

# KIC 006938264

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006938264-01	OBS	4180.01	1.121653	132.305016	59.0	1.361	10.7	13.9	0.72	4518	0.69	532.63

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006938264-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

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

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

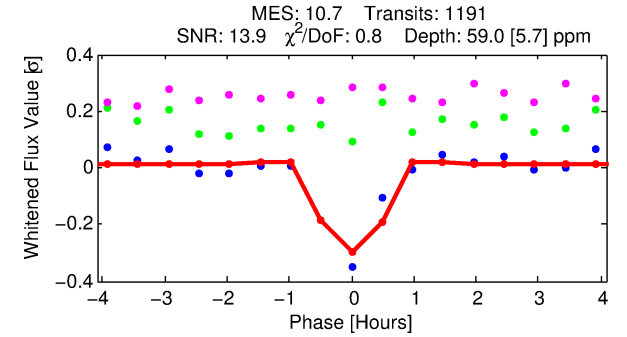
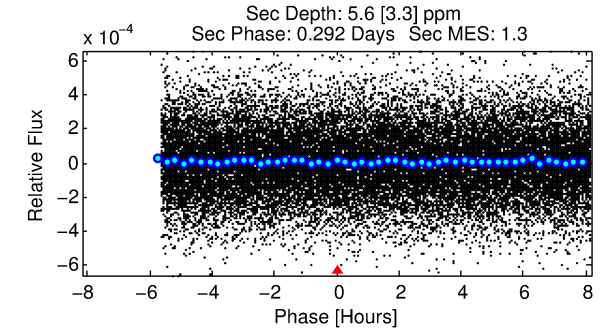
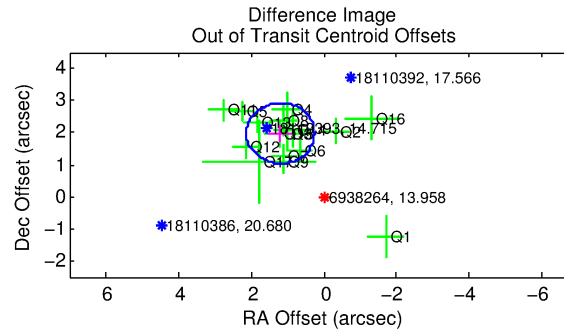
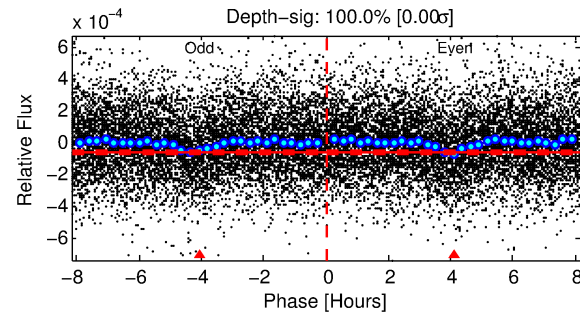
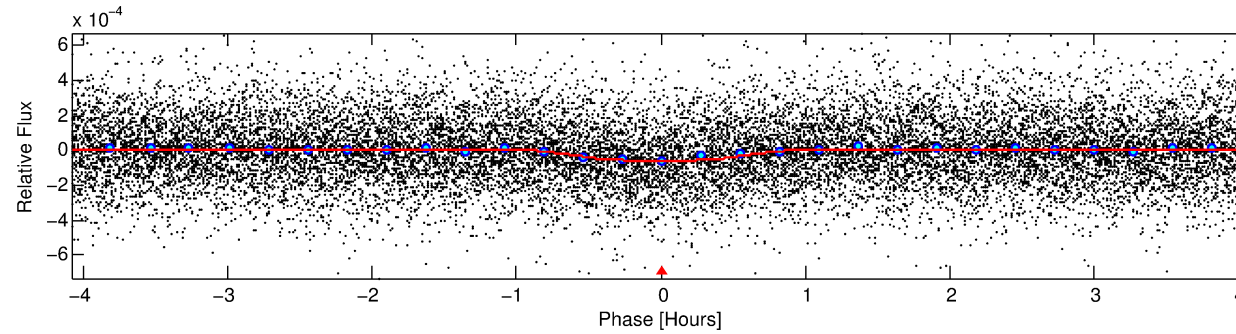
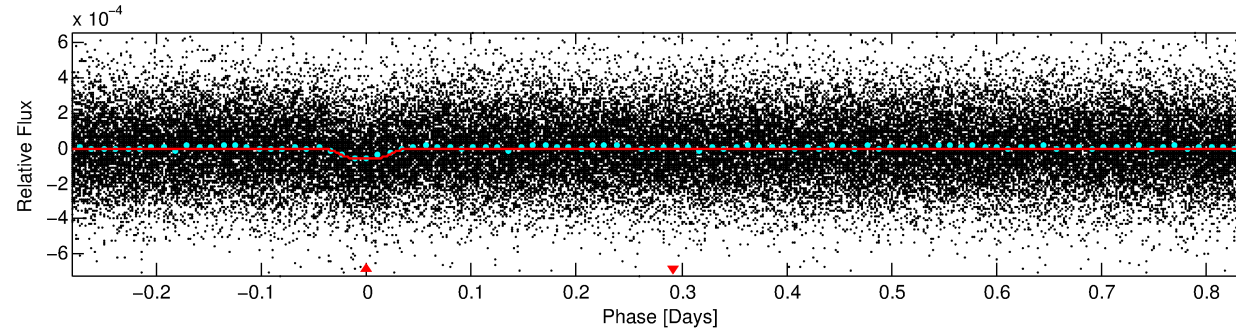
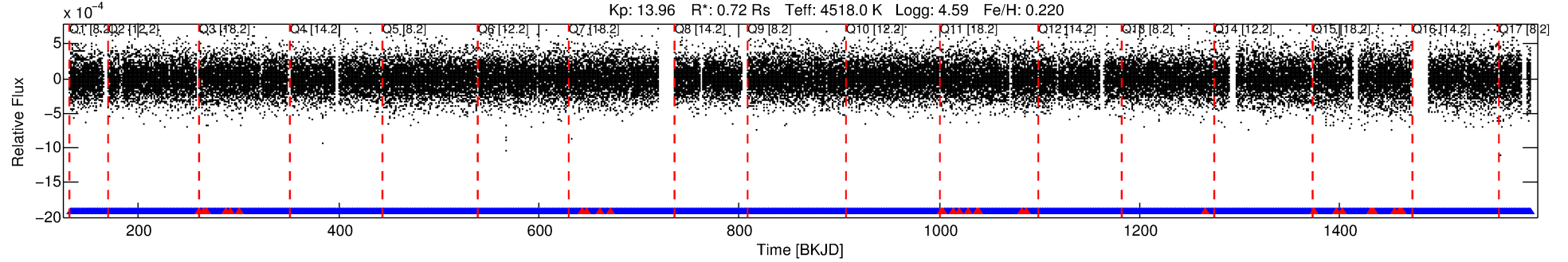
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006938264-01

No Significant Match Found

# DV One-Page Summary

KIC: 6938264 Candidate: 1 of 1 Period: 1.122 d  
KOI: K04180.01 Corr: 0.897



## DV Fit Results:

Period = 1.12165 [0.00001] d  
Epoch = 132.3050 [0.0015] BKJD  
Rp/R\* = 0.0088 [0.0054]  
a/R\* = 3.02 [6.02]  
b = 0.90 [0.49]  
Seff = 532.63 [86.97]  
Teq = 1225 [50] K  
Rp = 0.69 [0.42] Re  
a = 0.0191 [0.0012] AU  
Ag = 2.35 [3.20] [0.42 $\sigma$ ]  
Teffp = 2345 [801] K [1.40 $\sigma$ ]

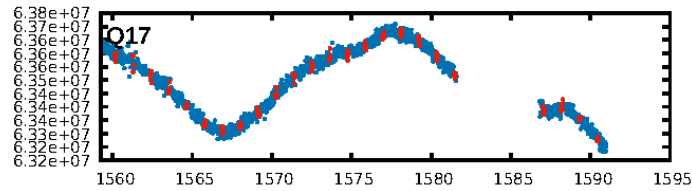
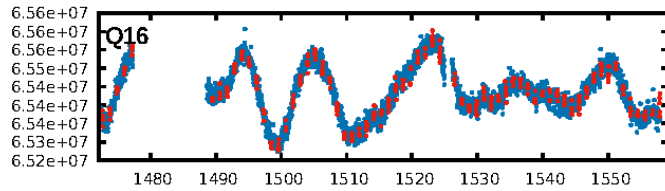
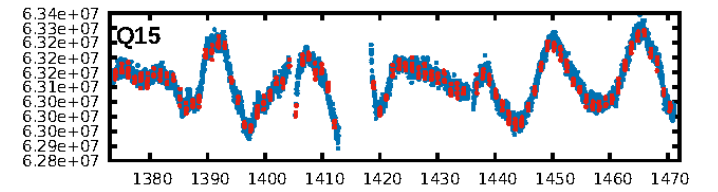
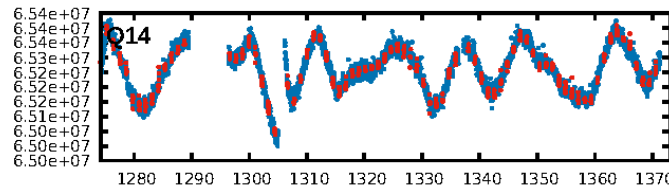
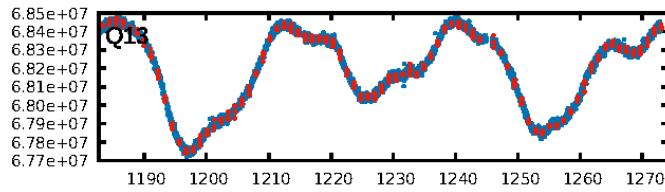
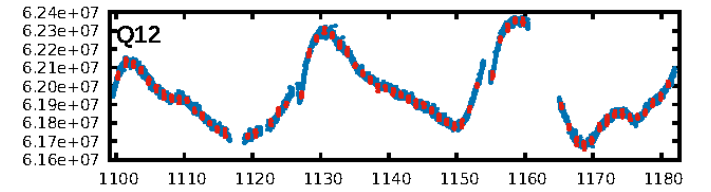
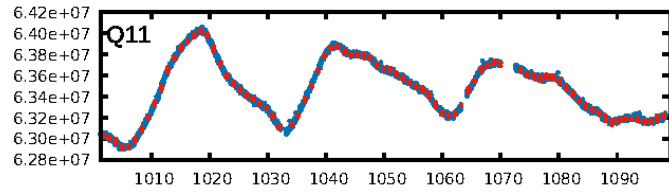
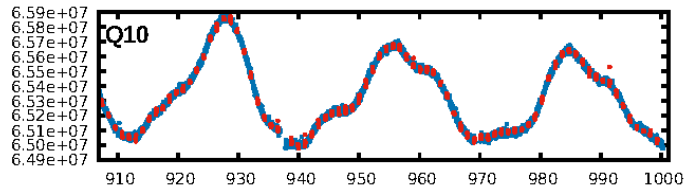
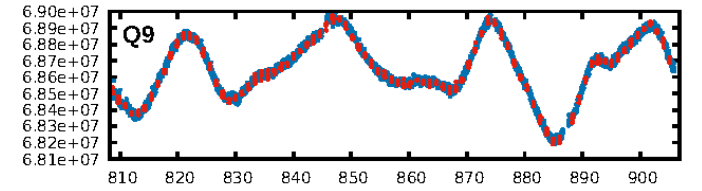
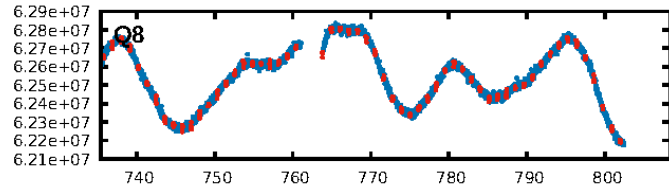
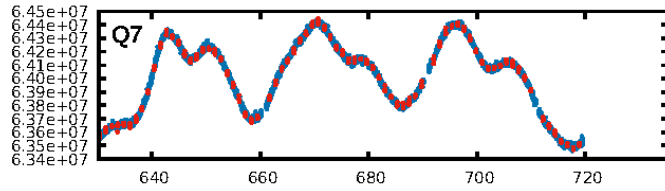
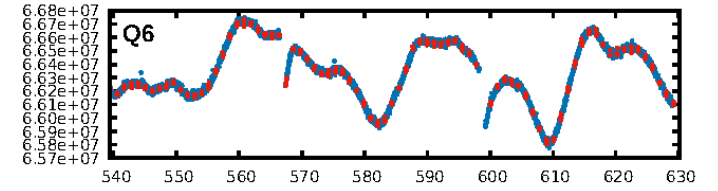
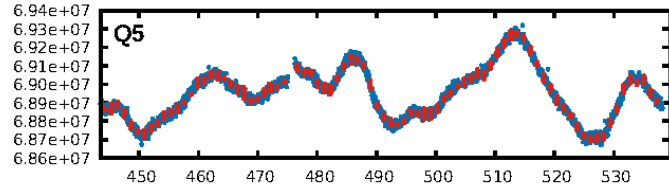
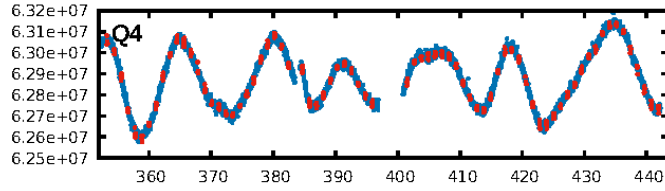
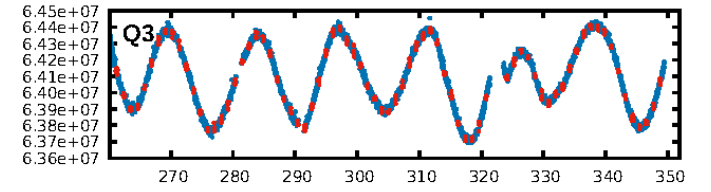
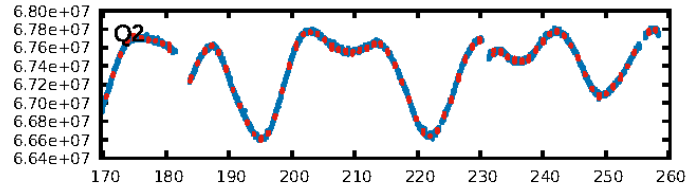
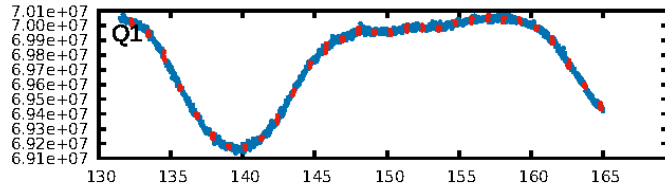
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 7.00e-26  
RollingBand-fgt: 0.97 [1106/1137]  
GhostDiagnostic-chr: 0.4674  
Centroid-sig: 0.0%  
Centroid-so: 3.994 arcsec [4.83 $\sigma$ ]  
OotOffset-rm: 2.309 arcsec [7.37 $\sigma$ ]  
KicOffset-rm: 3.037 arcsec [10.48 $\sigma$ ]  
OotOffset-st: 3/4/4/5 [16]  
KicOffset-st: 3/4/4/5 [16]  
DiffImageQuality-fgm: 0.94 [15/16]  
DiffImageOverlap-fno: 1.00 [17/17]

