

# KIC 006786224

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006786224-01	OBS	4850.01	3.041894	132.497274	63.1	1.508	9.1	10.1	0.86	5802	0.81	465.94

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006786224-01	OBS	PC	1.00	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.

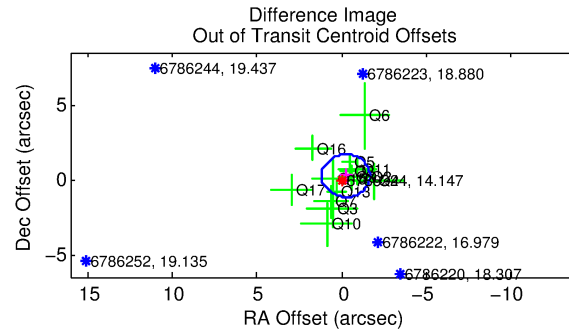
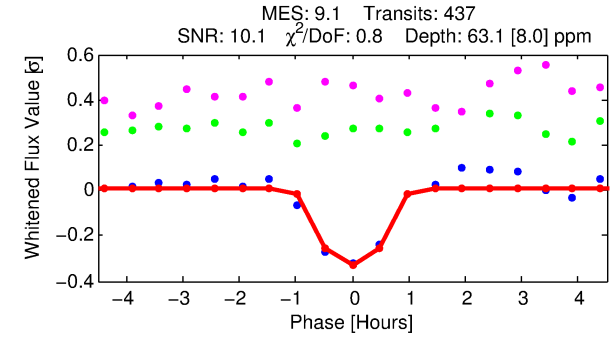
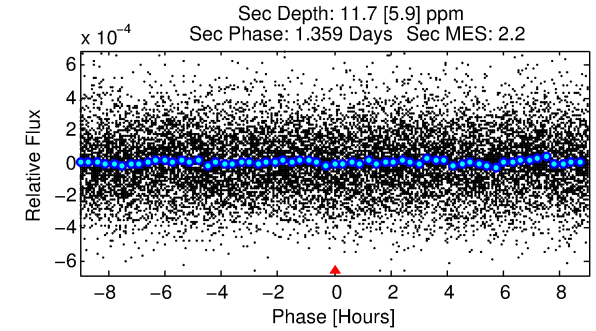
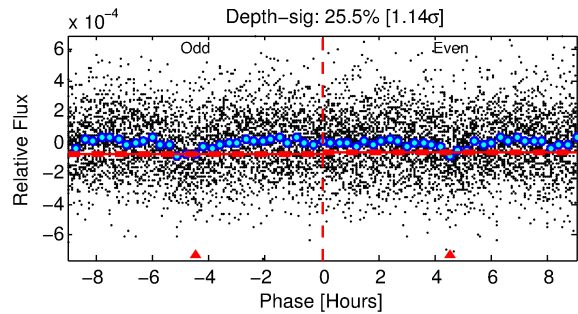
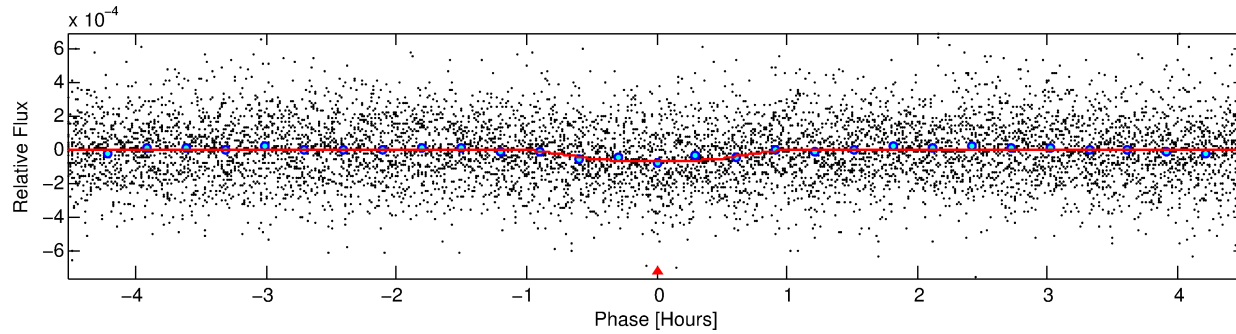
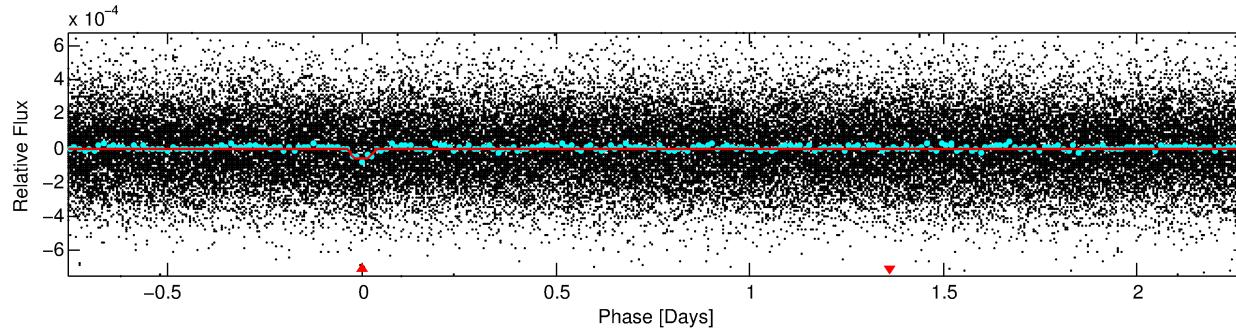
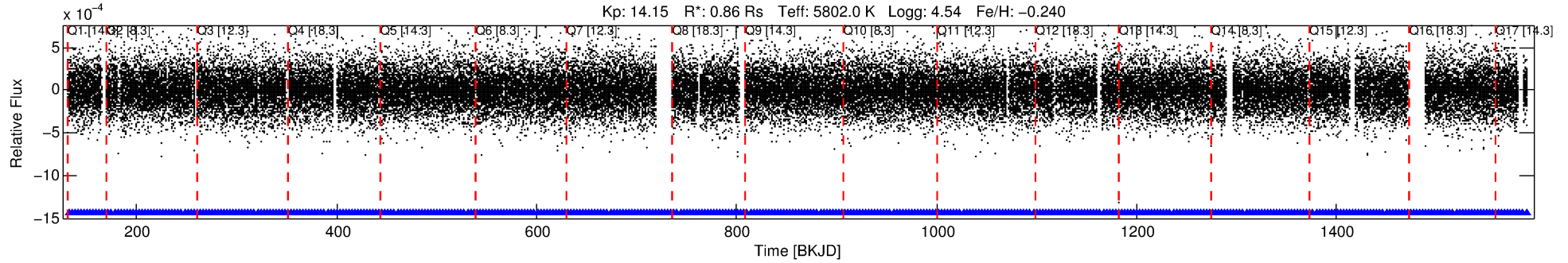
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006786224-01

No Significant Match Found

# DV One-Page Summary

KIC: 6786224 Candidate: 1 of 1 Period: 3.042 d  
KOI: K04850.01 Corr: 0.909



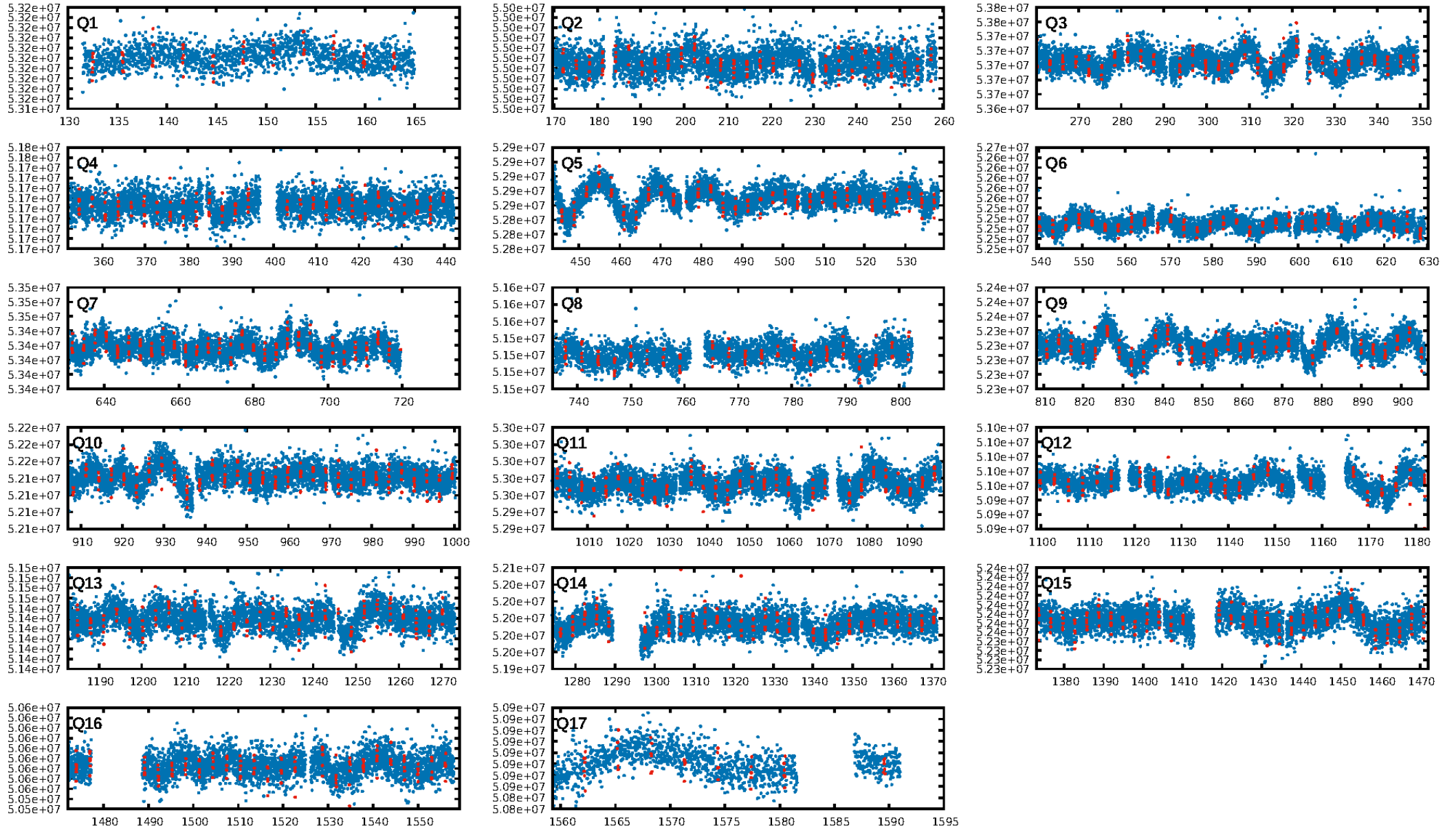
## DV Fit Results:

