

# KIC 003340165

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003340165-01	OBS	4972.01	26.091623	149.174149	124.1	4.060	8.7	8.2	1.21	6346	1.51	62.67

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003340165-01	OBS	PC	0.87	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.

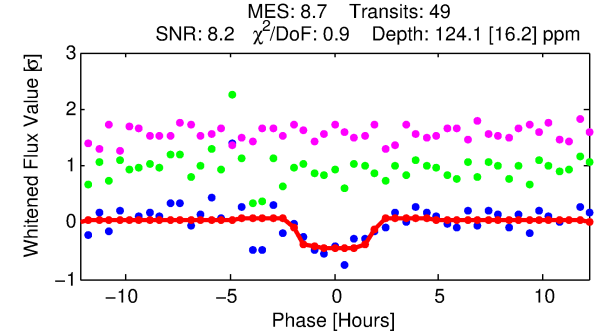
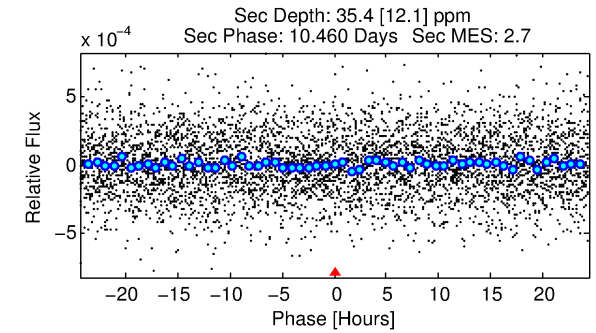
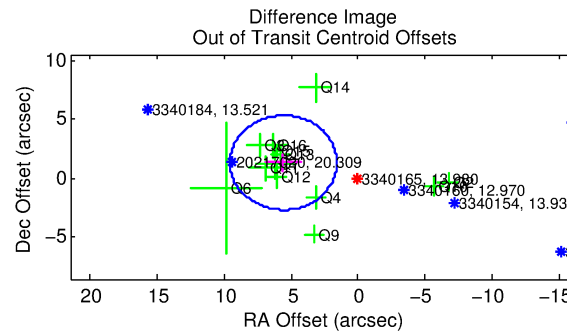
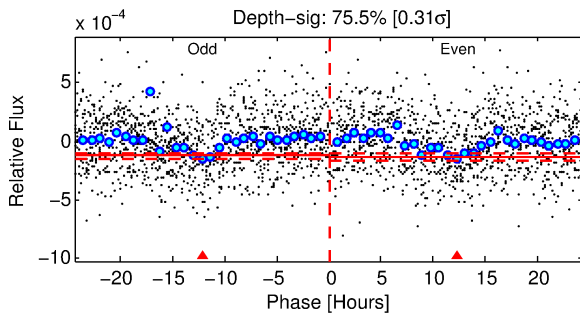
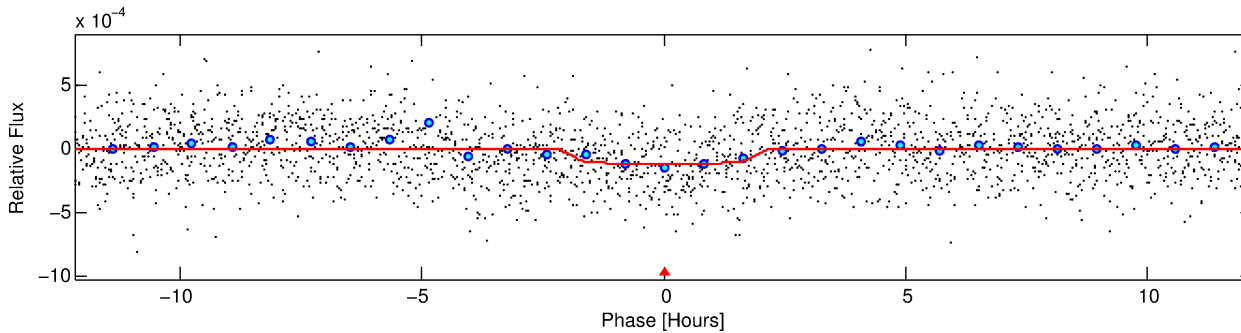
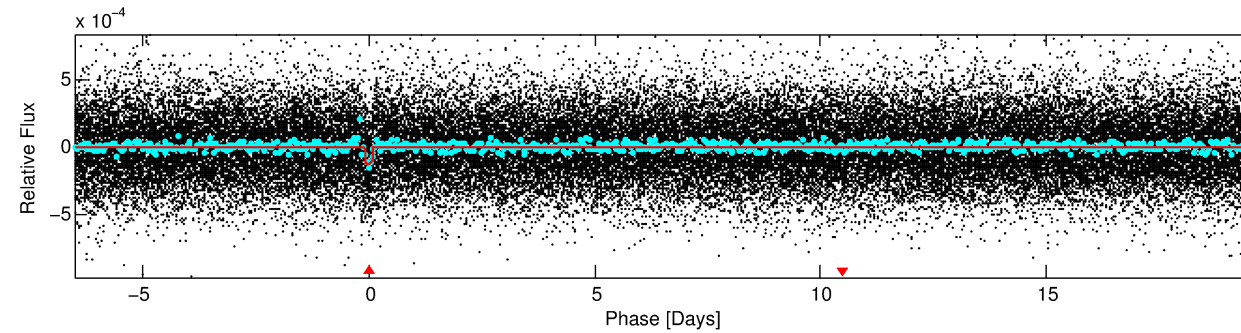
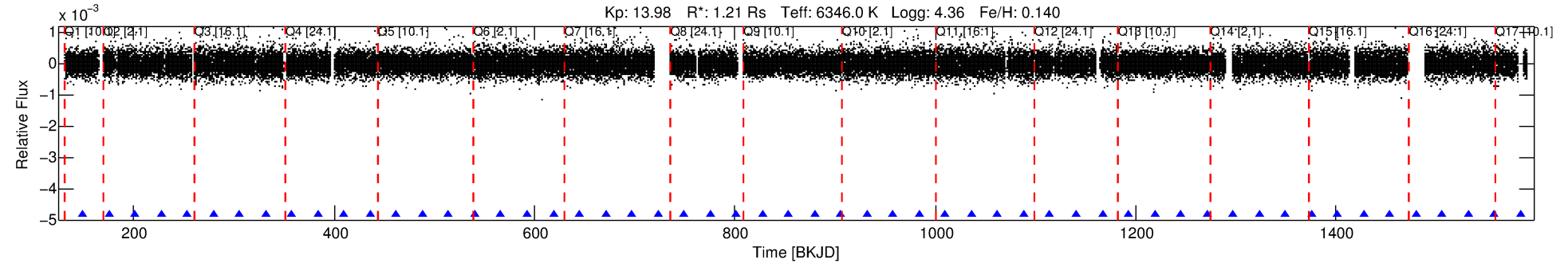
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003340165-01

No Significant Match Found

# DV One-Page Summary

KIC: 3340165 Candidate: 1 of 1 Period: 26.092 d  
KOI: K04972.01 Corr: 0.787



## DV Fit Results:

Period = 26.09162 [0.00034] d  
Epoch = 149.1741 [0.0104] BKJD  
Rp/R\* = 0.0114 [0.0080]  
a/R\* = 29.36 [107.56]  
b = 0.82 [1.52]  
Seff = 62.67 [12.41]  
Teq = 717 [36] K  
Rp = 1.51 [1.09] Re  
a = 0.1849 [0.0241] AU  
Ag = 293.29 [429.26] [0.68σ]  
Teffp = 4590 [1666] K [2.32σ]

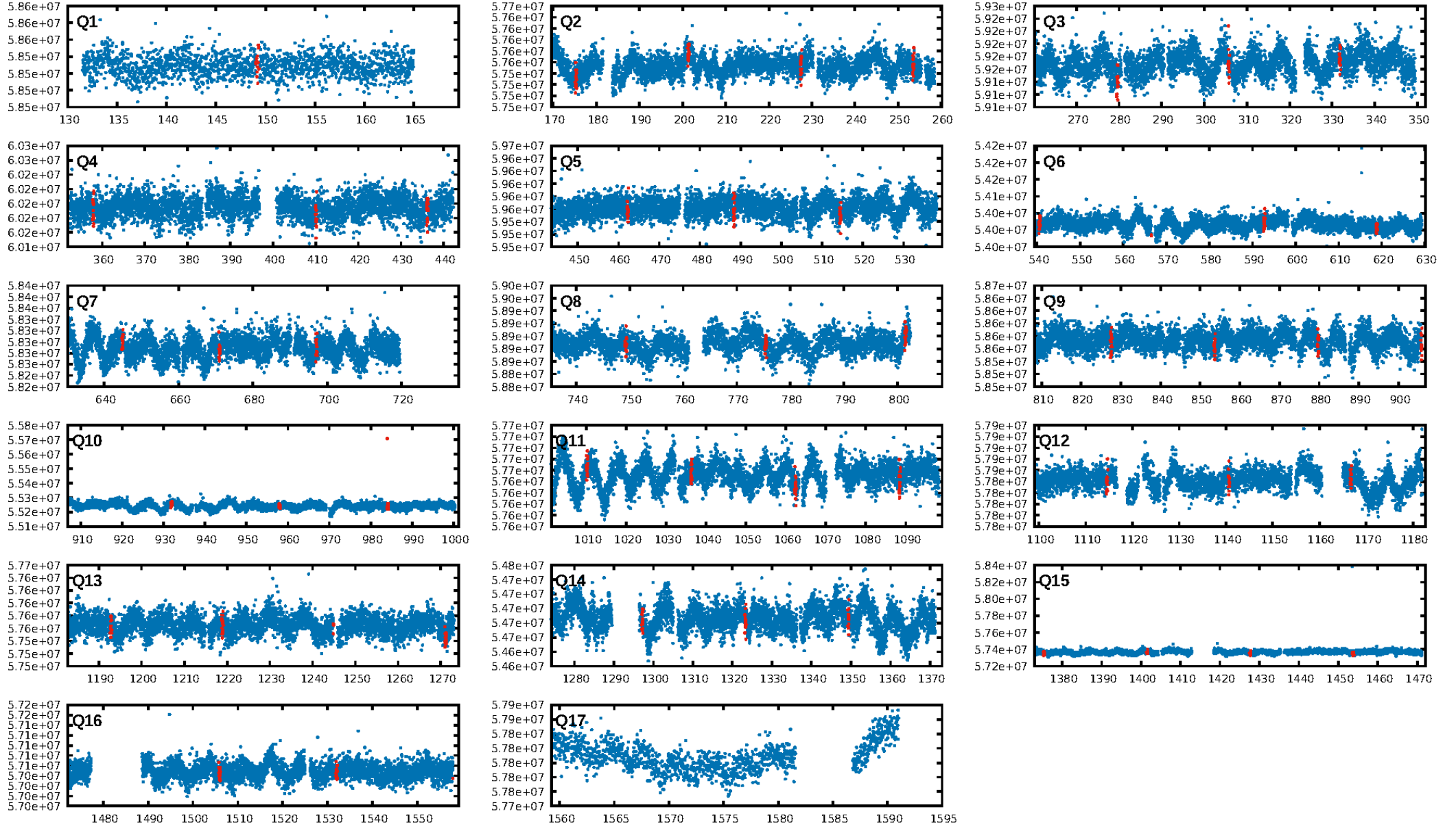
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 45.4%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 4.24e-18  
RollingBand-fgt: 1.00 [48/48]  
GhostDiagnostic-chr: 1.413  
Centroid-sig: 15.0%  
Centroid-so: 2.501 arcsec [1.98σ]  
OotOffset-rm: 5.744 arcsec [4.32σ]  
KicOffset-rm: 0.828 arcsec [0.81σ]  
OotOffset-st: 4/4/3/2 [13]  
KicOffset-st: 4/4/3/2 [13]  
DiffImageQuality-fgm: 0.23 [3/13]  
DiffImageOverlap-fno: 1.00 [16/16]

