

# KIC 006751874

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006751874-01	OBS	2282.01	6.892286	132.462583	208.8	2.610	19.7	20.8	1.46	5862	2.51	423.40

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006751874-01	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.

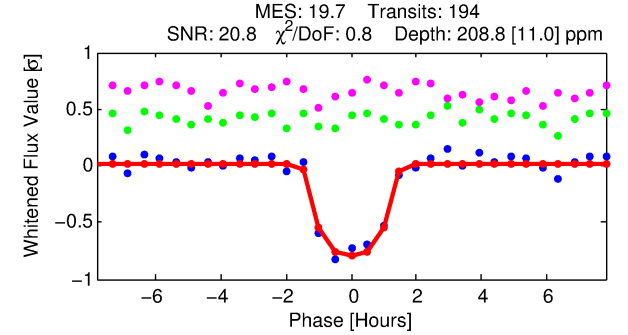
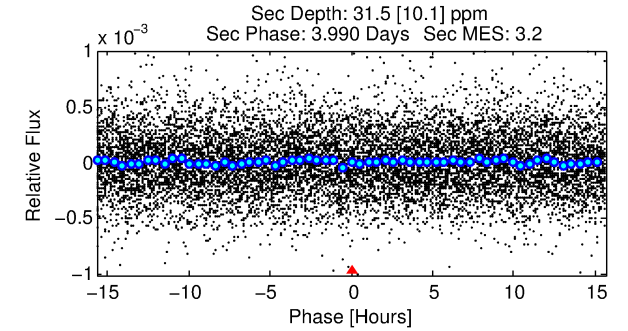
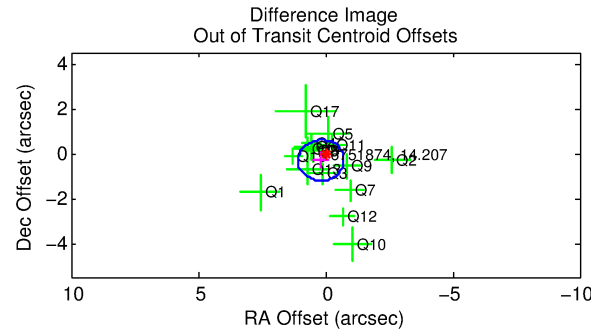
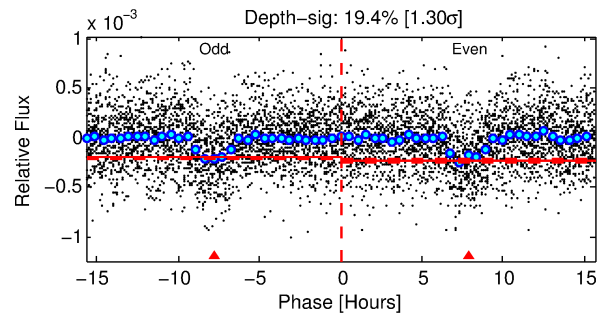
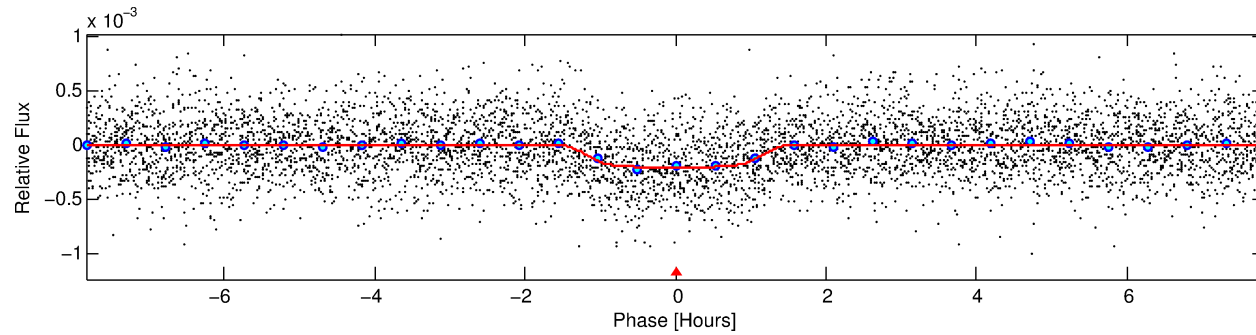
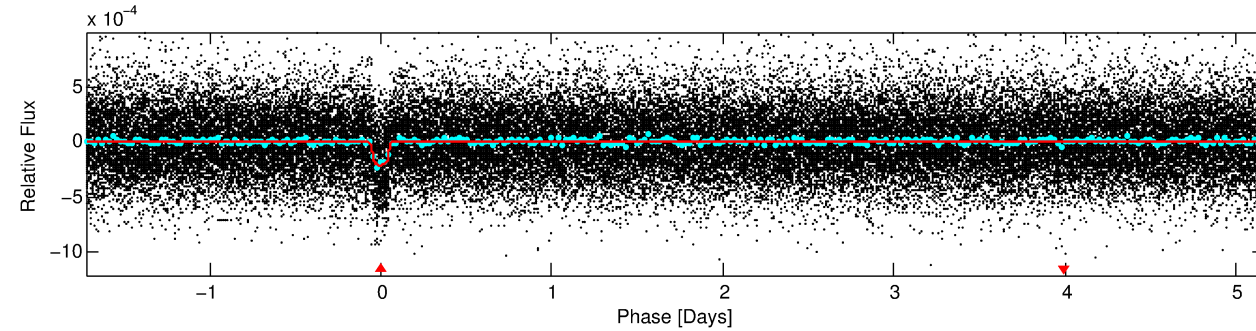
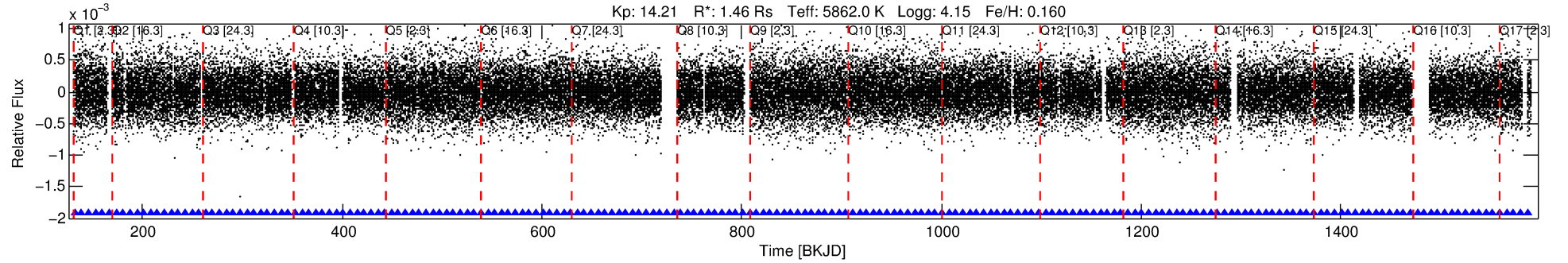
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006751874-01

No Significant Match Found

# DV One-Page Summary

KIC: 6751874 Candidate: 1 of 1 Period: 6.892 d  
KOI: K02282.01 Corr: 0.966



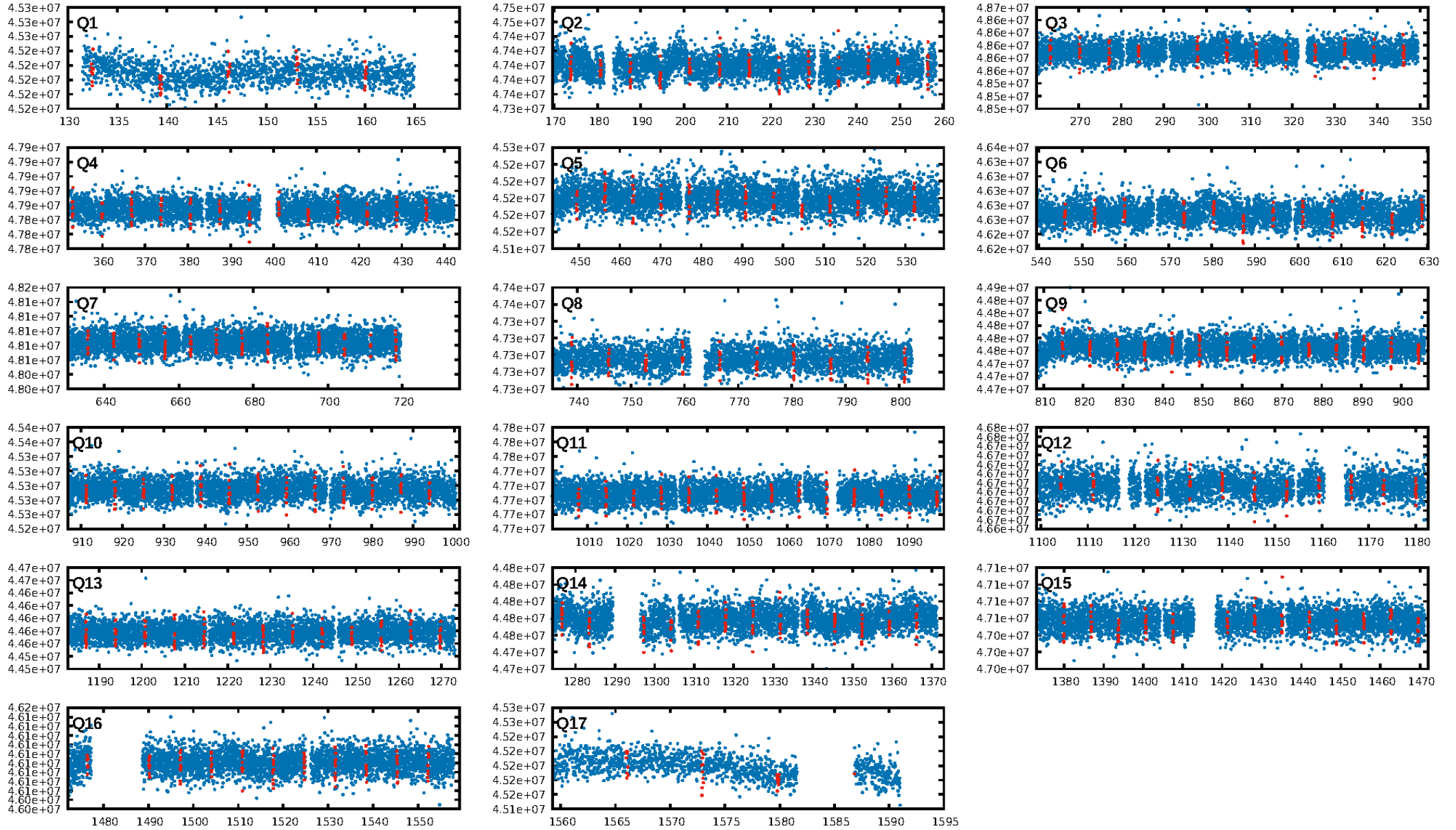
## DV Fit Results:

Period = 6.89229 [0.00002] d  
Epoch = 132.4626 [0.0027] BKJD  
Rp/R\* = 0.0157 [0.0050]  
a/R\* = 9.54 [14.39]  
b = 0.90 [0.33]  
Seff = 423.41 [128.88]  
Teff = 1157 [88] K  
Rp = 2.51 [0.94] Re  
a = 0.0731 [0.0137] AU  
Ag = 14.67 [11.32] [1.21 $\sigma$ ]  
Teffp = 3500 [624] K [3.72 $\sigma$ ]