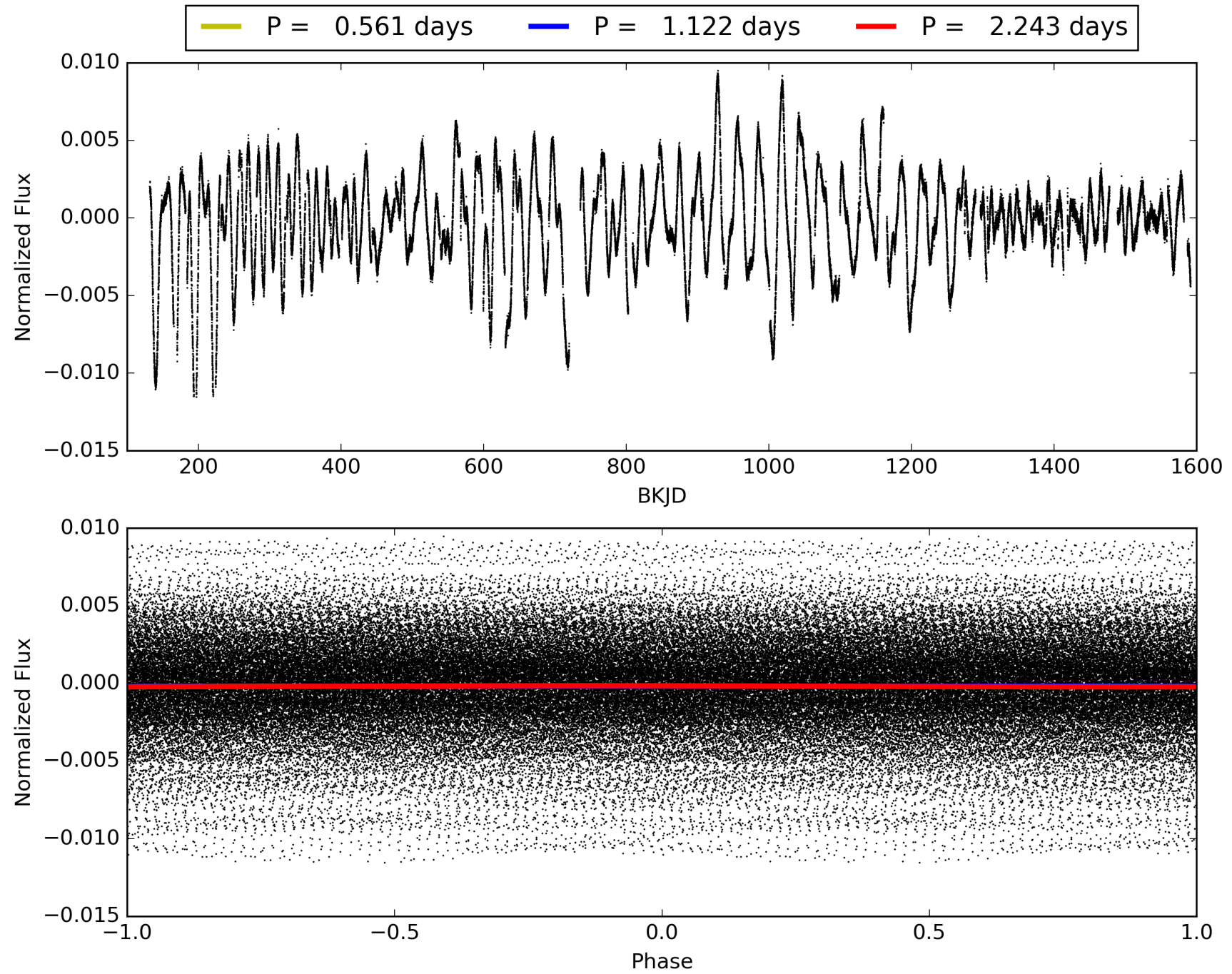
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 18:04:59 Z

