

# KIC 011461844

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011461844-01	OBS	2356.01	13.682493	139.180129	189.7	4.256	13.9	16.3	1.03	6102	1.63	97.87

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011461844-01	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.

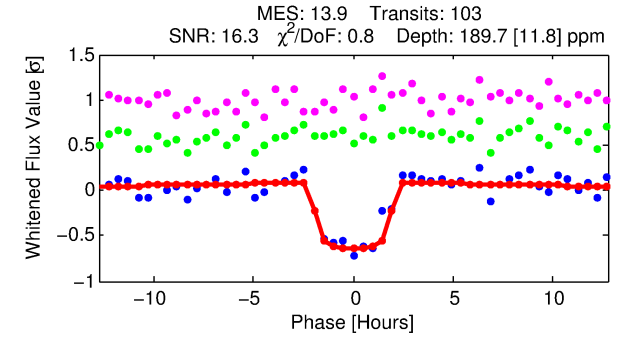
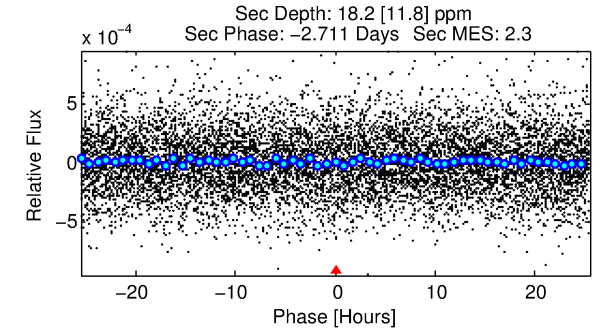
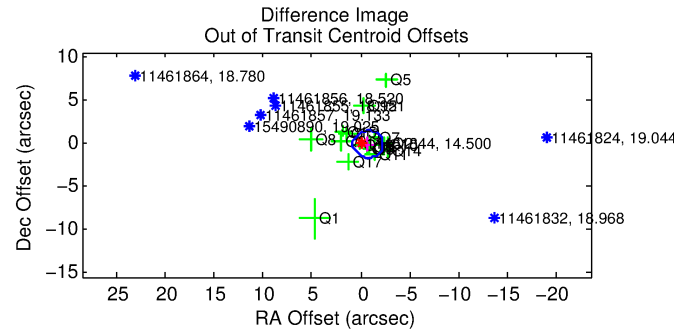
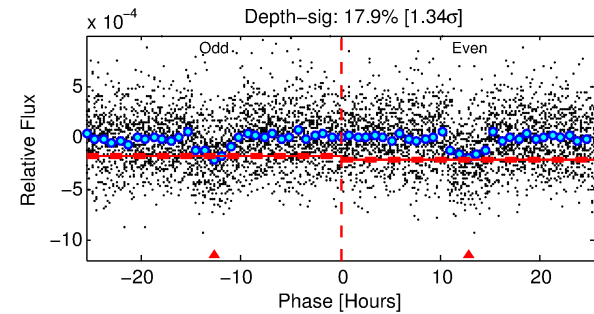
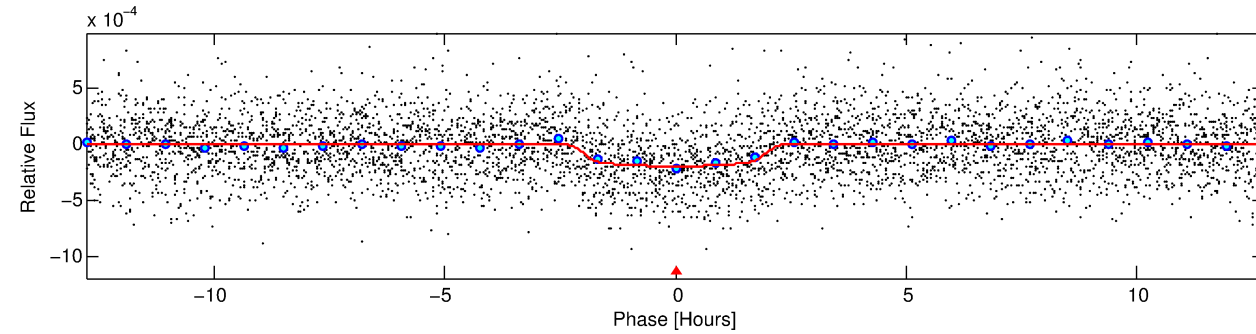
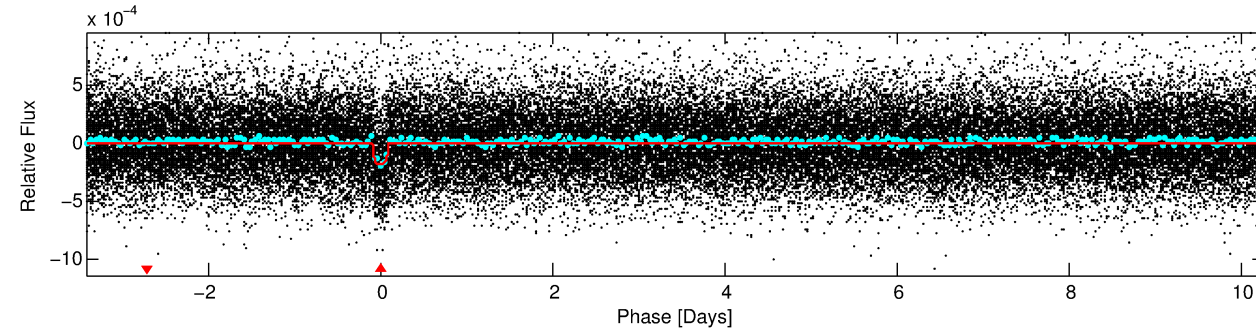
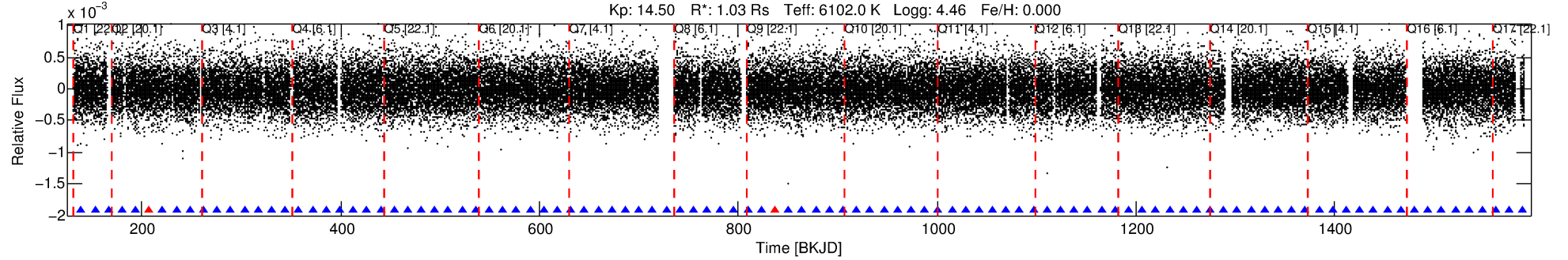
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011461844-01