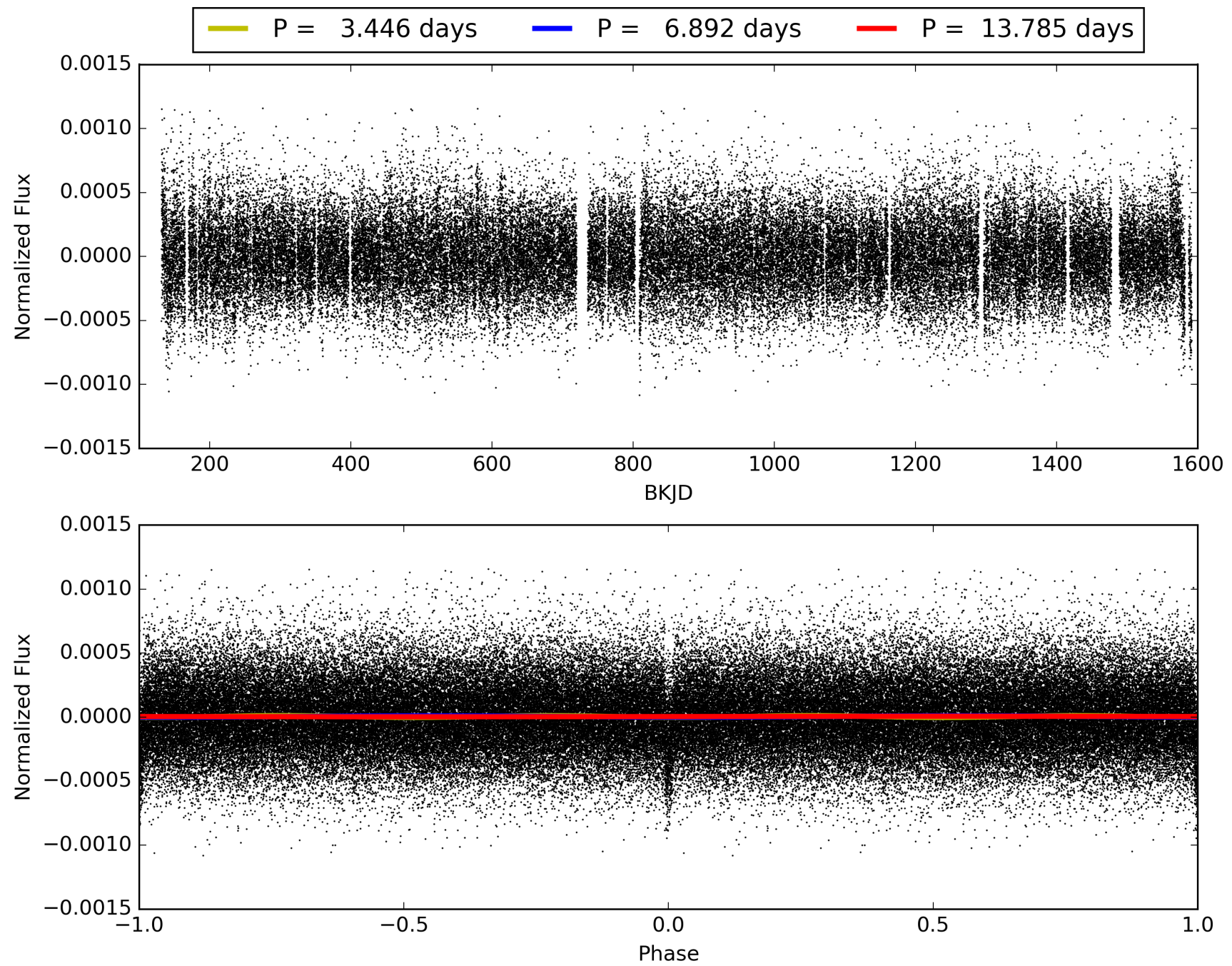
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 4.81e-85  
RollingBand-fgt: 1.00 [186/186]  
GhostDiagnostic-chr: 9.918  
Centroid-sig: 0.0%  
Centroid-so: 2.383 arcsec [3.32 $\sigma$ ]  
OotOffset-rm: 0.354 arcsec [1.17 $\sigma$ ]  
KicOffset-rm: 0.362 arcsec [1.24 $\sigma$ ]  
OotOffset-st: 4/4/3/5 [16]  
KicOffset-st: 4/4/3/5 [16]  
DiffImageQuality-fgm: 0.81 [13/16]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 006751874-01, PDC Light Curves