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

# TCE 006938264-01, PDC Light Curves

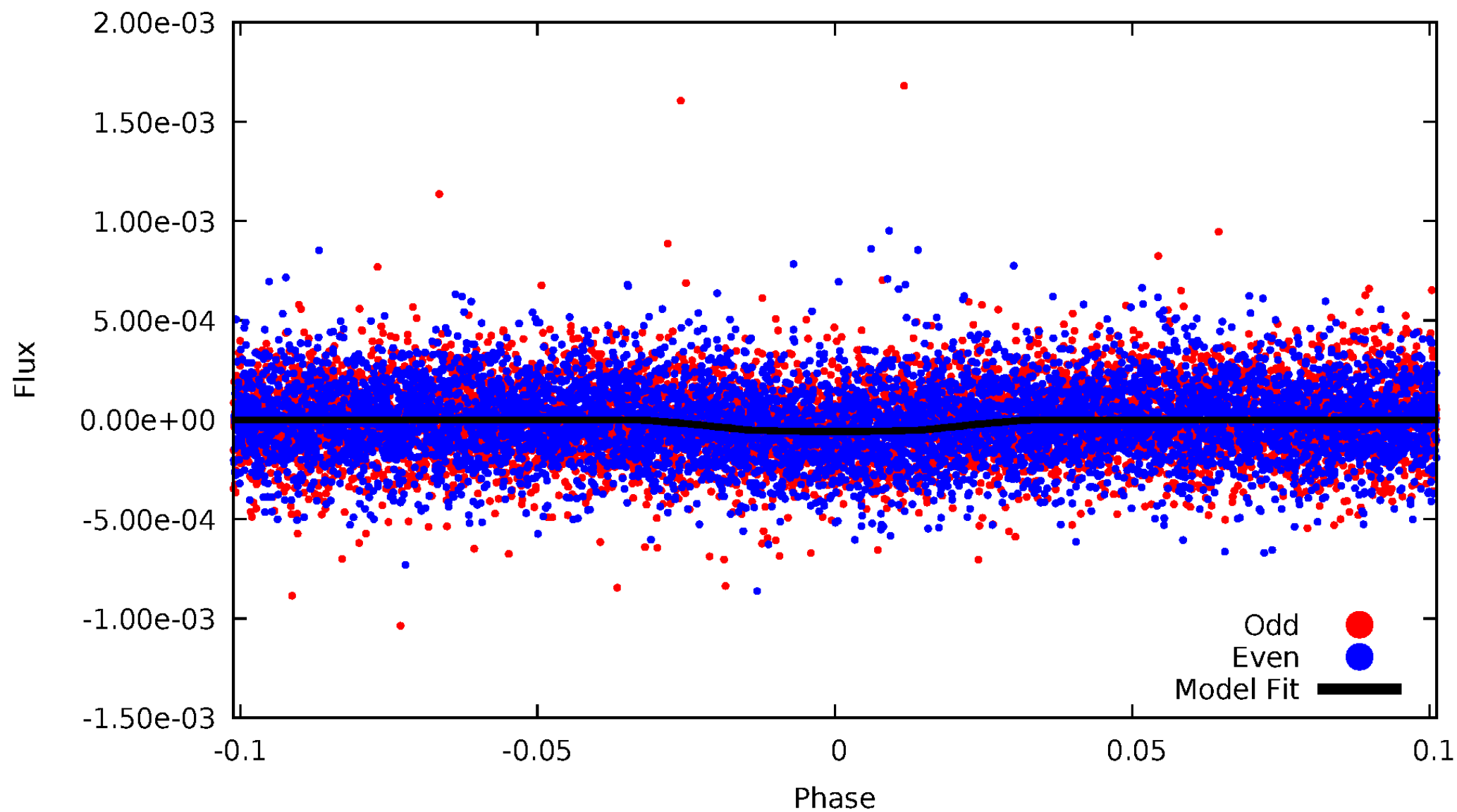


TCE 006938264-01



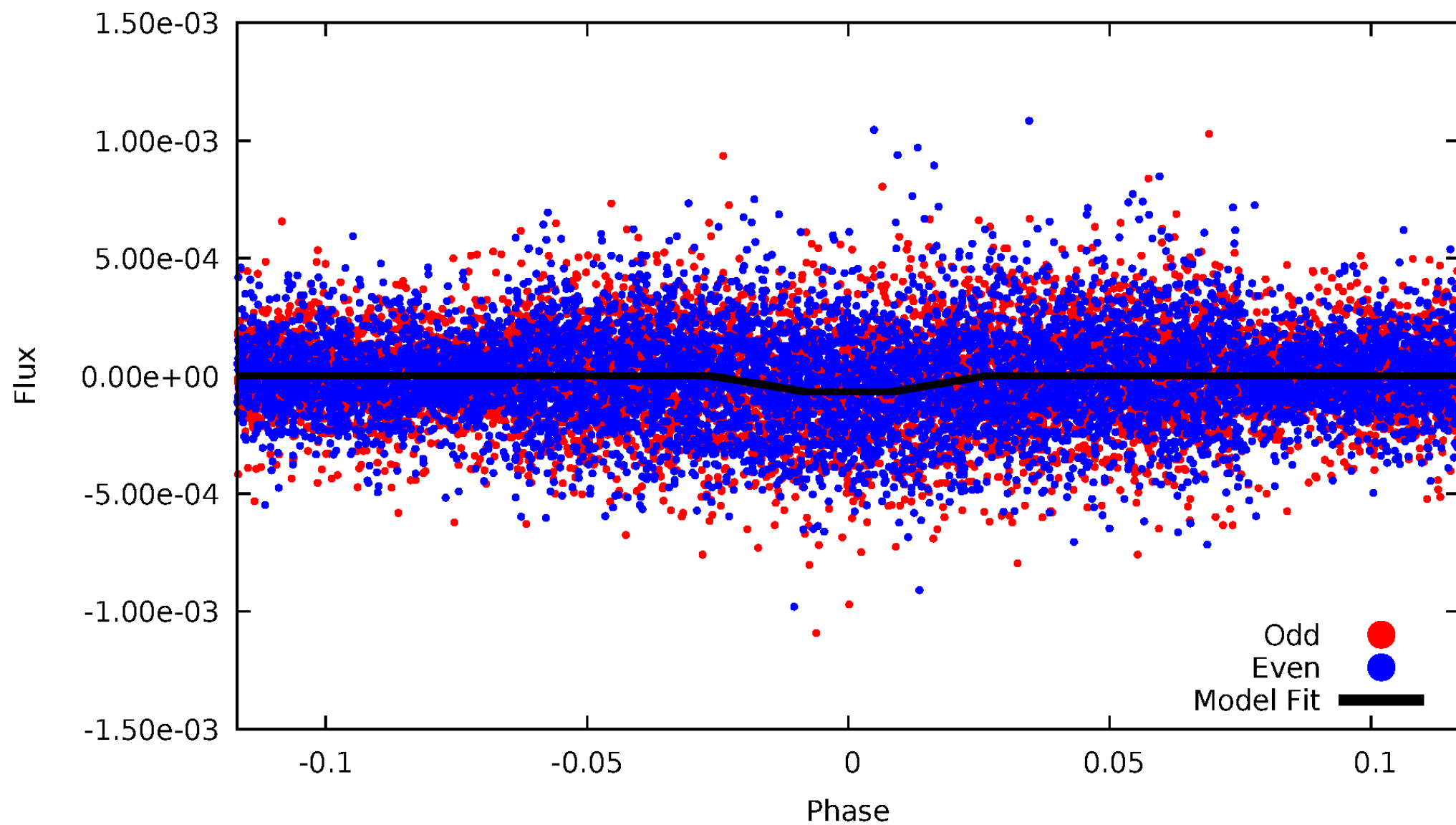
# DV Odd/Even

TCE 006938264-01



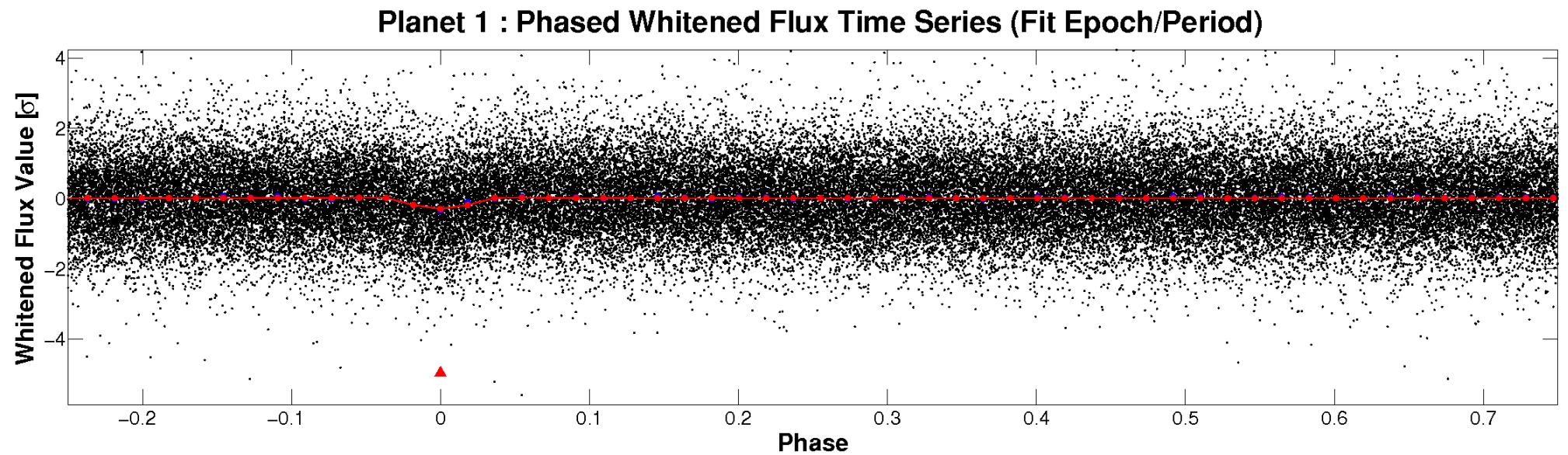
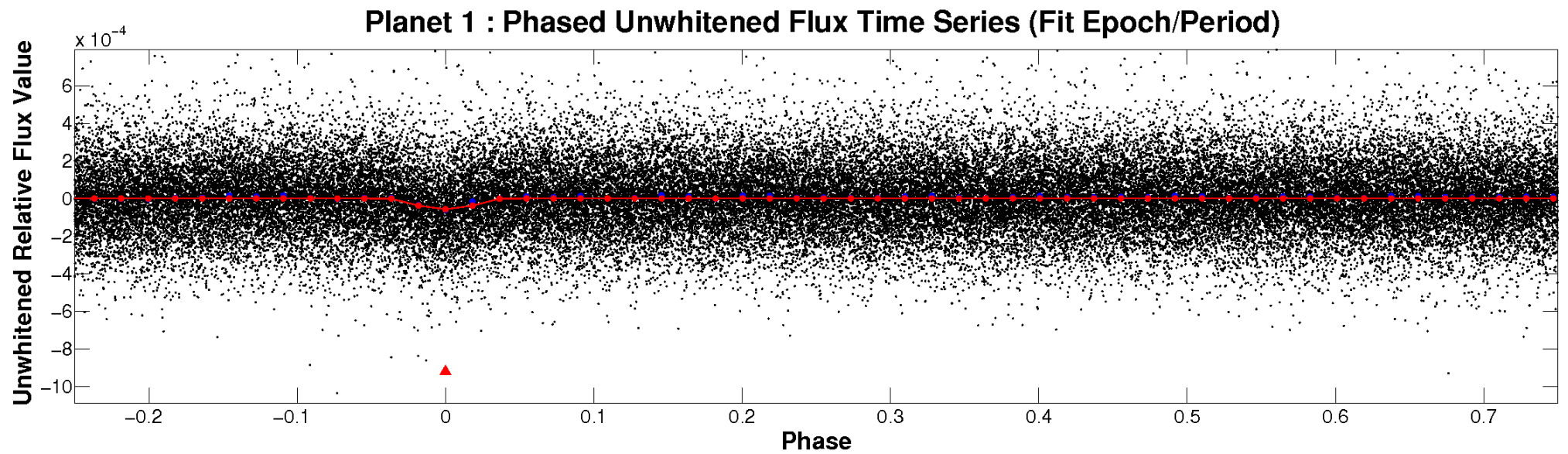
# ALT Odd/Even