No Significant Match Found

# DV One-Page Summary

KIC: 11461844 Candidate: 1 of 1 Period: 13.682 d  
KOI: K02356.01 Corr: 0.980



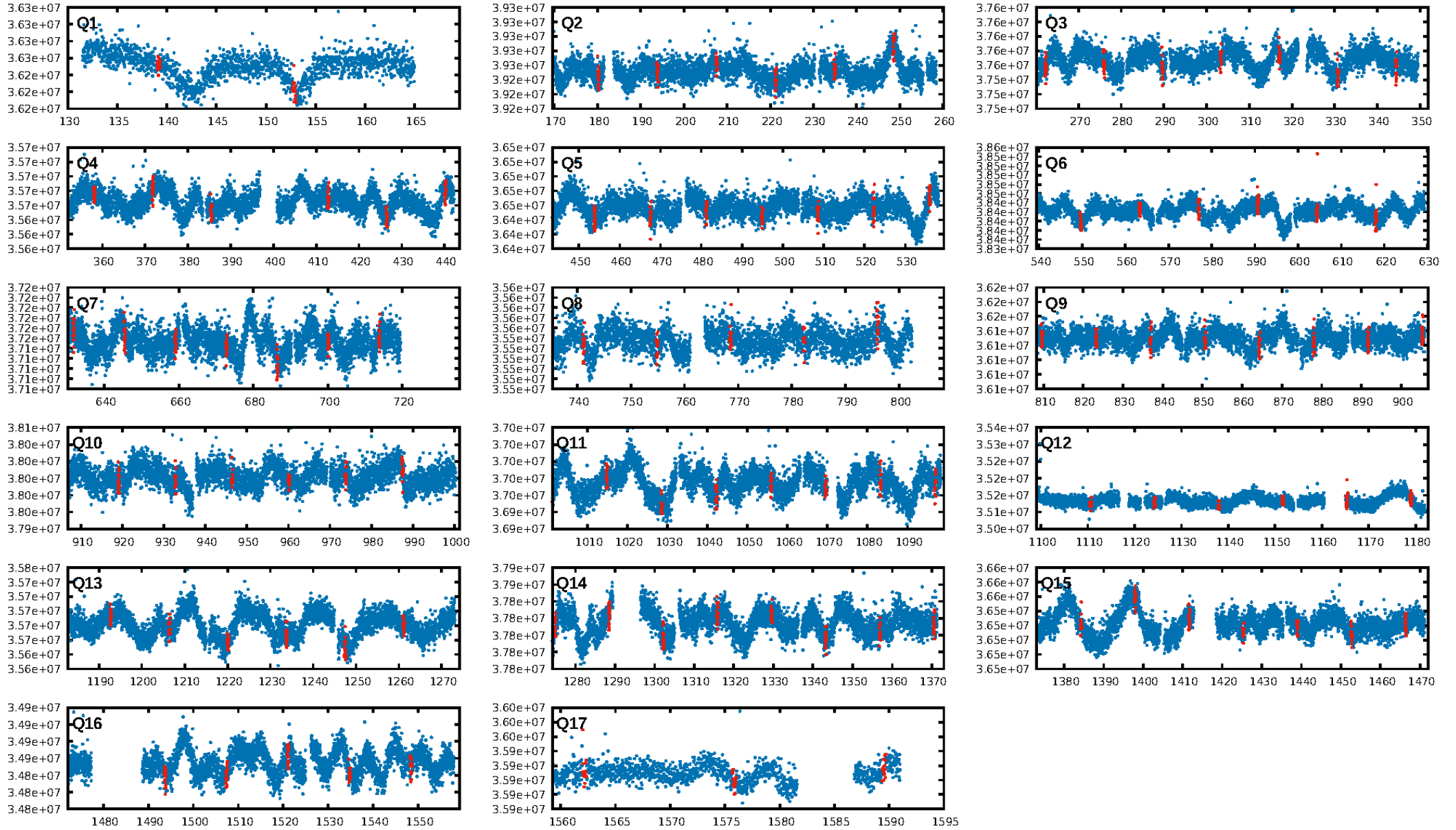
## DV Fit Results:

Period = 13.68249 [0.00008] d  
Epoch = 139.1801 [0.0051] BKJD  
Rp/R\* = 0.0146 [0.0046]  
a/R\* = 12.77 [20.52]  
b = 0.87 [0.45]  
Seff = 97.87 [40.57]  
Teq = 802 [83] K  
Rp = 1.63 [0.72] Re  
a = 0.1156 [0.0303] AU  
Ag = 50.33 [49.77] [0.99 $\sigma$ ]  
Teffp = 3303 [760] K [3.27 $\sigma$ ]