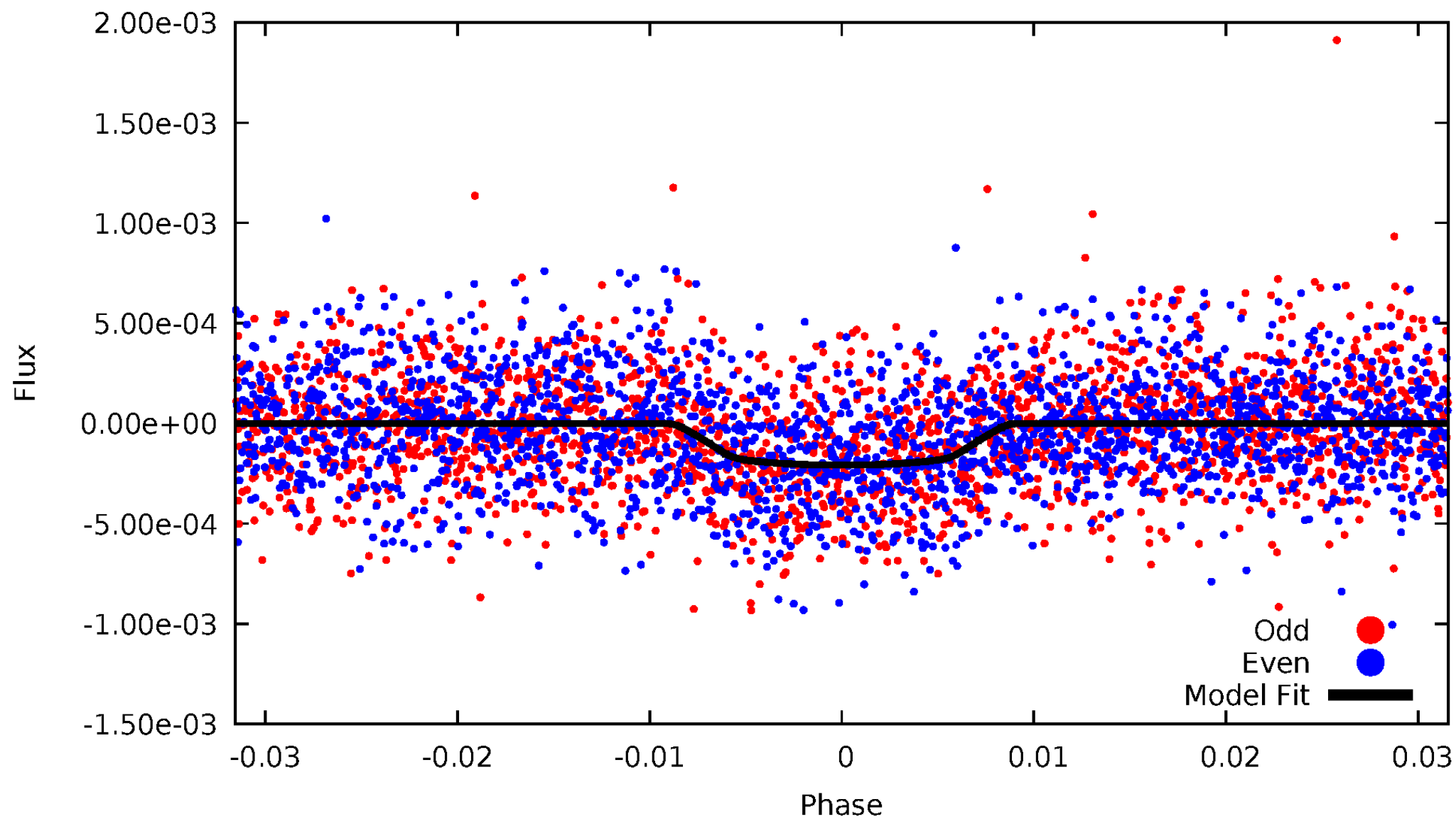


TCE 006751874-01



# DV Odd/Even

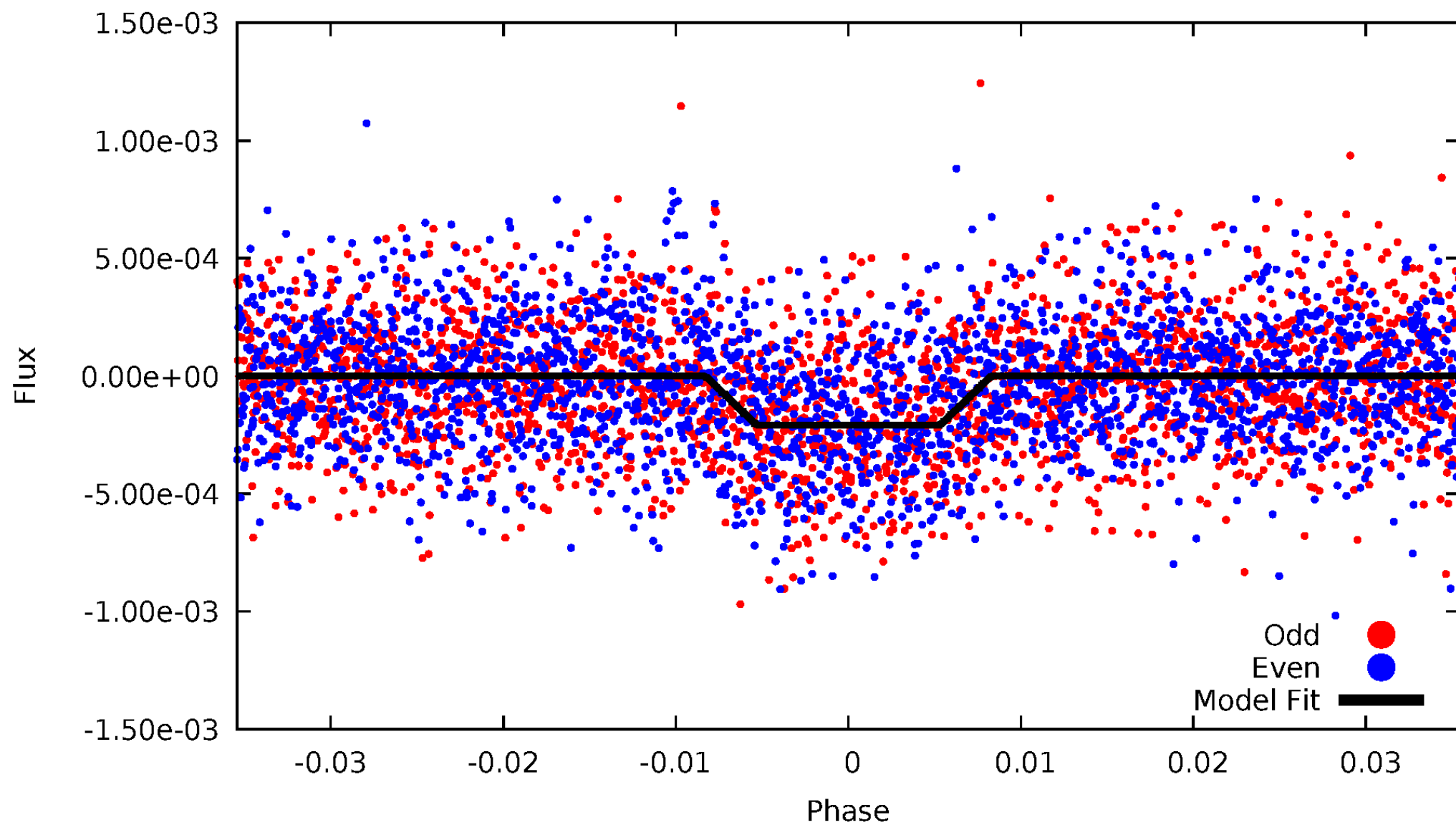
TCE 006751874-01



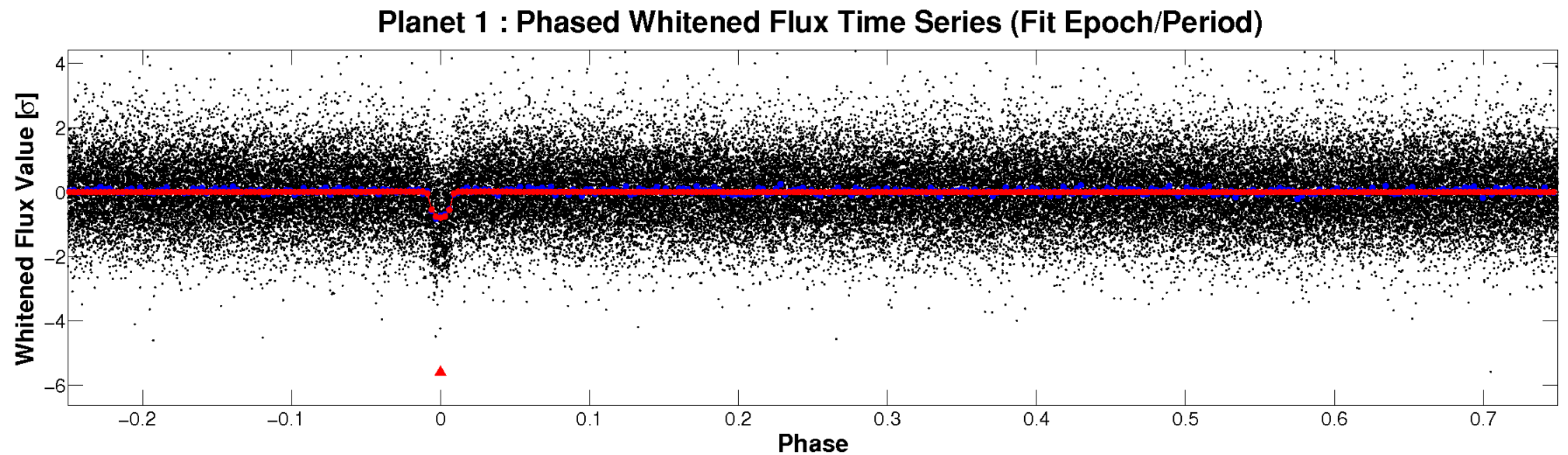
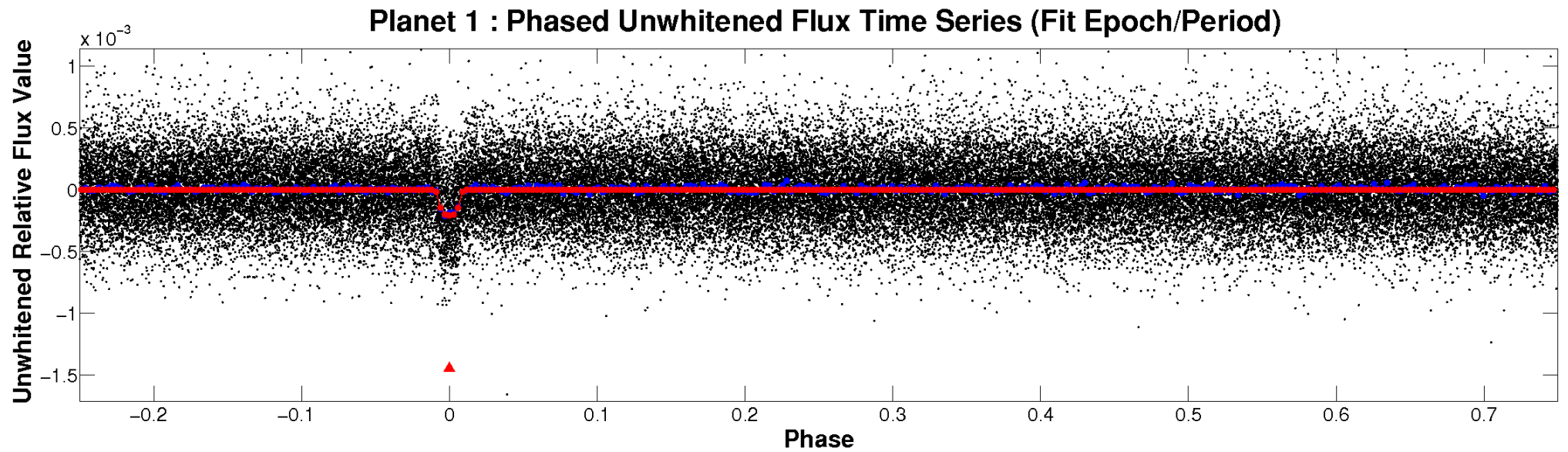


# ALT Odd/Even

TCE 006751874-01

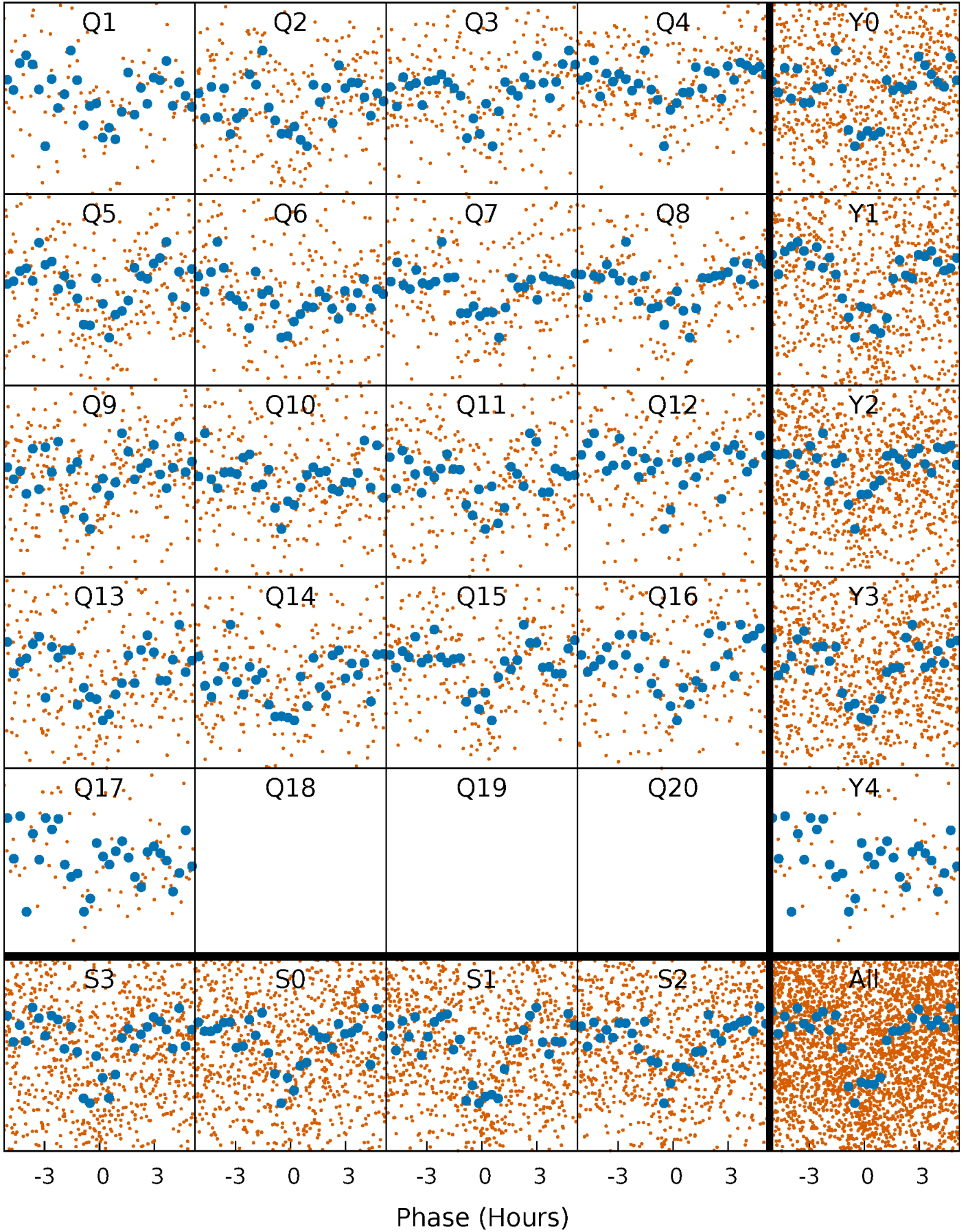


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

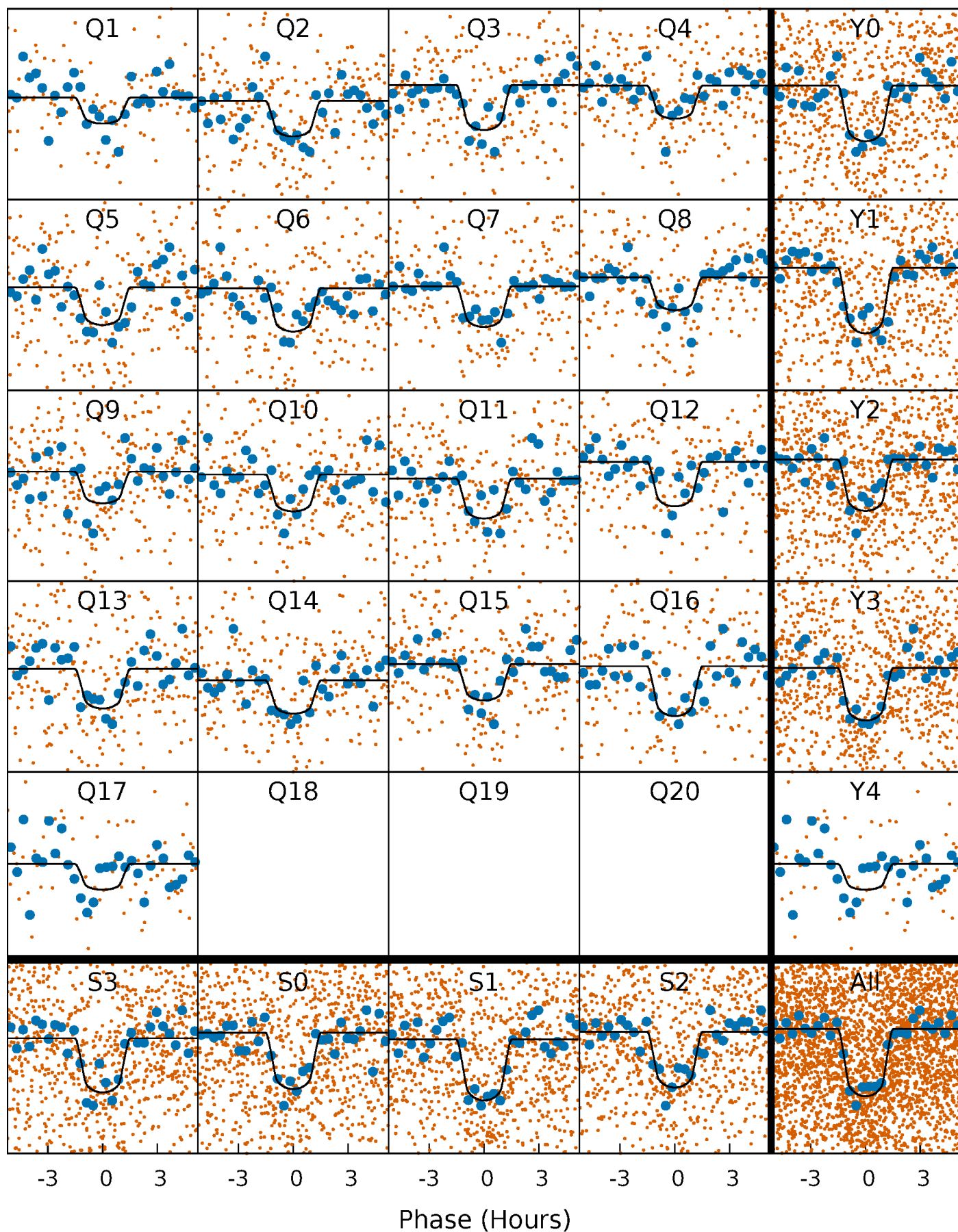
TCE 006751874-01 P= 6.892286 Days  $T_0=132.462583$  (BKJD)





