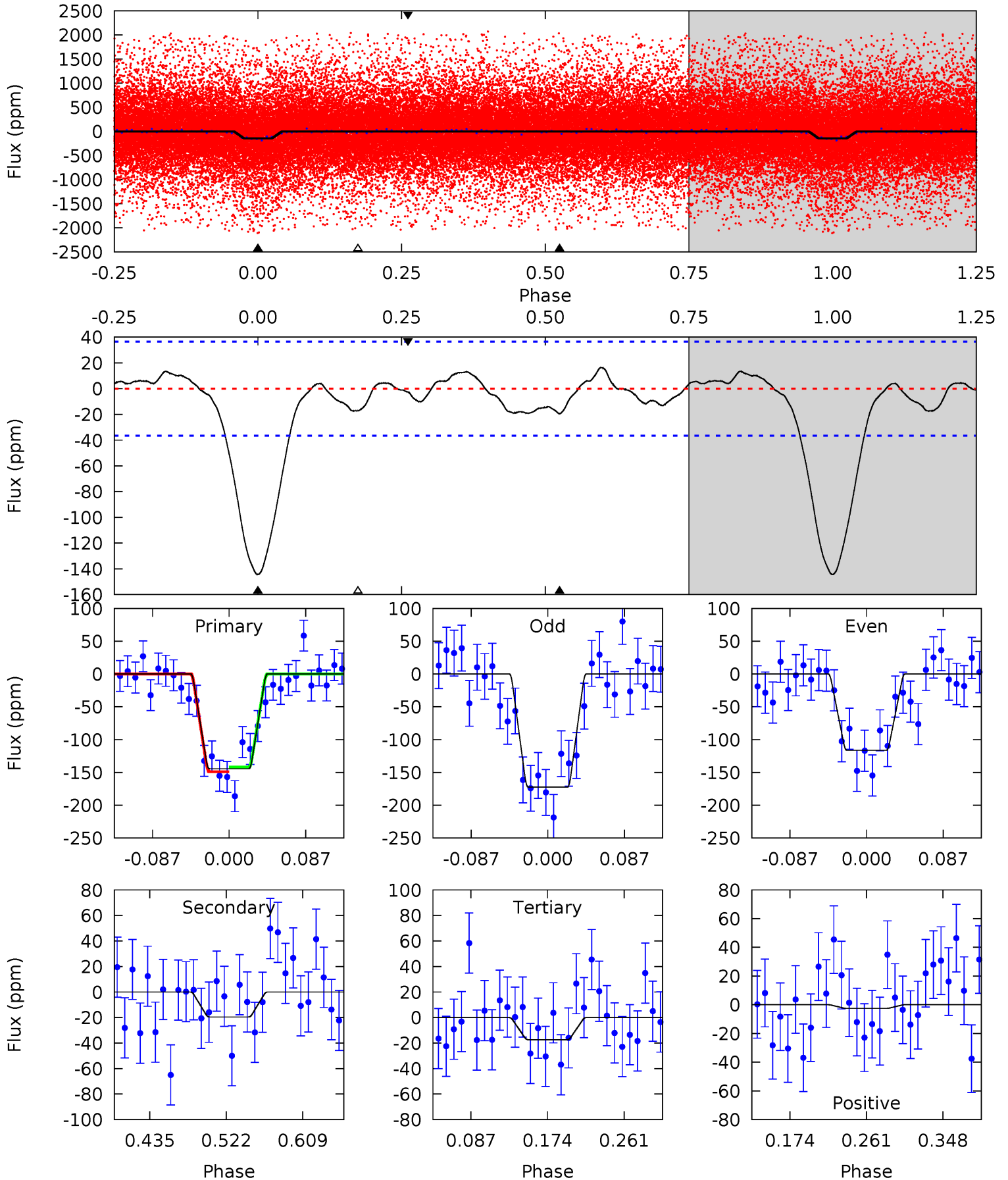
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.8	5.39	-0.98	0	4.50	1.48	0.77	22.8	21.8	6.37	5.39	1.25	1.26	0.04	1.03



# Alt Model-Shift Uniqueness Test

006364126-01, P = 5.244108 Days, E = 132.638908 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
18.2	2.46	2.18	-0.32	4.59	1.71	1.01	16.0	18.5	0.28	2.78	3.53	1.34	0.10	0.45



### Stellar Parameters For KIC 006364126

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5047^{+176}_{-176}$	$4.574^{+0.039}_{-0.066}$	$0.000^{+0.250}_{-0.300}$	$0.766^{+0.087}_{-0.063}$	$0.802^{+0.071}_{-0.079}$	$2.514^{+0.542}_{-0.533}$
	+3%/-3%	+1%/-1%	+inf%/-inf%	+11%/-8%	+9%/-10%	+22%/-21%
Source	KIC0	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 006364126-01 / KOI 6690.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-36 \pm 7$	$1.36^{+0.90}_{-0.72}$	$1170^{+48}_{-46}$	$3506^{+1106}_{-498}$	$32^{+124}_{-20}$
Alt.	$-20 \pm 8$	$1.05^{+0.80}_{-0.62}$	$1165^{+48}_{-46}$	$3415^{+1379}_{-559}$	$28^{+160}_{-20}$

$T_{\text{max}}$  = 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

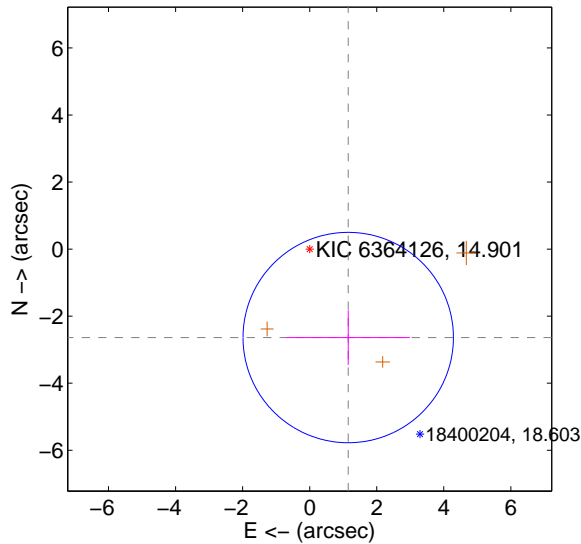
Supplemental centroid analysis for 006364126-01. Kepler magnitude: 14.90. Transit SNR 11.34