Period = 3.04189 [0.00002] d  
Epoch = 132.4973 [0.0028] BKJD  
Rp/R\* = 0.0087 [0.0057]  
a/R\* = 6.90 [22.17]  
b = 0.91 [0.67]  
Seff = 465.94 [172.38]  
Teq = 1185 [110] K  
Rp = 0.81 [0.59] Re  
a = 0.0400 [0.0098] AU  
Ag = 15.53 [22.60] [0.64σ]  
Teffp = 3636 [1287] K [1.90σ]

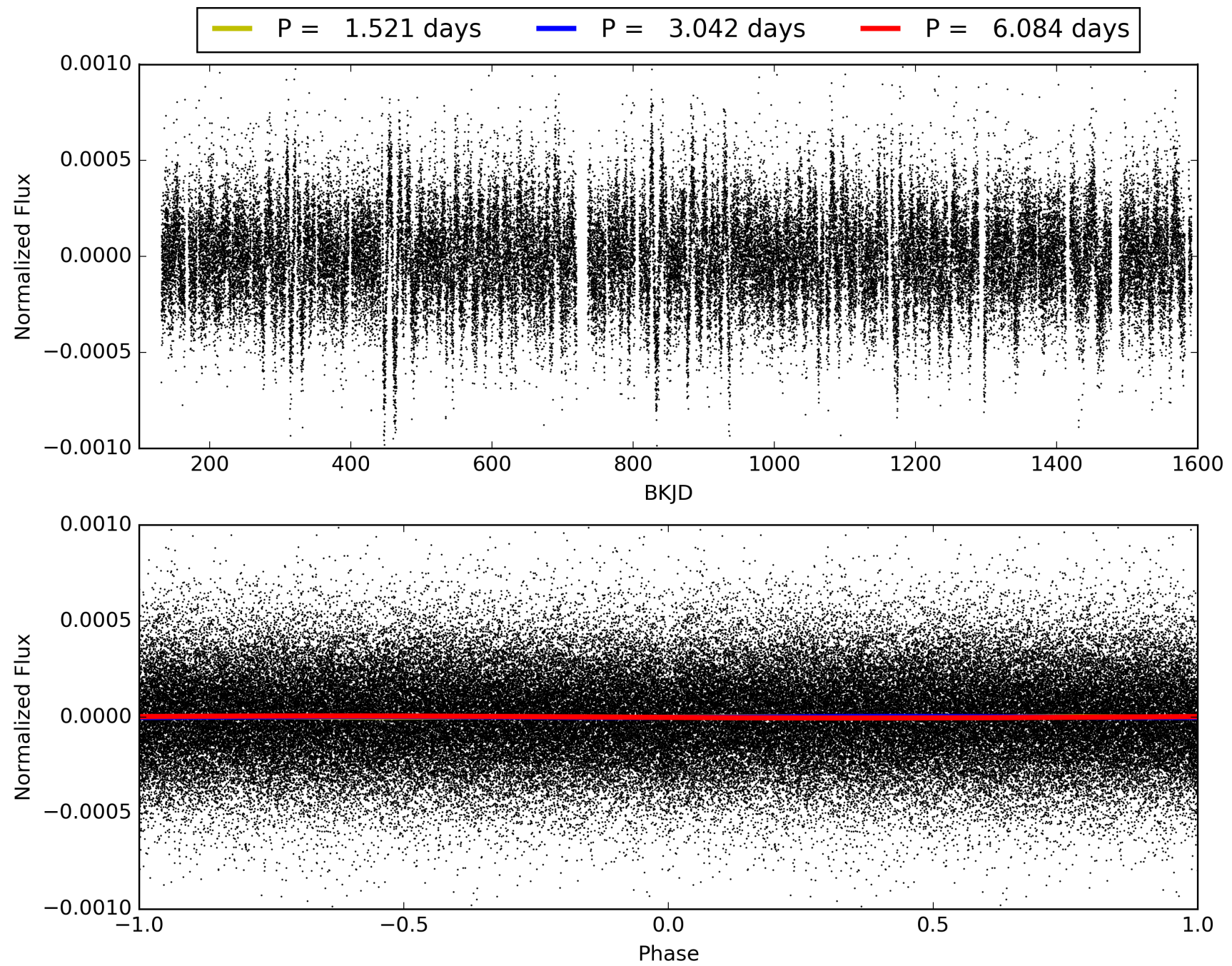
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.10e-48  
RollingBand-fgt: 1.00 [418/418]  
GhostDiagnostic-chr: 8.542  
Centroid-sig: 24.9%  
Centroid-so: 1.556 arcsec [1.25σ]  
OotOffset-rm: 0.360 arcsec [0.76σ]  
KicOffset-rm: 0.287 arcsec [0.60σ]  
OotOffset-st: 3/4/3/4 [14]  
KicOffset-st: 3/4/3/4 [14]  
DiffImageQuality-fgm: 0.43 [6/14]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 006786224-01, PDC Light Curves