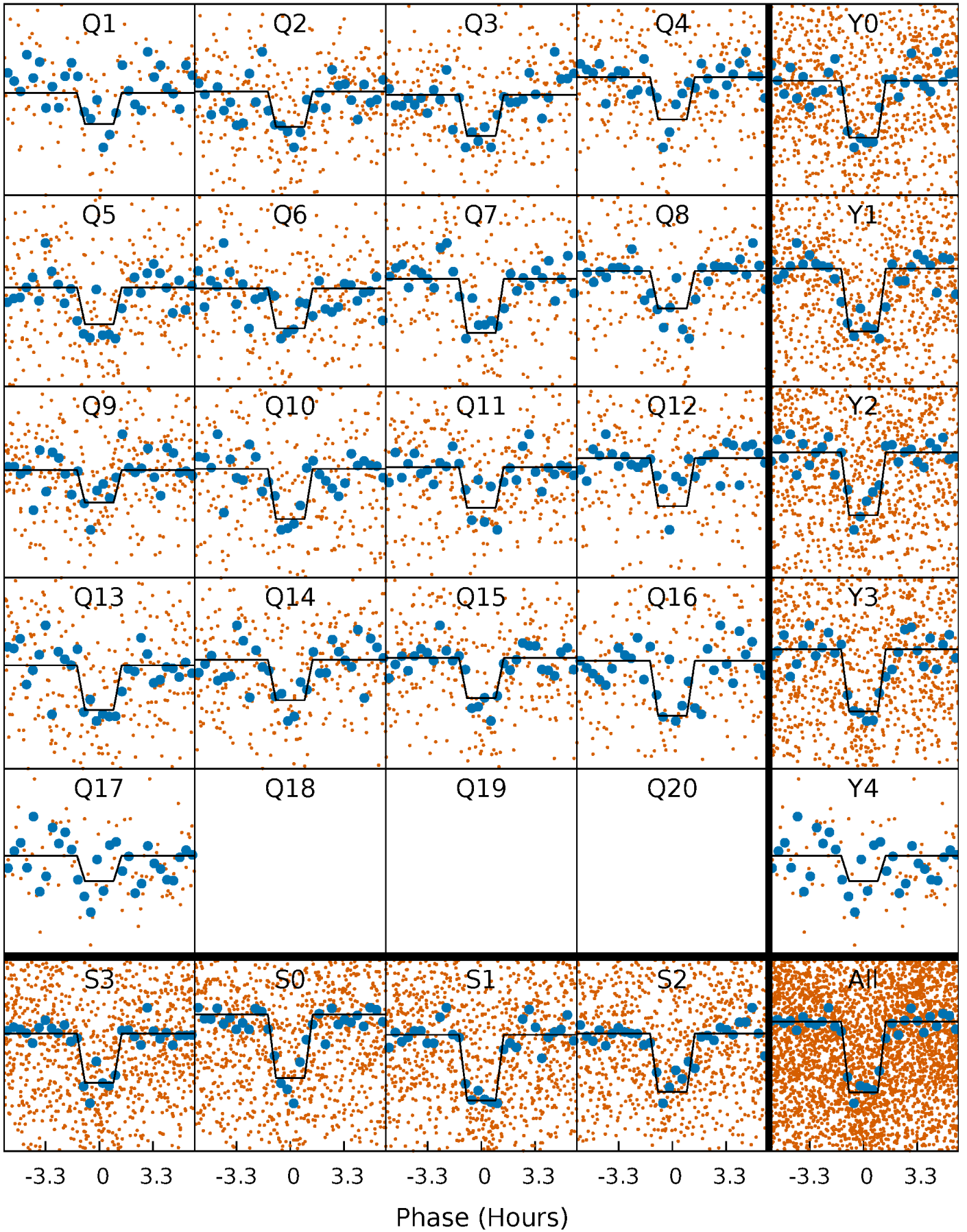
# DV Quarter-Phased Transit Curves

TCE 006751874-01 P= 6.892286 Days  $T_0=132.462583$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

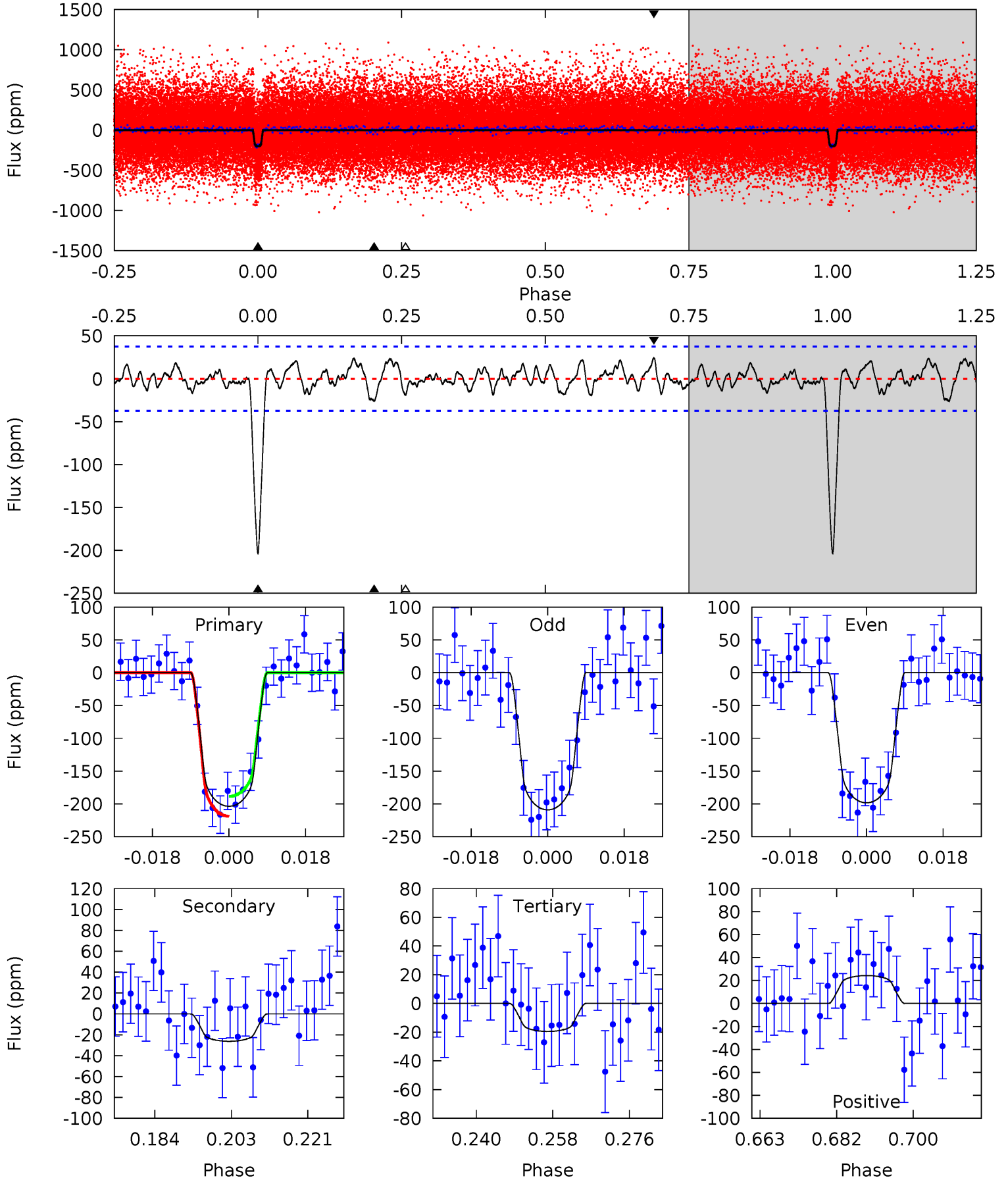
TCE 006751874-01 P= 6.892201 Days  $T_0=132.470258$  (BKJD)



# DV Model-Shift Uniqueness Test

006751874-01, P = 6.892286 Days, E = 125.570297 Days

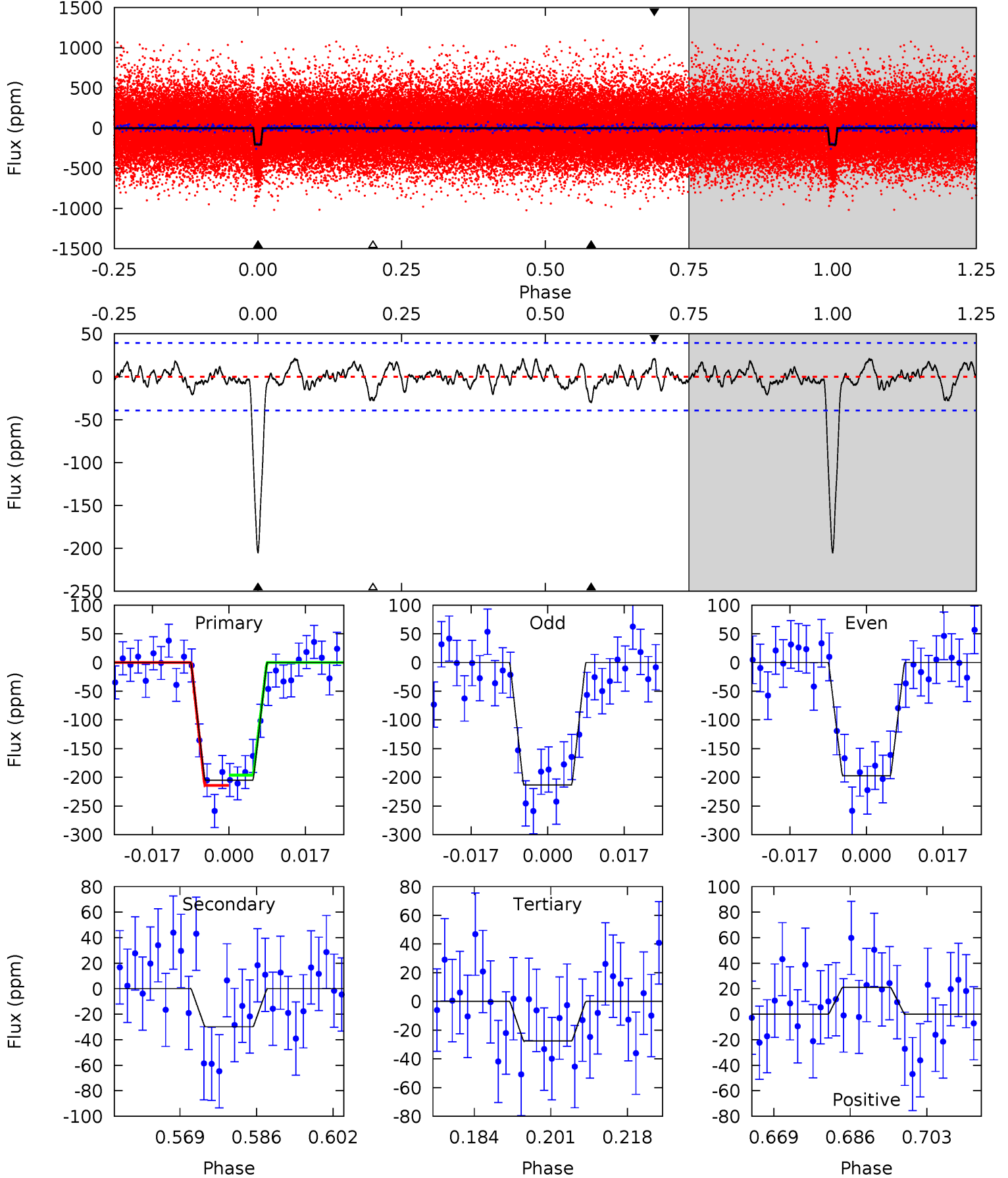
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.7	3.45	2.56	3.18	4.91	2.36	1.24	24.2	23.5	0.88	0.26	0.71	1.00	0.11	1.99