There are 0 quarters with good PRF difference image offsets

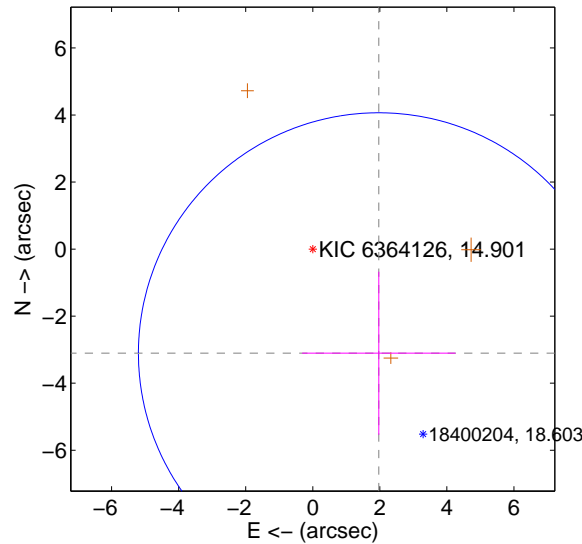
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.878 \pm 1.046$	2.75	$-1.150 \pm 1.837$	$-2.638 \pm 0.813$
PRF-fit source offset from KIC position	$3.677 \pm 2.390$	1.54	$-1.971 \pm 2.288$	$-3.104 \pm 2.430$
photometric centroid source offset	$2.27 \pm 0.34$	6.61	$0.04 \pm 0.29$	$2.27 \pm 0.34$

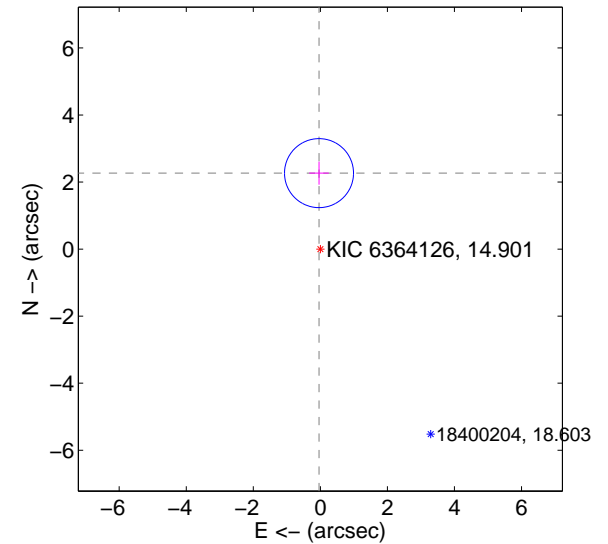
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



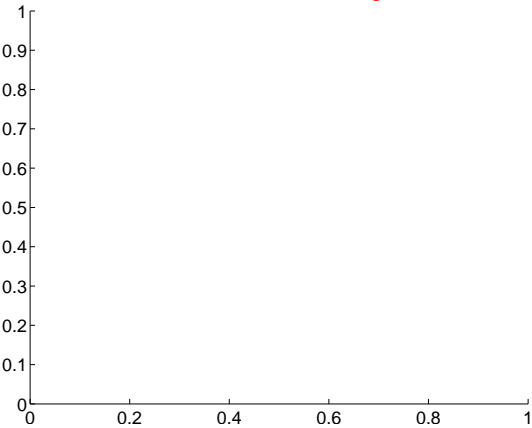
offset from photometric centroids



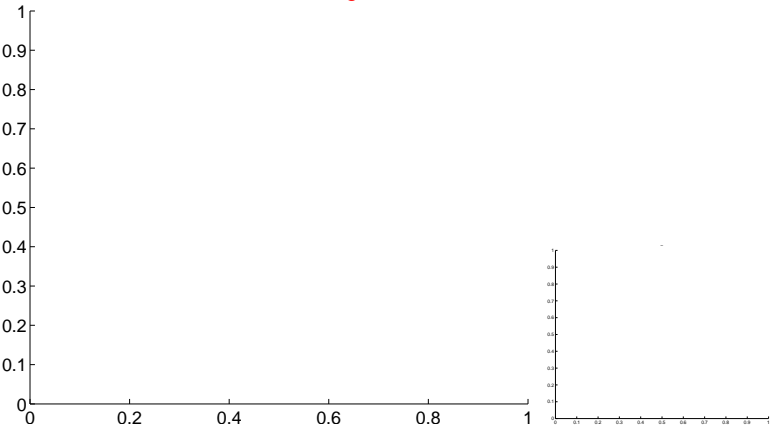
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