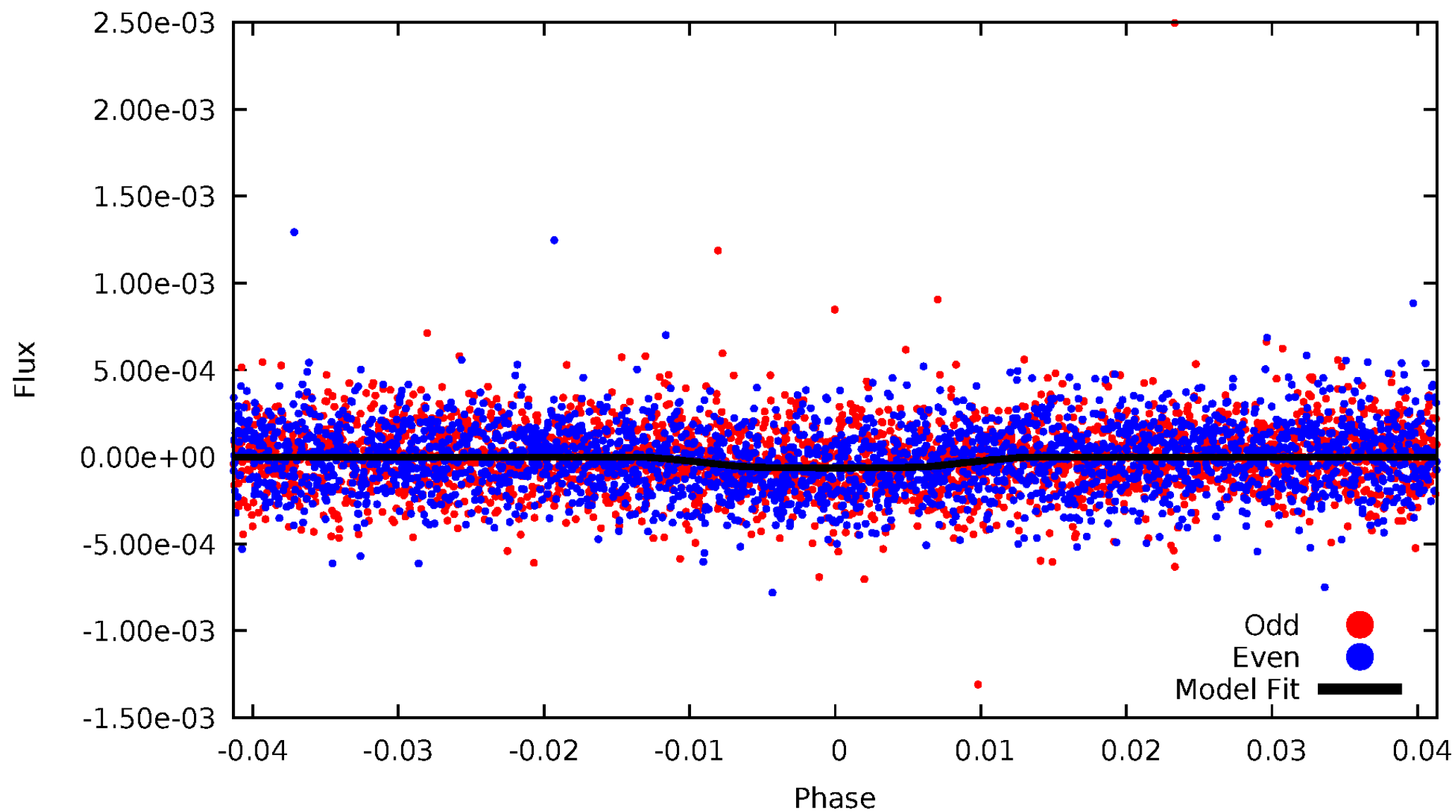
TCE 006786224-01





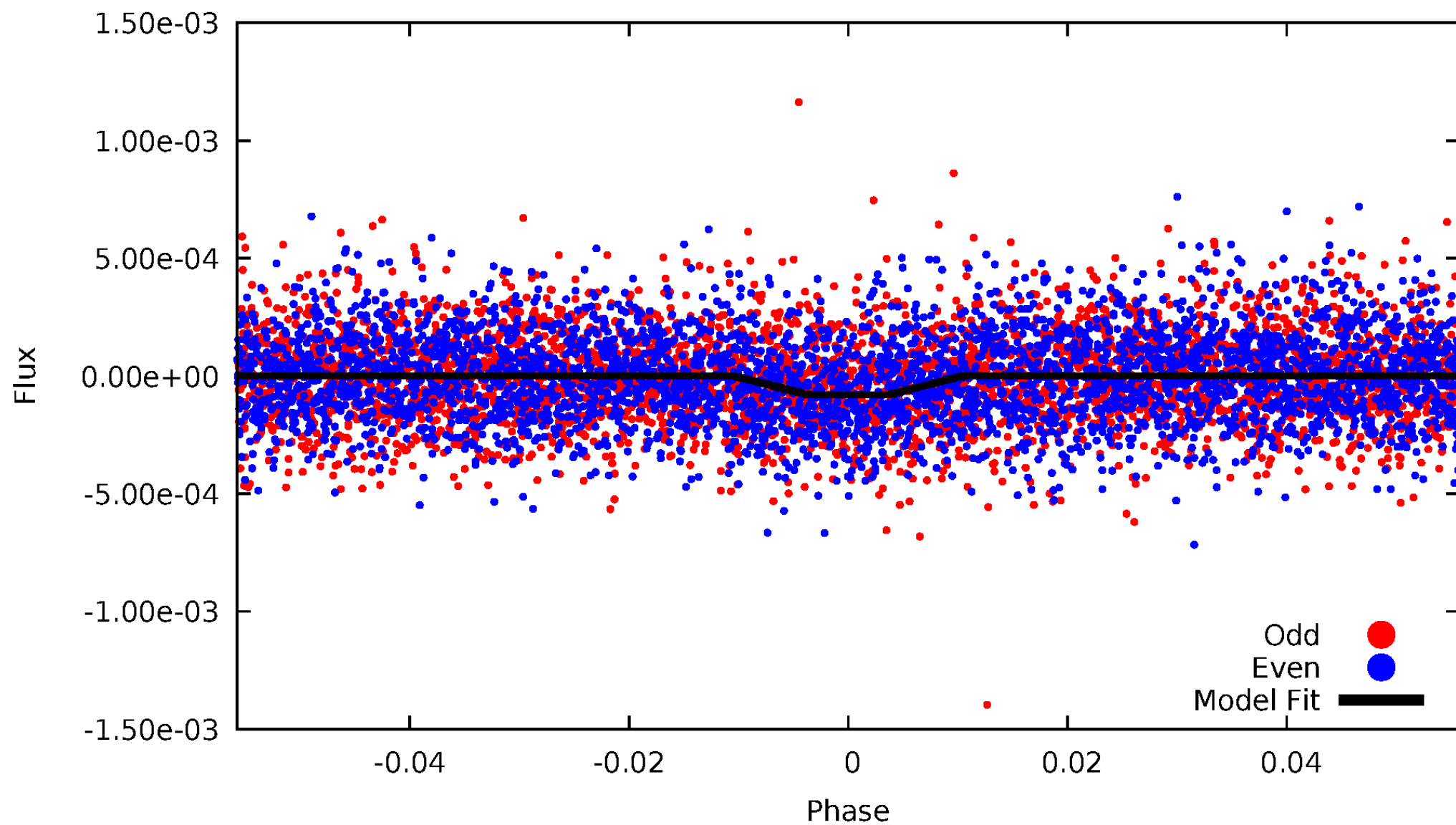
# DV Odd/Even

TCE 006786224-01



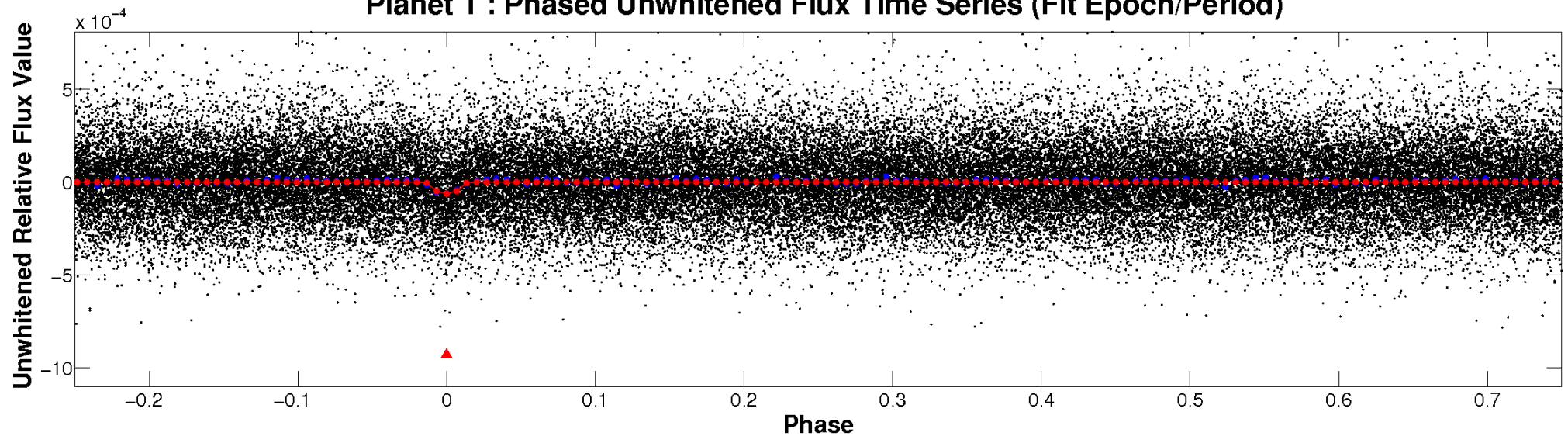
# ALT Odd/Even

TCE 006786224-01

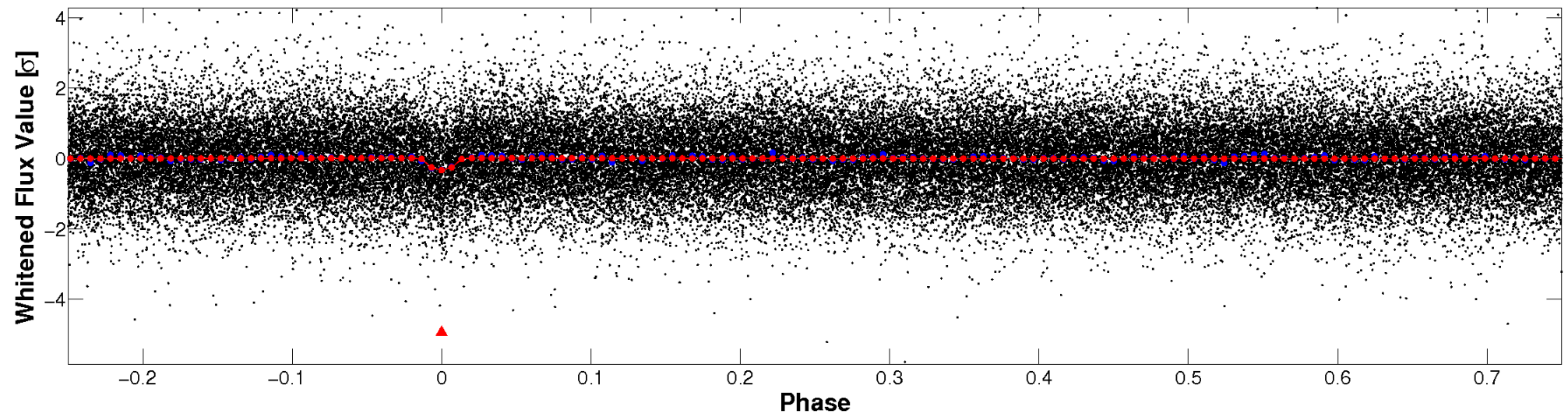


# Non-Whitened Vs. Whitened Light Curve

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

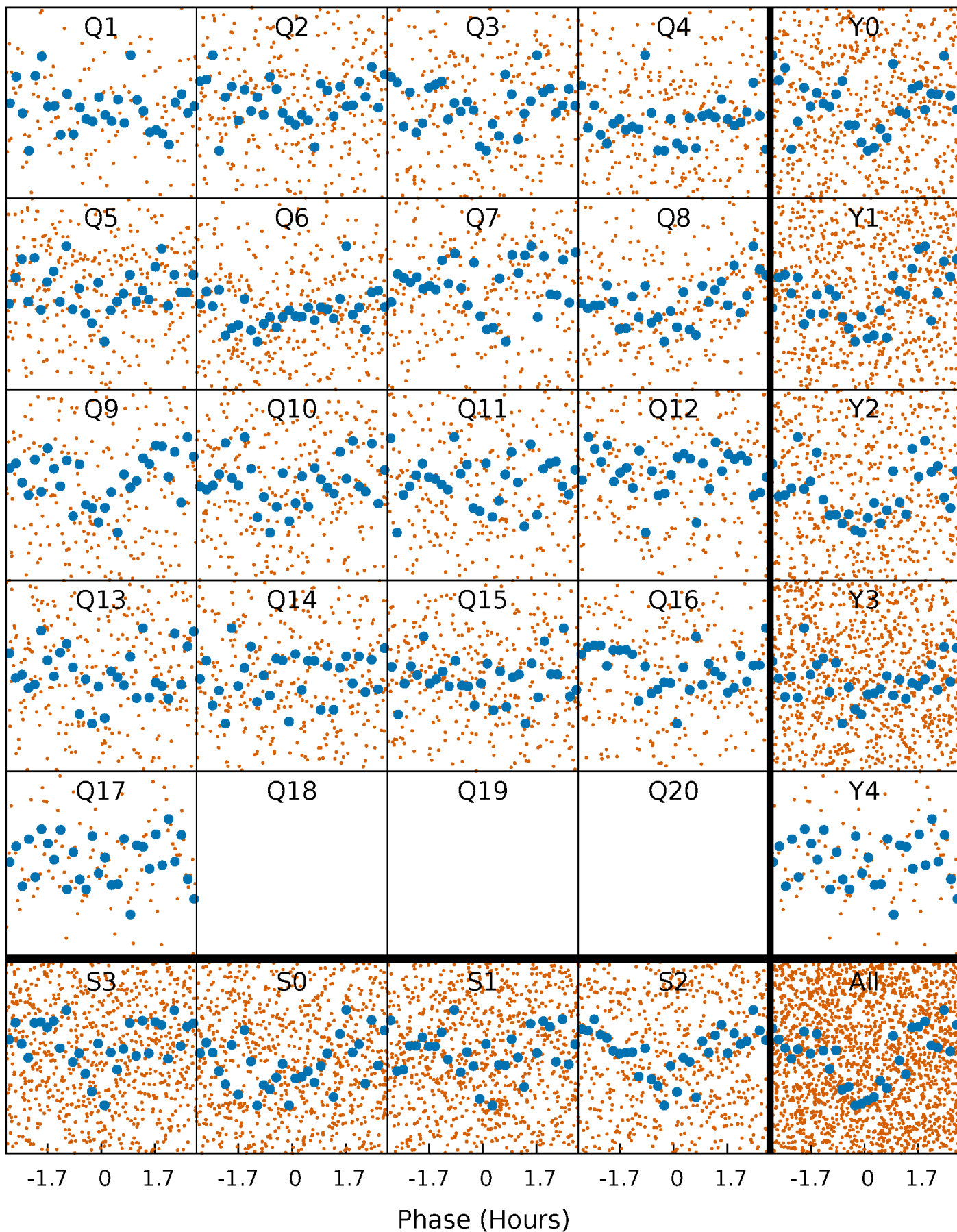