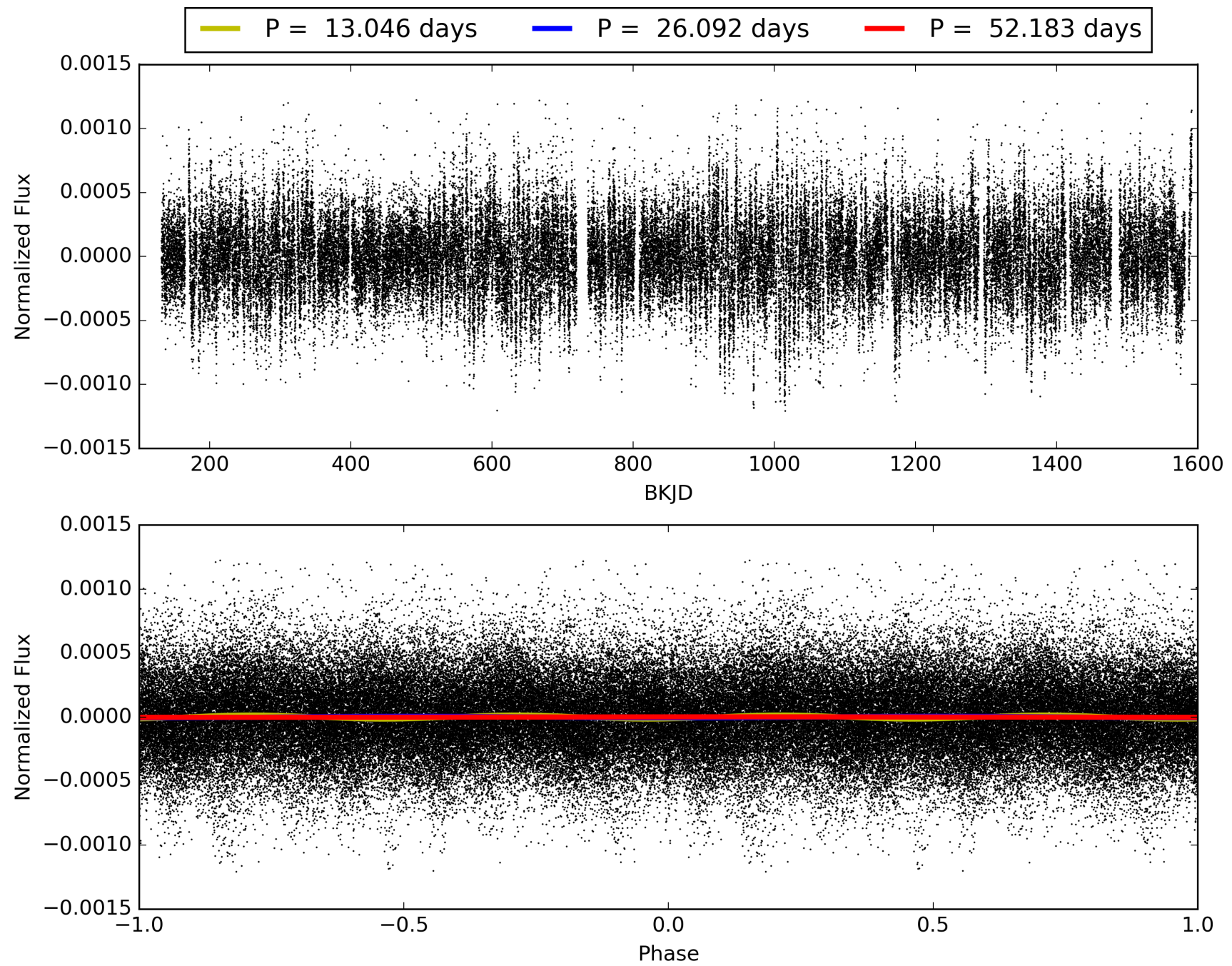
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:29:35 Z