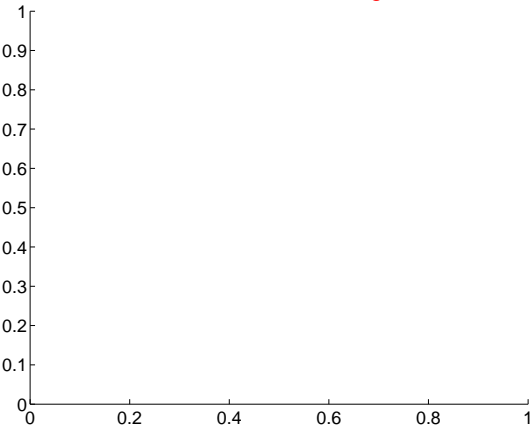
Q1 no difference image



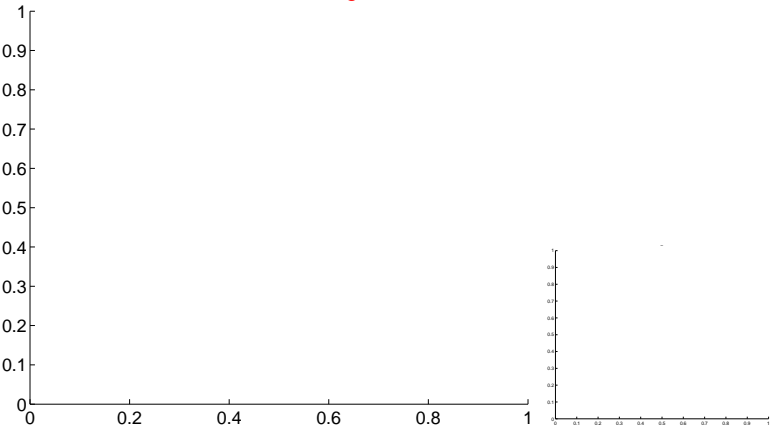
Q1 no OOT image



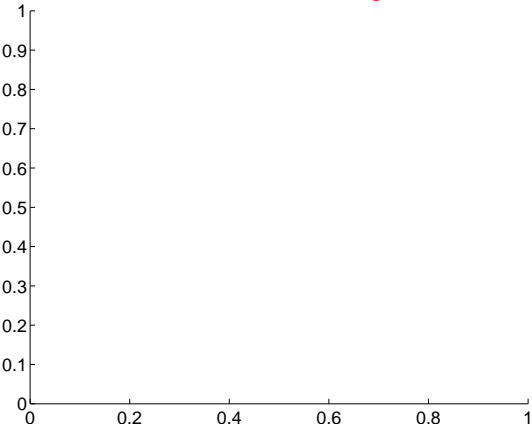
Q2 no difference image



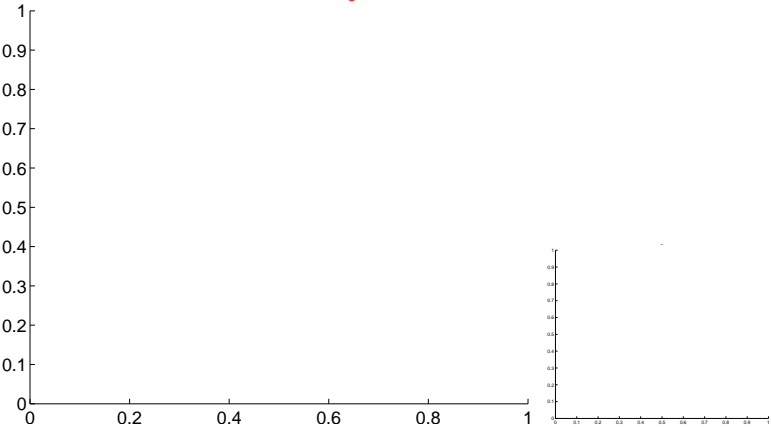
Q2 no OOT image



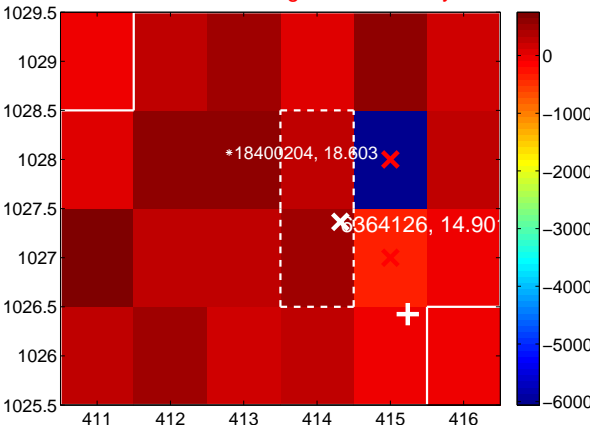