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

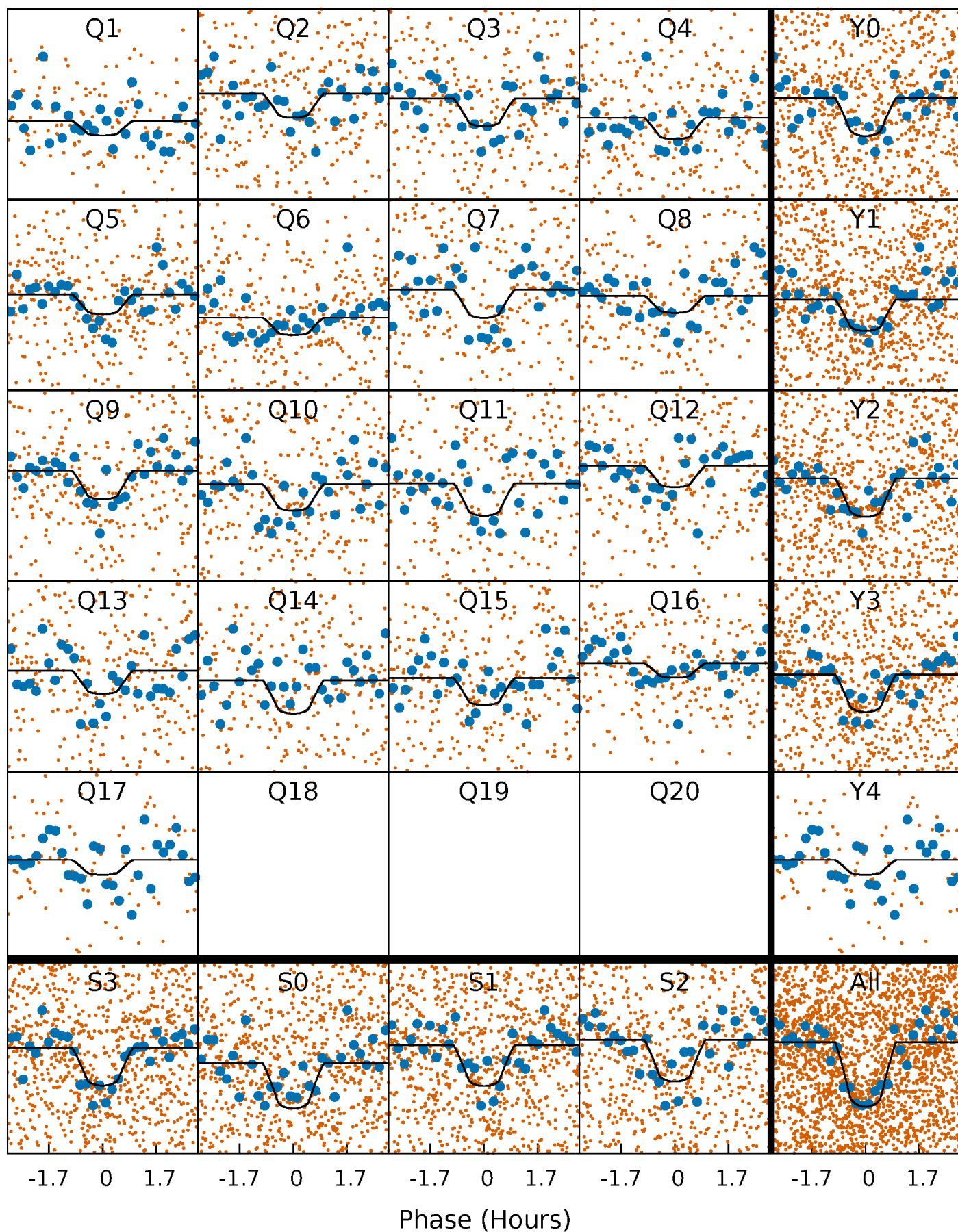
TCE 006786224-01 P= 3.041894 Days  $T_0=132.497274$  (BKJD)





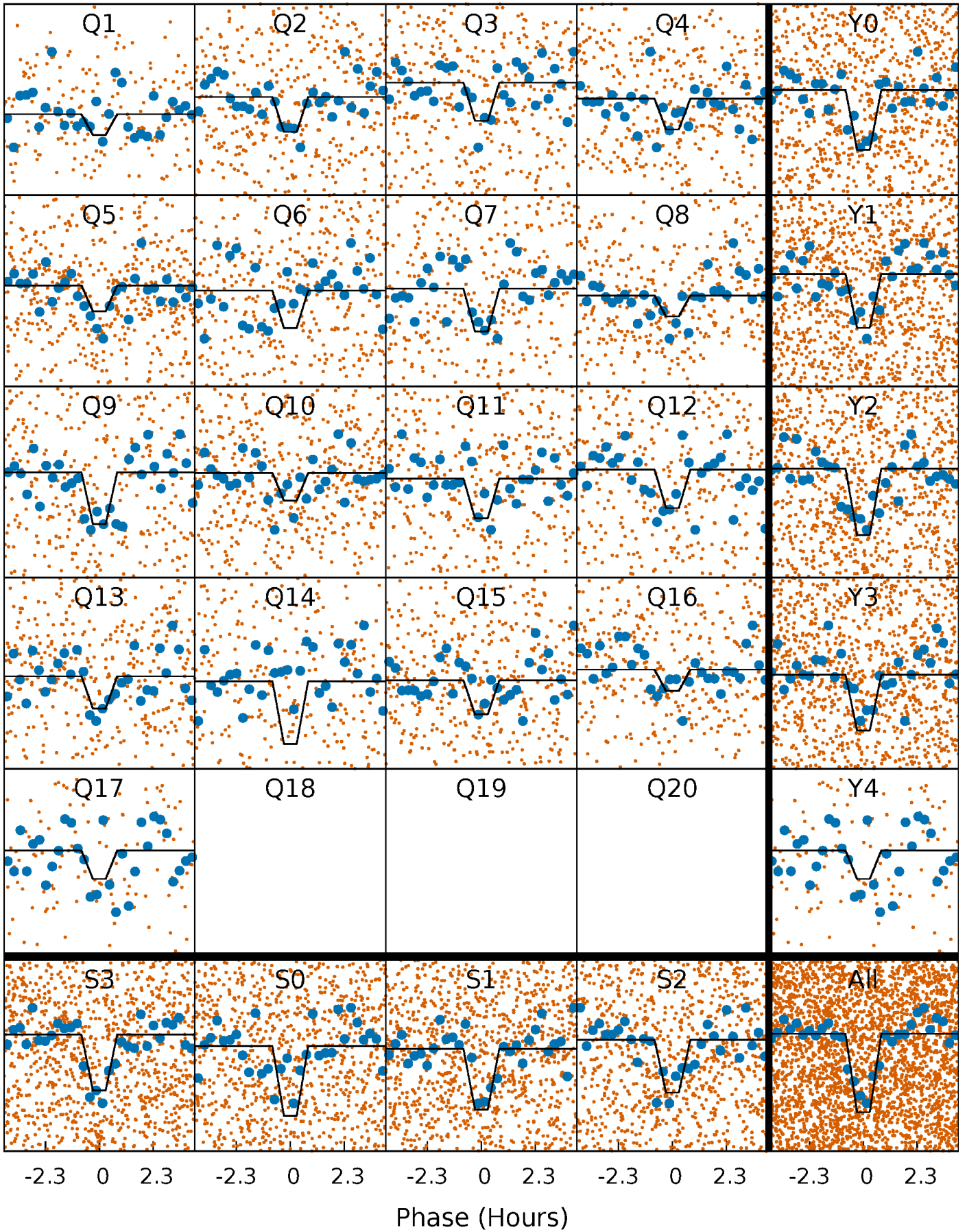
# DV Quarter-Phased Transit Curves

TCE 006786224-01 P= 3.041894 Days  $T_0=132.497274$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

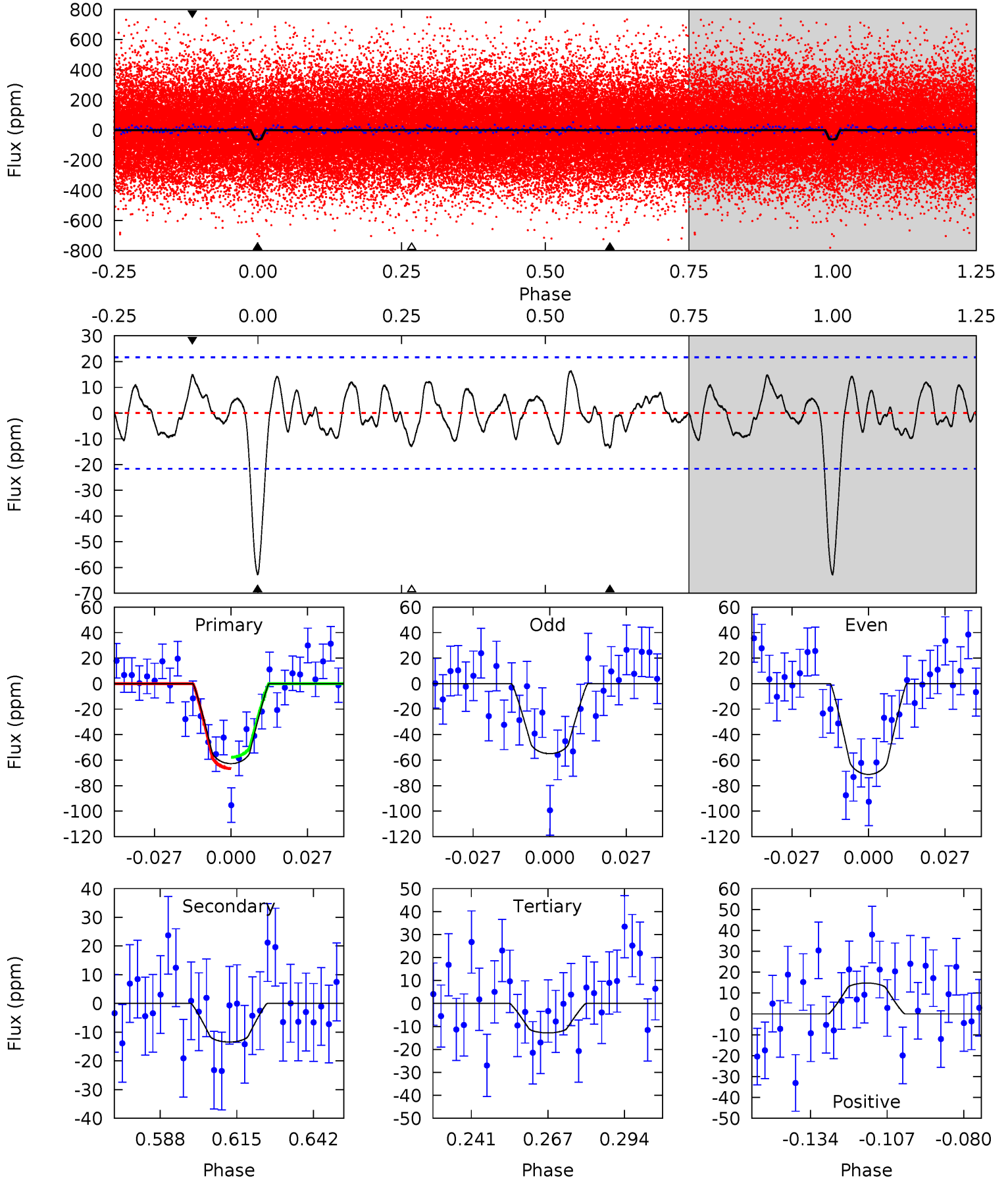
TCE 006786224-01 P= 3.041849 Days  $T_0=132.504261$  (BKJD)