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

# TCE 003340165-01, PDC Light Curves

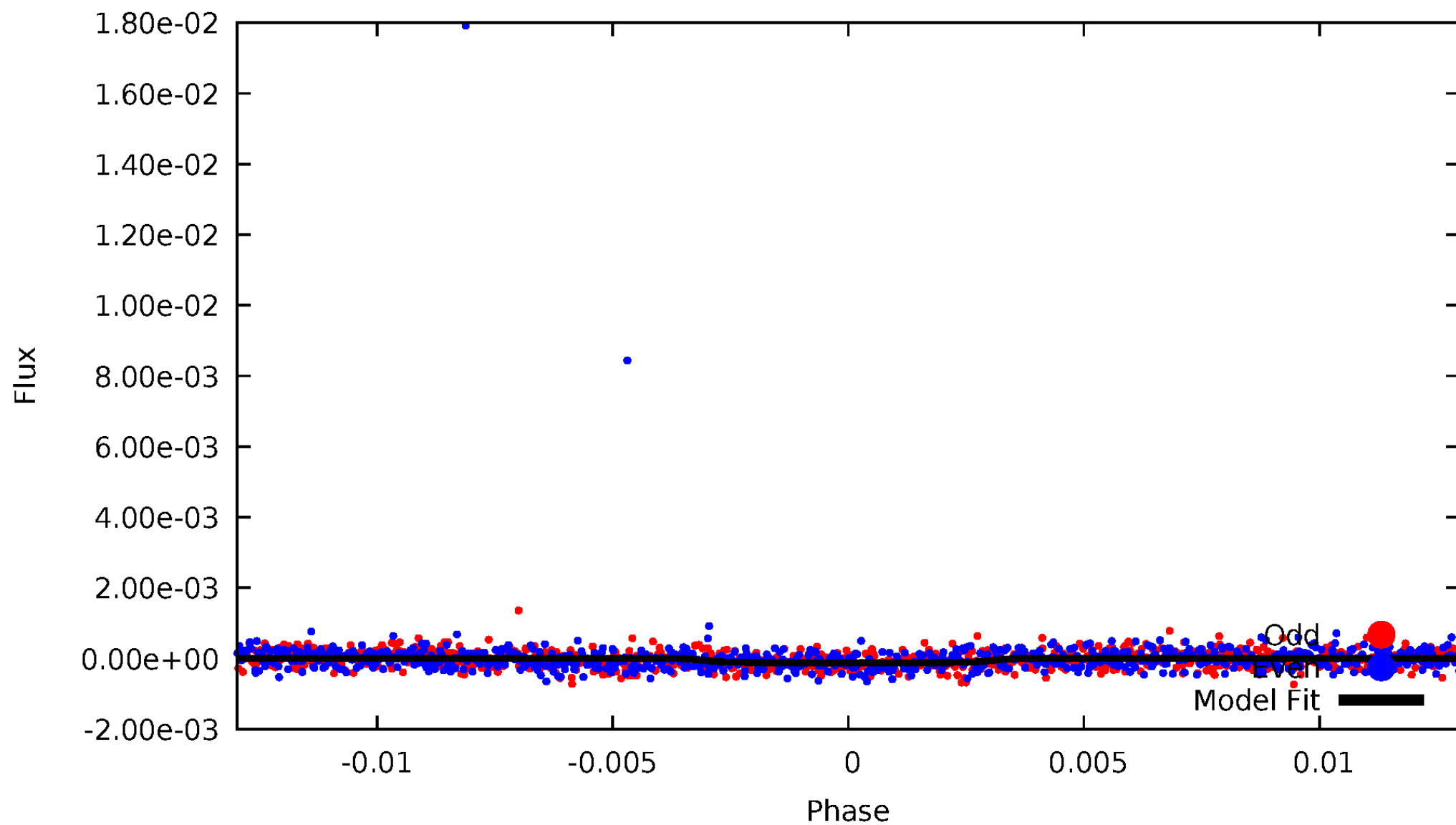


TCE 003340165-01



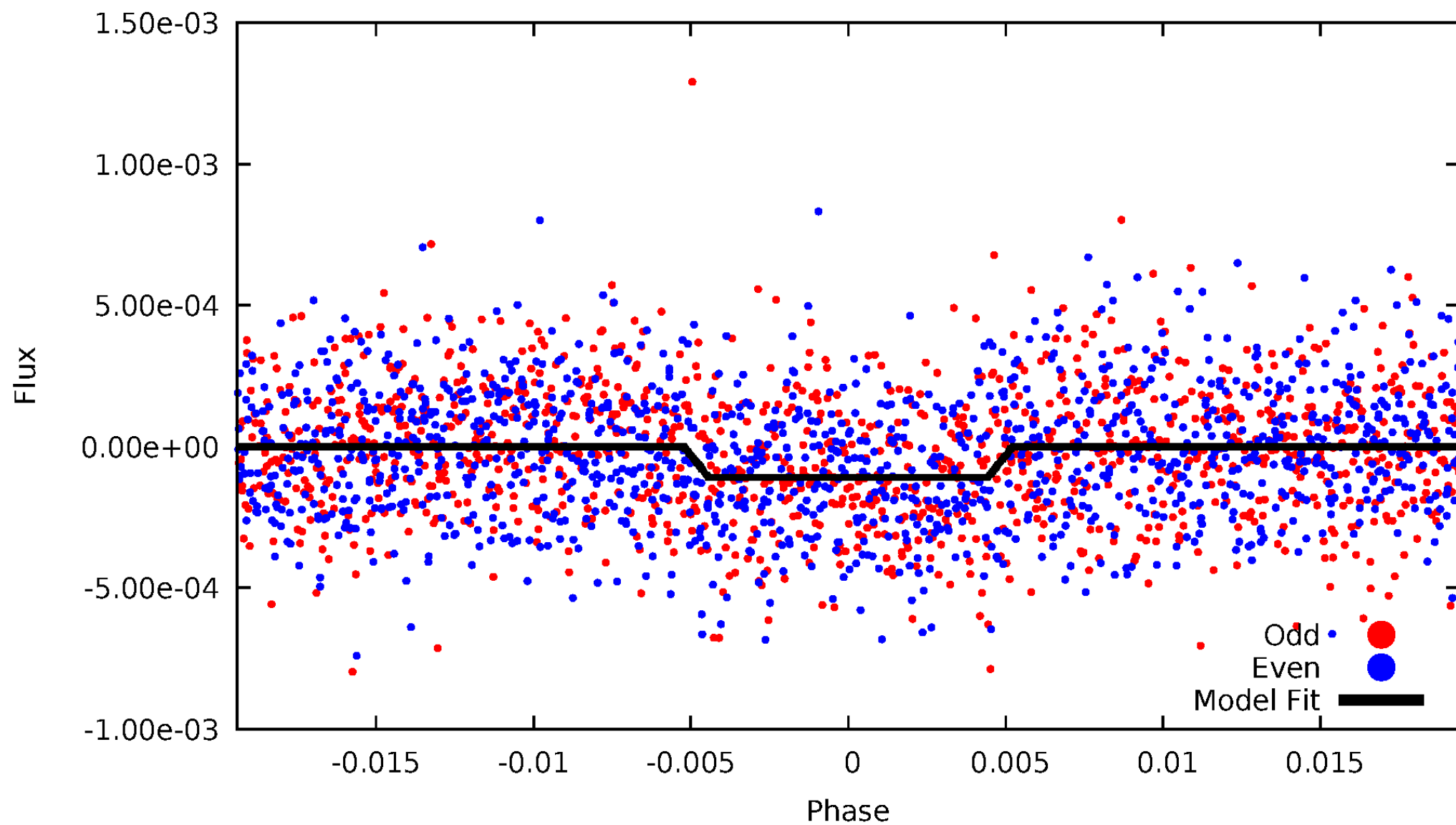
# DV Odd/Even

TCE 003340165-01



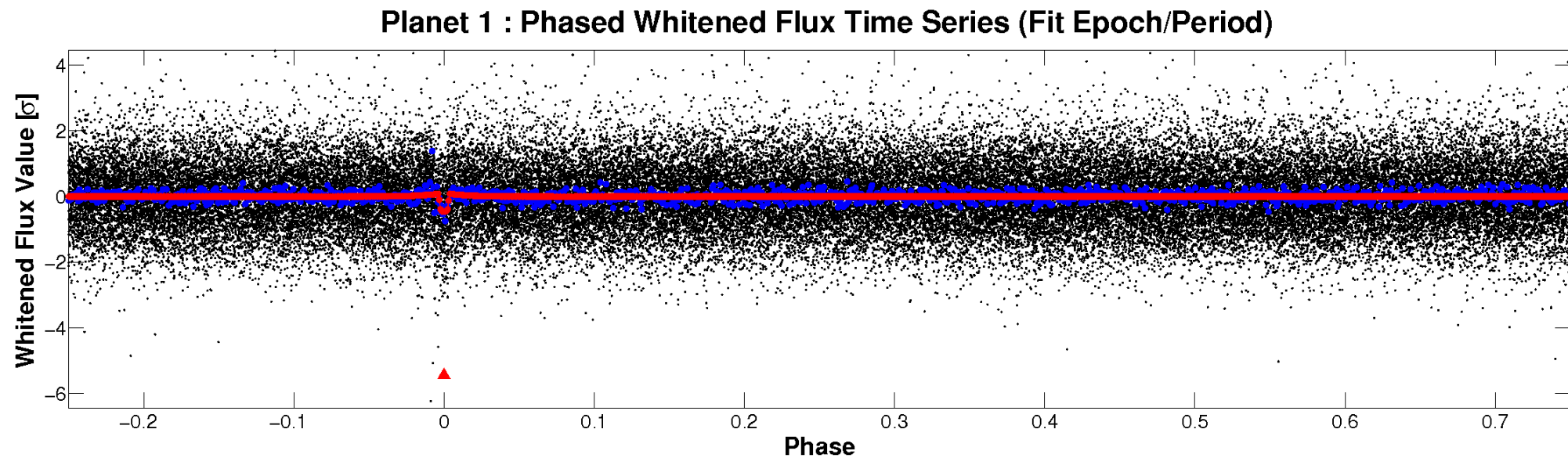
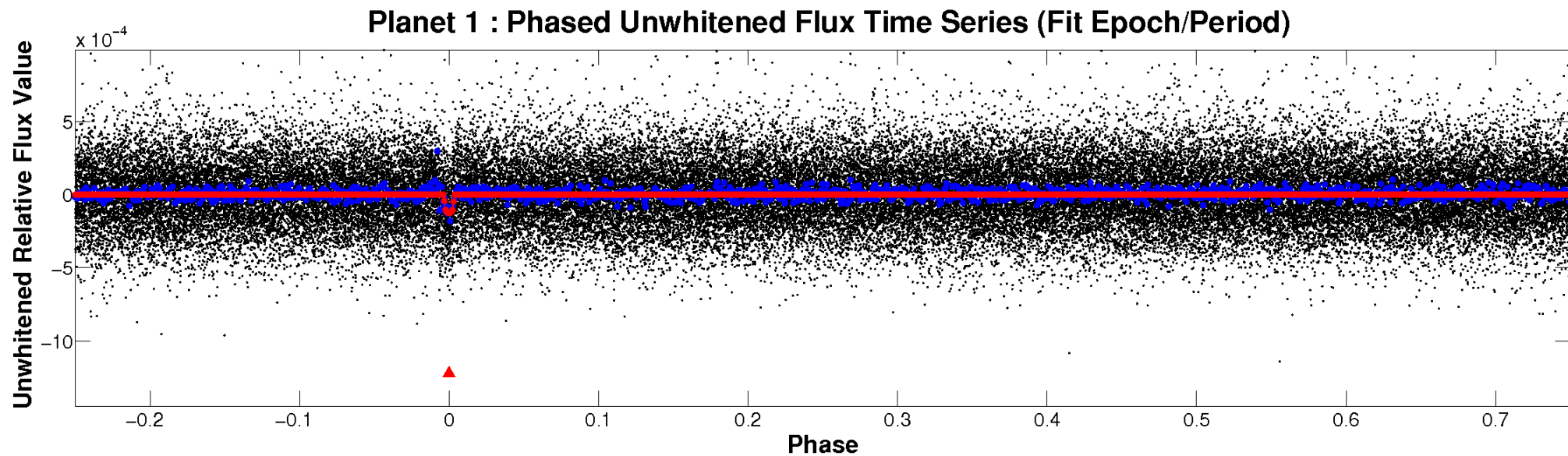
# ALT Odd/Even