Q3 no difference image



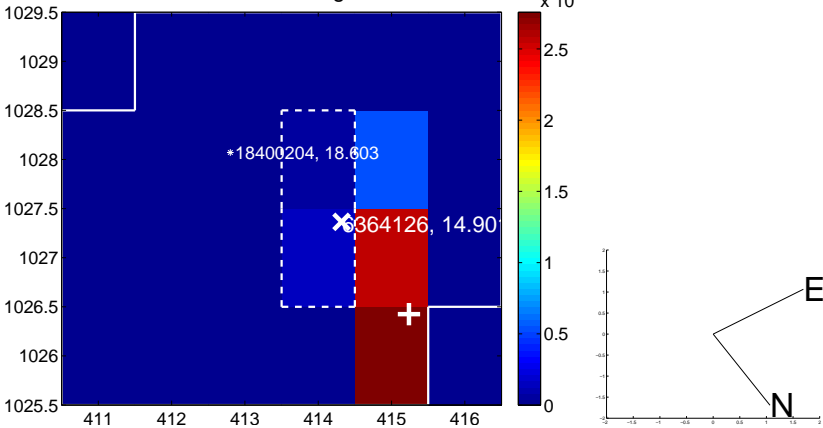
Q3 no OOT image



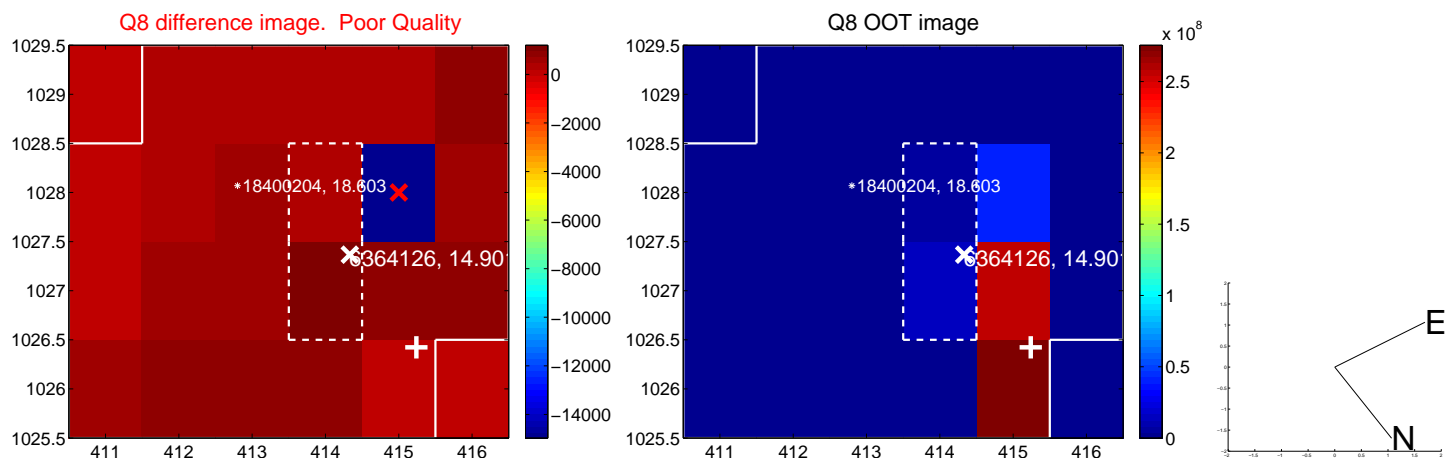
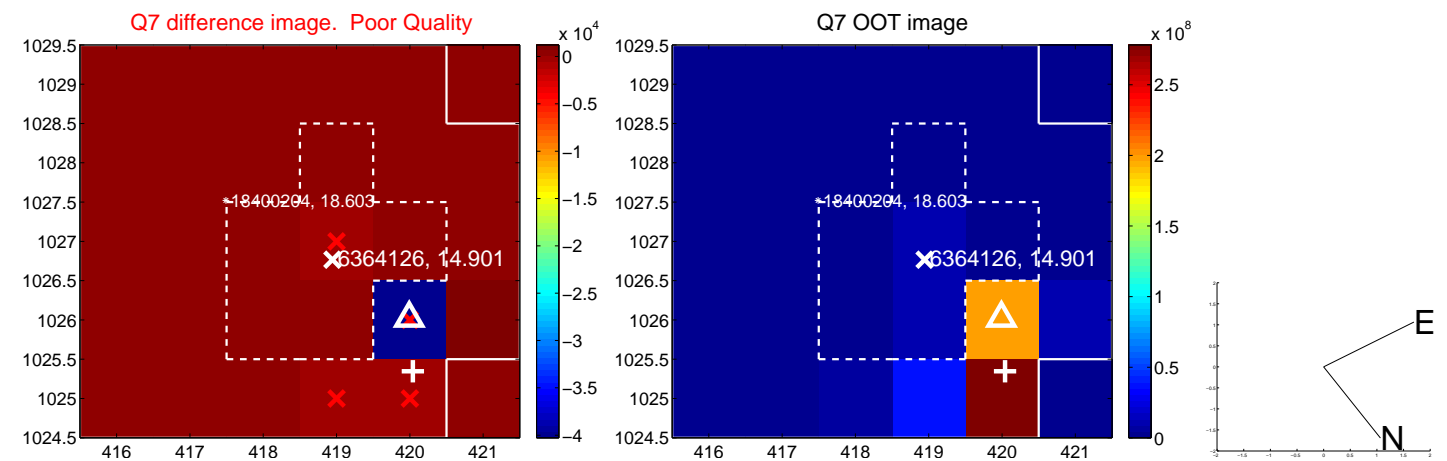
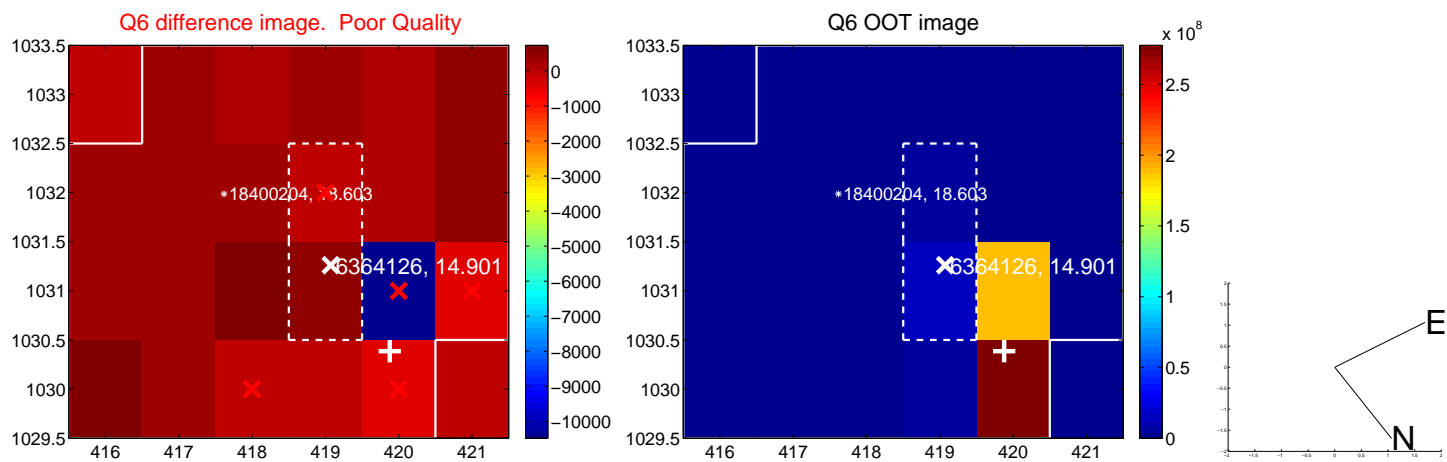
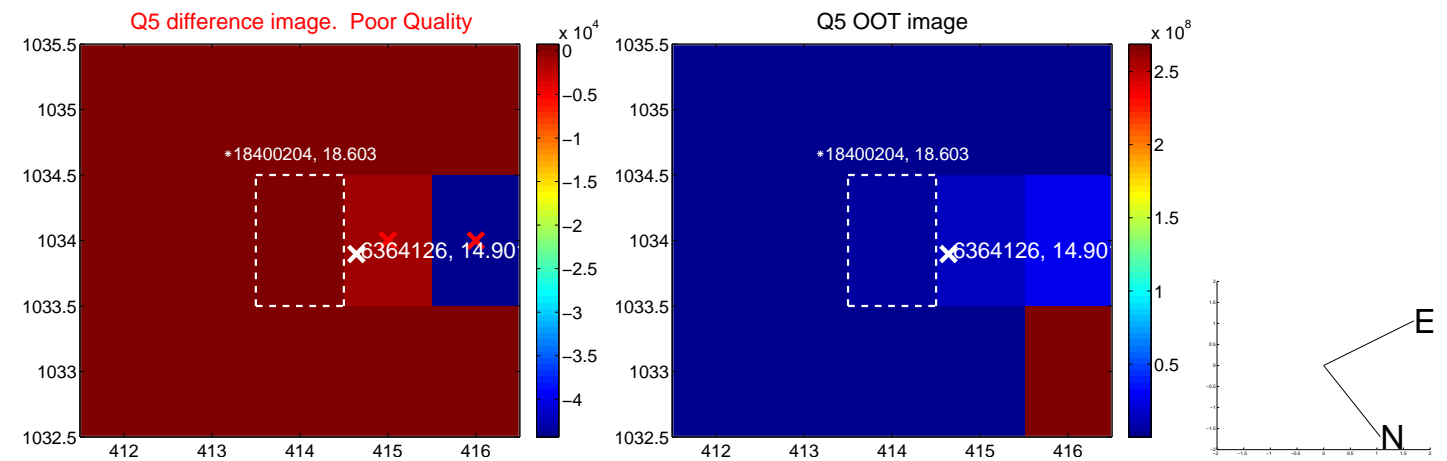
Q4 difference image. Poor Quality