# DV Model-Shift Uniqueness Test

006786224-01, P = 3.041894 Days, E = 129.455380 Days

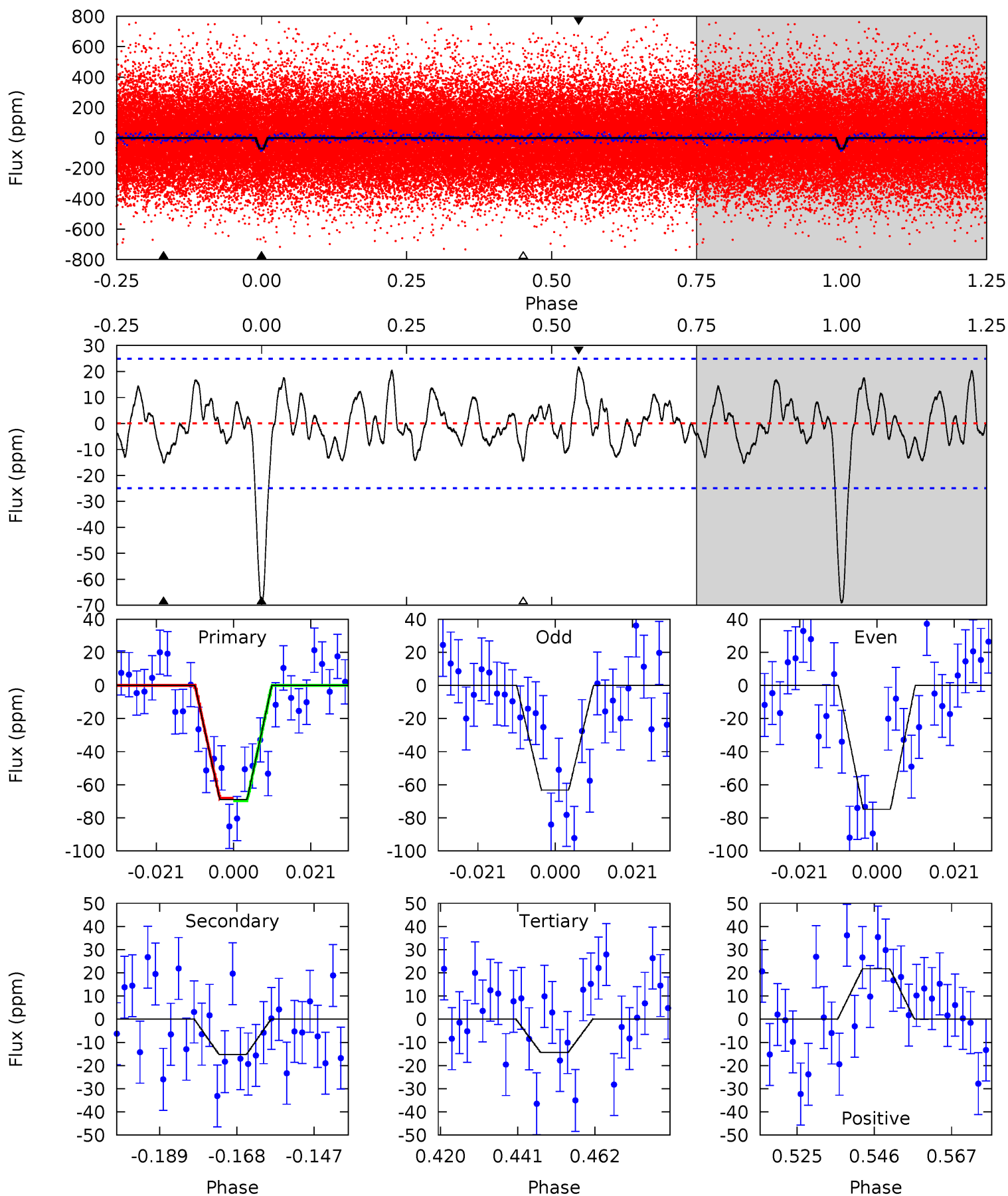
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.0	3.00	2.87	3.30	4.83	2.22	1.44	11.2	10.7	0.14	-0.30	1.82	0.88	0.21	1.00



# Alt Model-Shift Uniqueness Test

006786224-01, P = 3.041849 Days, E = 129.462412 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
13.5	2.99	2.81	4.26	4.88	2.31	1.44	10.7	9.23	0.18	-1.27	1.13	0.93	0.24	0.15





### Stellar Parameters For KIC 006786224

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5802^{+156}_{-156}$	$4.537^{+0.048}_{-0.192}$	$-0.240^{+0.300}_{-0.300}$	$0.857^{+0.252}_{-0.084}$	$0.922^{+0.111}_{-0.101}$	$2.064^{+0.415}_{-1.081}$
	+3%/-3%	+1%/-4%	+125%/-125%	+29%/-10%	+12%/-11%	+20%/-52%
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 006786224-01 / KOI 4850.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-13 \pm 4$	$0.89^{+0.58}_{-0.50}$	$1691^{+127}_{-76}$	$3964^{+1716}_{-665}$	$14^{+68}_{-9}$
Alt.	$-15 \pm 5$	$0.89^{+0.52}_{-0.48}$	$1699^{+120}_{-83}$	$4056^{+1561}_{-638}$	$16^{+64}_{-10}$

$T_{max}$  = Theoretical Maximum Planetary Temperature  
 $T_{obs}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )  
 $A_{obs}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$

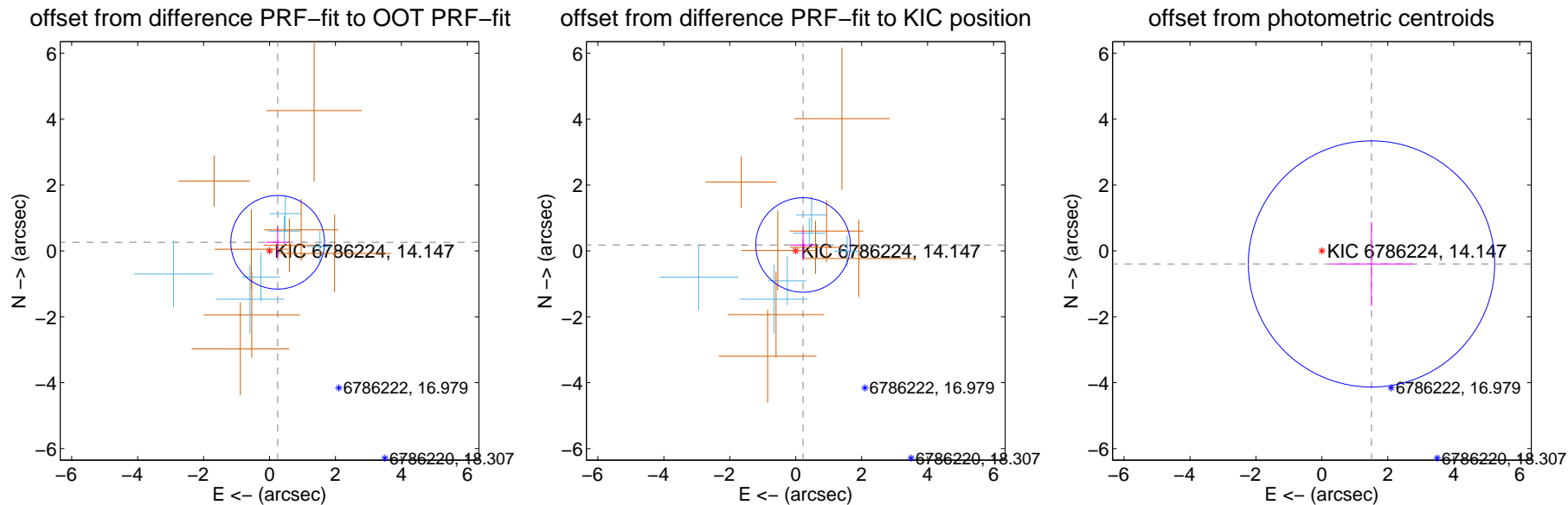
## DV Centroid Data

Supplemental centroid analysis for 006786224-01. Kepler magnitude: 14.15. Transit SNR 10.13

There are 6 quarters with good PRF difference image offsets

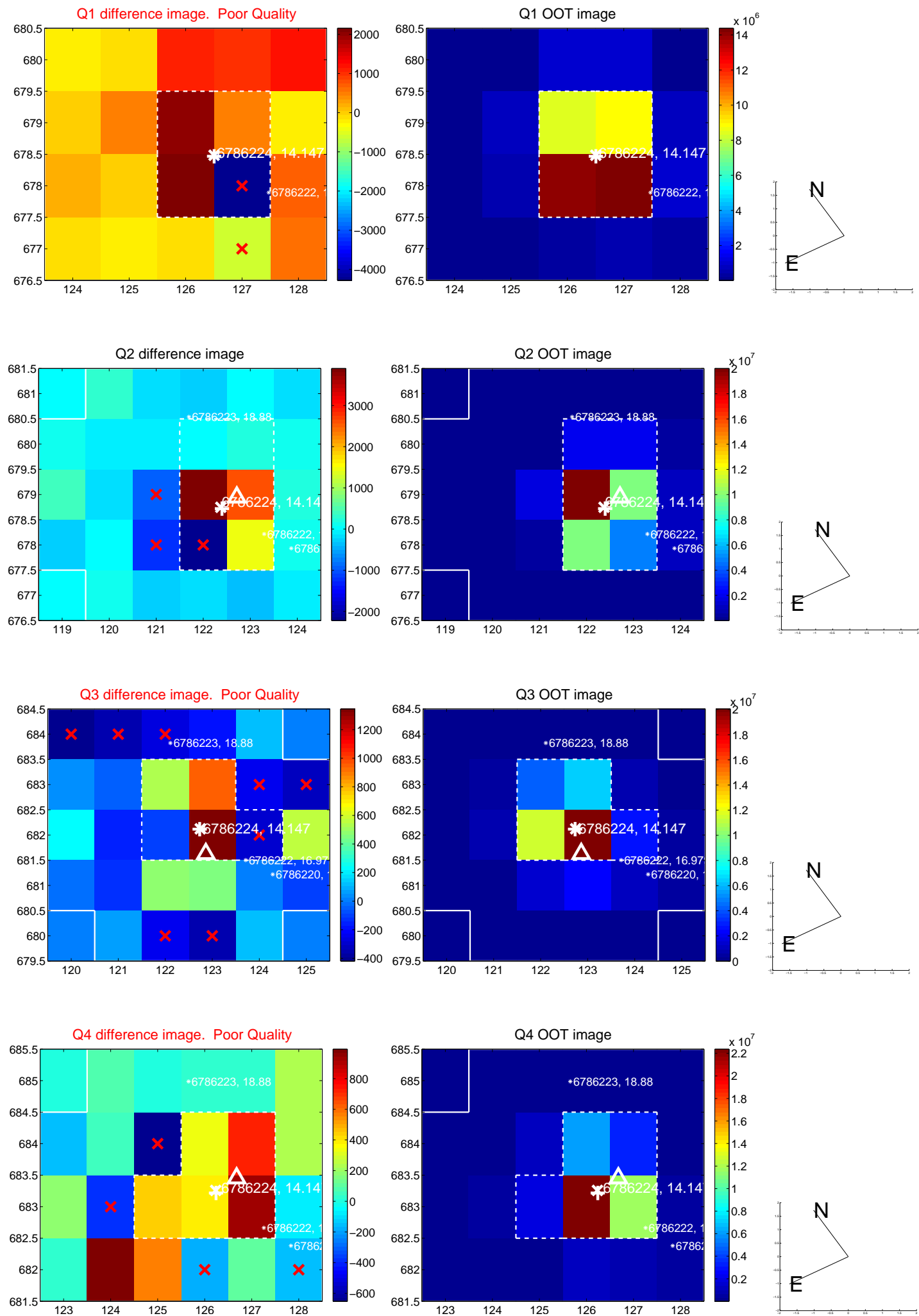
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.360 \pm 0.474$	0.76	$-0.247 \pm 0.356$	$0.262 \pm 0.472$
PRF-fit source offset from KIC position	$0.287 \pm 0.478$	0.60	$-0.224 \pm 0.379$	$0.180 \pm 0.454$
photometric centroid source offset	$1.56 \pm 1.25$	1.25	$-1.51 \pm 1.24$	$-0.40 \pm 1.28$