TCE 003340165-01



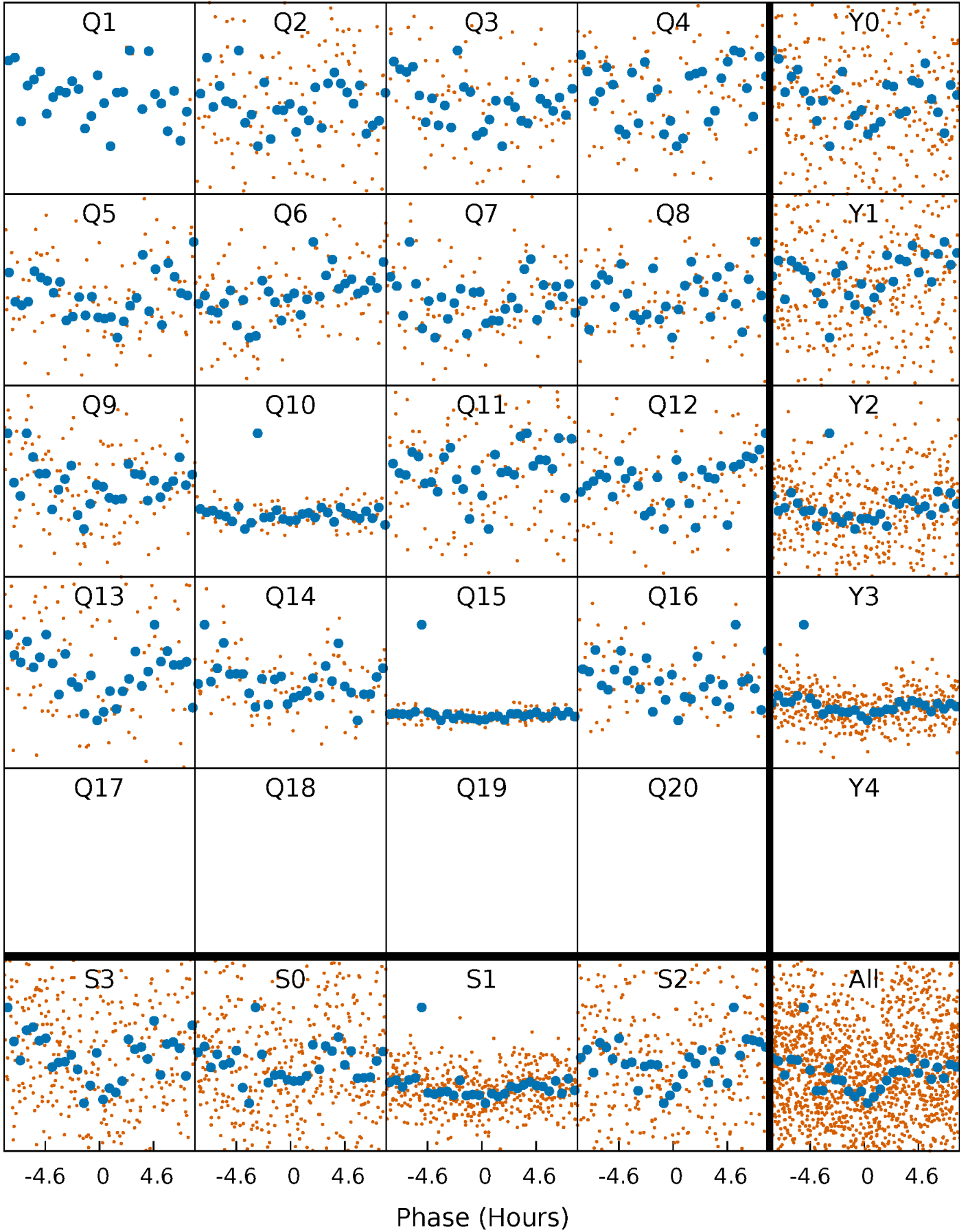


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

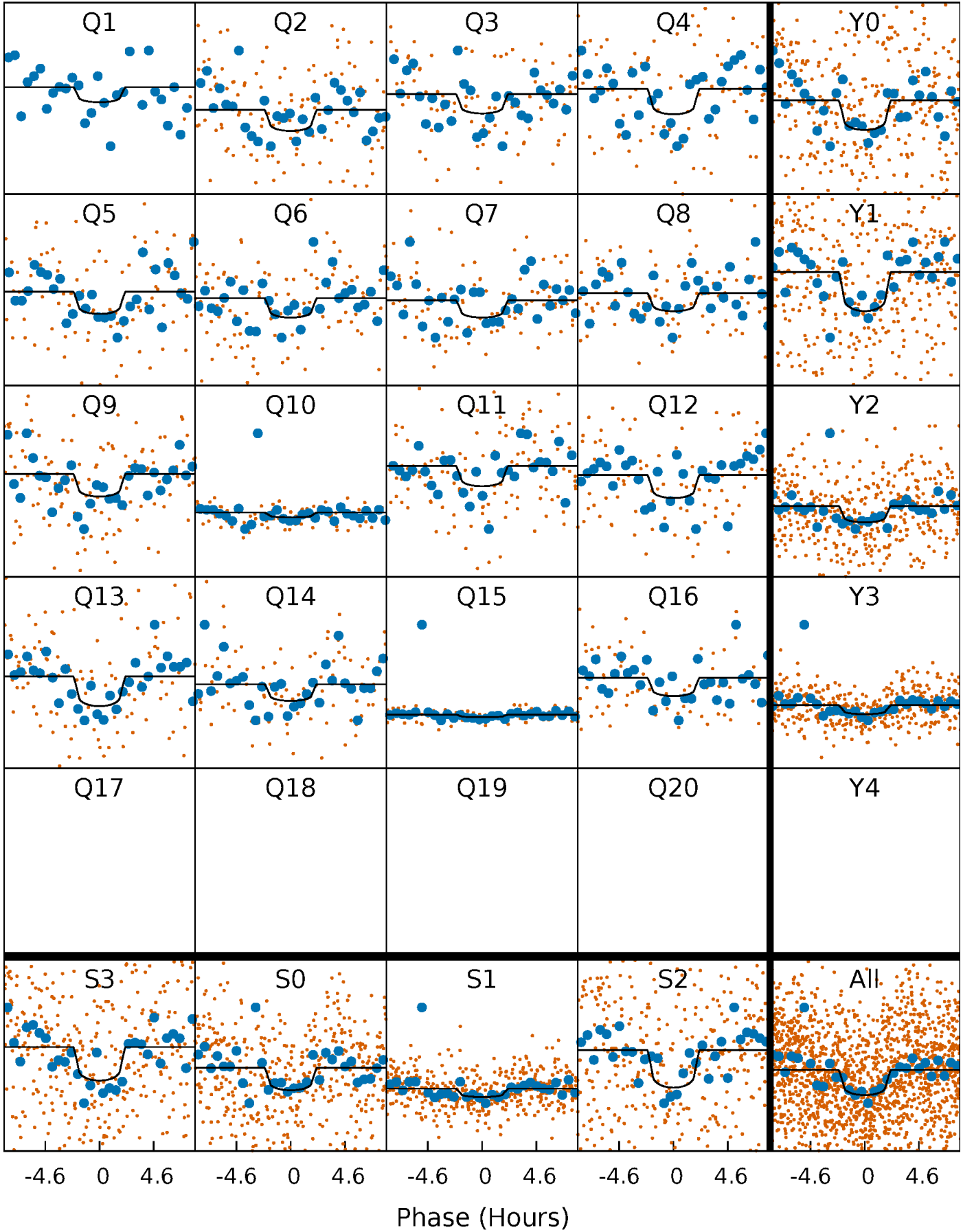
TCE 003340165-01 P= 26.091623 Days  $T_0=149.174149$  (BKJD)





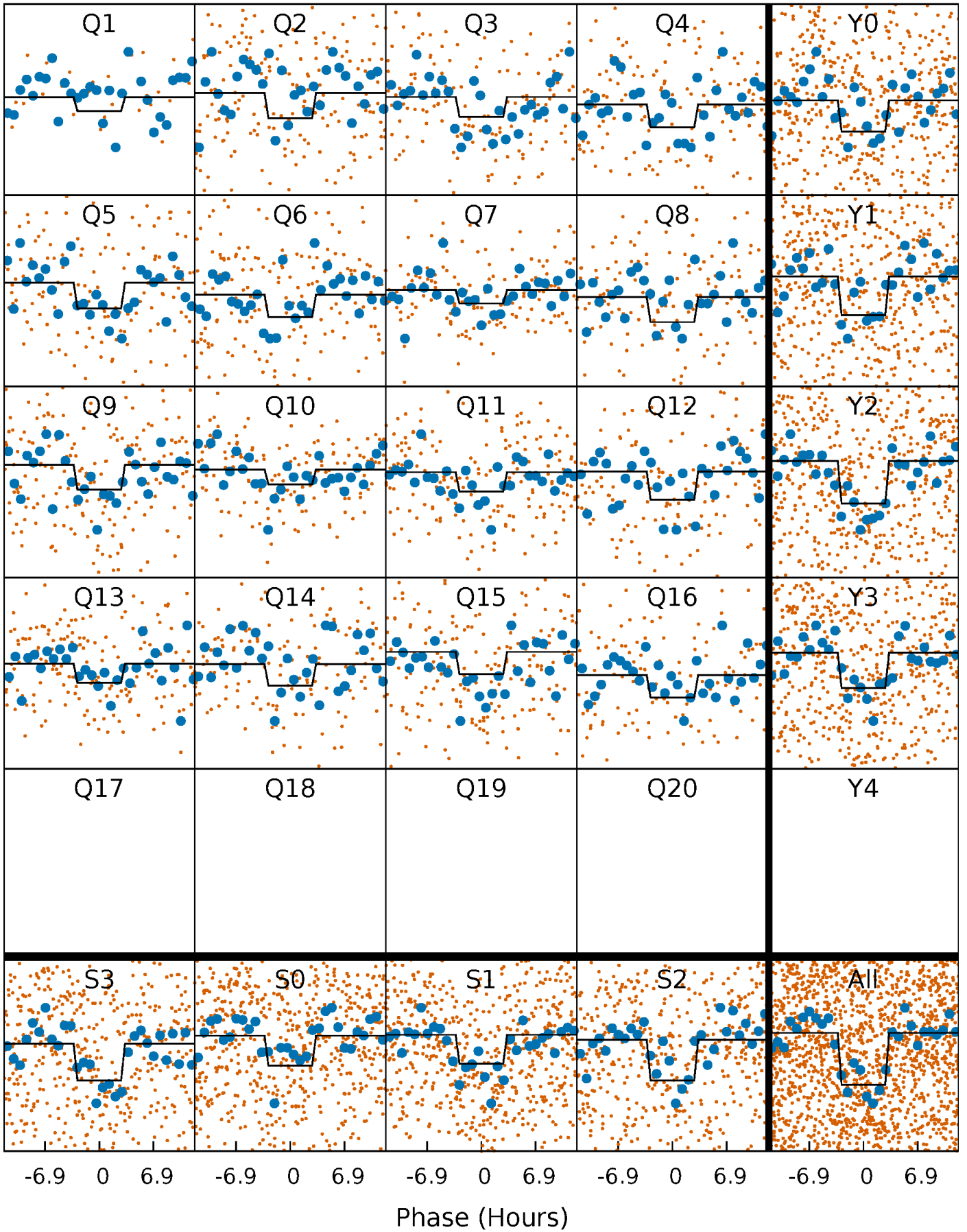
# DV Quarter-Phased Transit Curves

TCE 003340165-01 P= 26.091623 Days  $T_0=149.174149$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

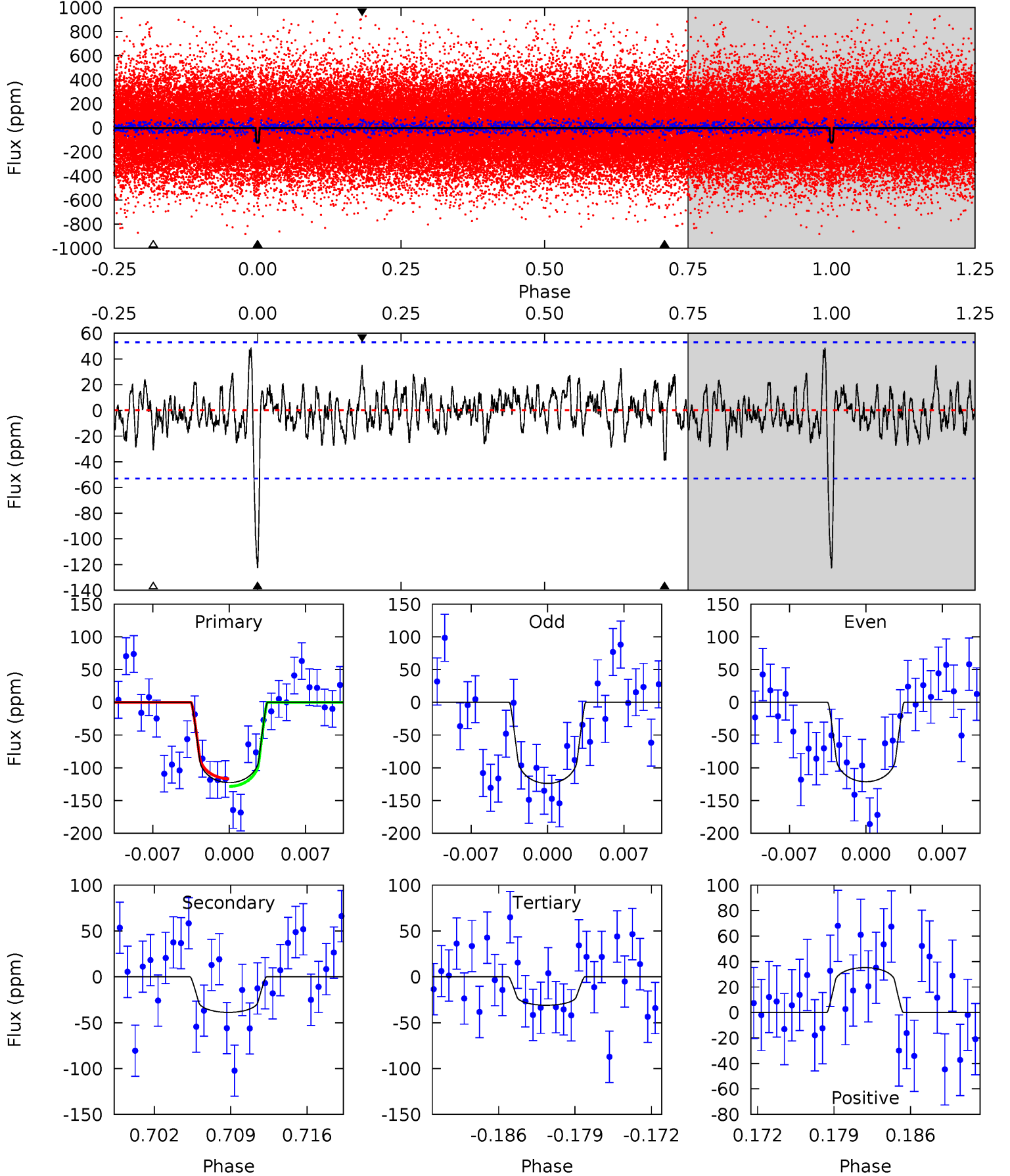
TCE 003340165-01 P= 26.091888 Days  $T_0=149.120156$  (BKJD)