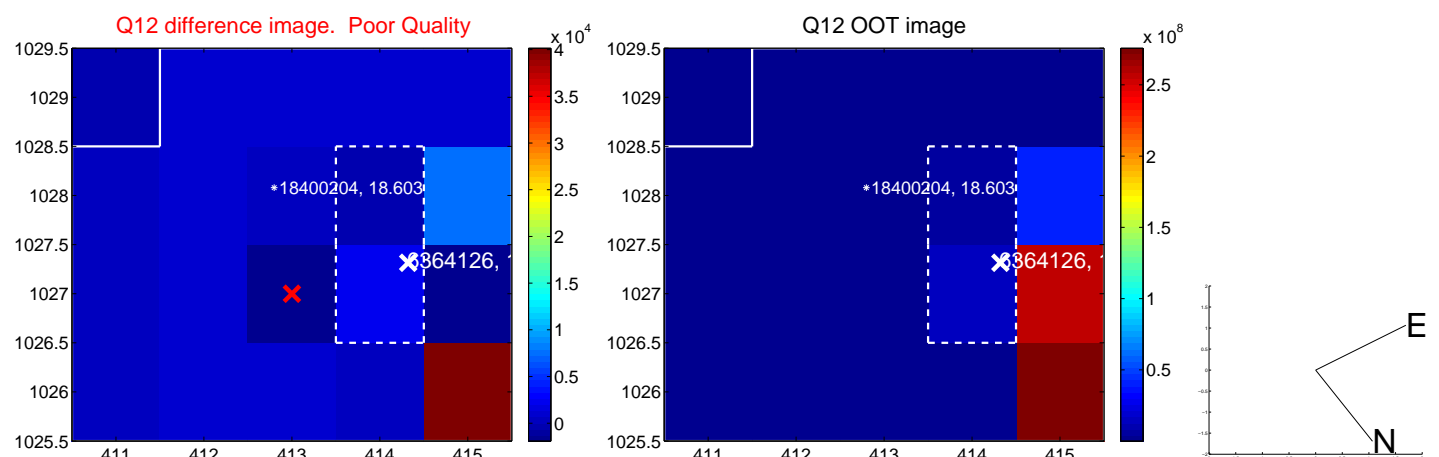
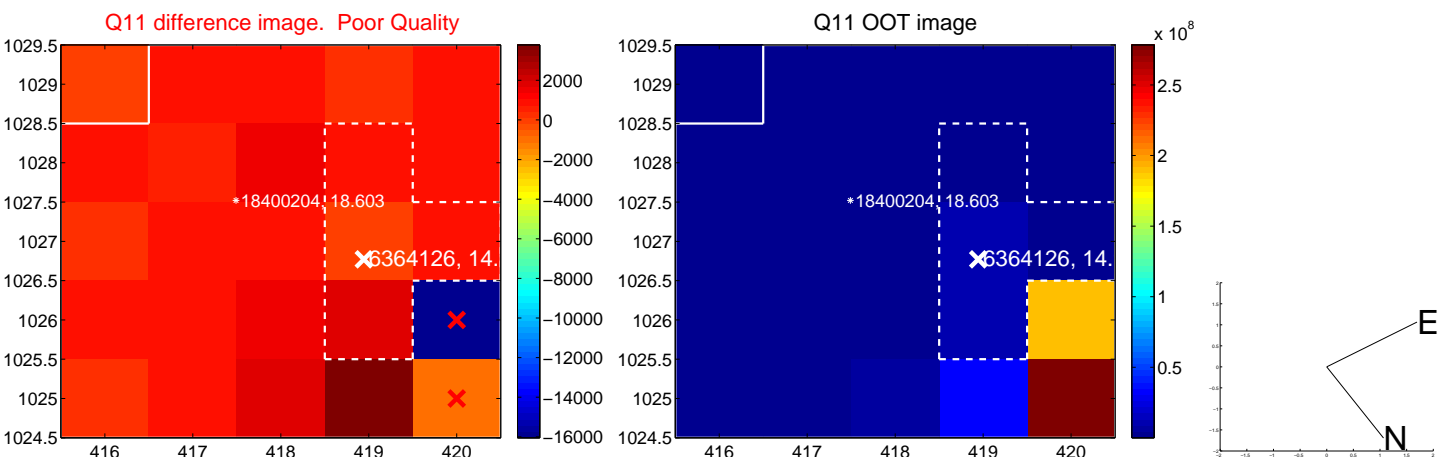