TCE 006938264-01



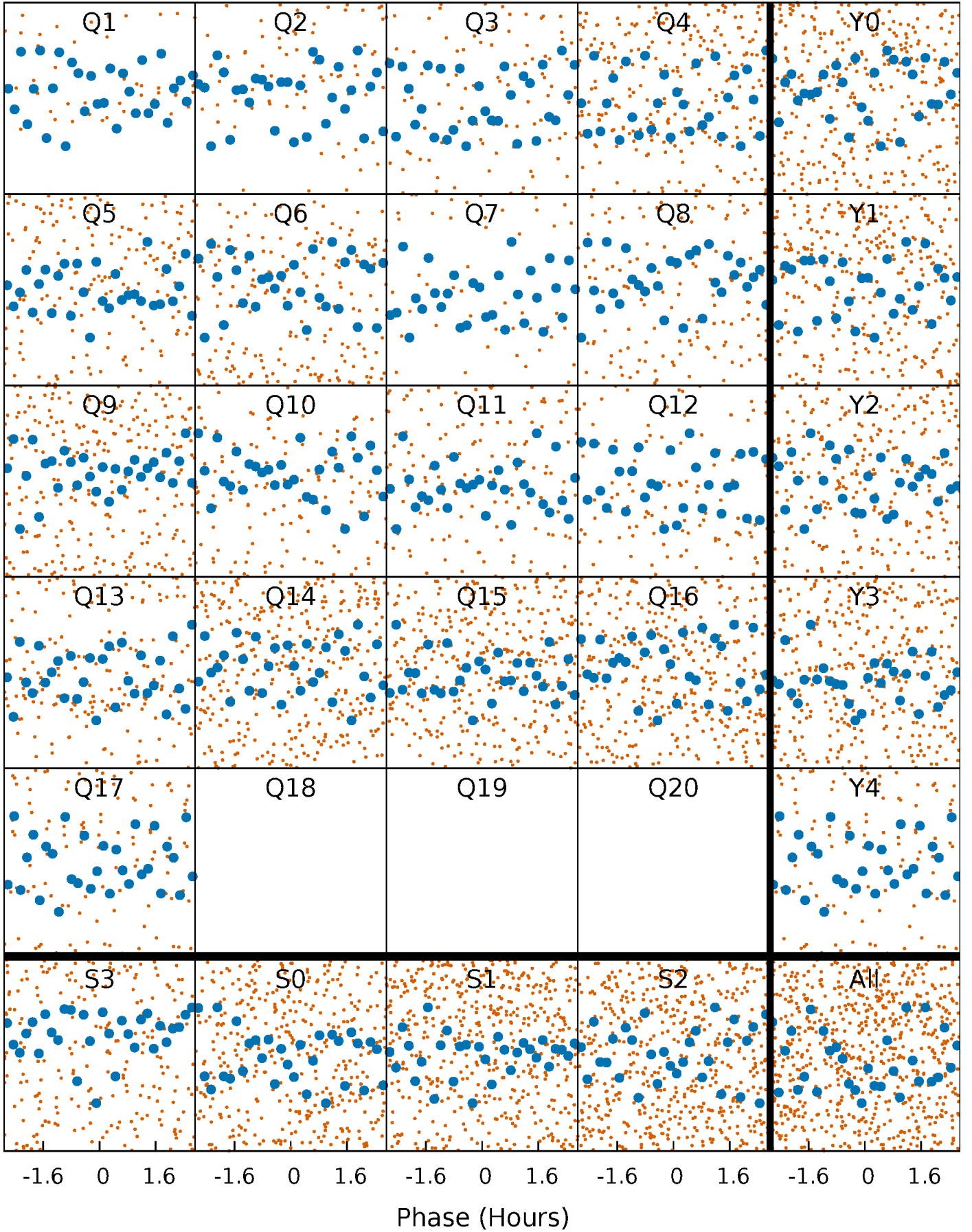


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

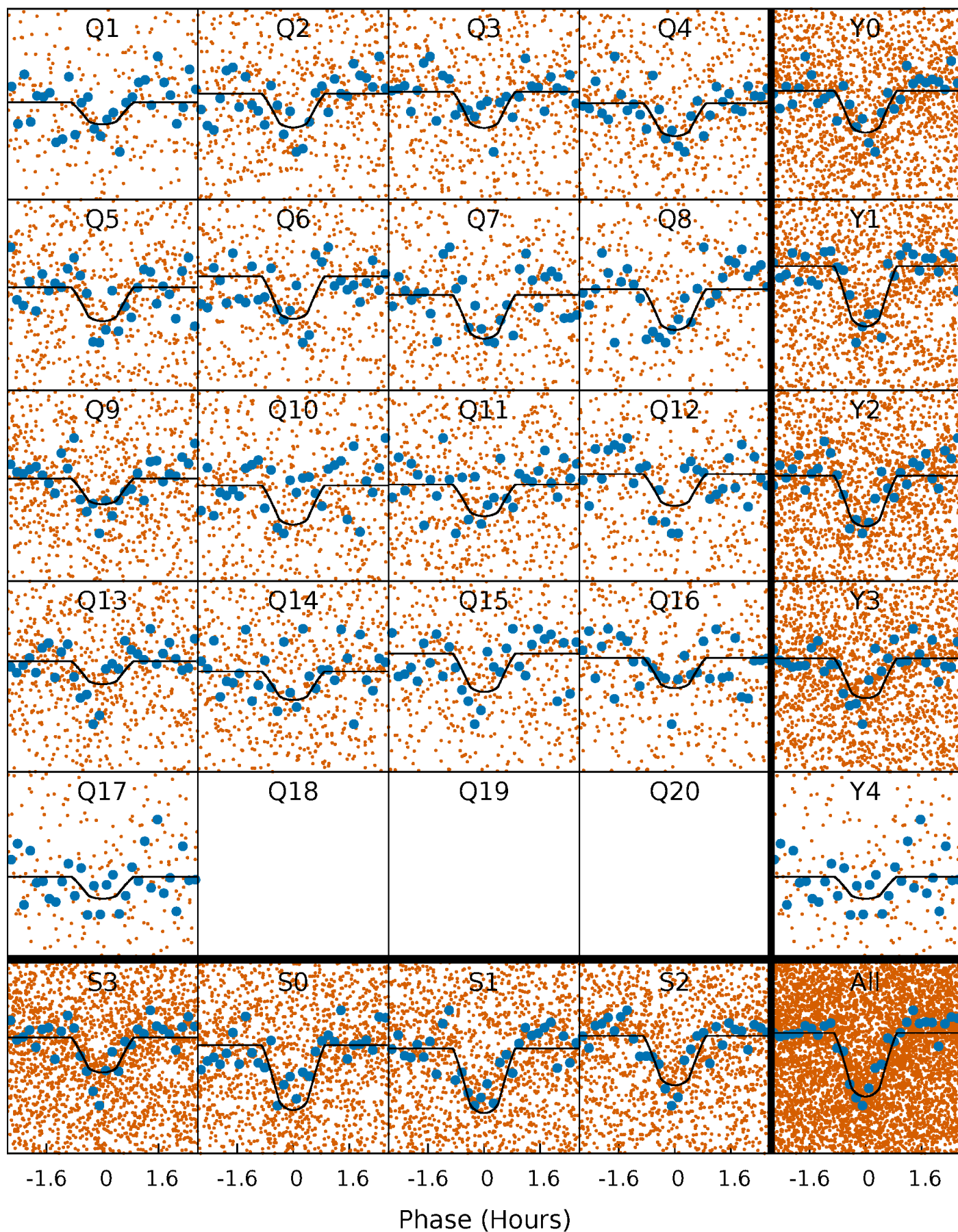
TCE 006938264-01 P= 1.121653 Days  $T_0=132.305016$  (BKJD)





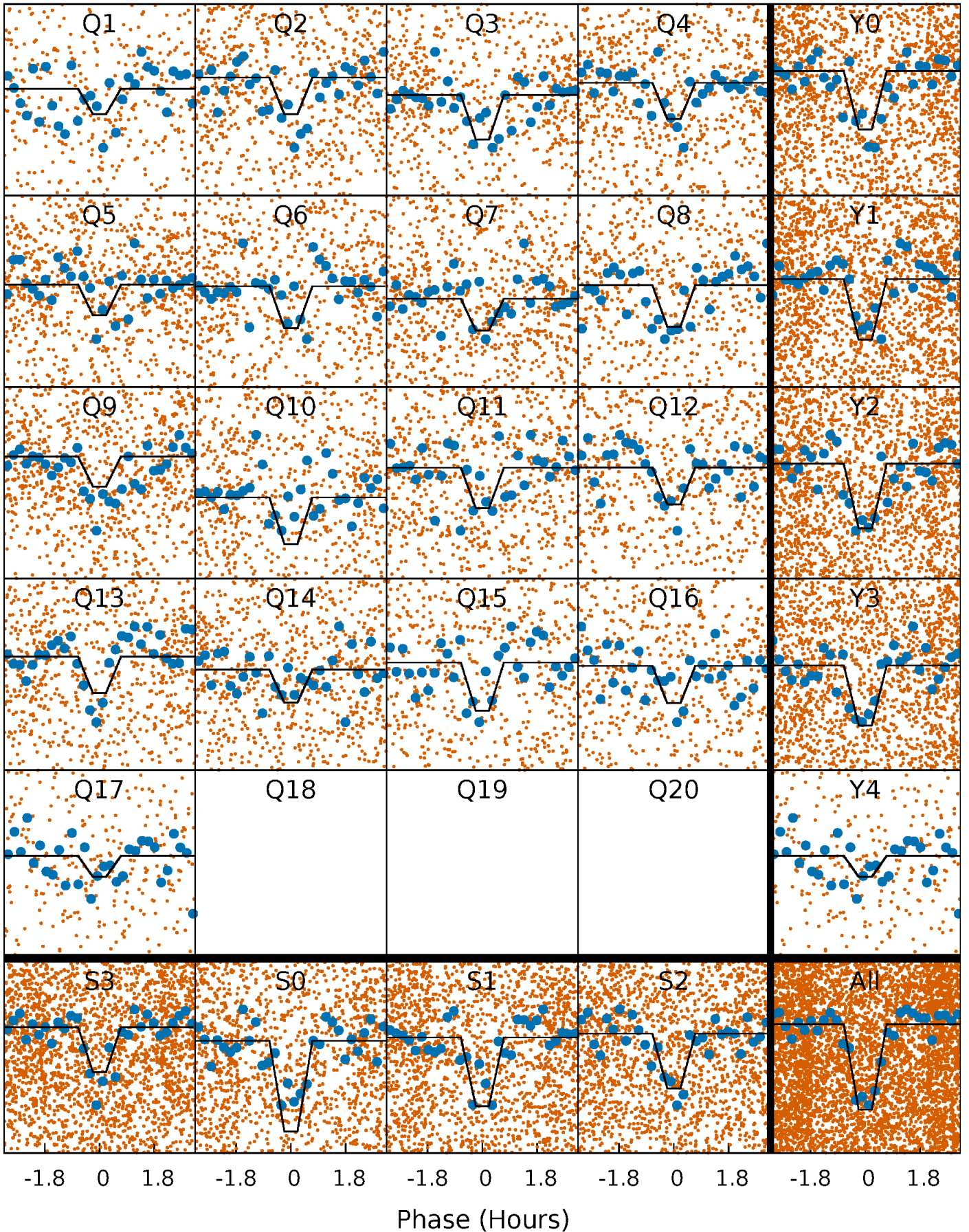
# DV Quarter-Phased Transit Curves

TCE 006938264-01 P= 1.121653 Days  $T_0=132.305016$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

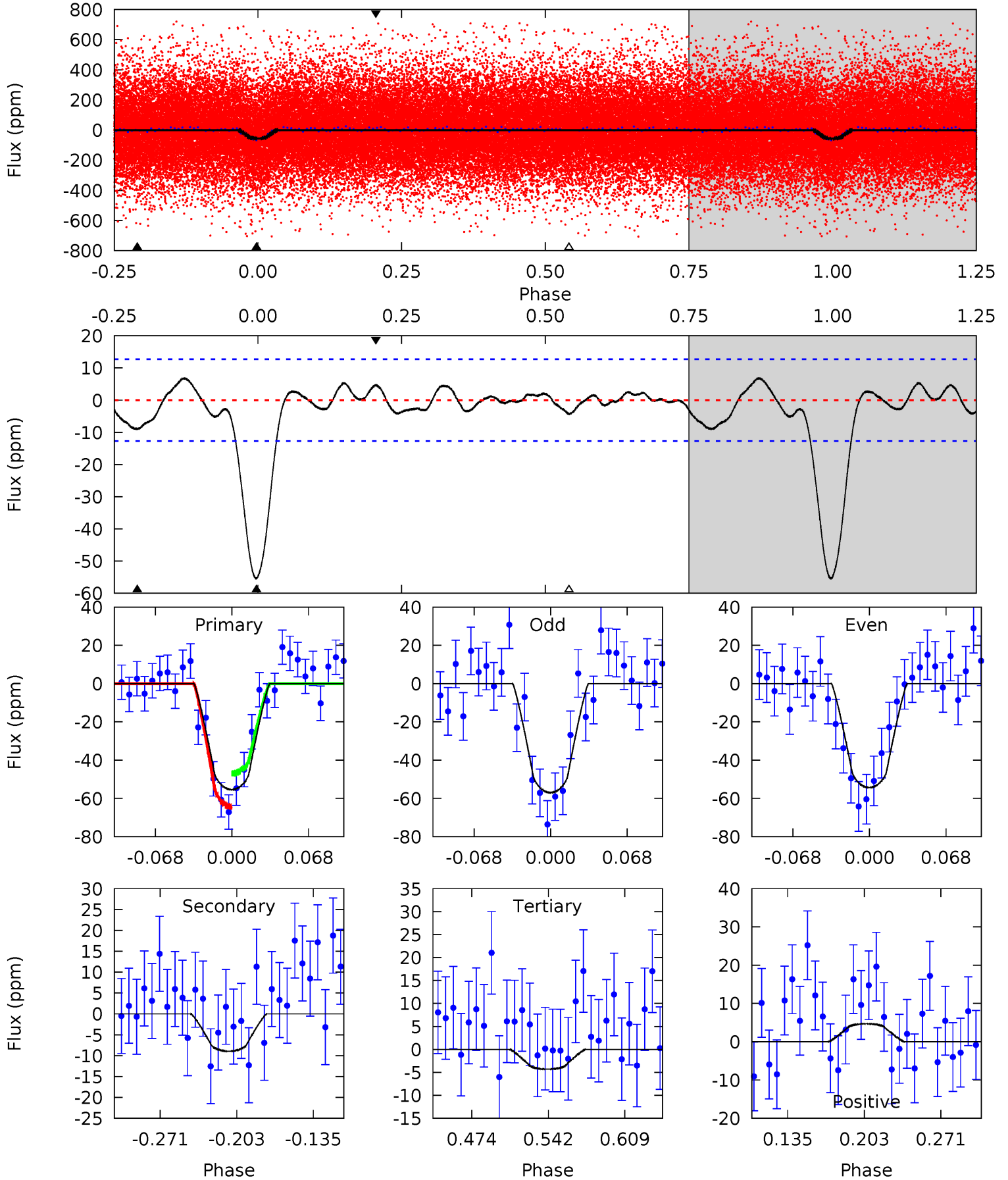
TCE 006938264-01 P= 1.121650 Days  $T_0=132.303110$  (BKJD)



# DV Model-Shift Uniqueness Test

006938264-01, P = 1.121653 Days, E = 131.183363 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
20.2	3.27	1.58	1.72	4.65	1.83	0.93	18.7	18.5	1.69	1.55	0.48	0.95	0.11	3.18