# DV Model-Shift Uniqueness Test

003340165-01,  $P = 26.091623$  Days,  $E = 123.082526$  Days

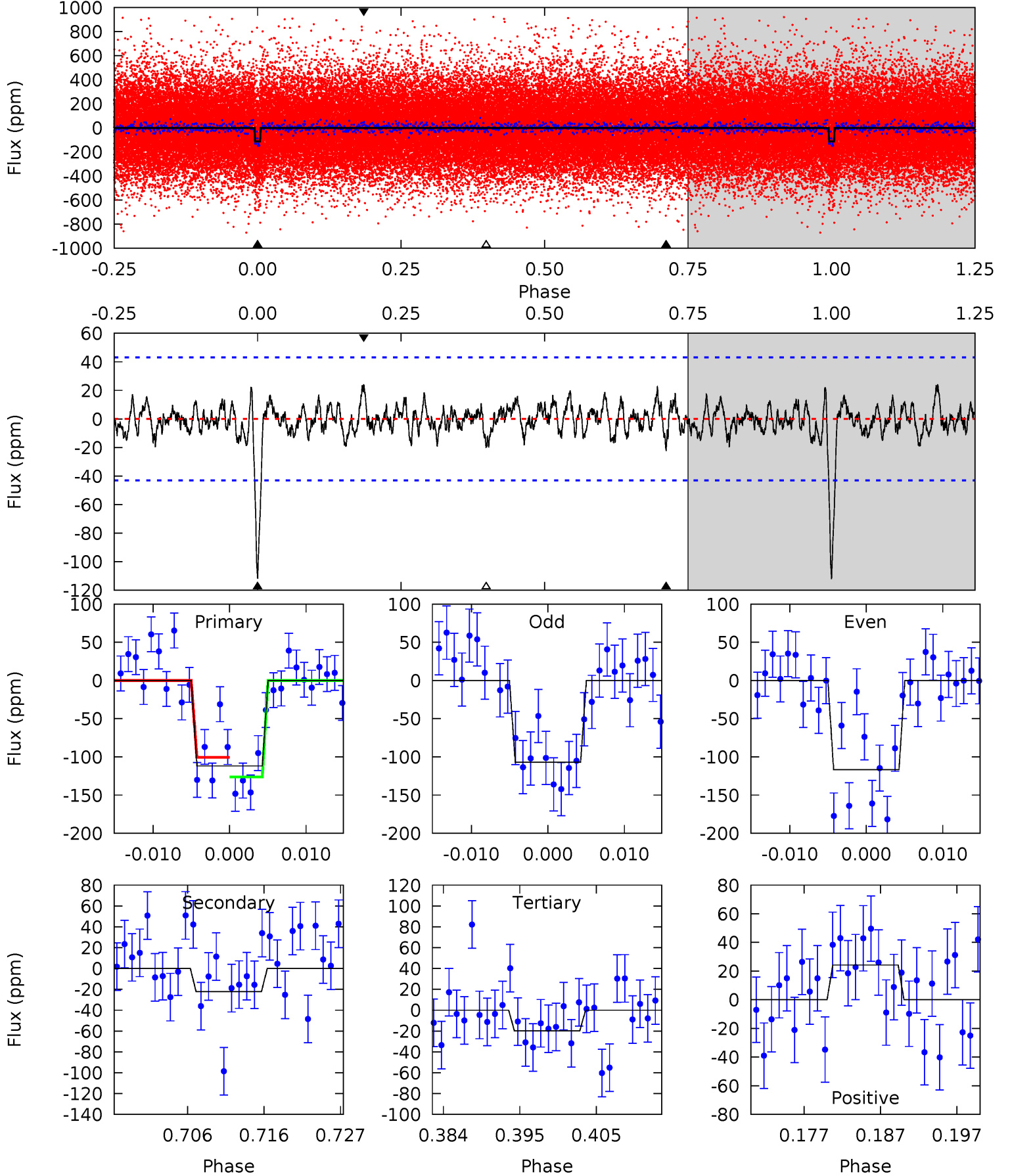
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	3.72	2.97	3.38	5.09	2.69	1.16	8.80	8.39	0.75	0.34	0.13	0.93	0.28	0.57



# Alt Model-Shift Uniqueness Test

003340165-01, P = 26.091888 Days, E = 123.028268 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
13.0	2.59	2.32	2.83	5.02	2.56	0.93	10.7	10.2	0.27	-0.24	0.56	1.22	0.18	1.49



### Stellar Parameters For KIC 003340165

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6346^{+76}_{-82}$	$4.362^{+0.035}_{-0.105}$	$0.140^{+0.150}_{-0.200}$	$1.214^{+0.187}_{-0.075}$	$1.241^{+0.079}_{-0.096}$	$0.978^{+0.137}_{-0.301}$
	+1%/-1%	+1%/-2%	+107%/-143%	+15%/-6%	+6%/-8%	+14%/-31%
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 003340165-01 / KOI 4972.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-39 \pm 10$	$1.60^{+1.11}_{-0.84}$	$1010^{+36}_{-23}$	$4670^{+2107}_{-781}$	$262^{+1045}_{-166}$
Alt.	$-22 \pm 9$	$1.54^{+1.05}_{-0.90}$	$1010^{+35}_{-24}$	$4284^{+1944}_{-763}$	$166^{+783}_{-112}$

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

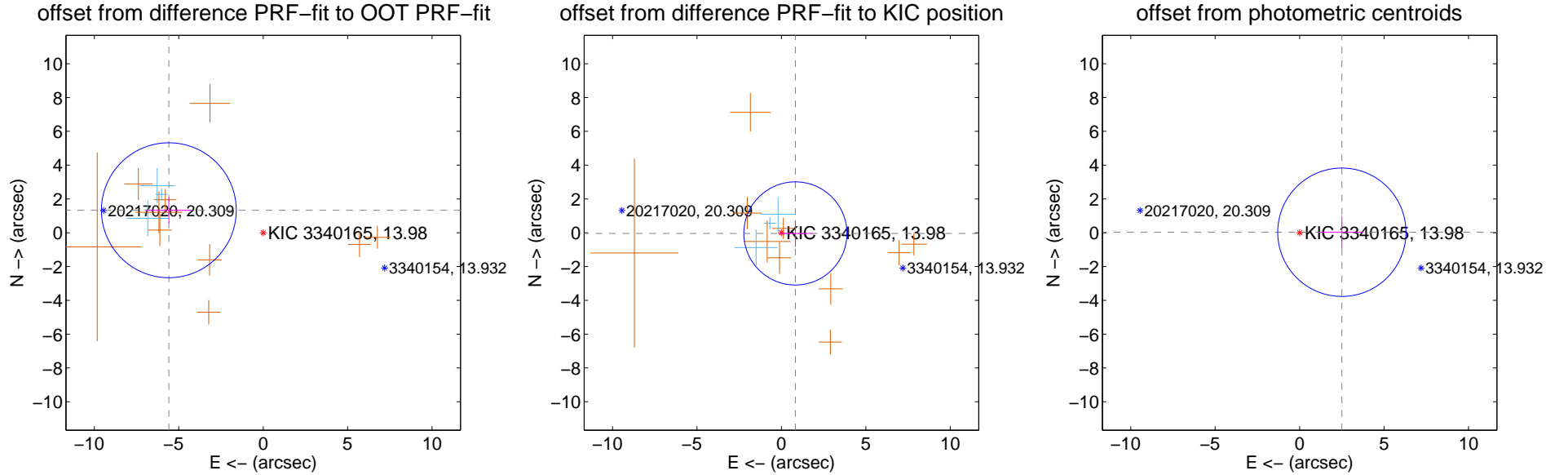
## DV Centroid Data

Supplemental centroid analysis for 003340165-01. Kepler magnitude: 13.98. Transit SNR 8.16

There are 3 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 6.31 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

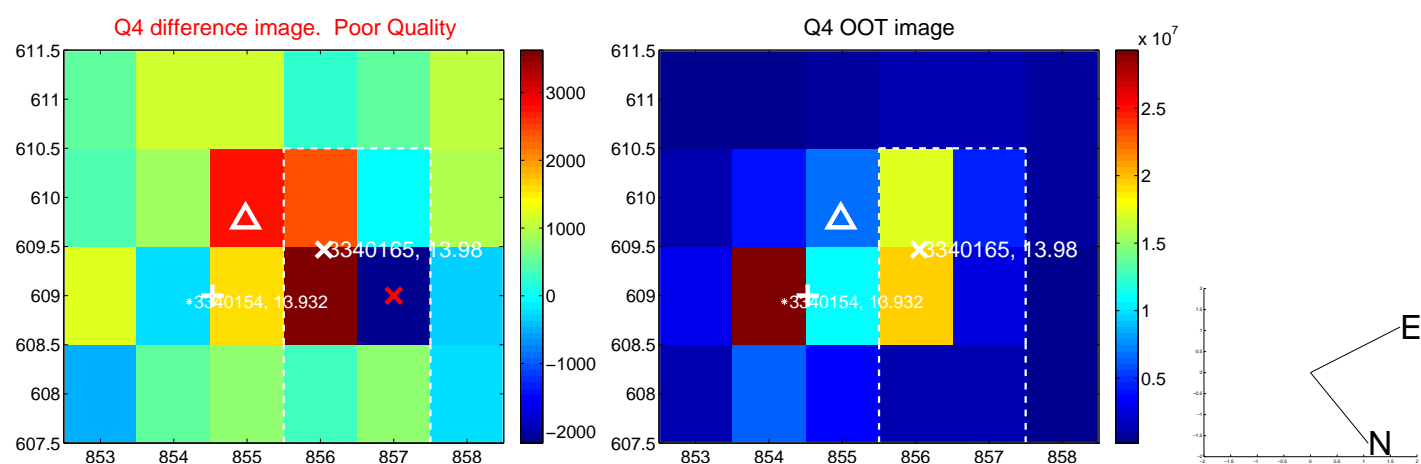
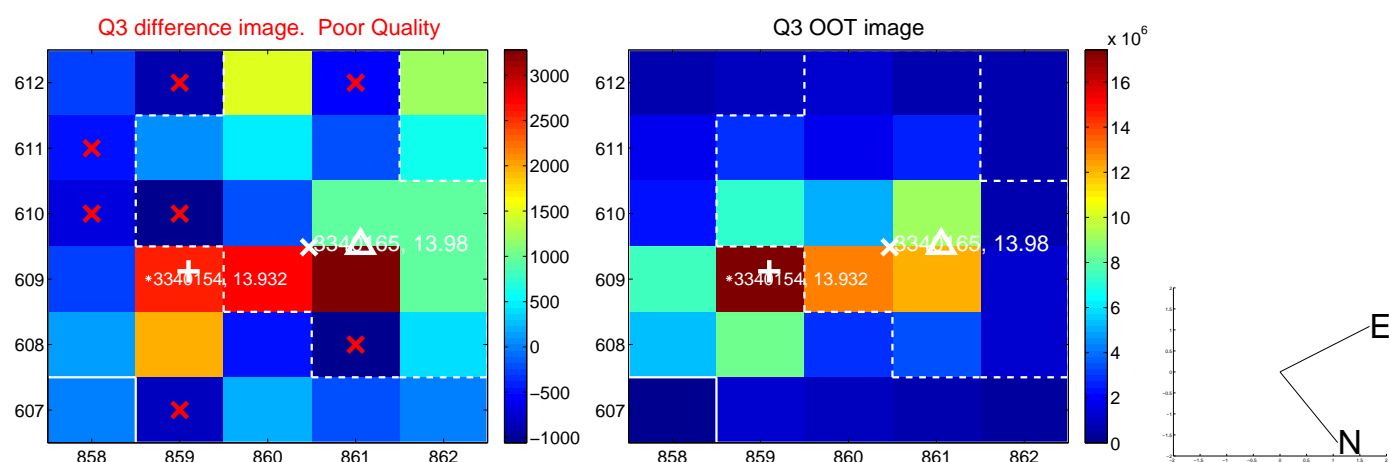
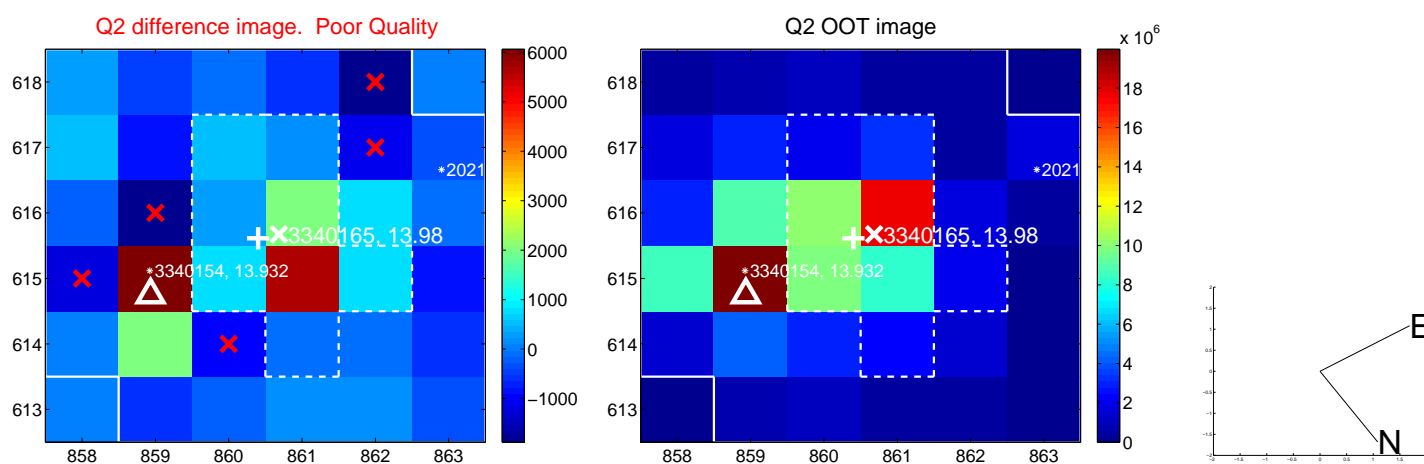
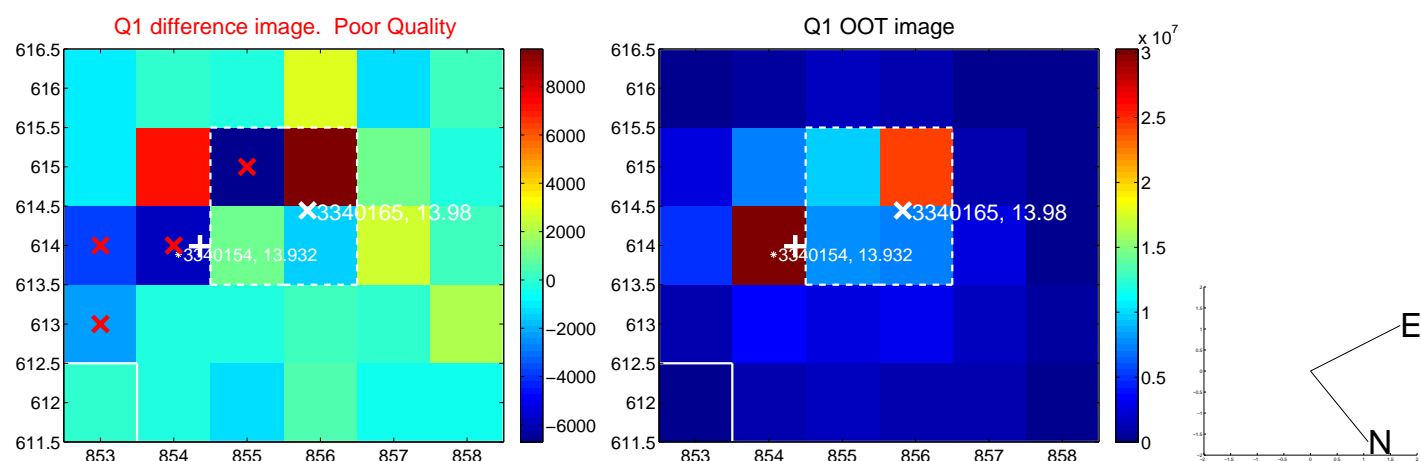
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$5.744 \pm 1.331$	4.32	$5.588 \pm 1.330$	$1.331 \pm 0.766$
PRF-fit source offset from KIC position	$0.828 \pm 1.017$	0.81	$-0.827 \pm 1.012$	$-0.041 \pm 0.790$
photometric centroid source offset	$2.50 \pm 1.27$	1.98	$-2.50 \pm 1.27$	$0.03 \pm 0.96$