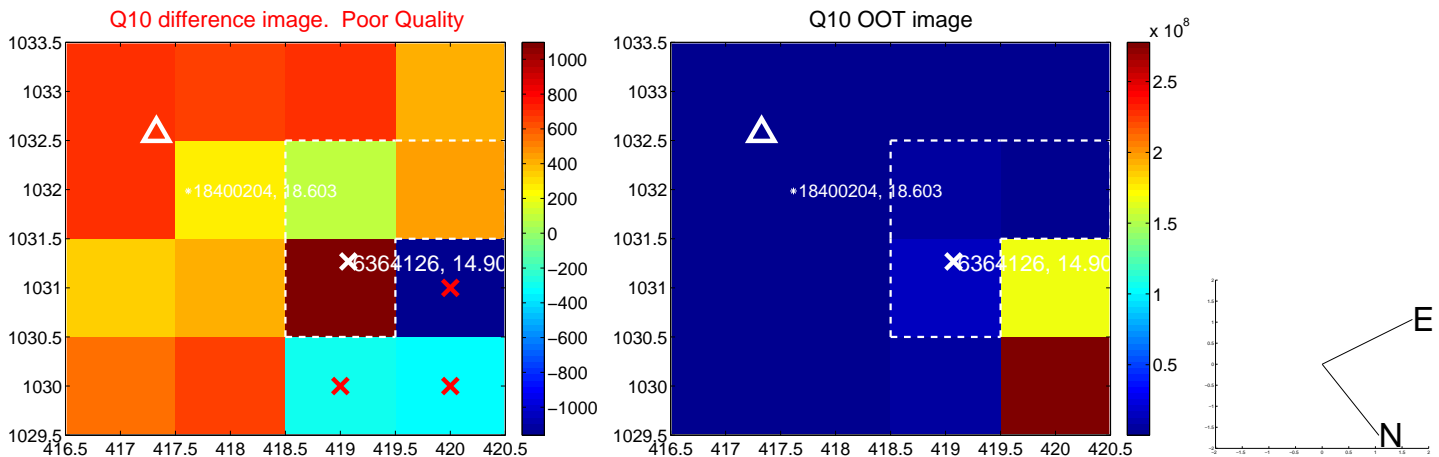
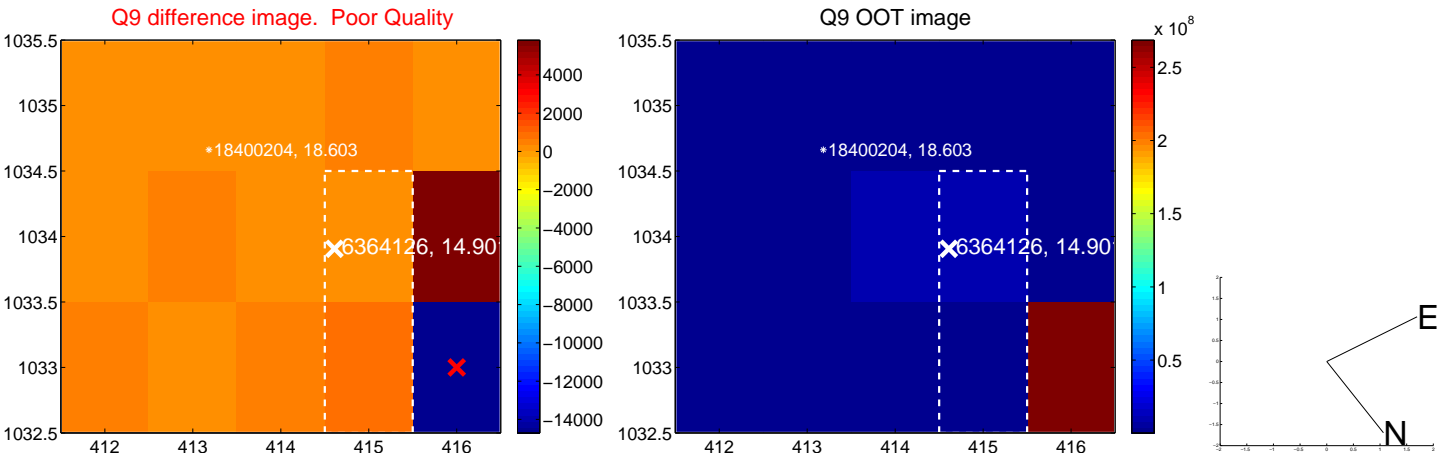
Q4 OOT image