# Alt Model-Shift Uniqueness Test

006751874-01, P = 6.892201 Days, E = 125.578057 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
25.7	3.74	3.45	2.63	4.93	2.39	1.10	22.3	23.1	0.29	1.11	1.01	0.97	0.09	1.12



### Stellar Parameters For KIC 006751874

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5862^{+79}_{-79}$	$4.148^{+0.176}_{-0.095}$	$0.160^{+0.150}_{-0.150}$	$1.463^{+0.233}_{-0.284}$	$1.097^{+0.100}_{-0.080}$	$0.494^{+0.452}_{-0.145}$
	+1%/-1%	+4%/-2%	+94%/-94%	+16%/-19%	+9%/-7%	+92%/-29%
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 006751874-01 / KOI 2282.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-26 \pm 8$	$2.42^{+0.80}_{-0.79}$	$1604^{+72}_{-95}$	$3737^{+593}_{-371}$	$13^{+17}_{-6}$
Alt.	$-30 \pm 8$	$2.26^{+0.83}_{-0.81}$	$1602^{+72}_{-86}$	$3951^{+718}_{-448}$	$18^{+26}_{-9}$

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



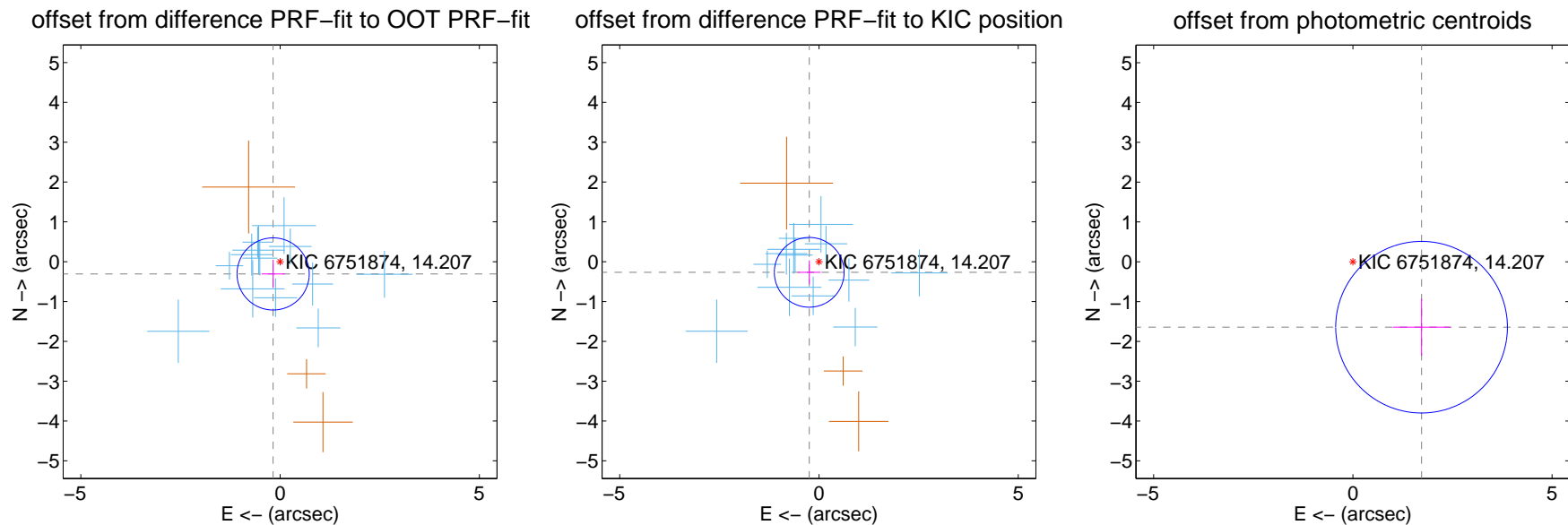
## DV Centroid Data

Supplemental centroid analysis for 006751874-01. Kepler magnitude: 14.21. Transit SNR 20.83

There are 13 quarters with good PRF difference image offsets

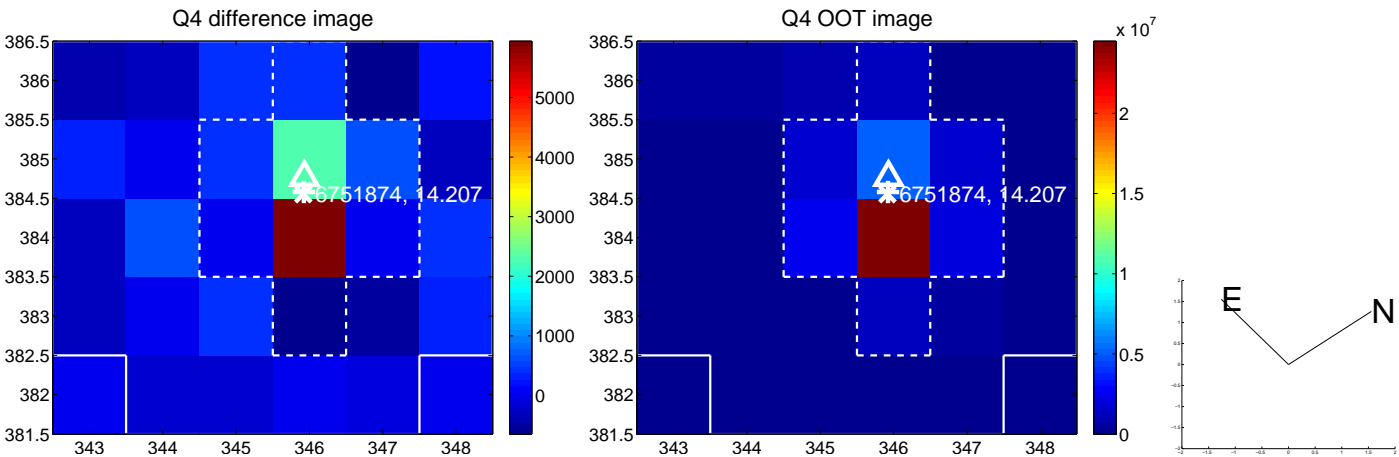
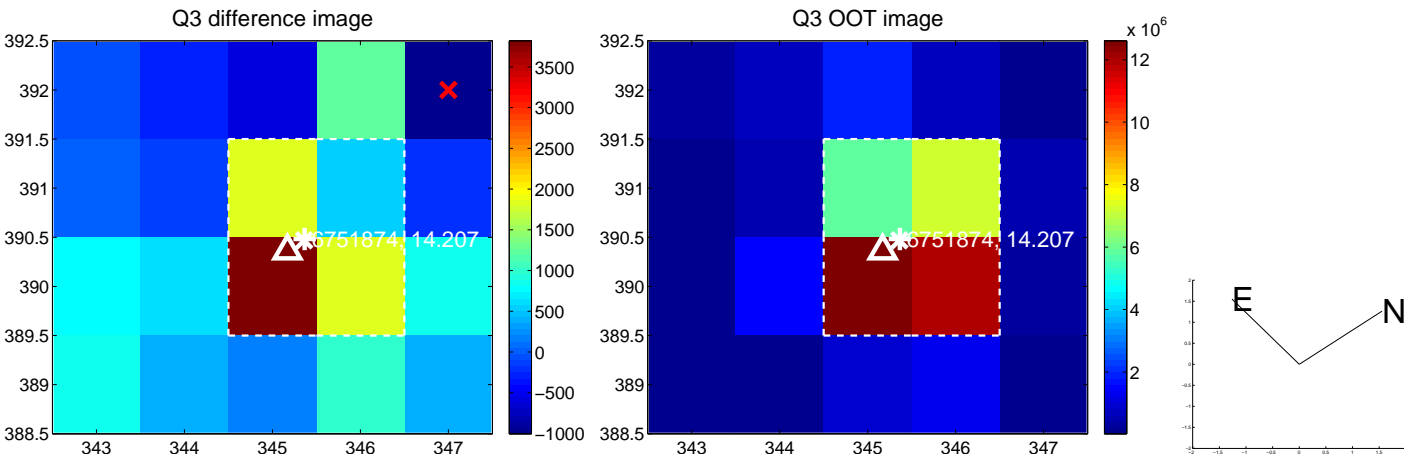
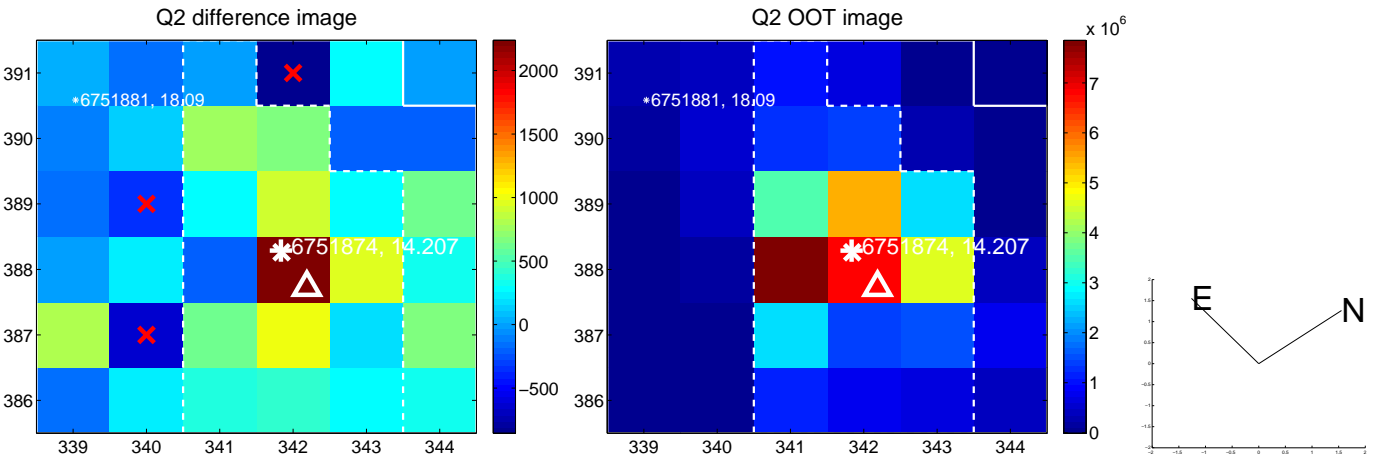
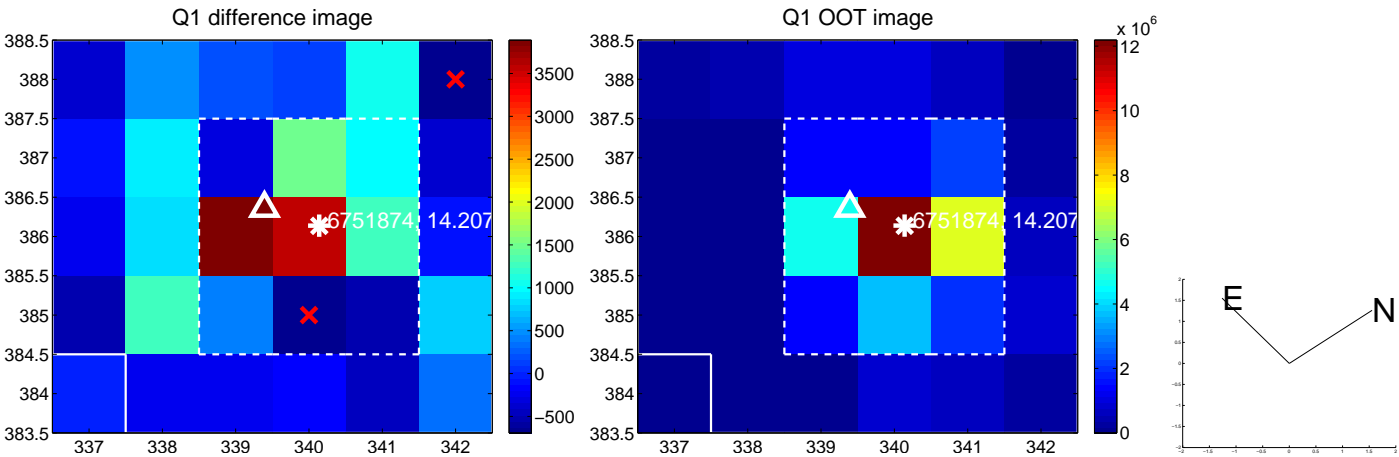
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.354 \pm 0.302$	1.17	$0.175 \pm 0.290$	$-0.307 \pm 0.352$
PRF-fit source offset from KIC position	$0.362 \pm 0.292$	1.24	$0.245 \pm 0.285$	$-0.267 \pm 0.298$
photometric centroid source offset	$2.38 \pm 0.72$	<b>3.32</b>	$-1.72 \pm 0.72$	$-1.64 \pm 0.72$