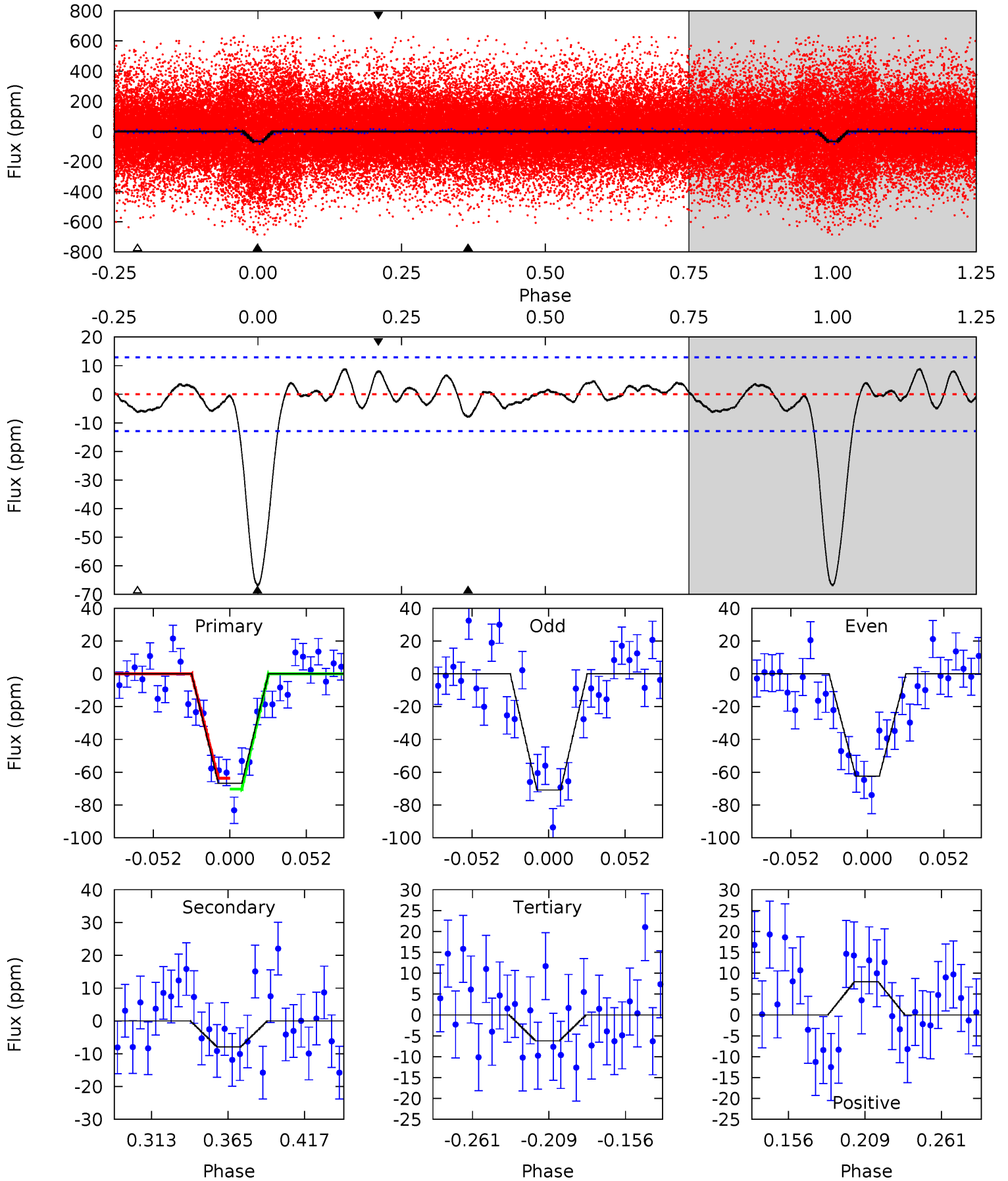




# Alt Model-Shift Uniqueness Test

006938264-01, P = 1.121650 Days, E = 131.181460 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
24.3	2.88	2.26	2.90	4.70	1.94	1.15	22.0	21.4	0.62	-0.01	1.54	1.07	0.12	1.20



### Stellar Parameters For KIC 006938264

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4518^{+143}_{-159}$	$4.589^{+0.042}_{-0.025}$	$0.220^{+0.200}_{-0.300}$	$0.720^{+0.036}_{-0.056}$	$0.735^{+0.044}_{-0.056}$	$2.771^{+0.544}_{-0.275}$
	+3%/-4%	+1%/-1%	+91%/-136%	+5%/-8%	+6%/-8%	+20%/-10%
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 006938264-01 / KOI 4180.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-9 \pm 3$	$0.72^{+0.38}_{-0.39}$	$1705^{+64}_{-65}$	$3068^{+926}_{-437}$	$3.474^{+13.450}_{-2.130}$
Alt.	$-8 \pm 3$	$0.66^{+0.40}_{-0.37}$	$1702^{+61}_{-63}$	$3071^{+909}_{-458}$	$3.519^{+14.732}_{-2.224}$

$T_{\text{max}}$  = 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

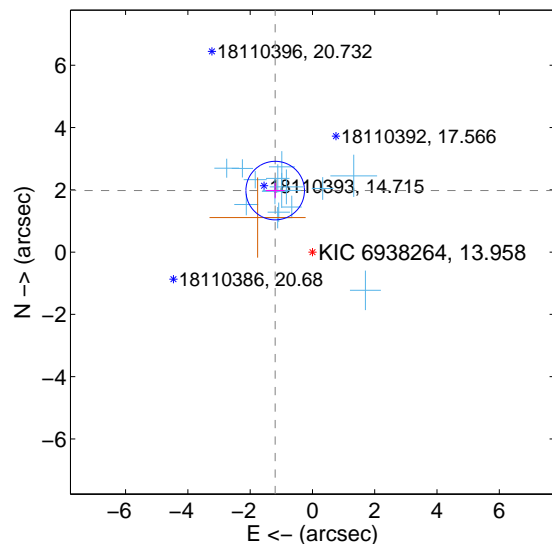
Supplemental centroid analysis for 006938264-01. Kepler magnitude: 13.96. Transit SNR 13.90

There are 15 quarters with good PRF difference image offsets

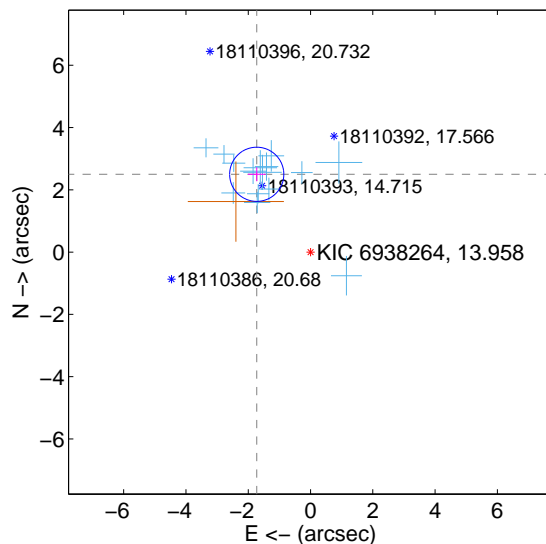
The direct PRF centroid is offset from the target star catalog position by about 0.82 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.309 \pm 0.313$	$7.37$	$1.196 \pm 0.298$	$1.975 \pm 0.247$
PRF-fit source offset from KIC position	$3.037 \pm 0.290$	$10.48$	$1.727 \pm 0.284$	$2.498 \pm 0.224$
photometric centroid source offset	$3.99 \pm 0.83$	$4.83$	$2.66 \pm 0.84$	$2.98 \pm 0.82$

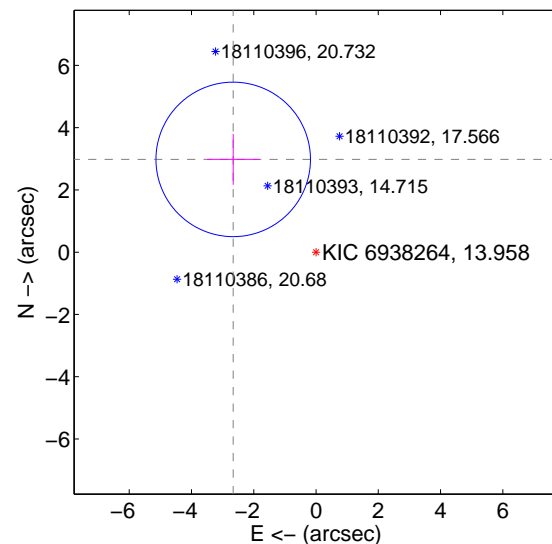
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