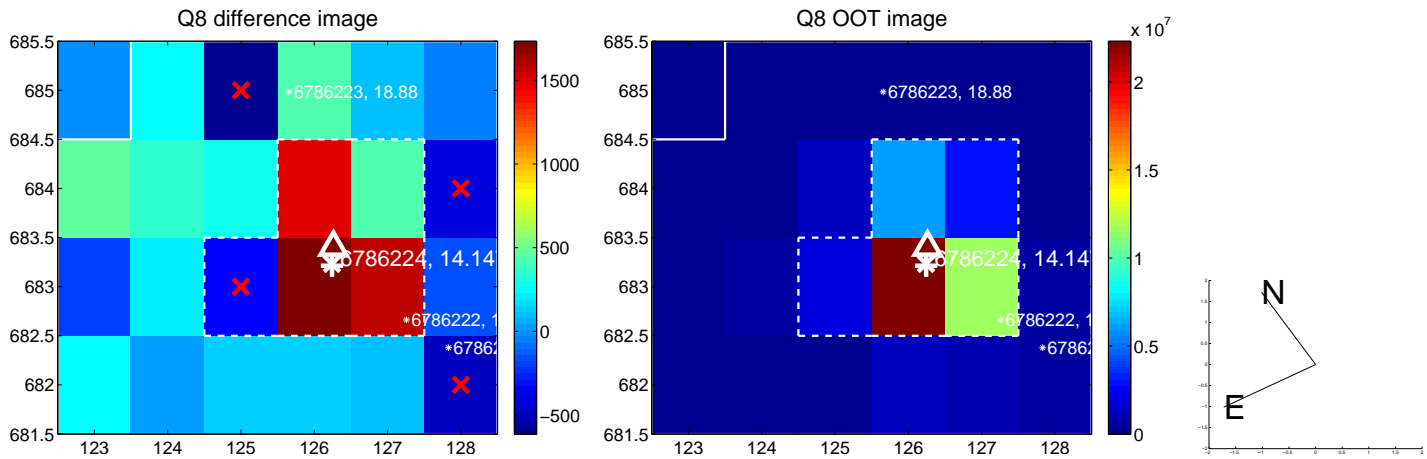
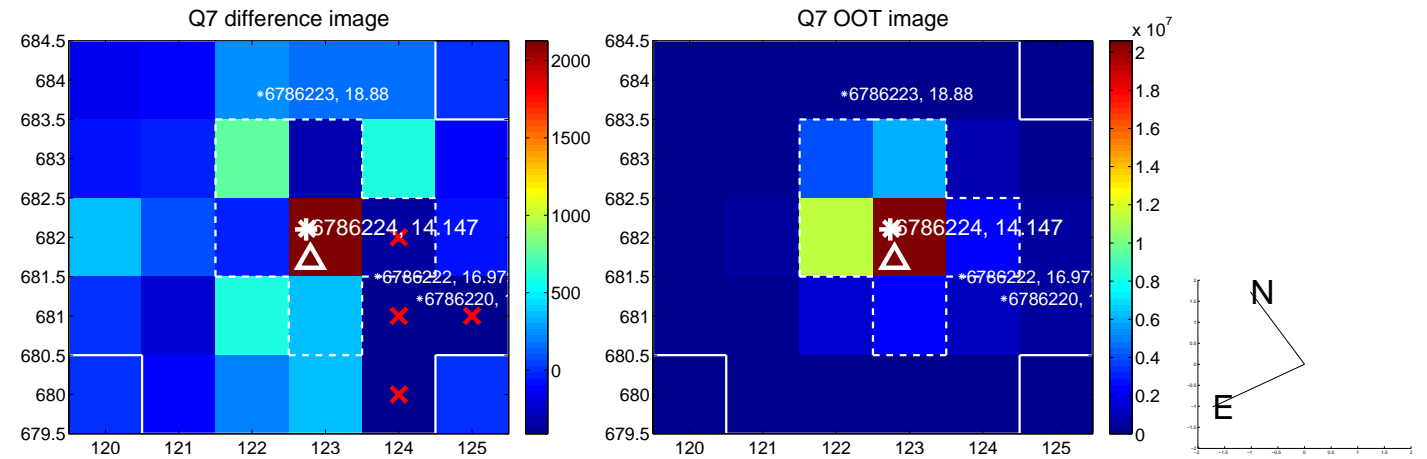
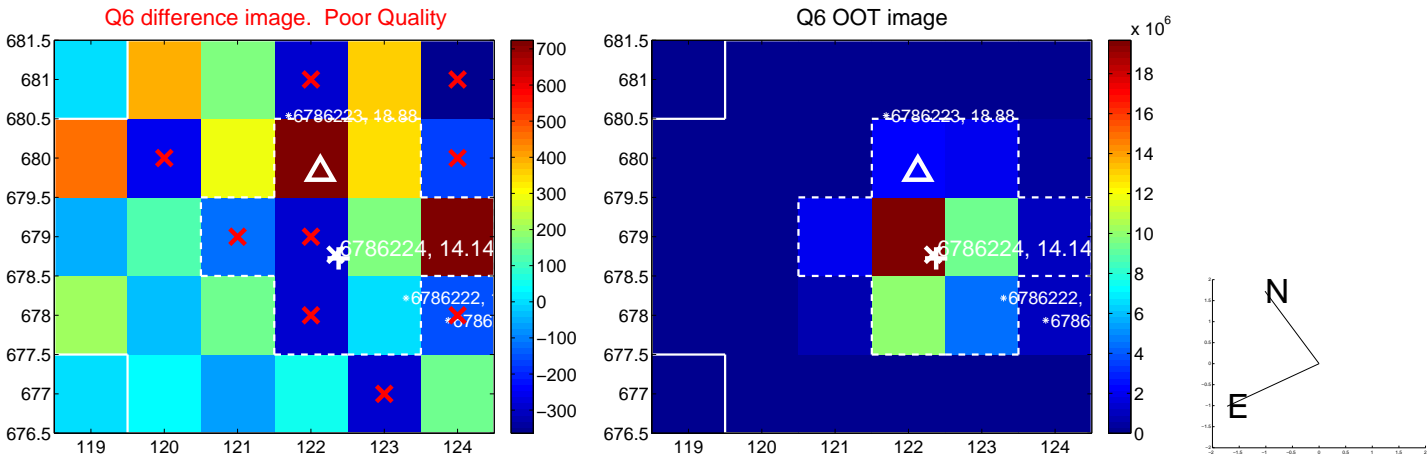
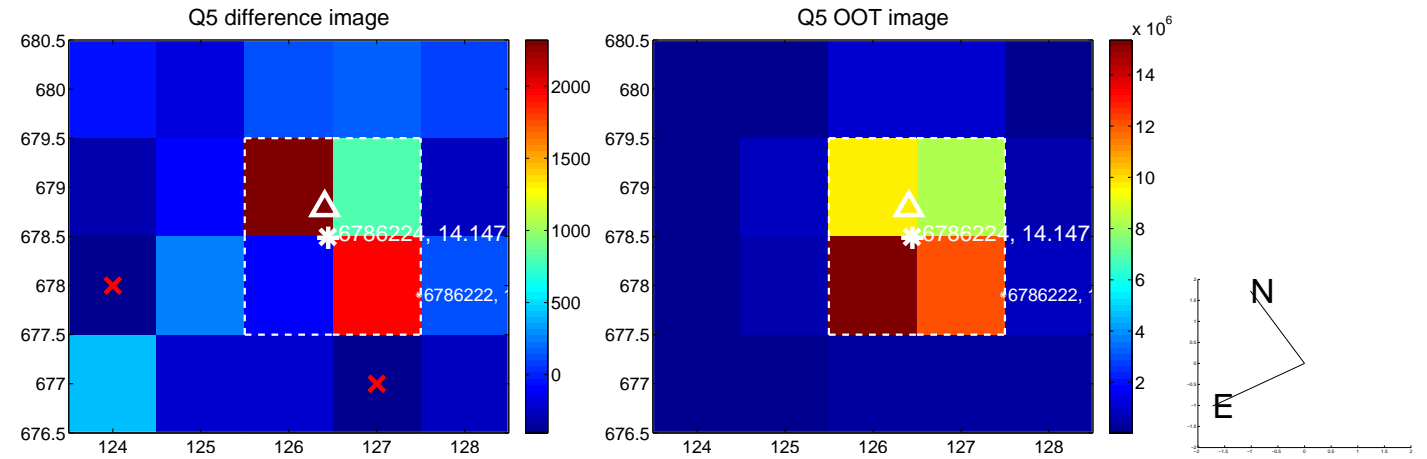