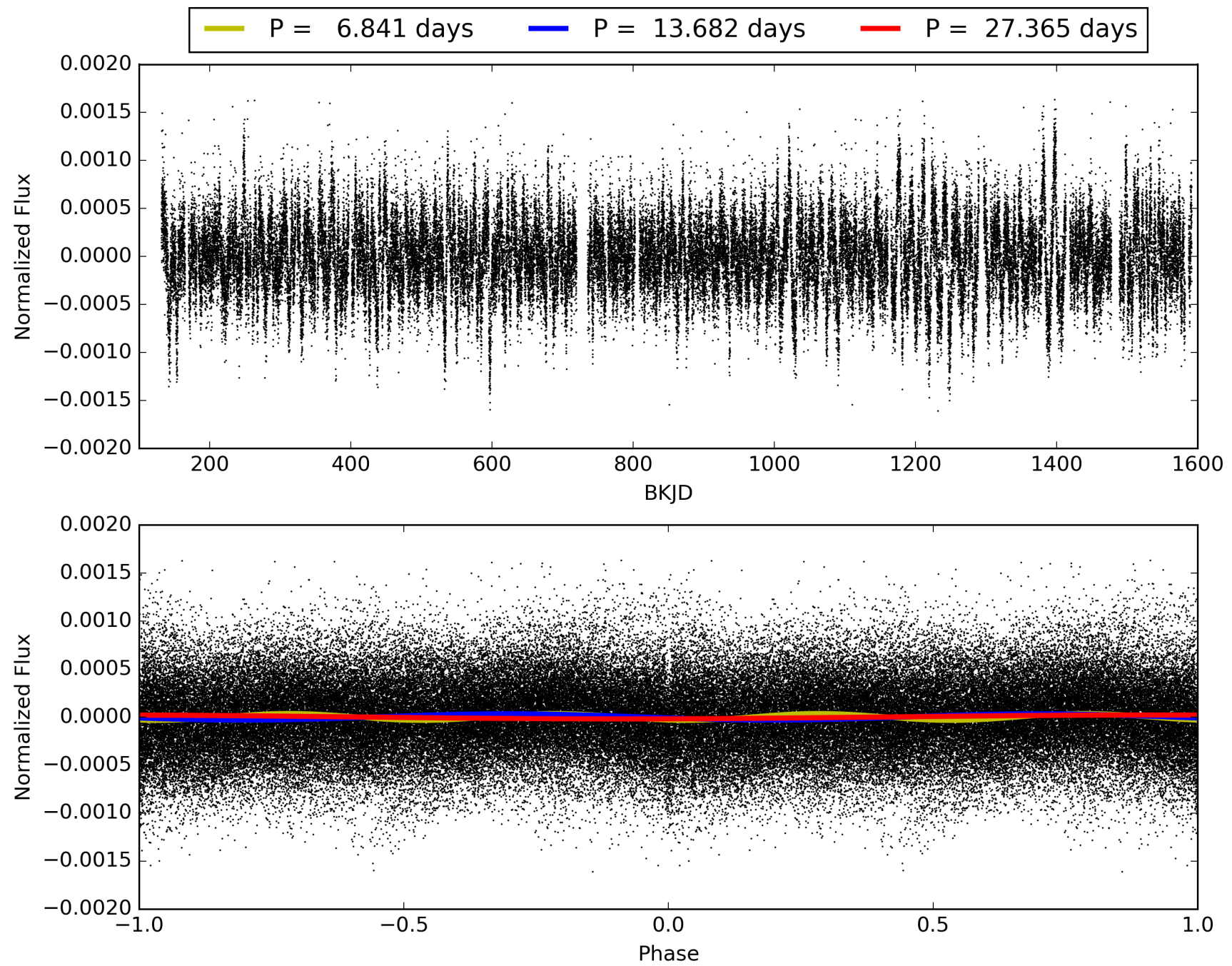
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.10e-43  
RollingBand-fgt: 0.98 [96/98]  
GhostDiagnostic-chr: 5.759  
Centroid-sig: 43.0%  
Centroid-so: 0.808 arcsec [1.16 $\sigma$ ]  
OotOffset-rm: 0.737 arcsec [1.43 $\sigma$ ]  
KicOffset-rm: 0.695 arcsec [1.34 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.65 [11/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 011461844-01, PDC Light Curves