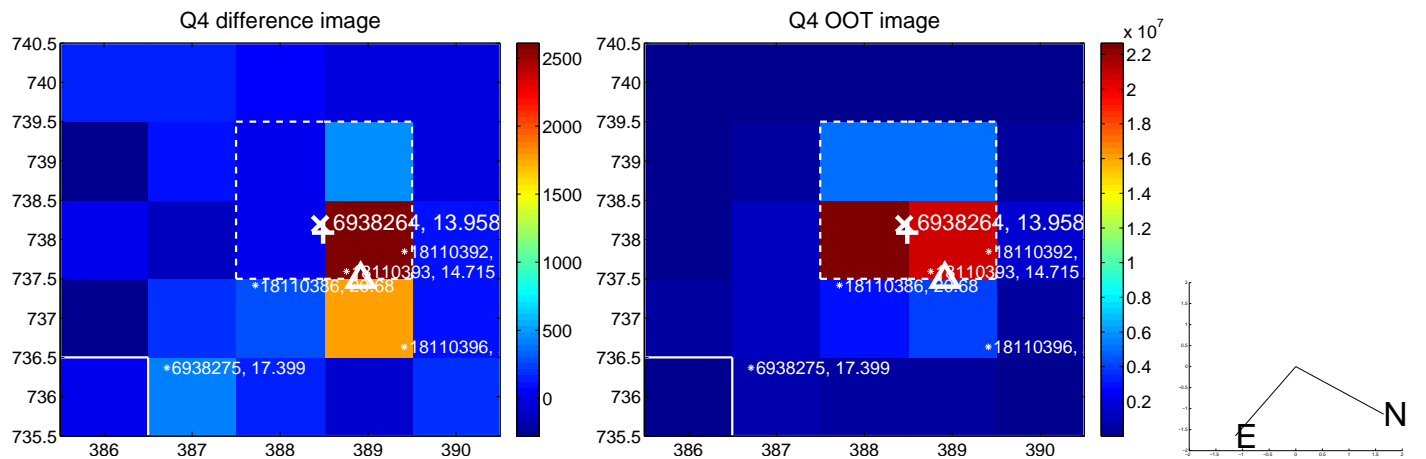
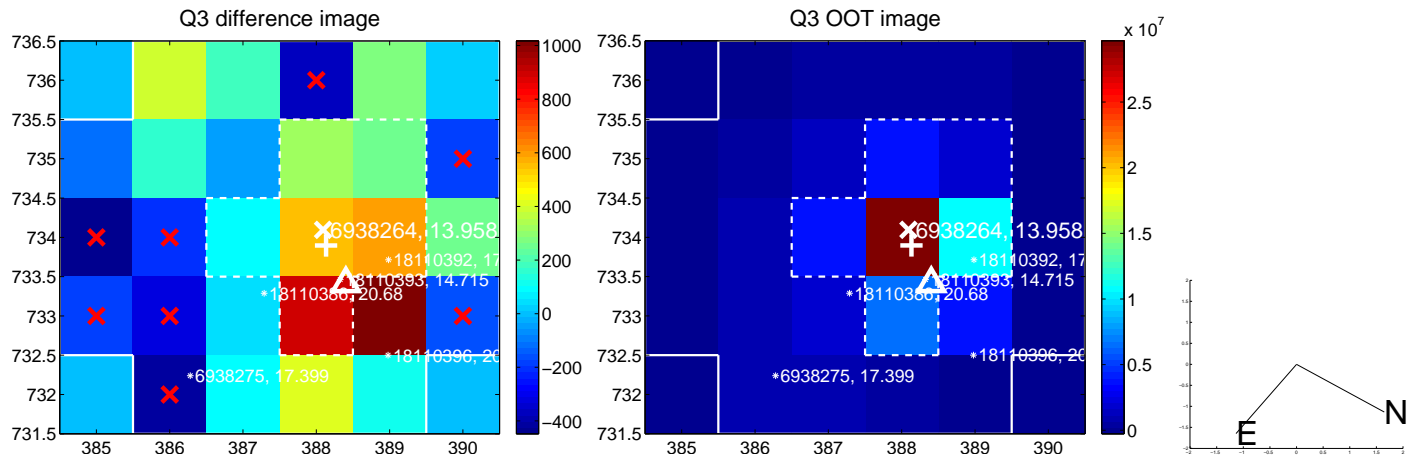
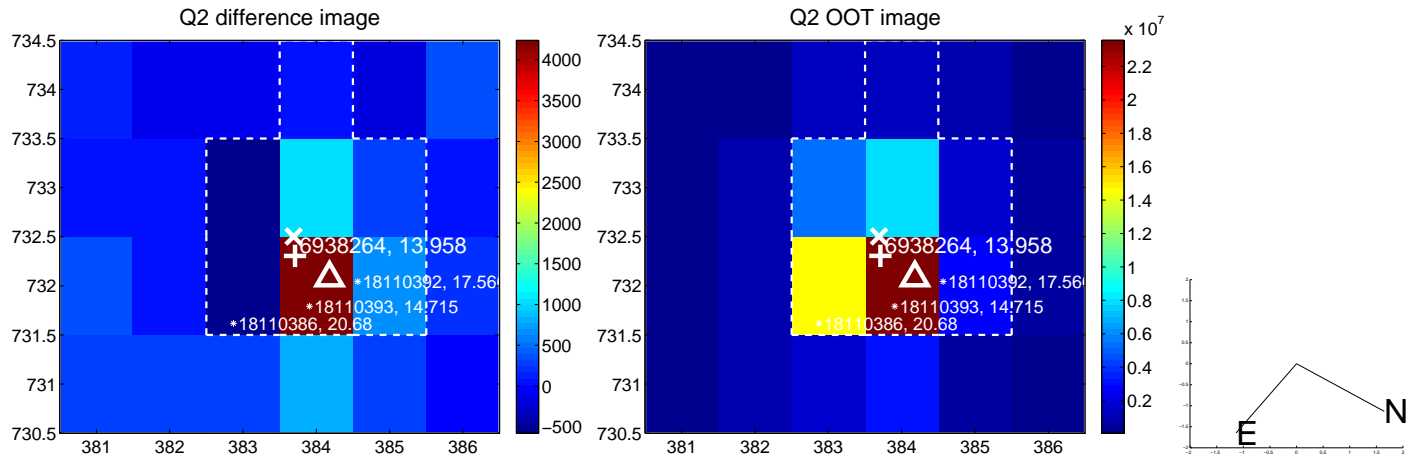
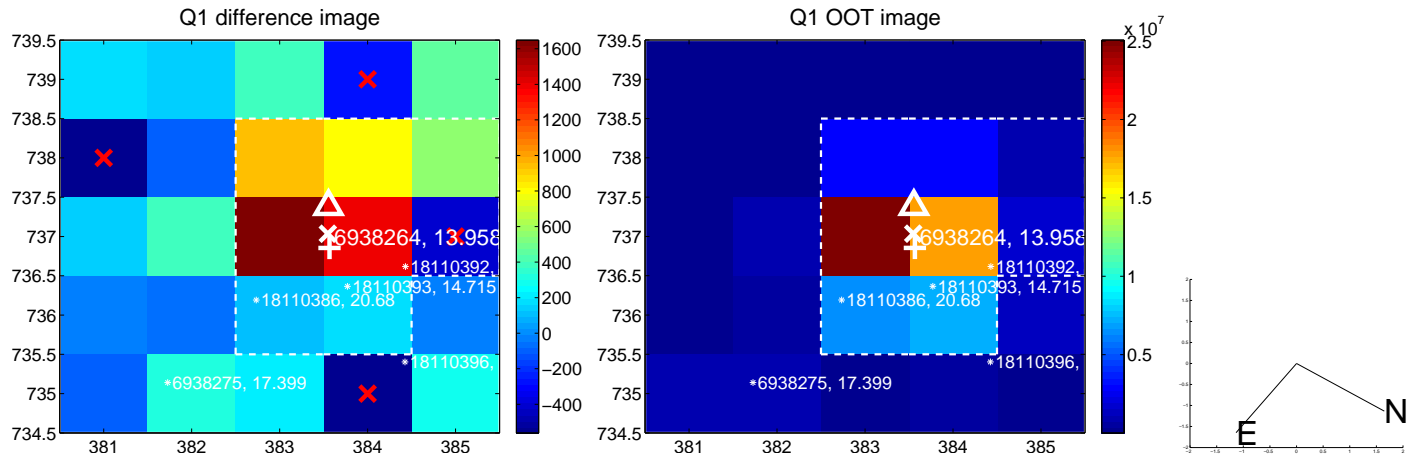


offset from photometric centroids

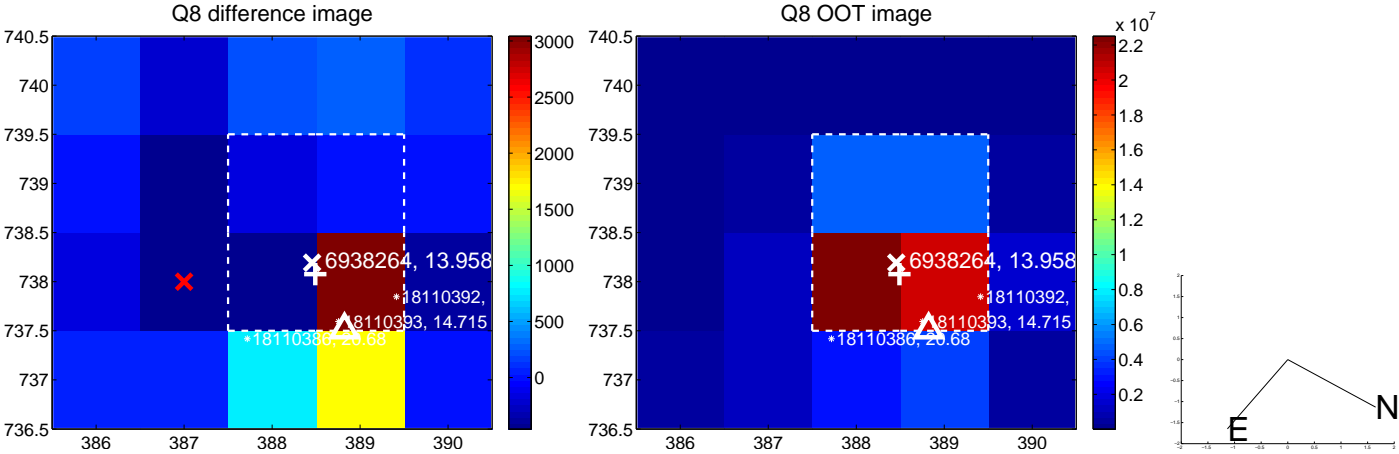
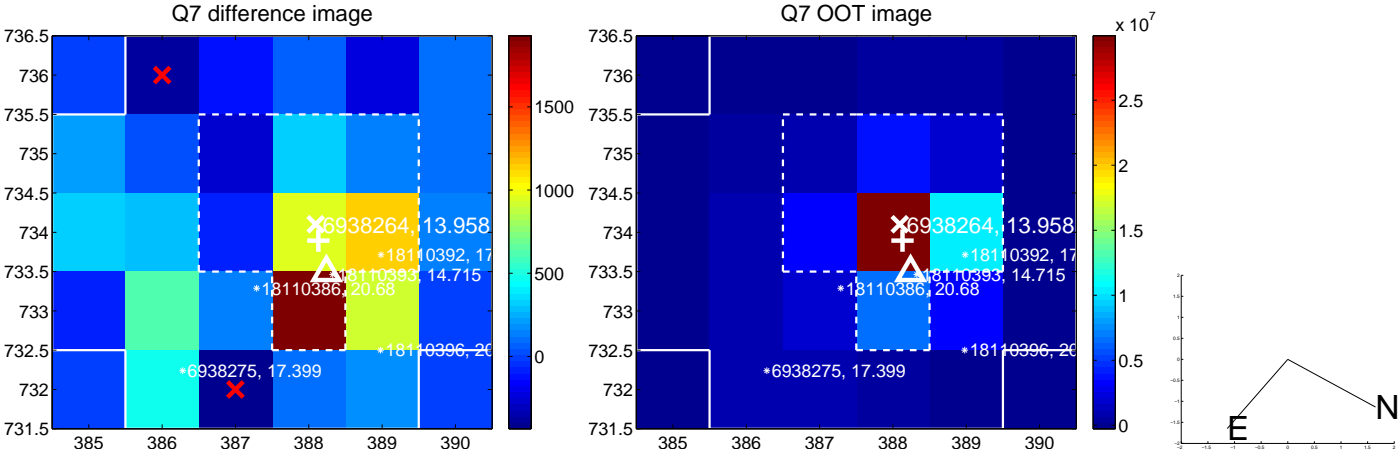
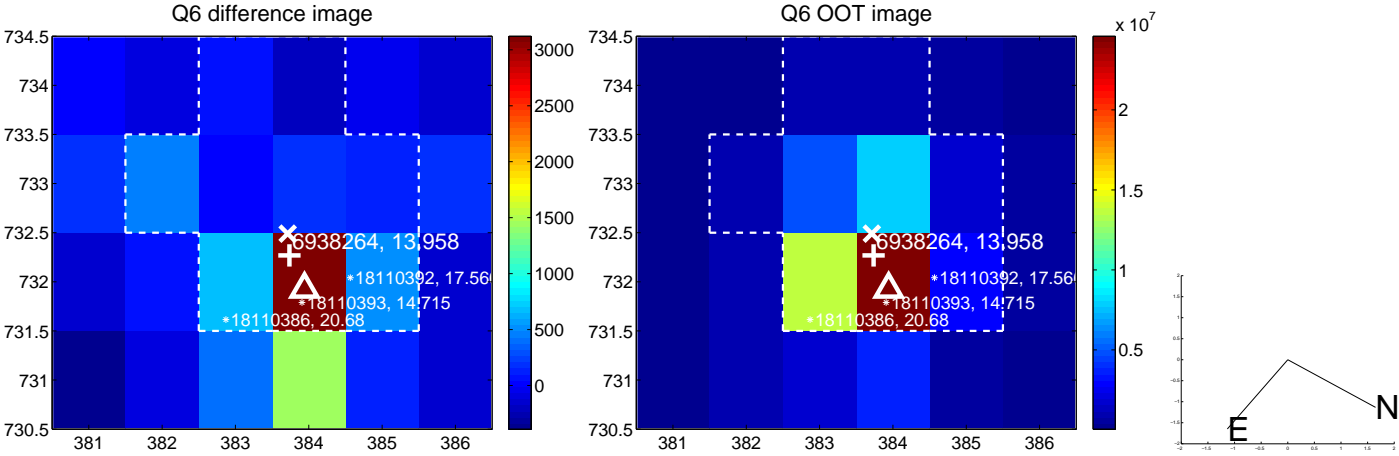
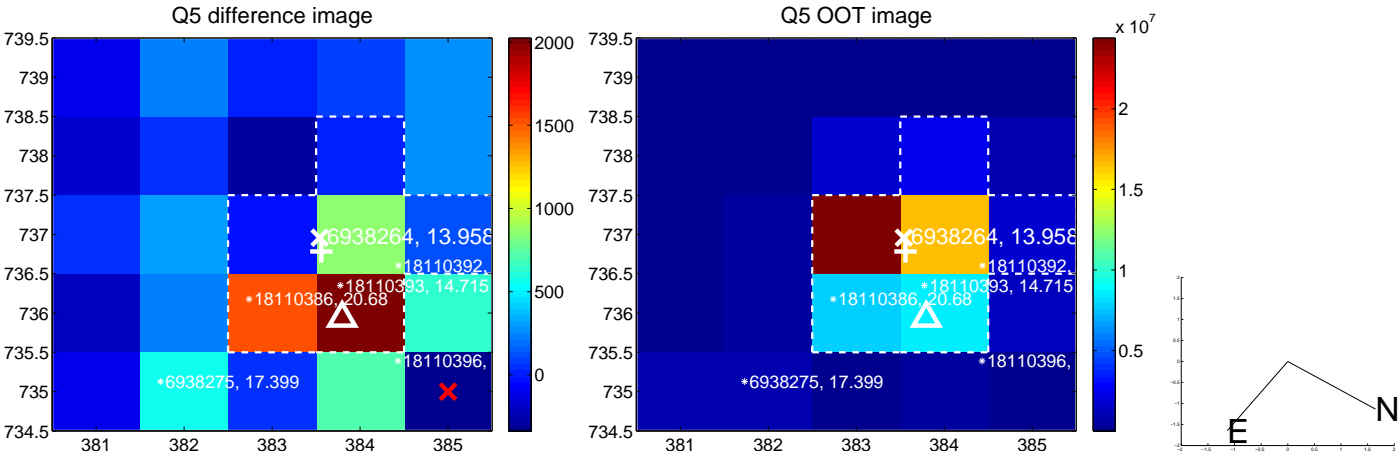