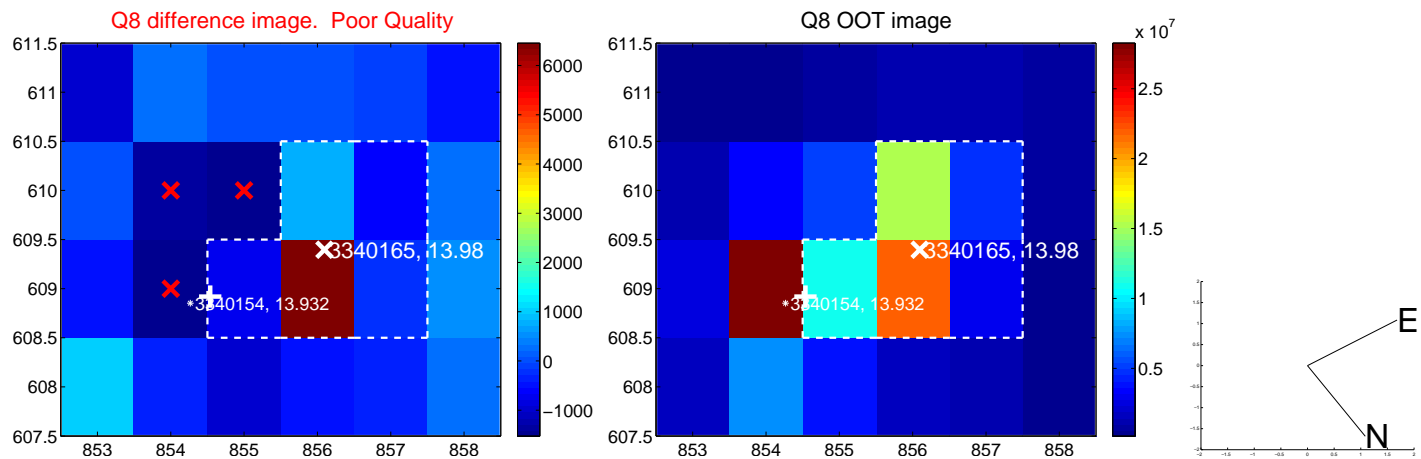
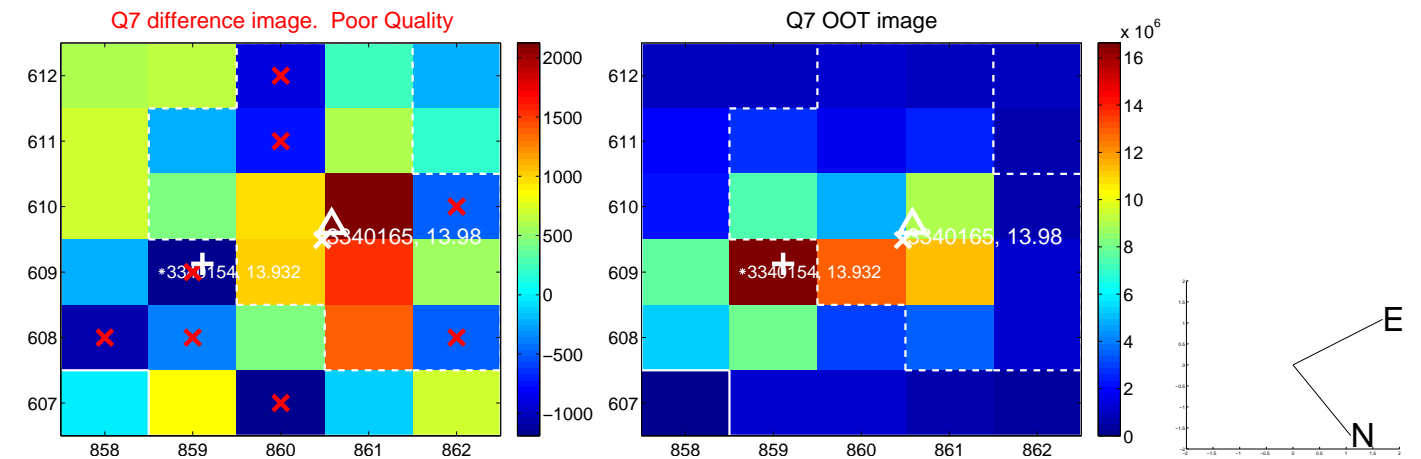
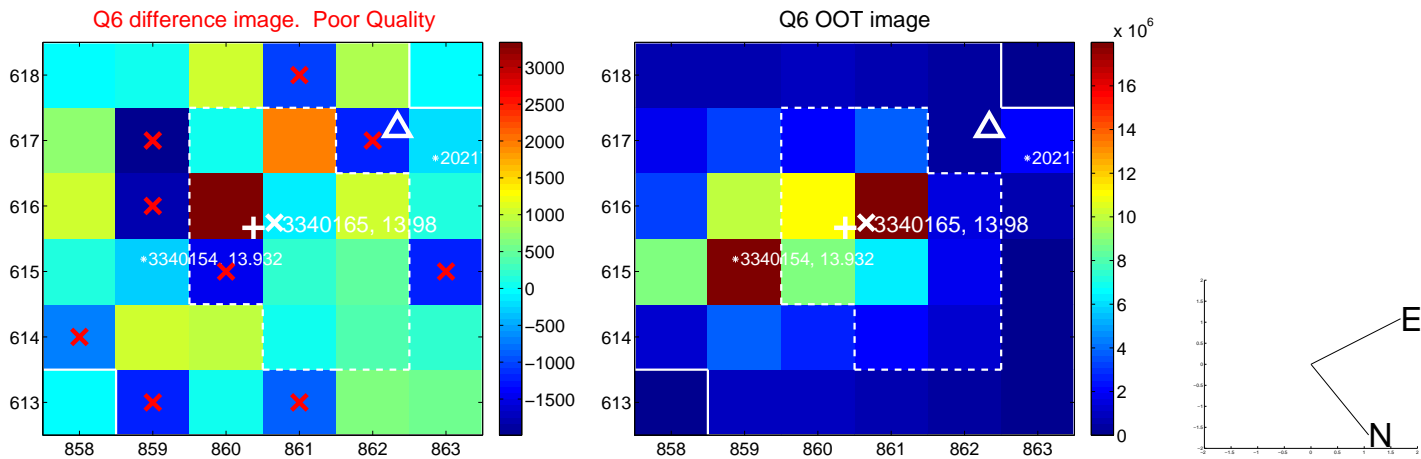
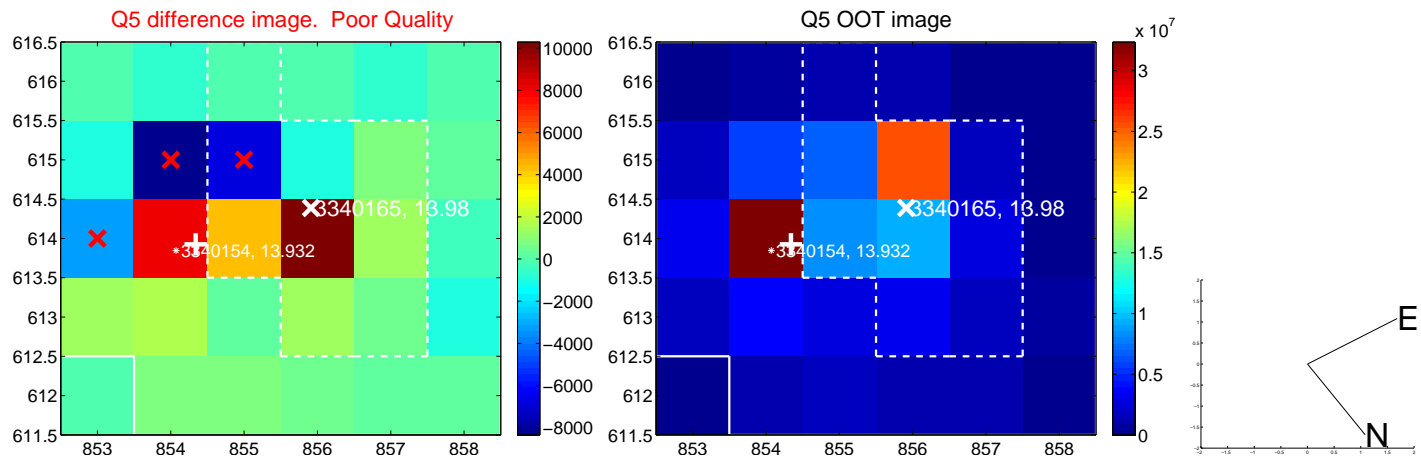
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