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

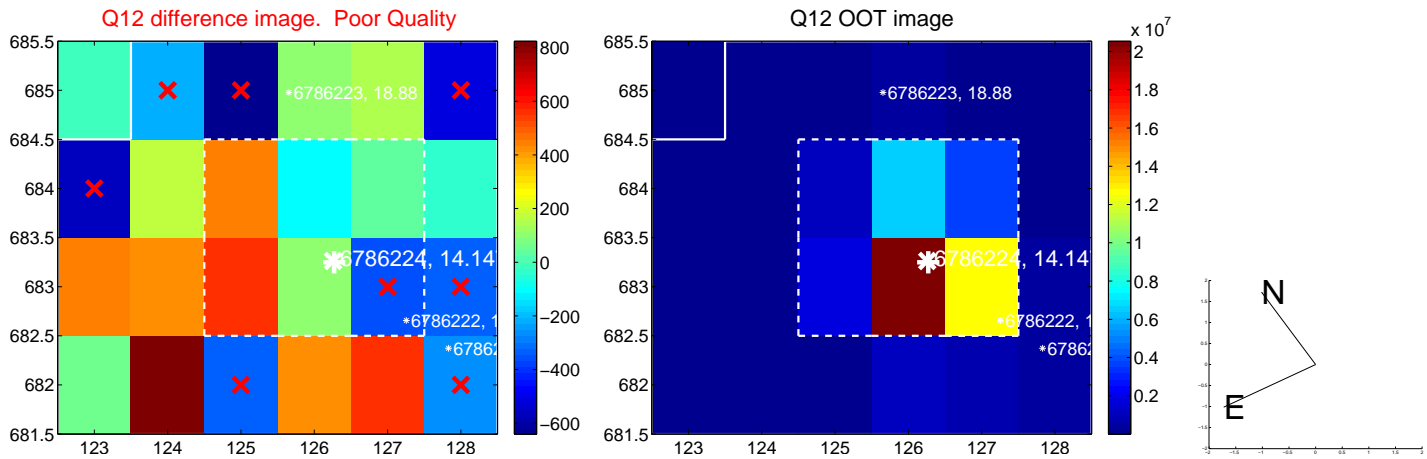
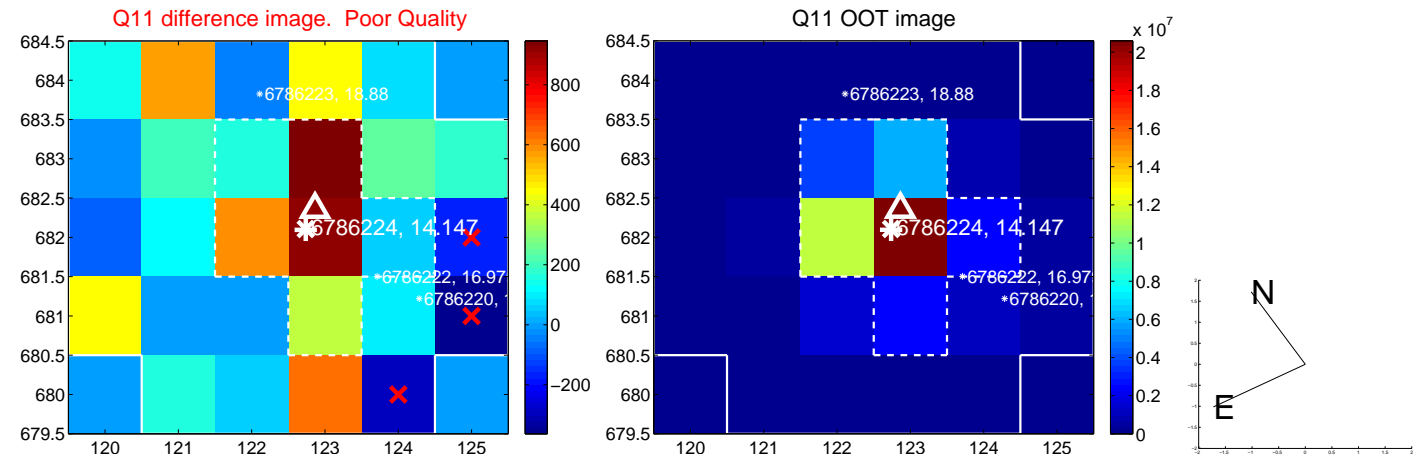
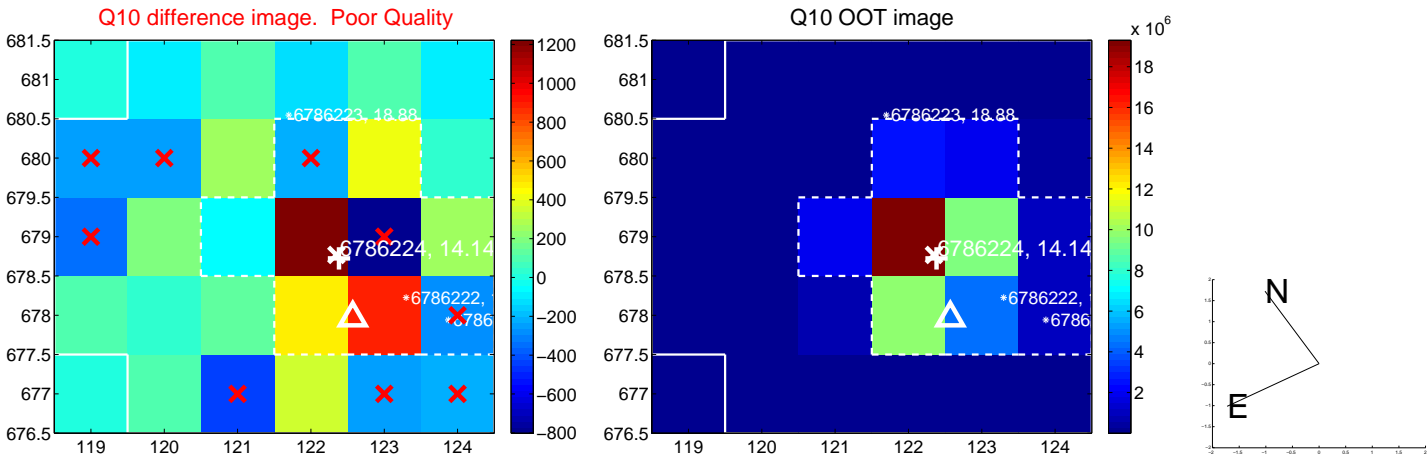
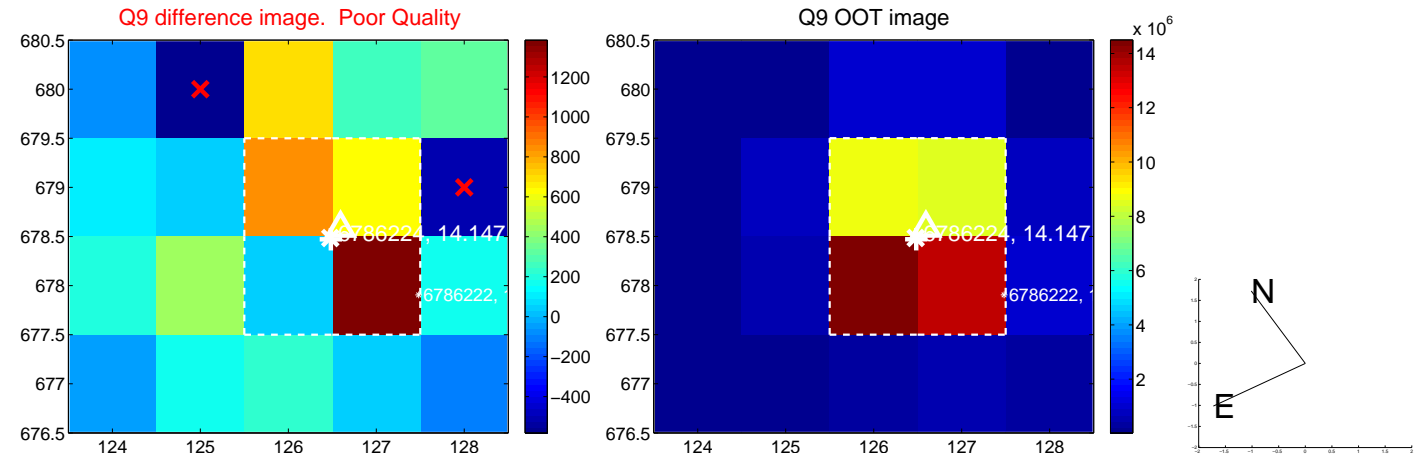