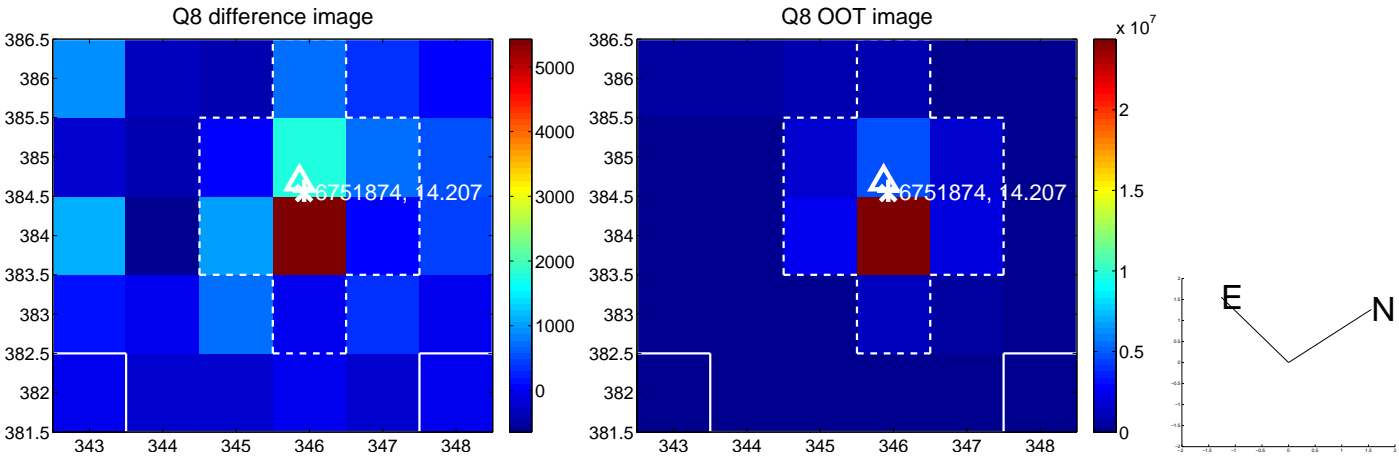
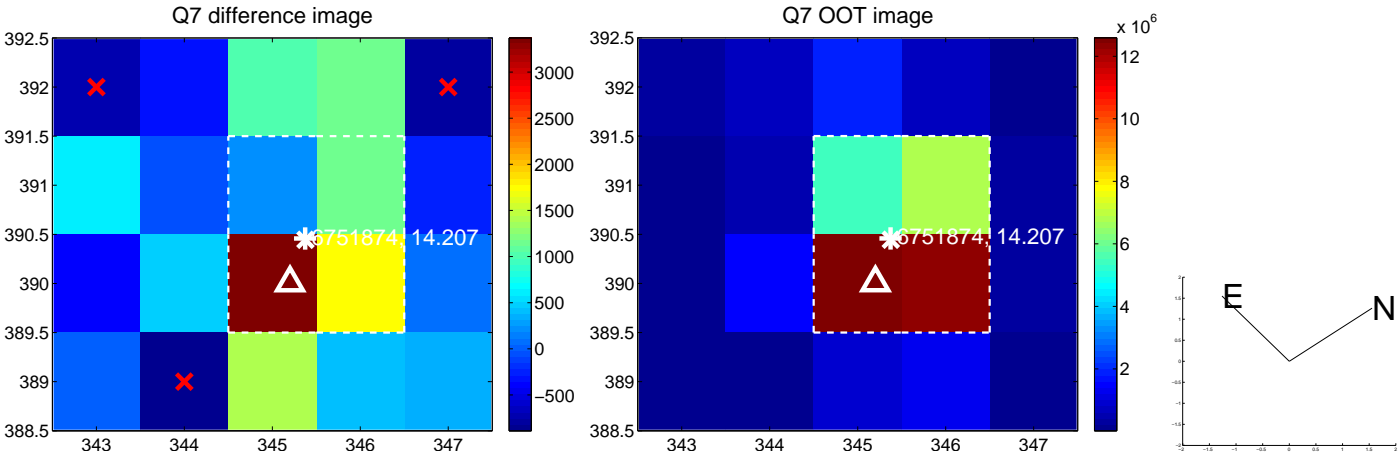
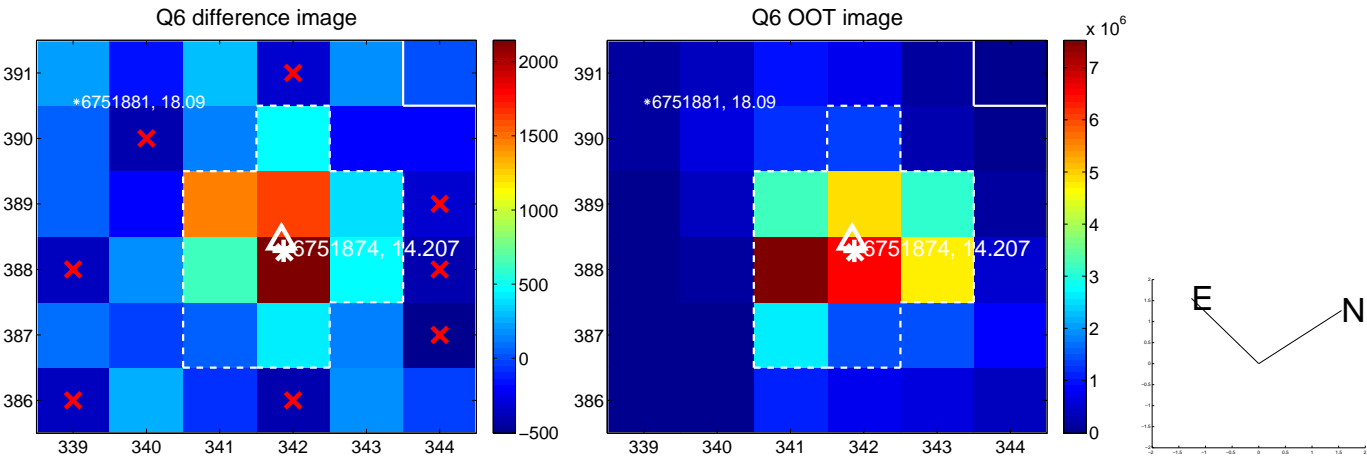
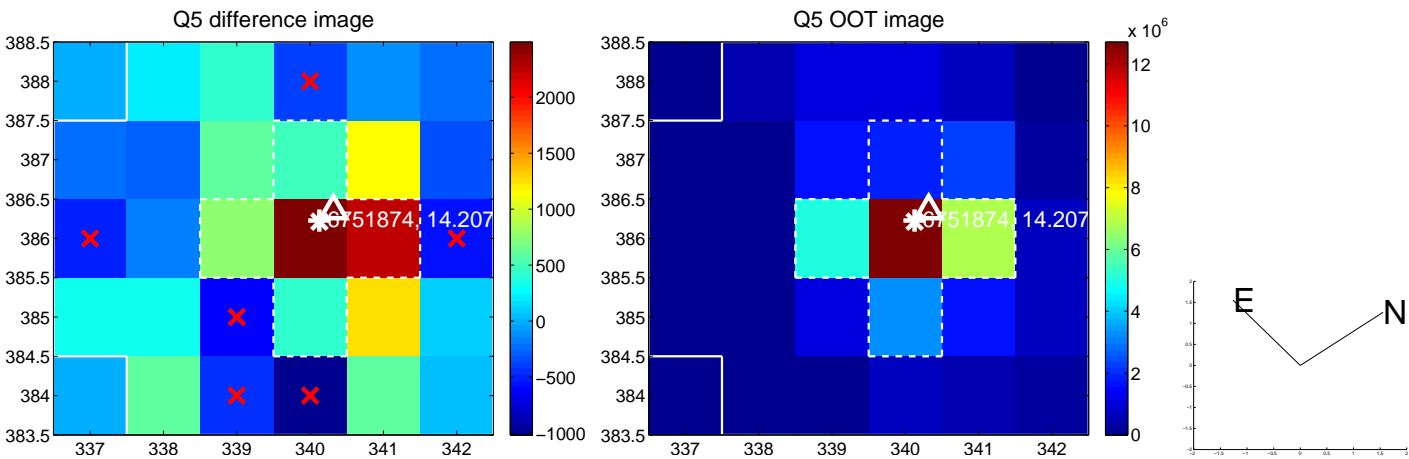