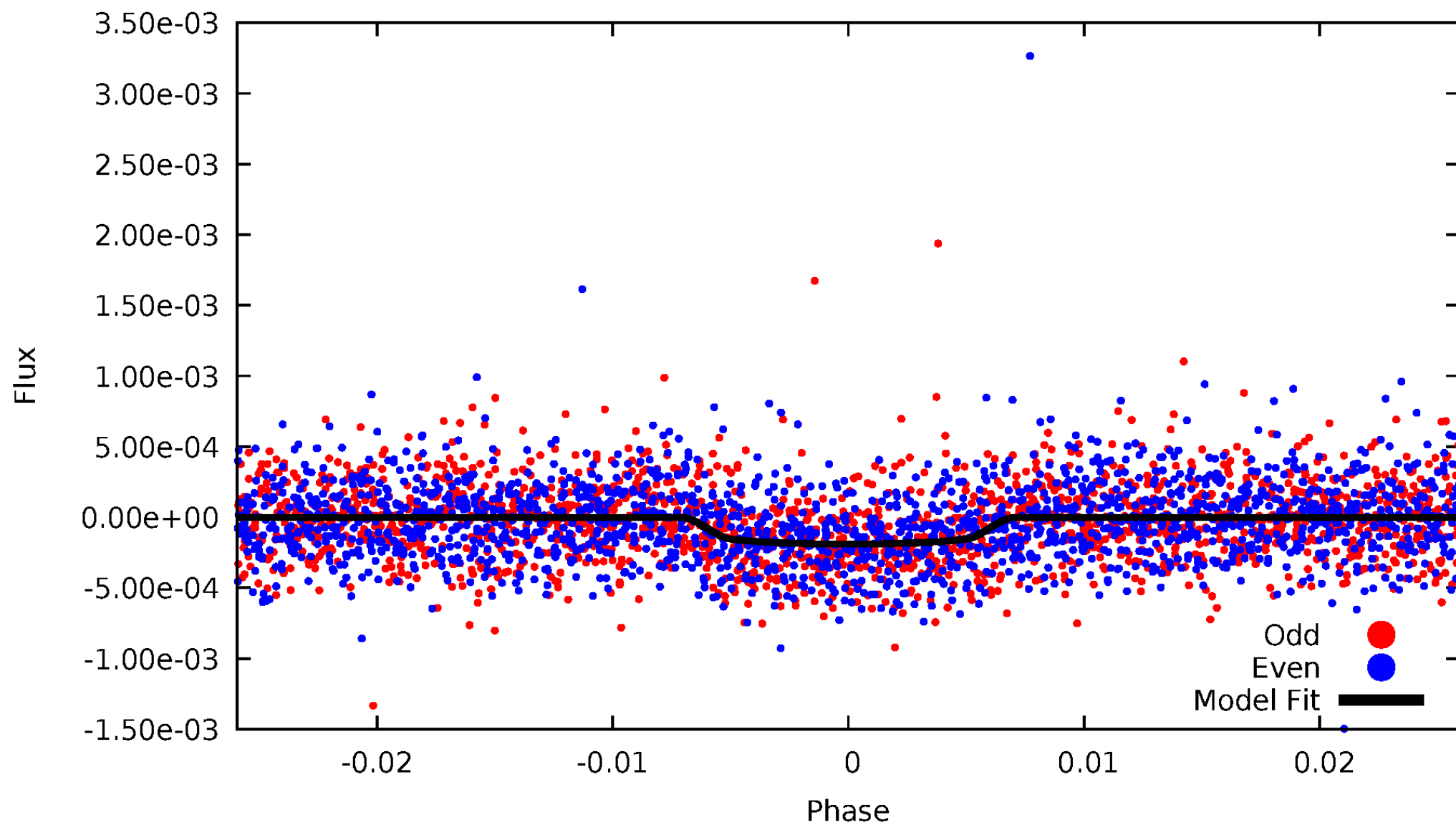


TCE 011461844-01