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

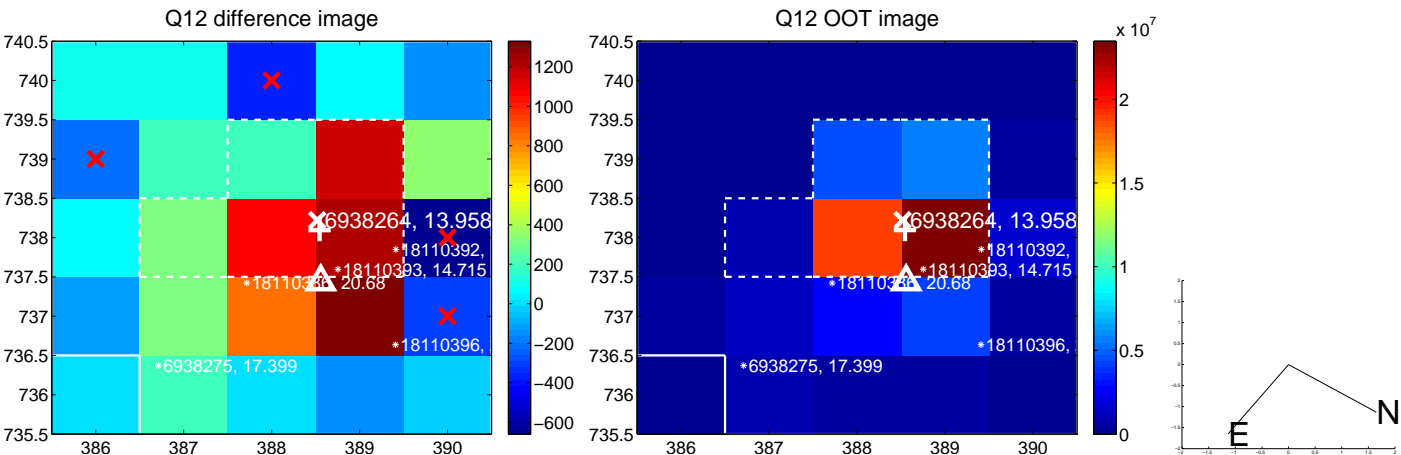
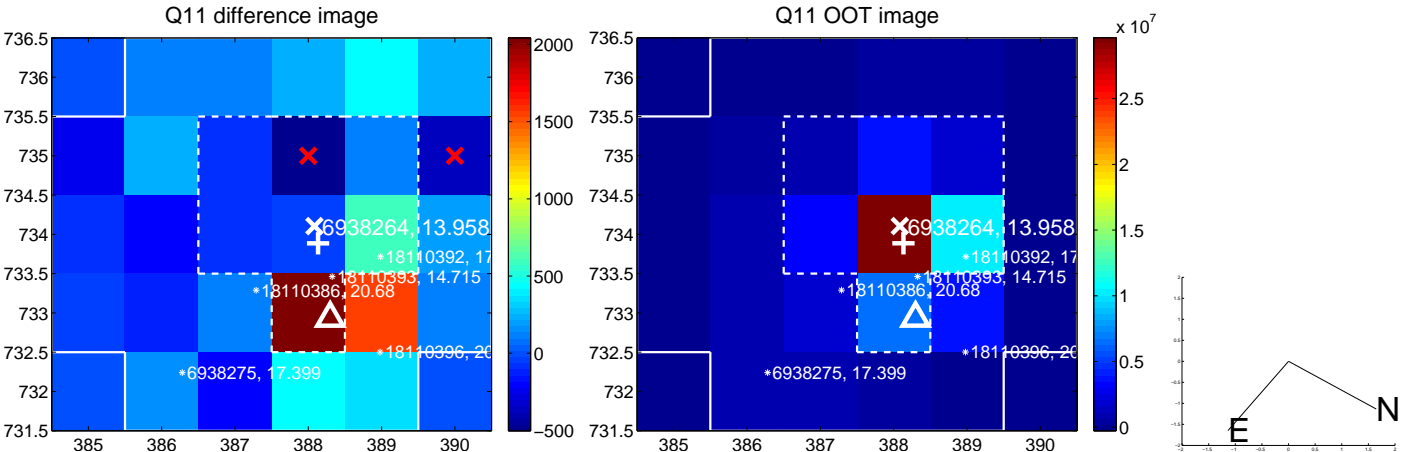
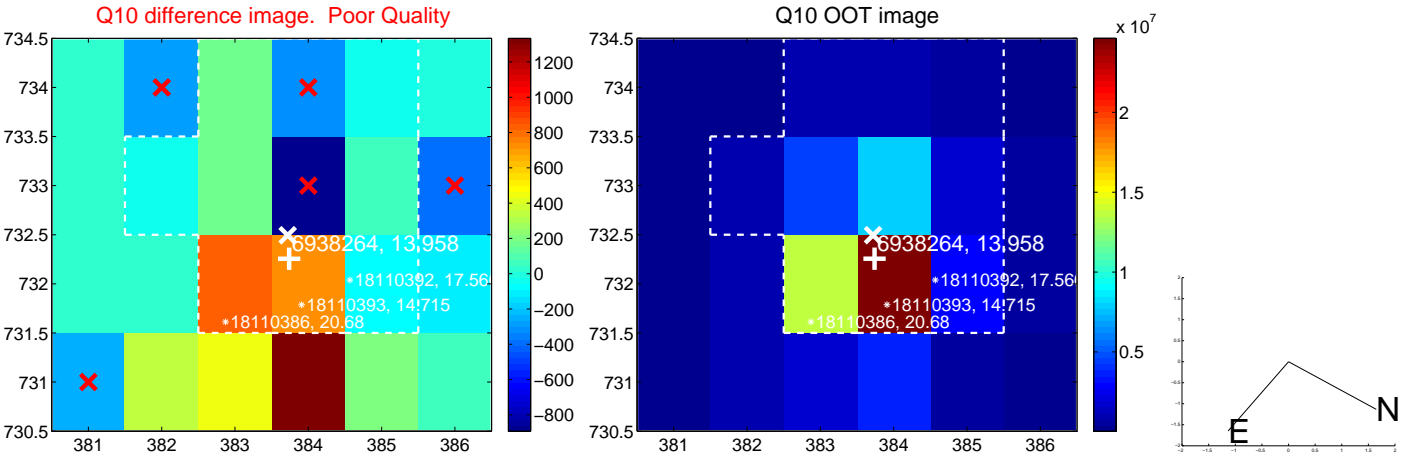
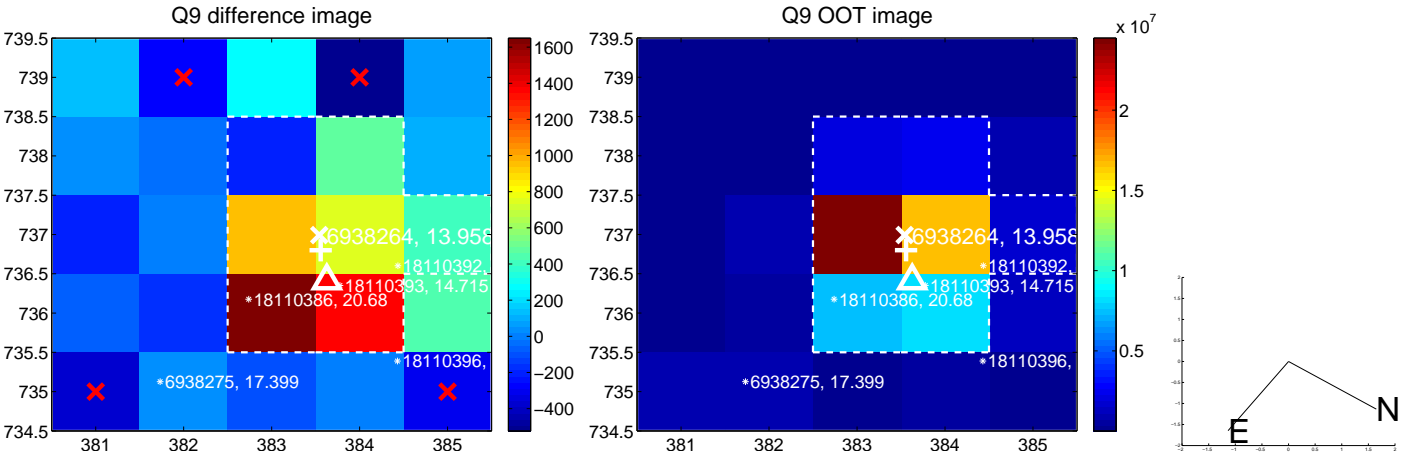
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