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

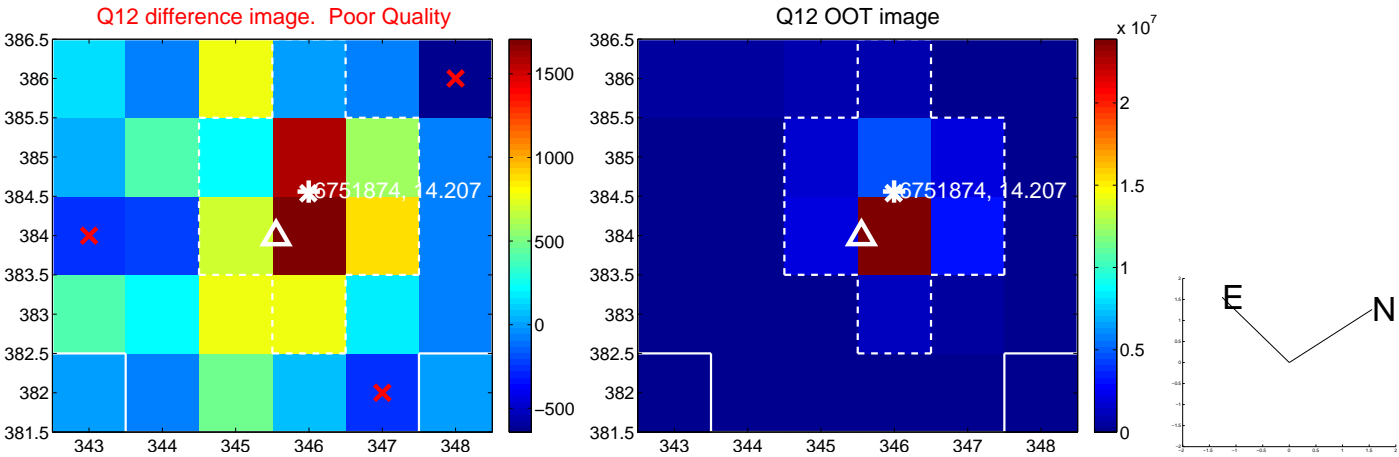
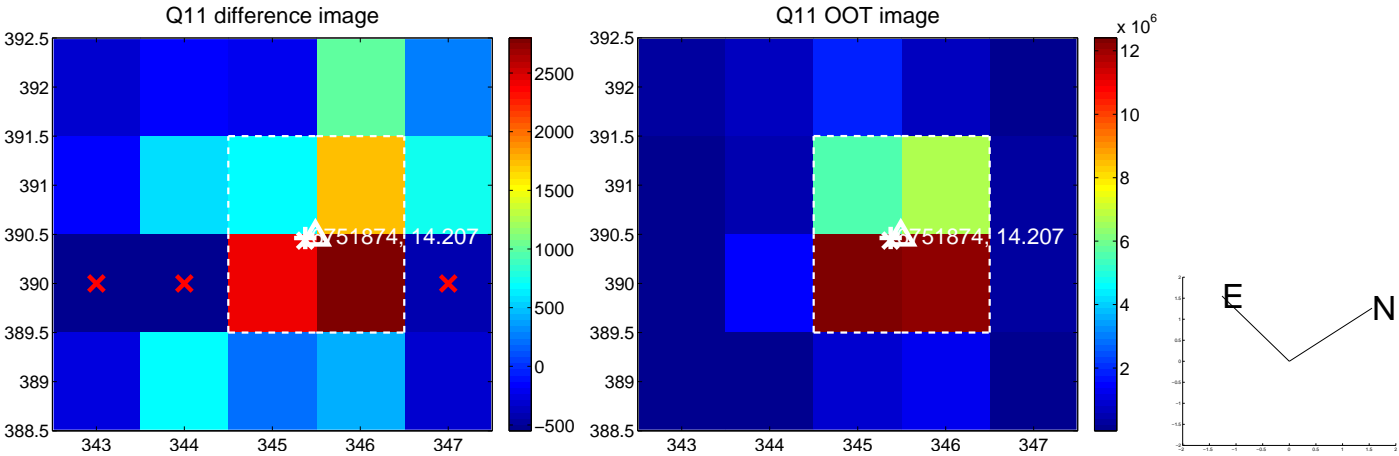
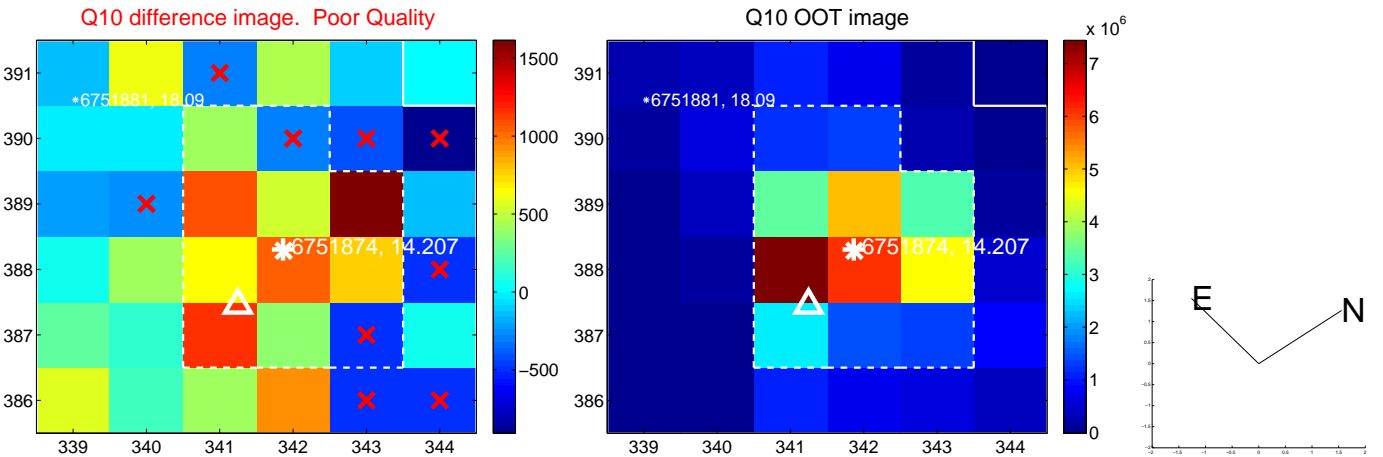
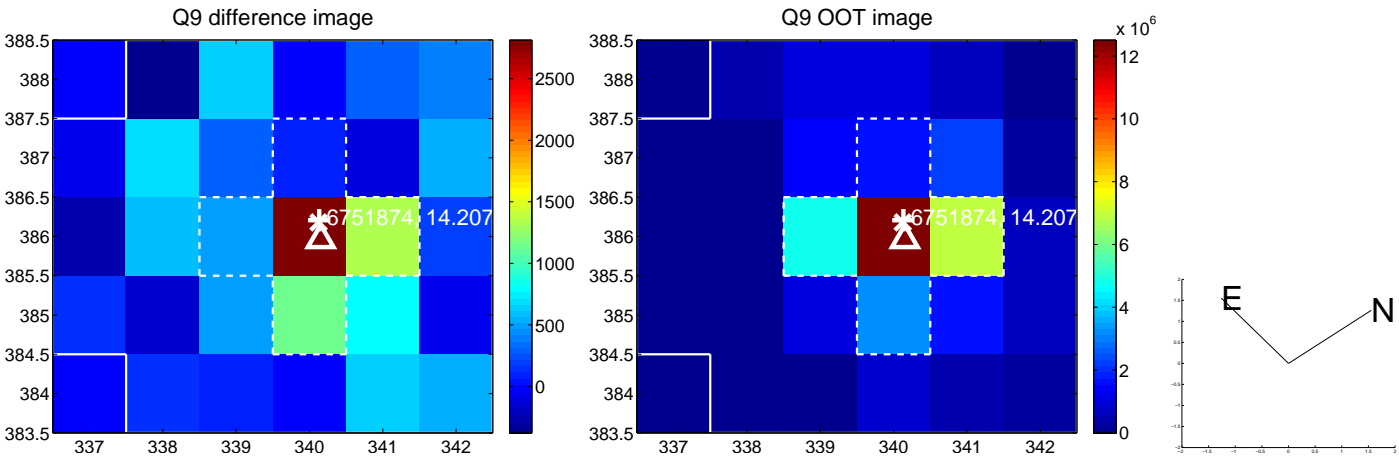
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