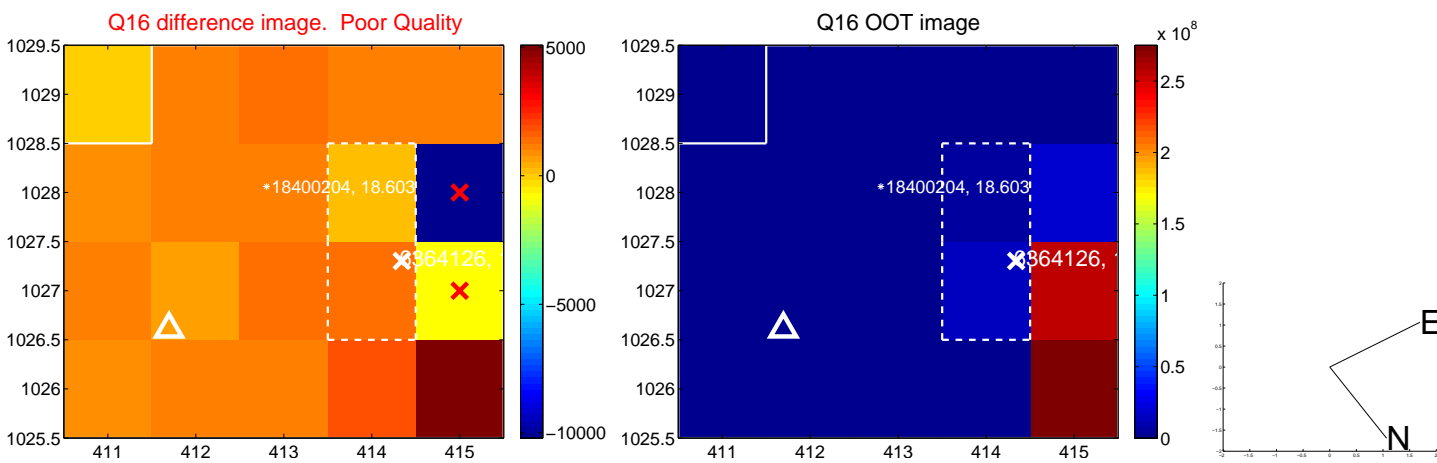
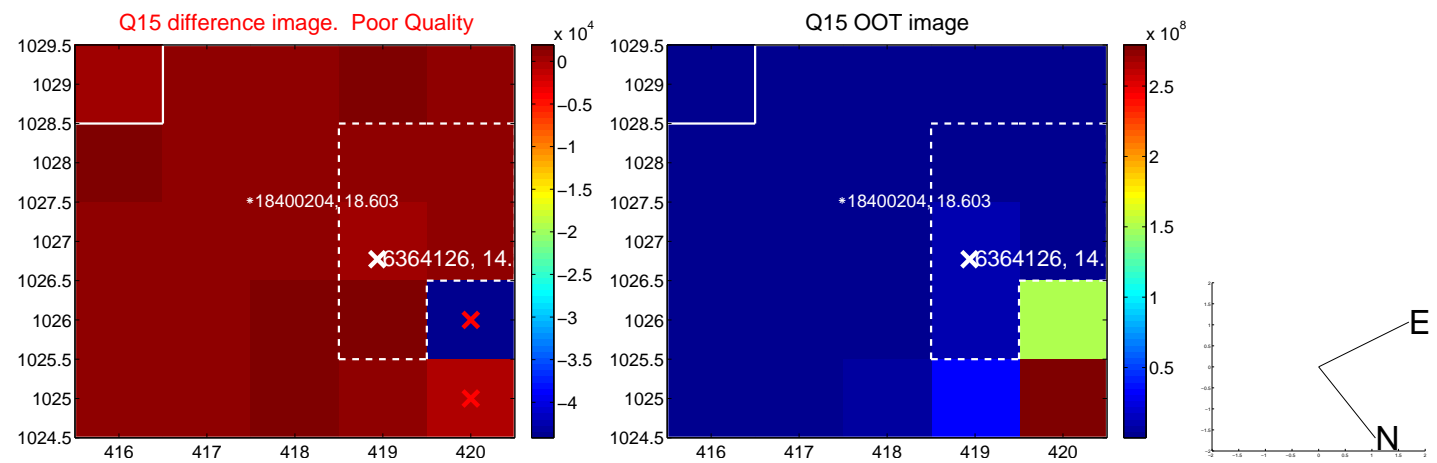
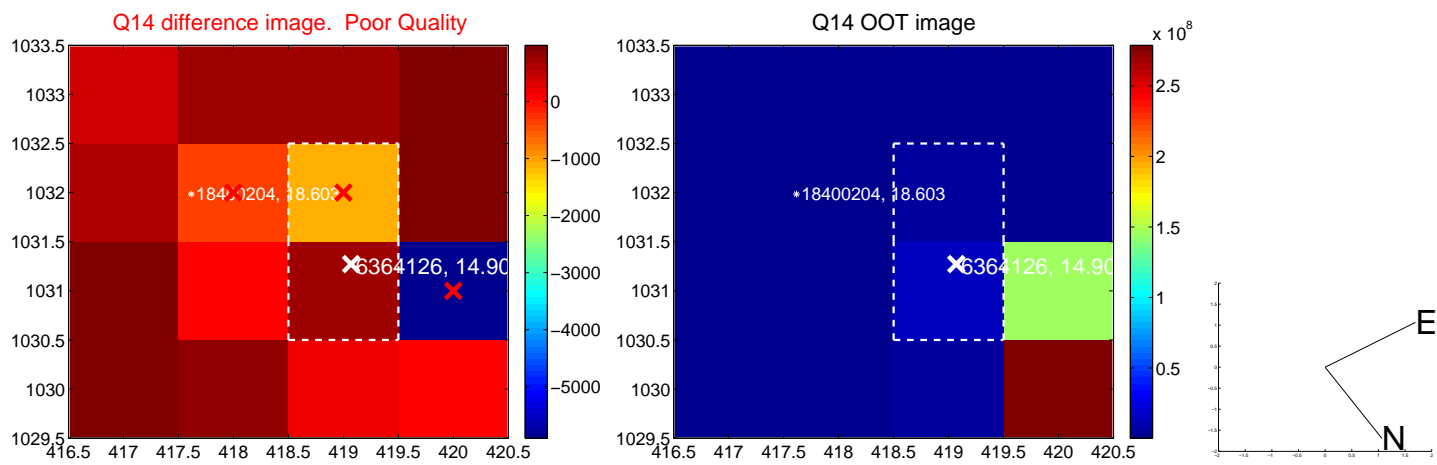
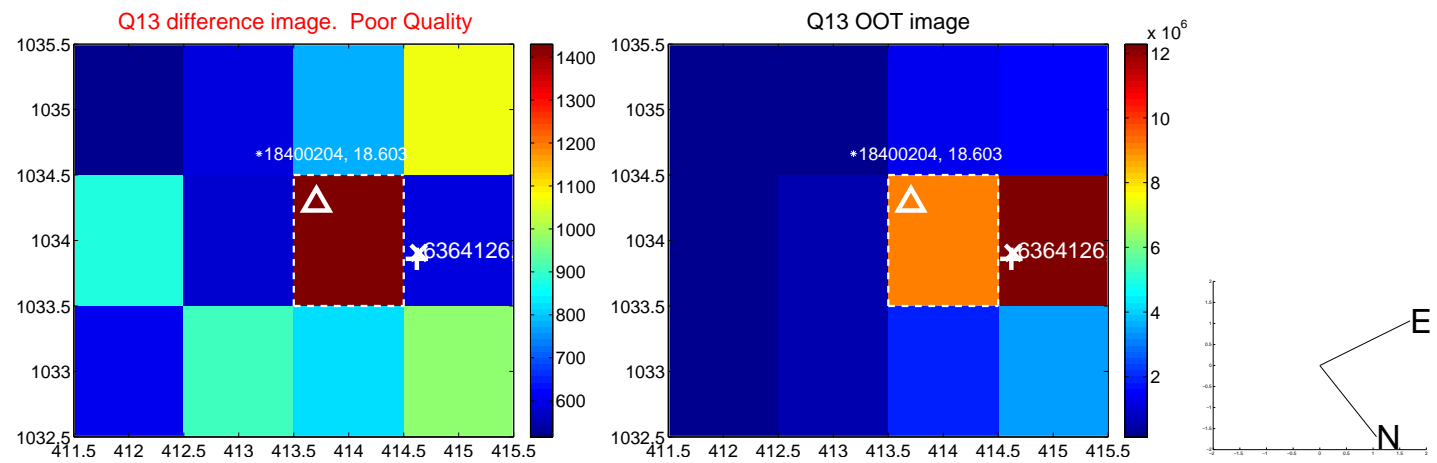
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