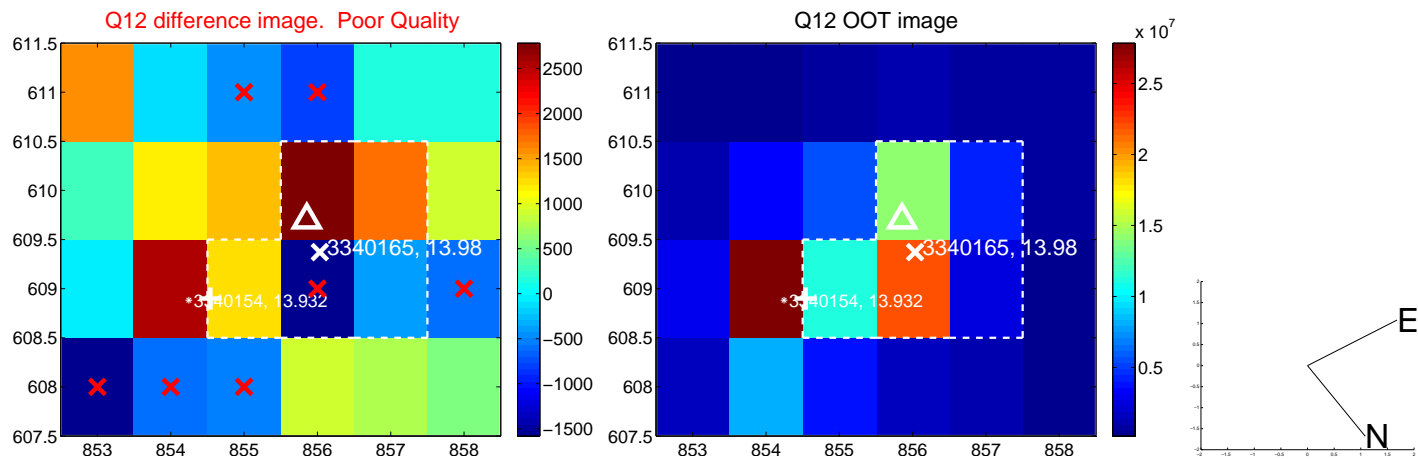
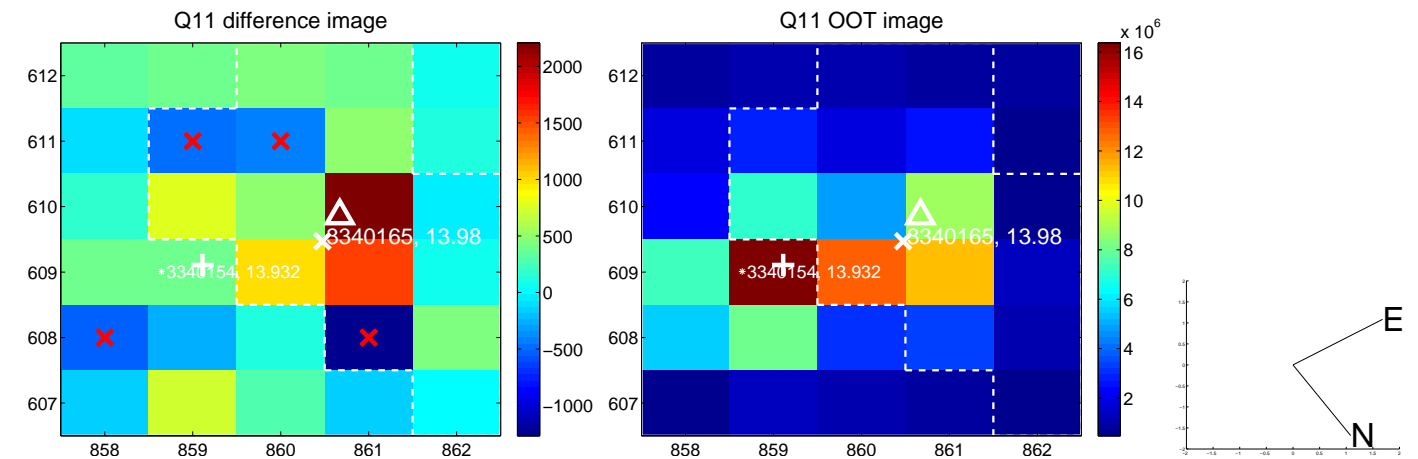
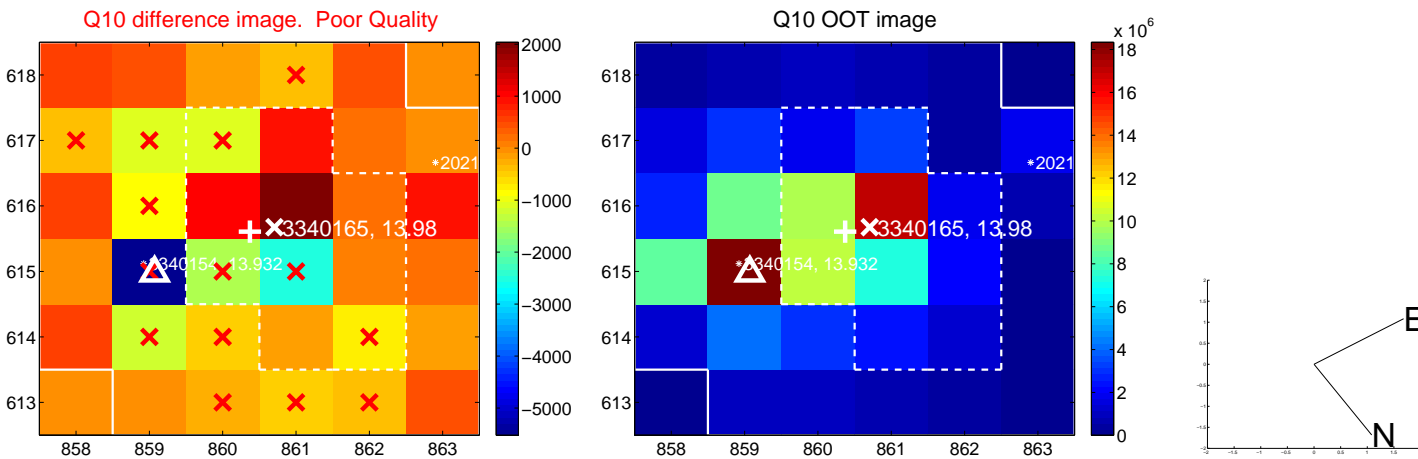
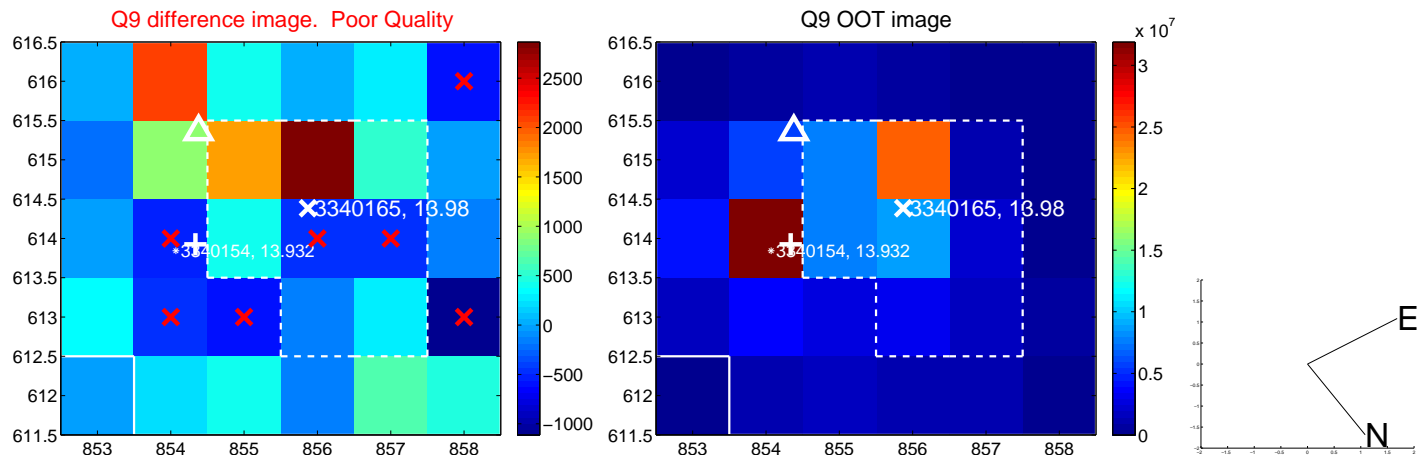
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