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

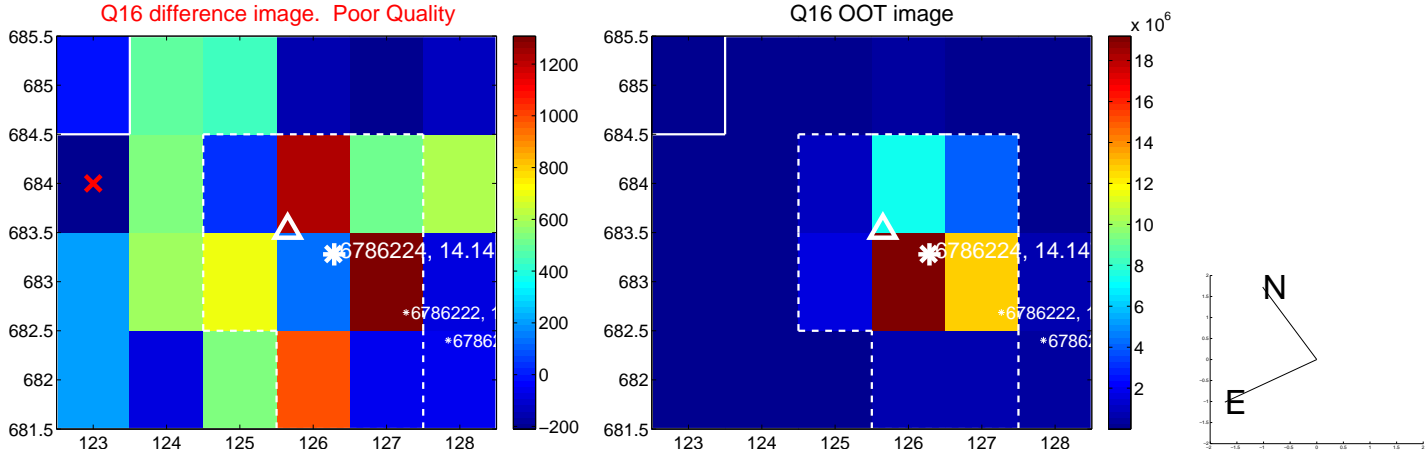
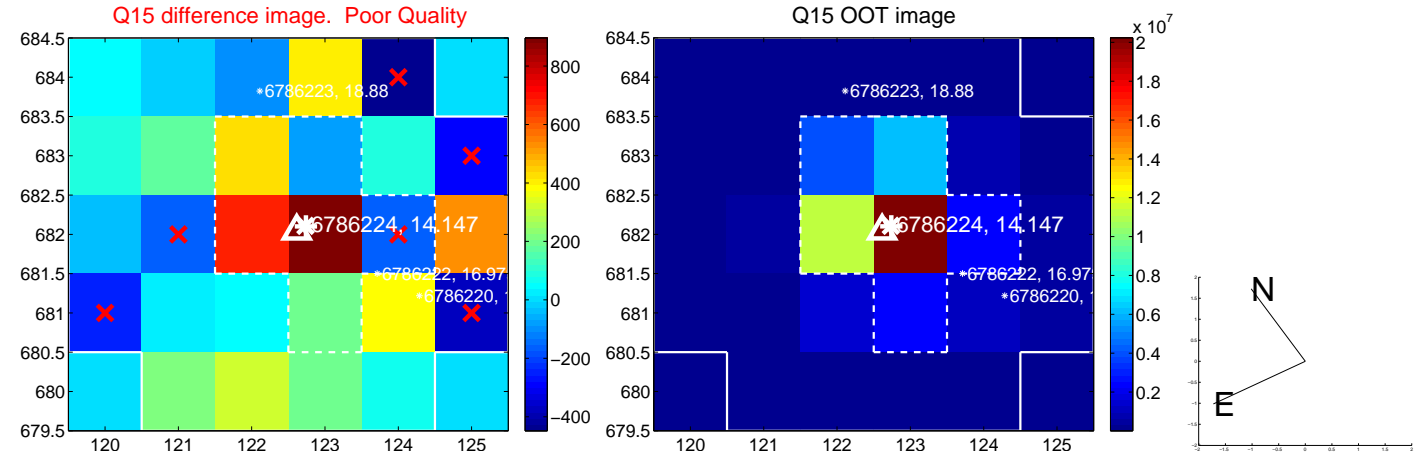
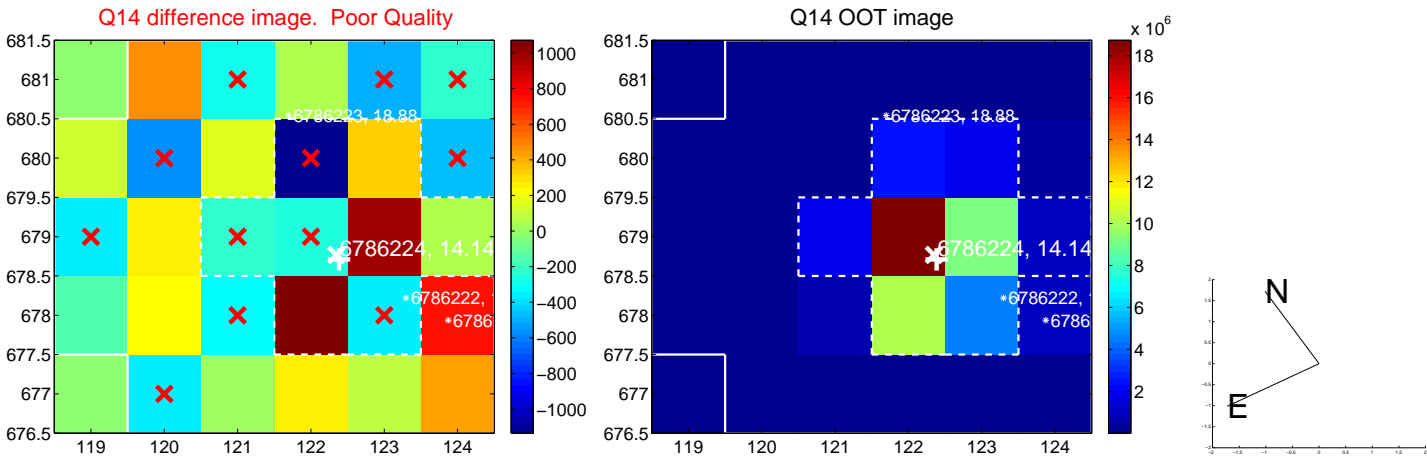
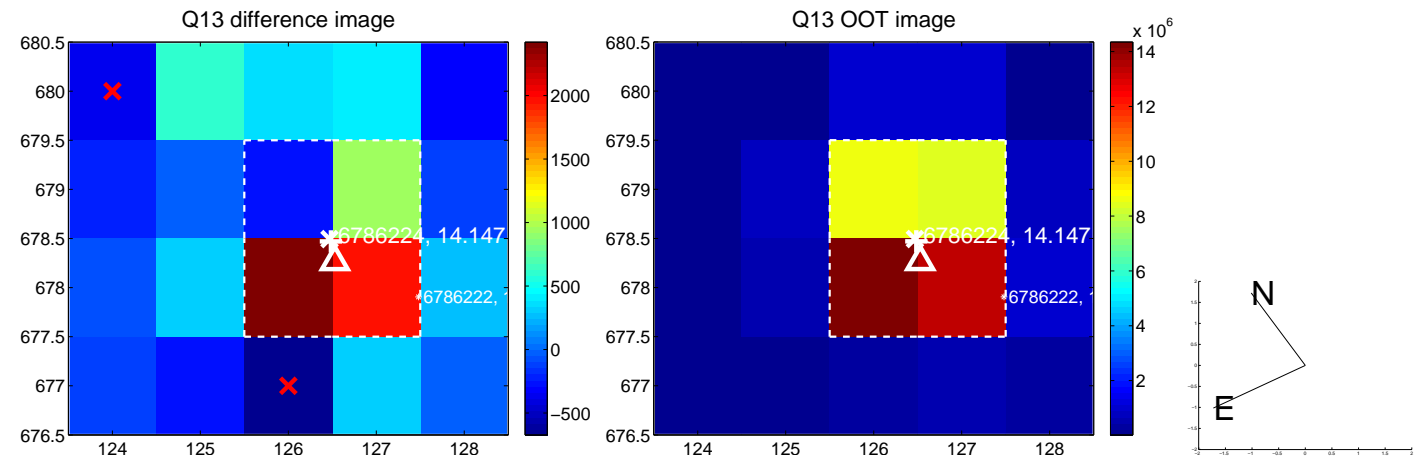




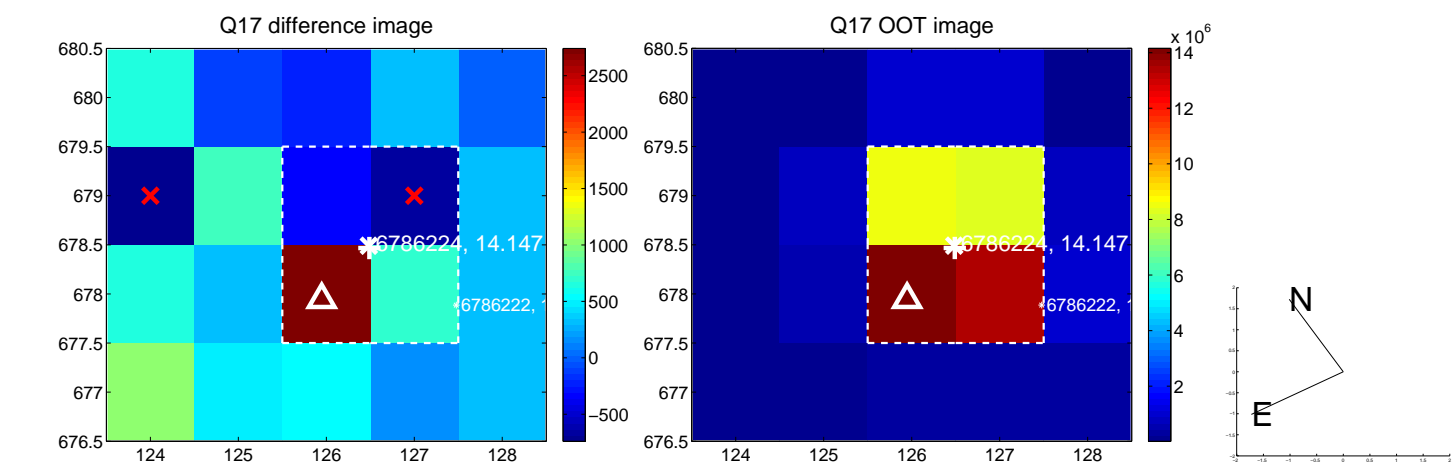
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



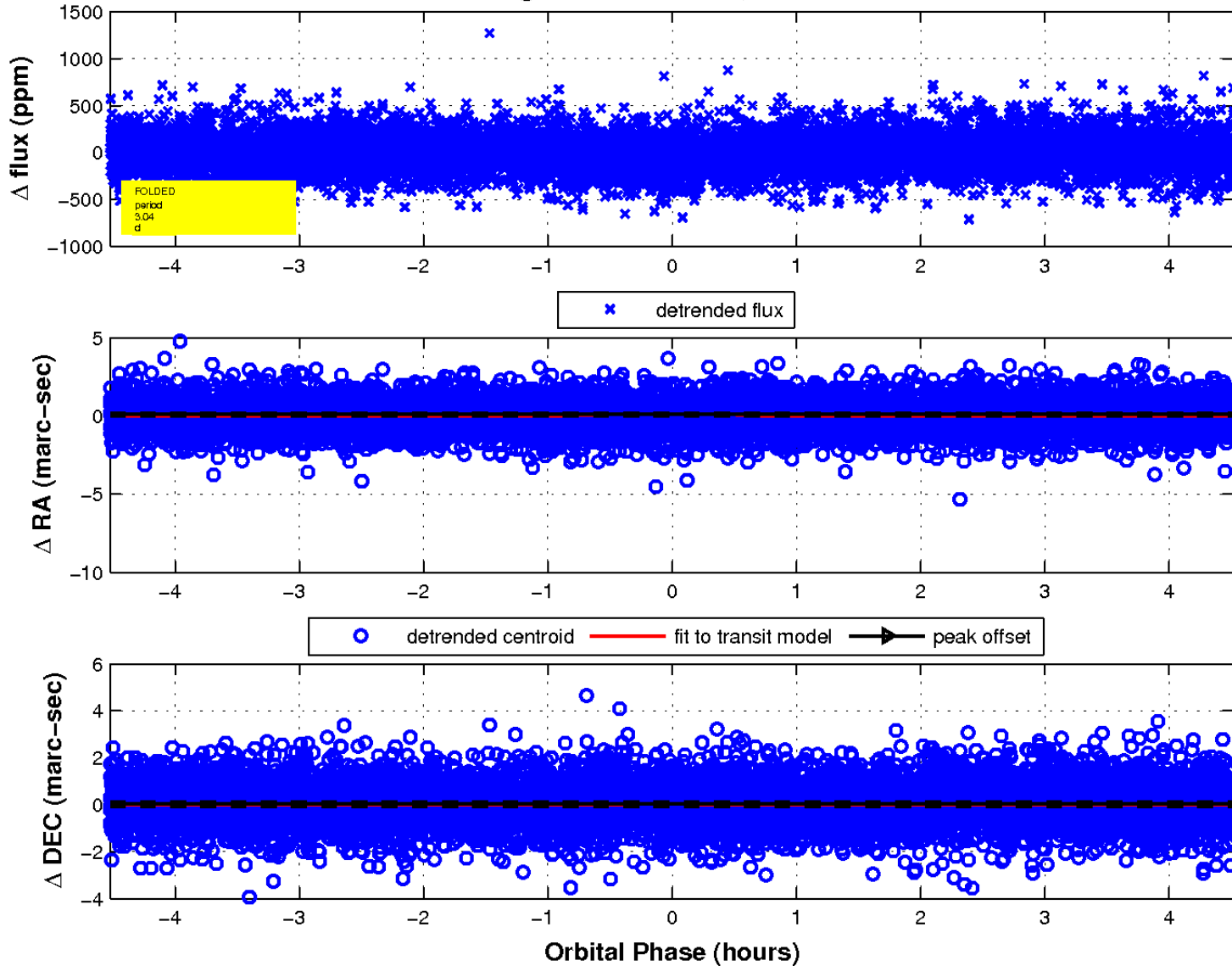
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