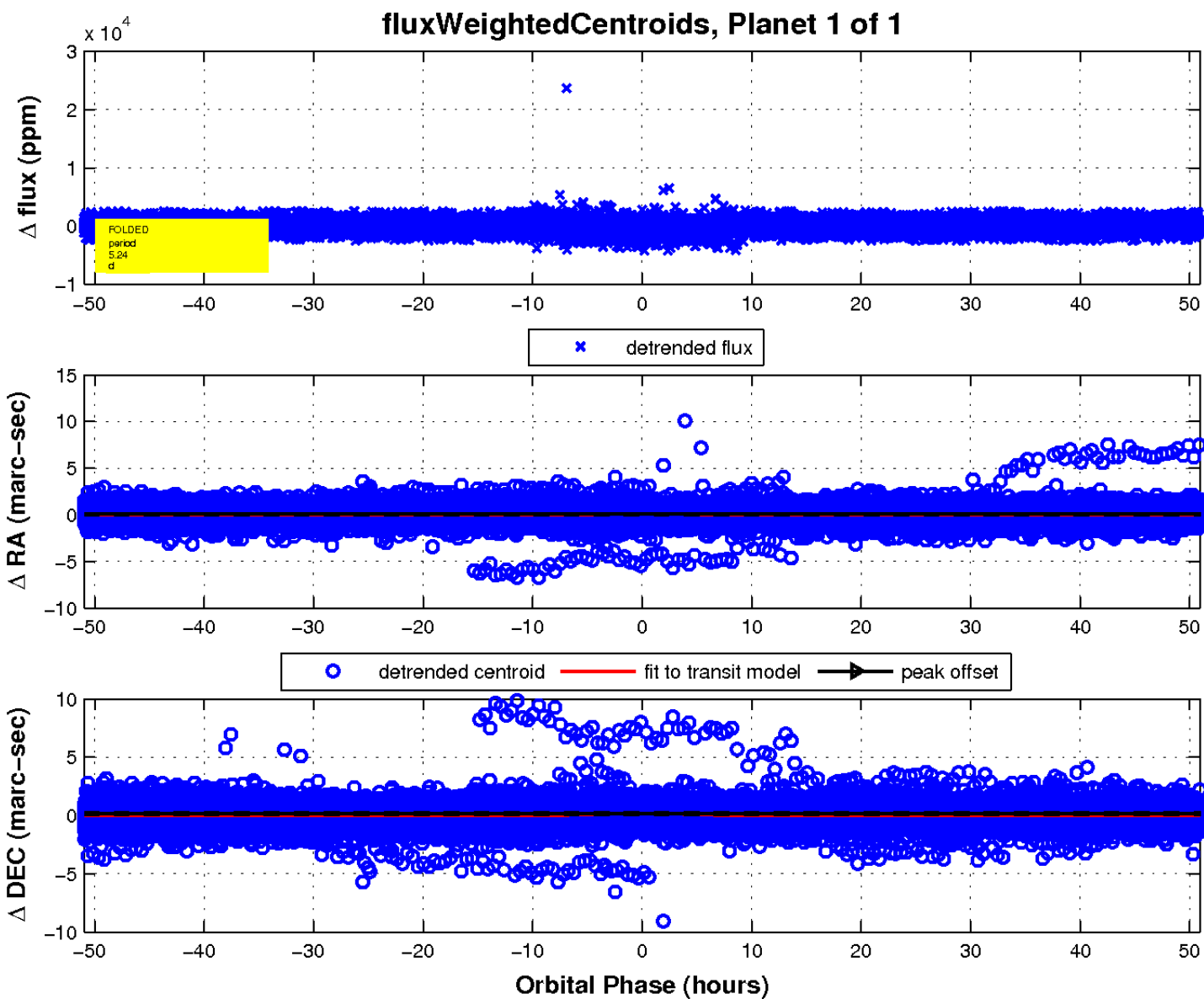
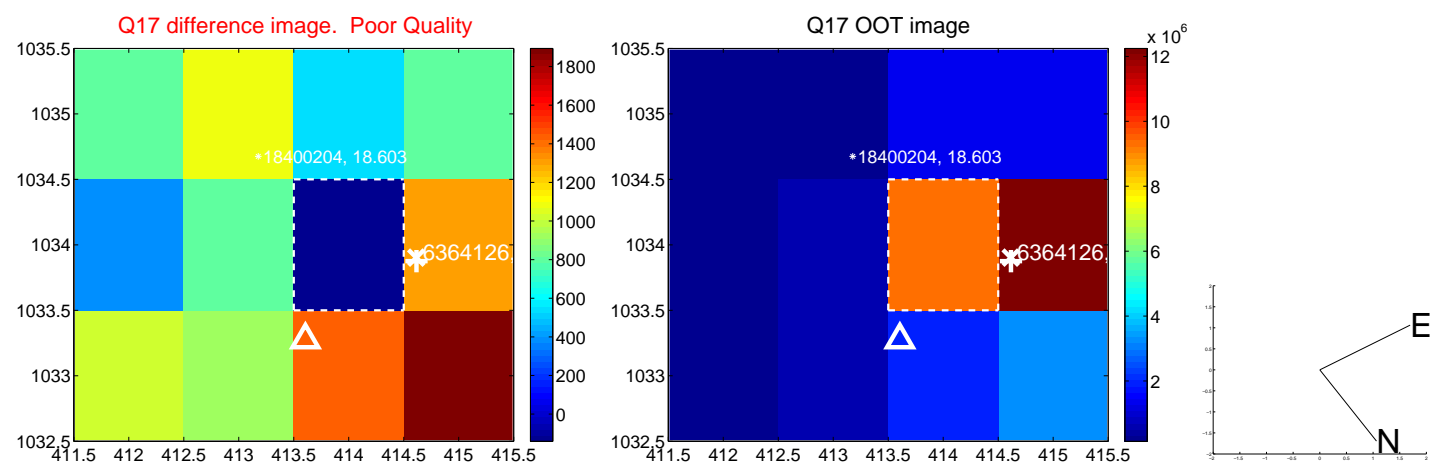
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