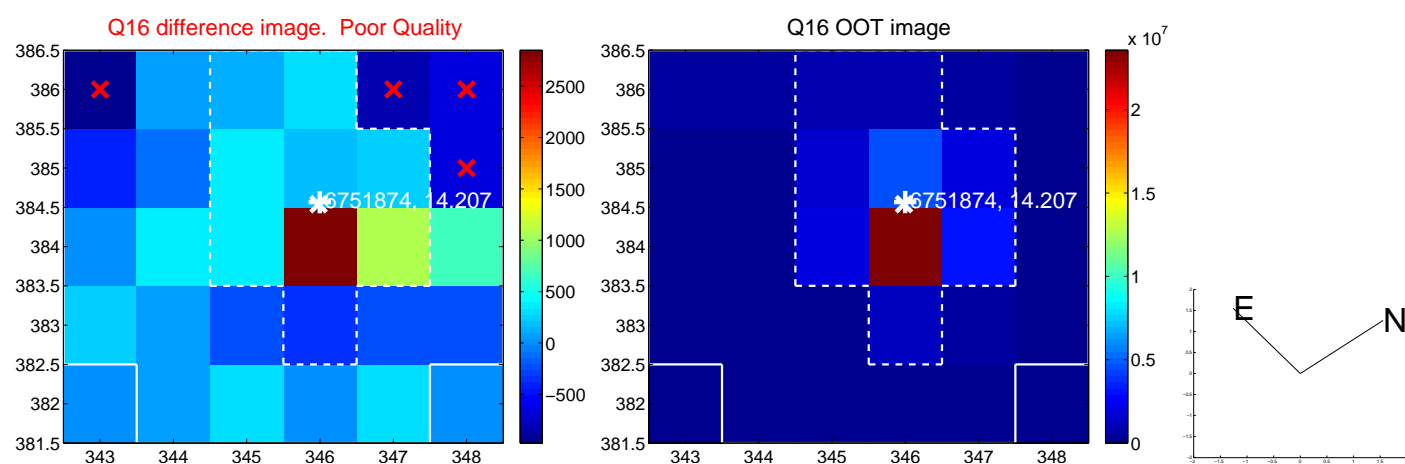
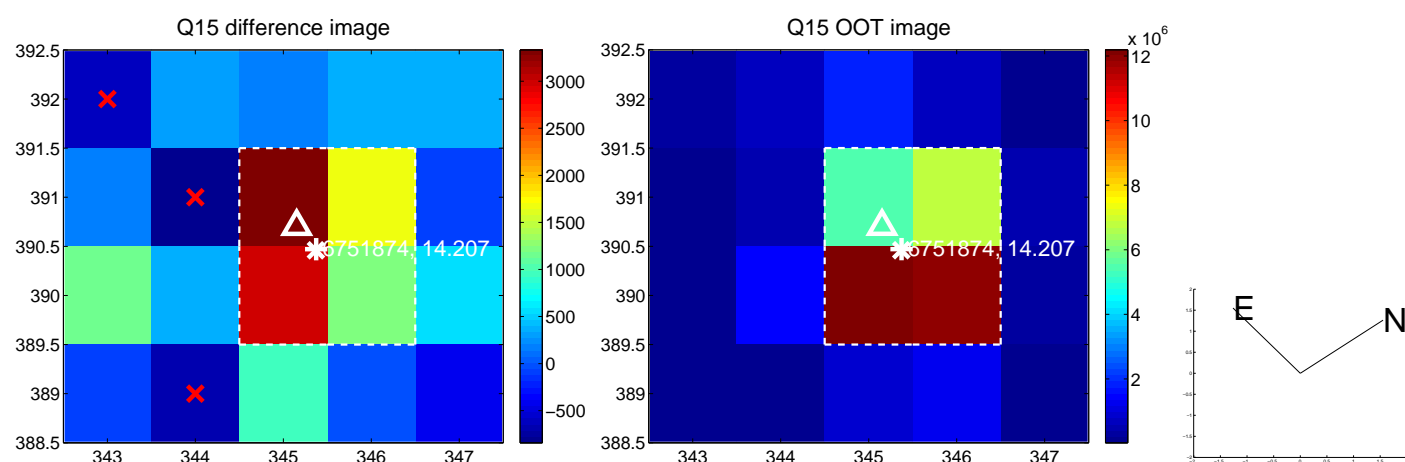
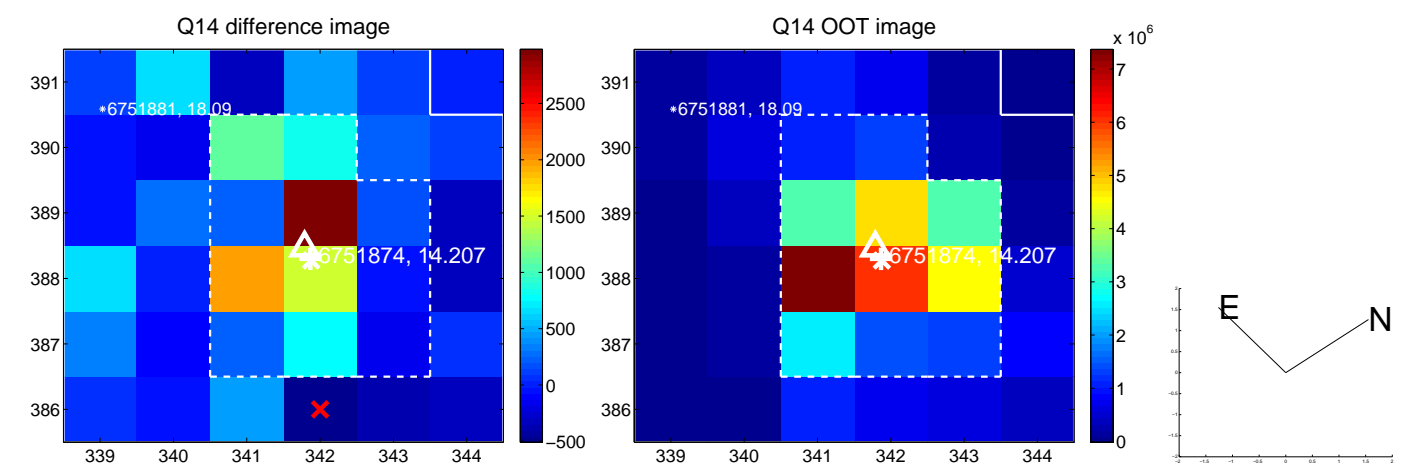
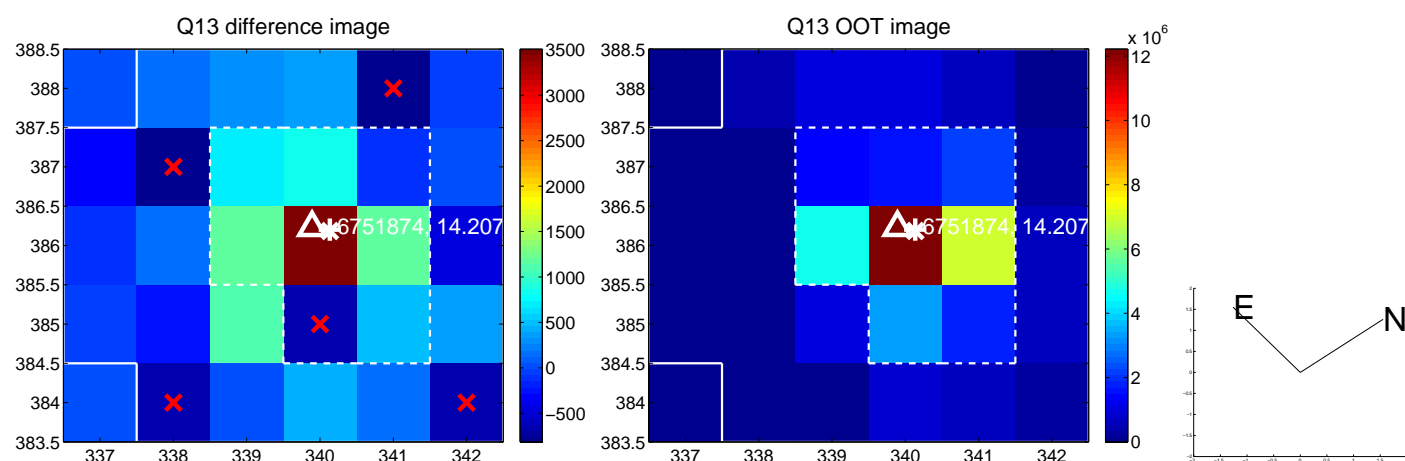
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

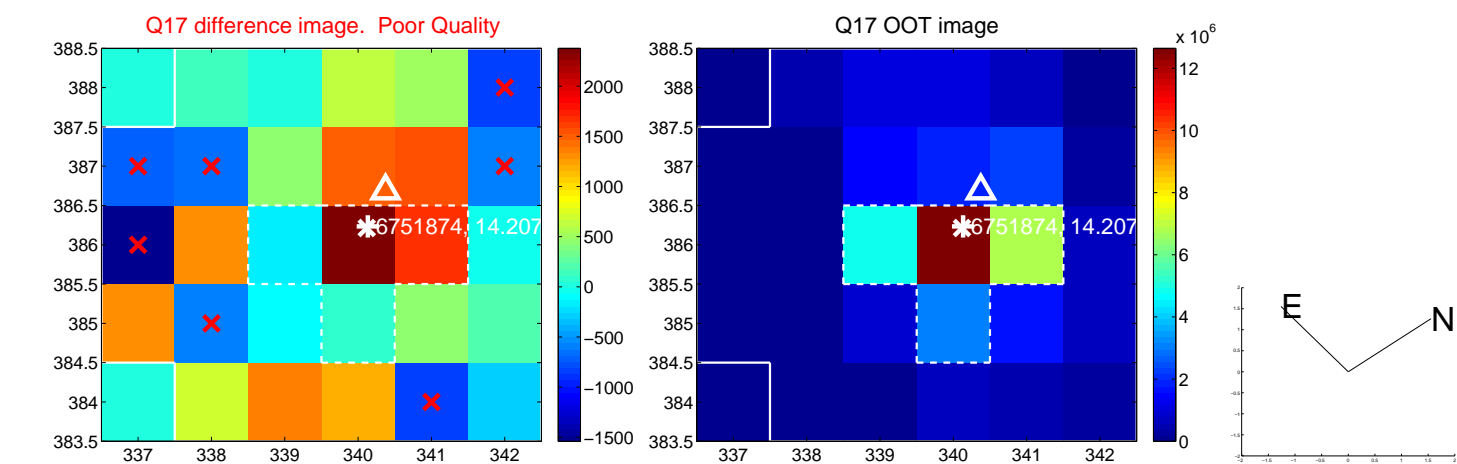


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

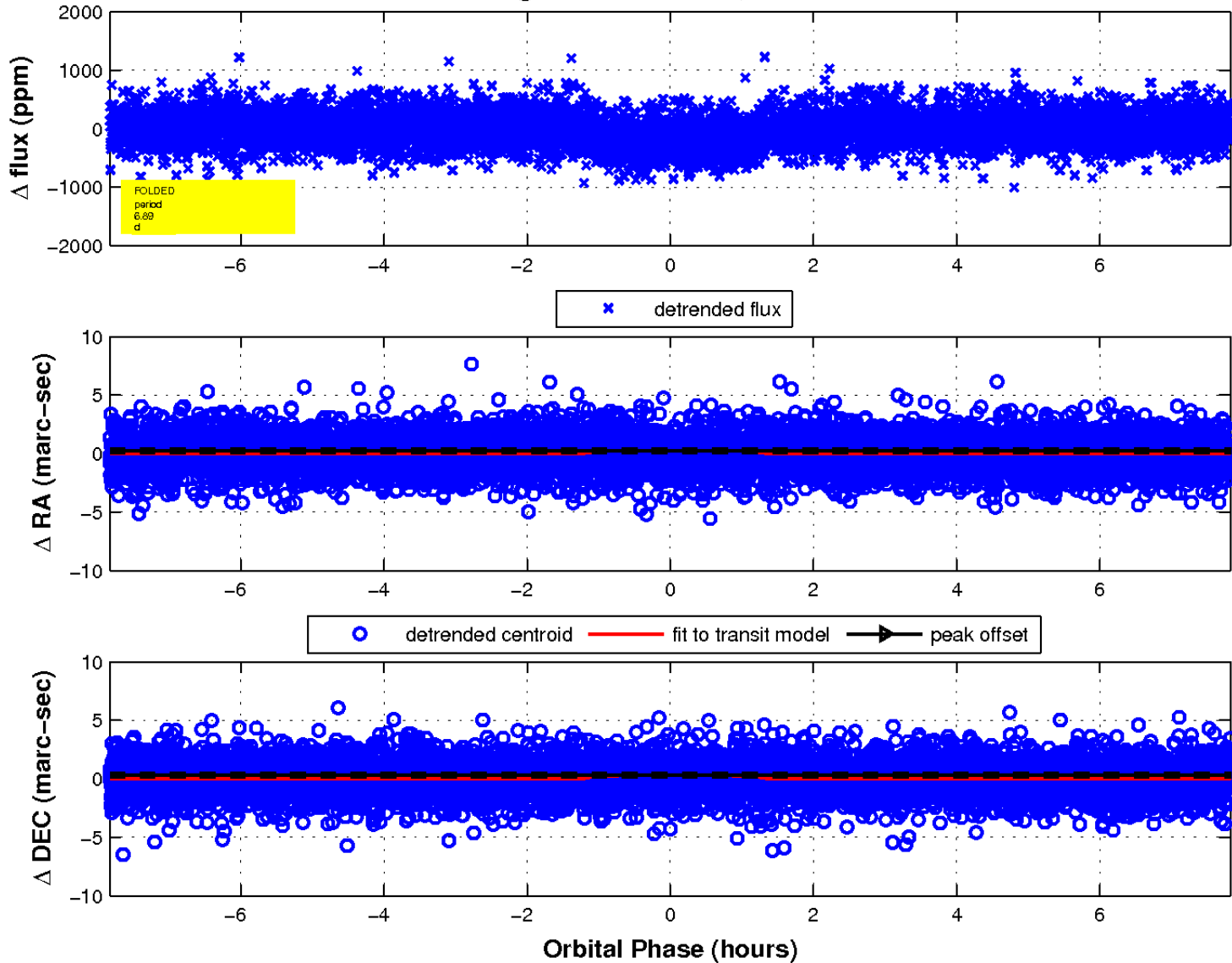




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



# UKIRT Image

Declination