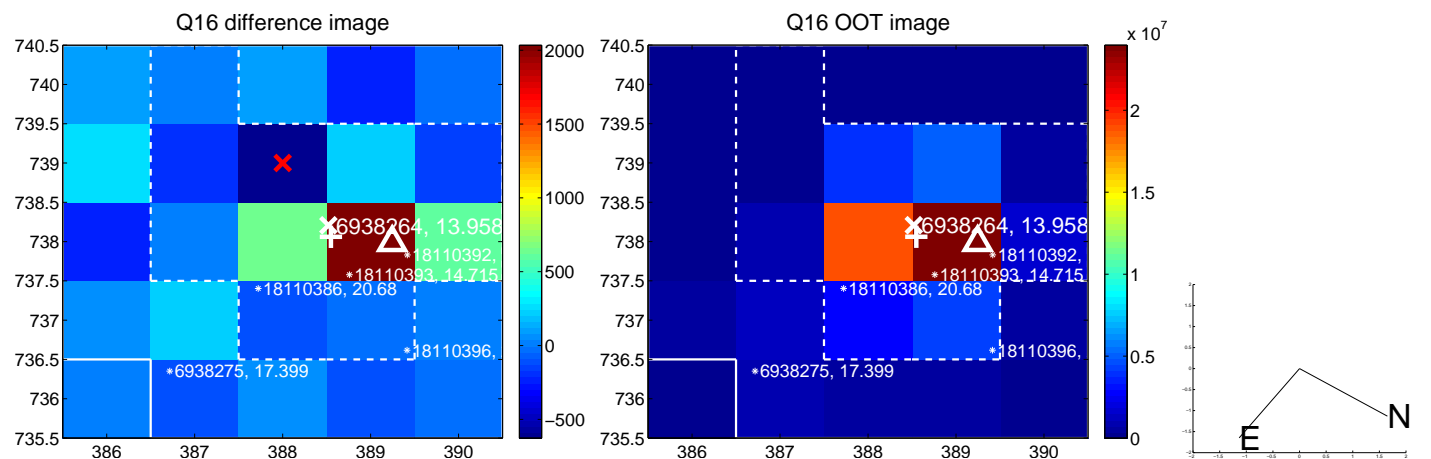
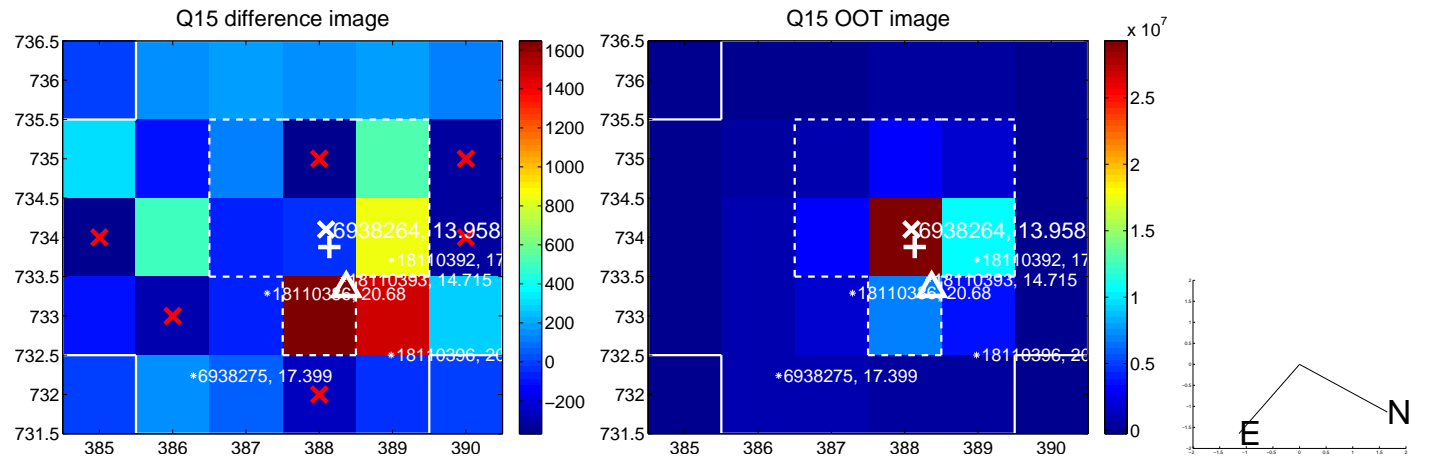
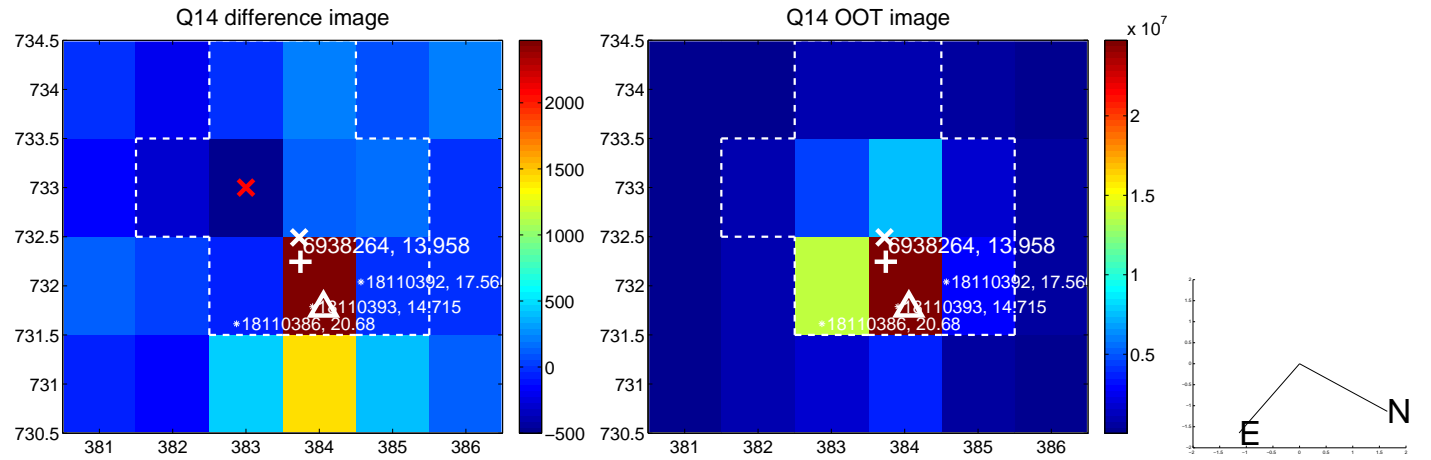
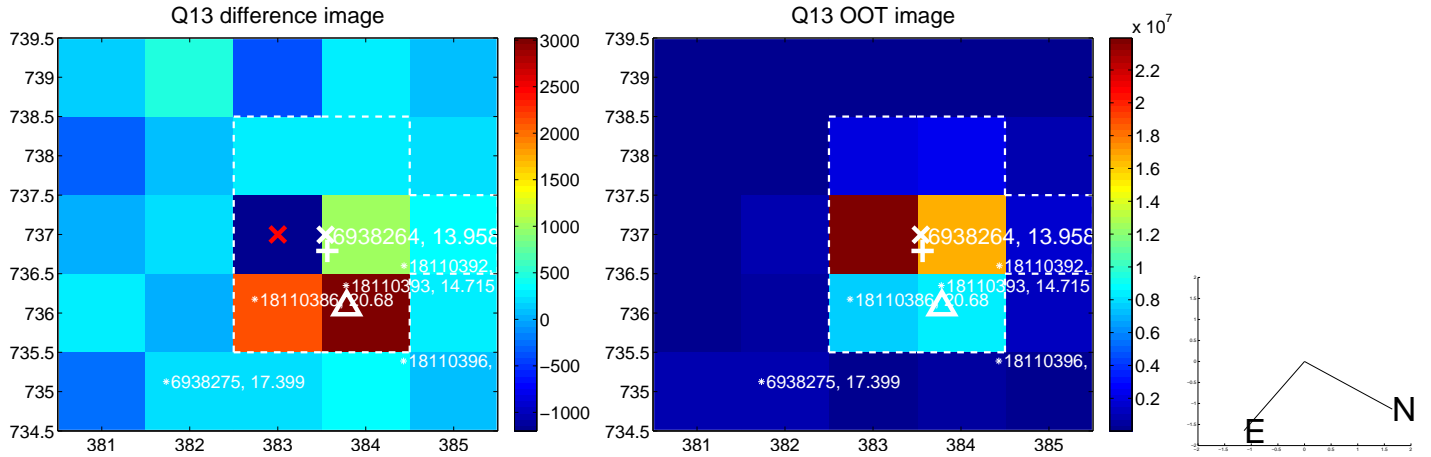
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

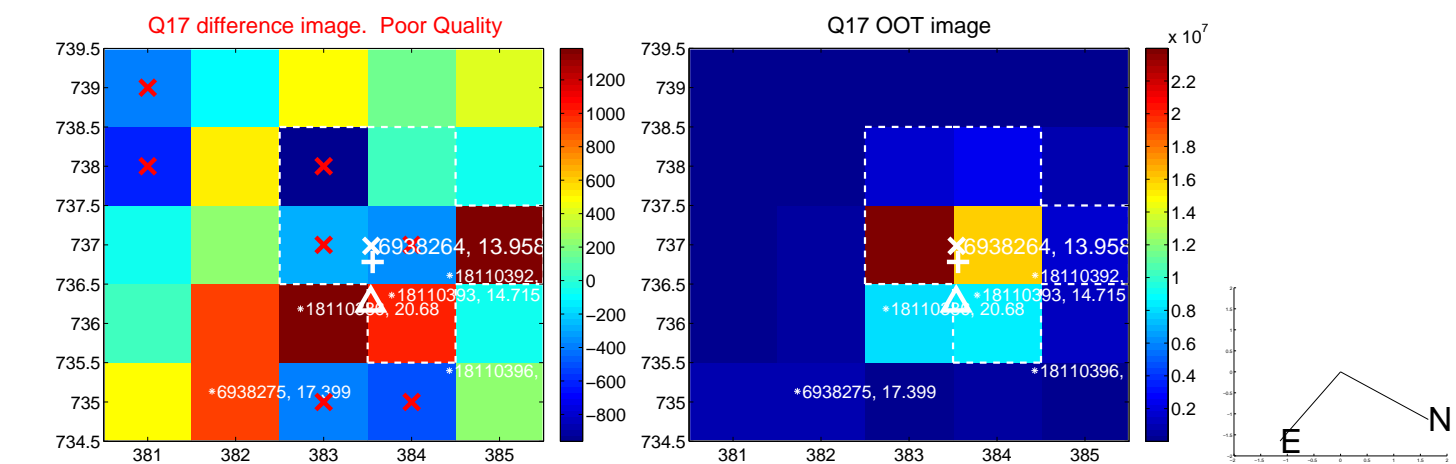


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

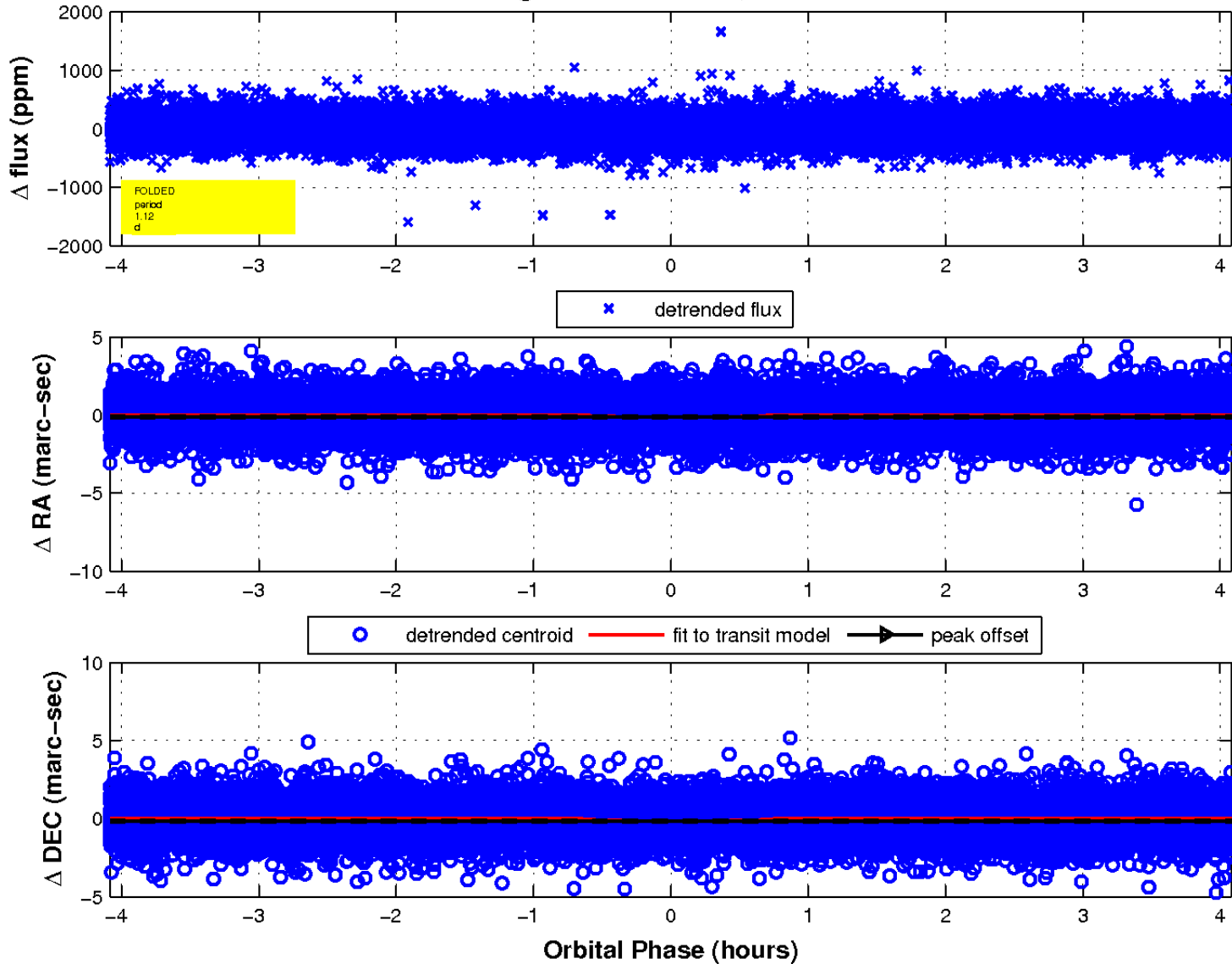




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