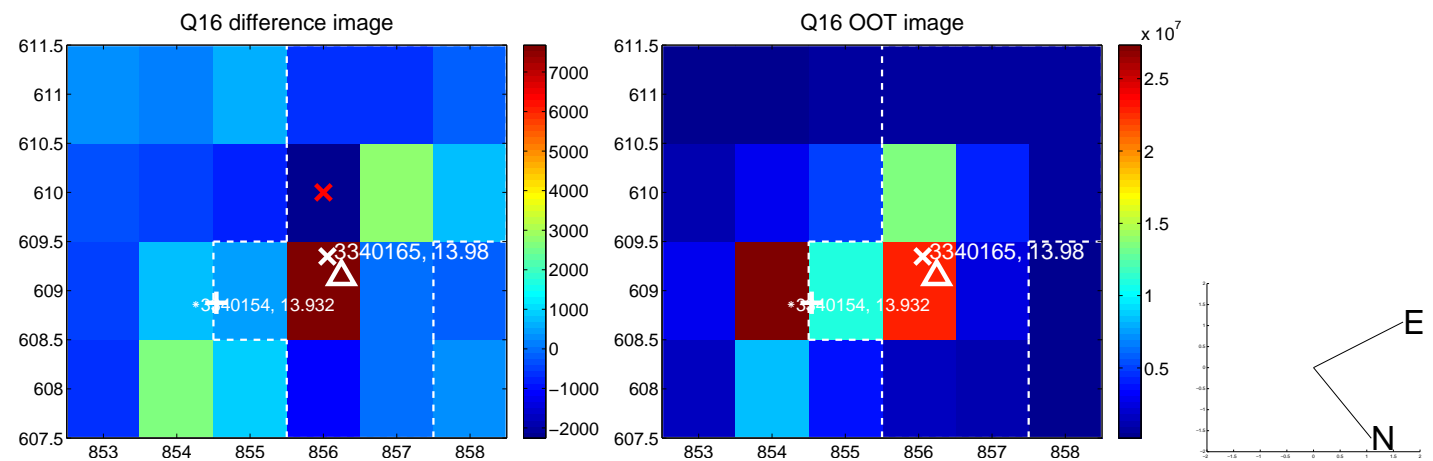
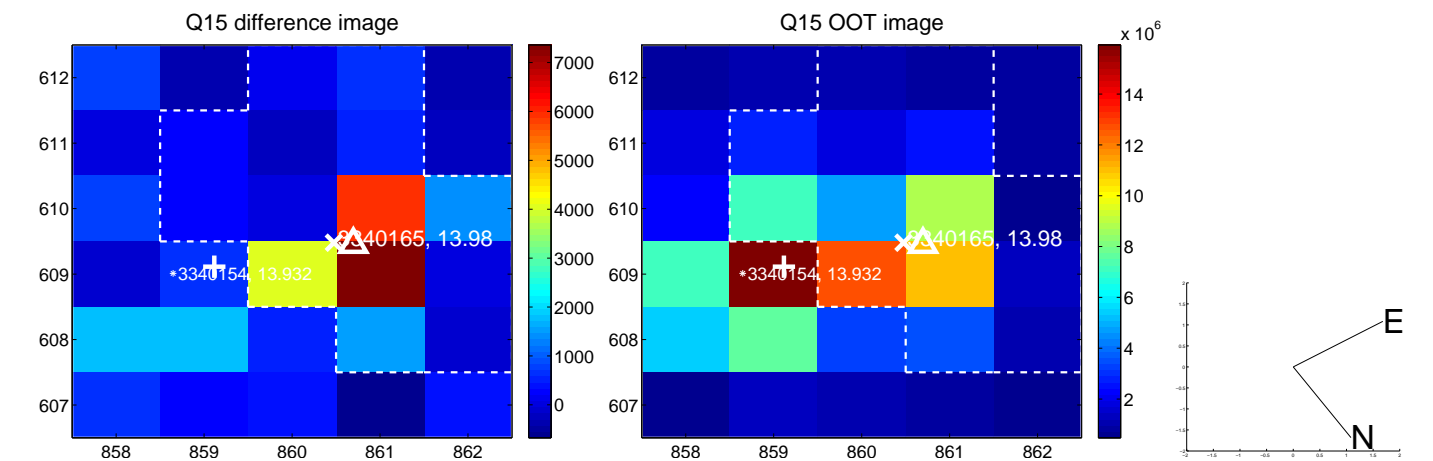
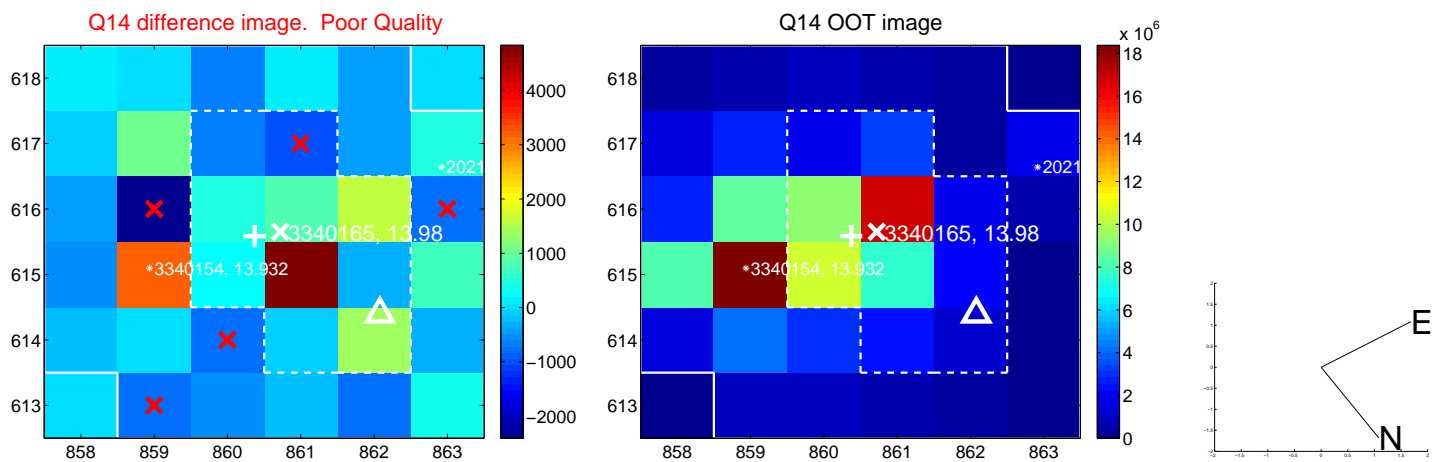
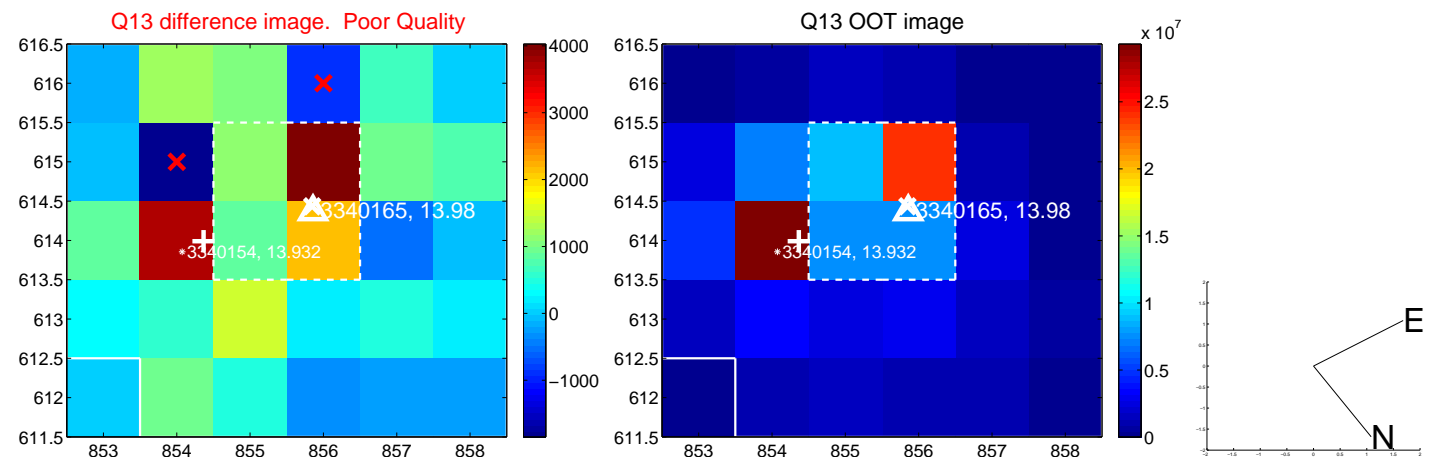
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



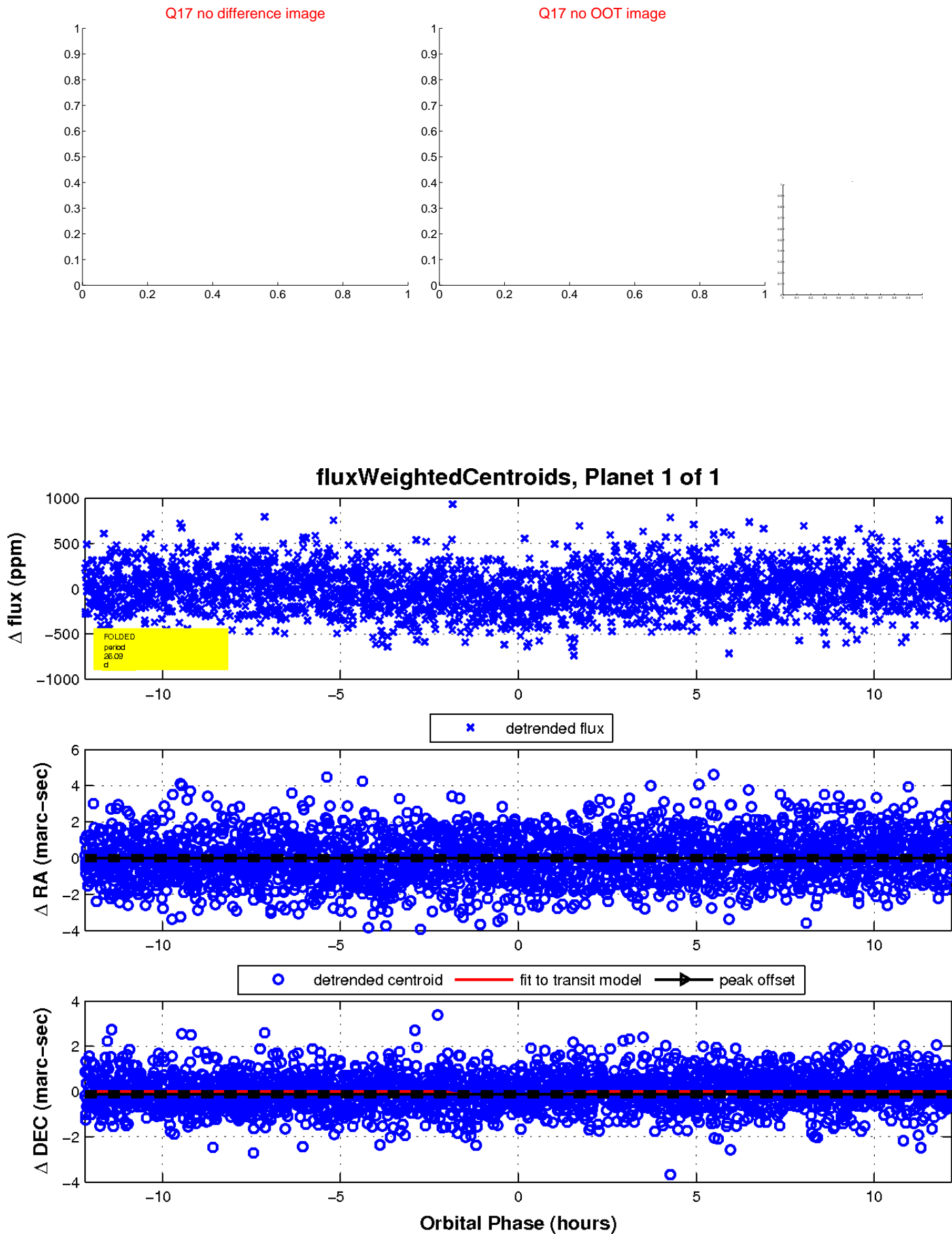
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