# DV Odd/Even

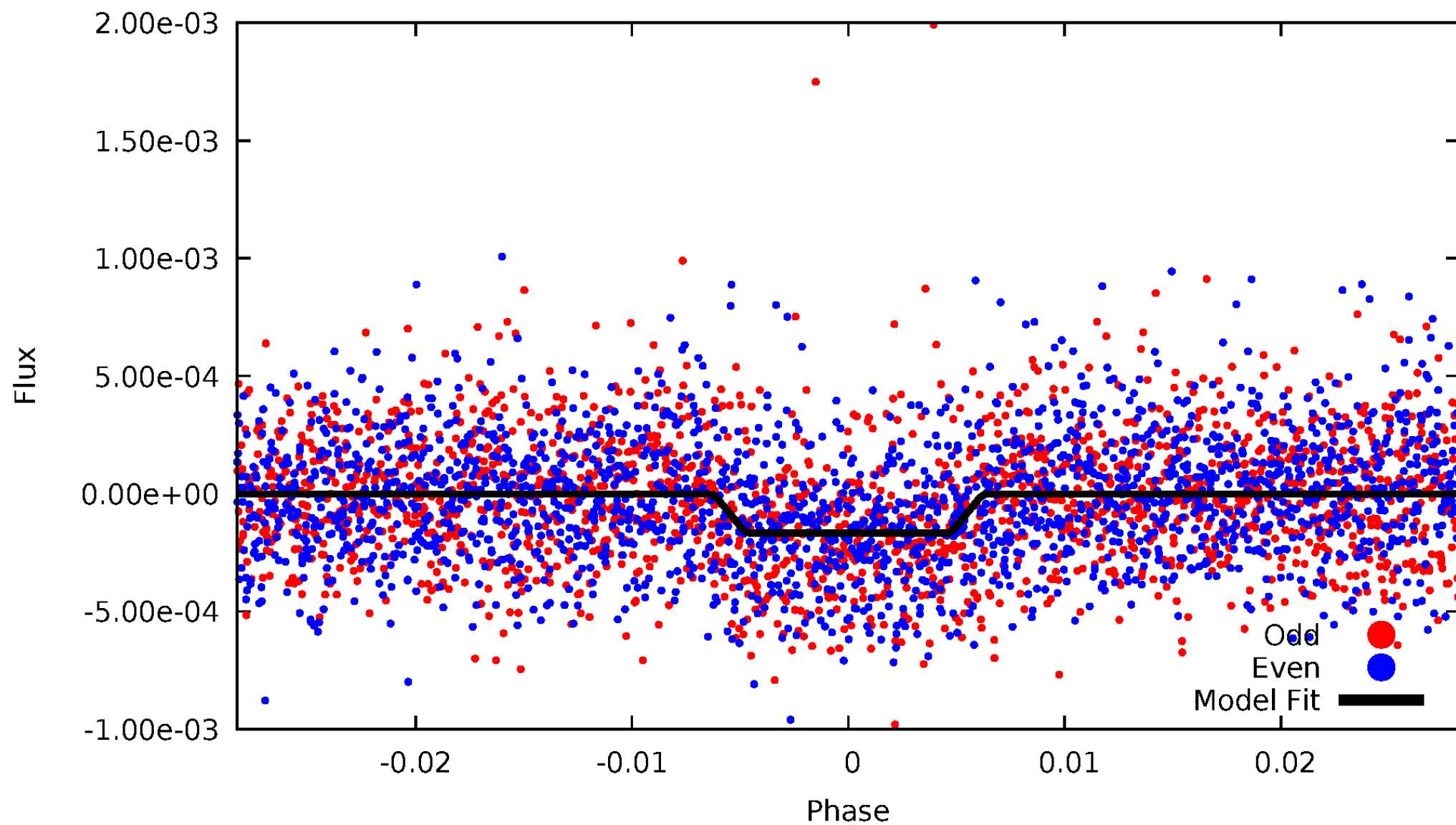
TCE 011461844-01



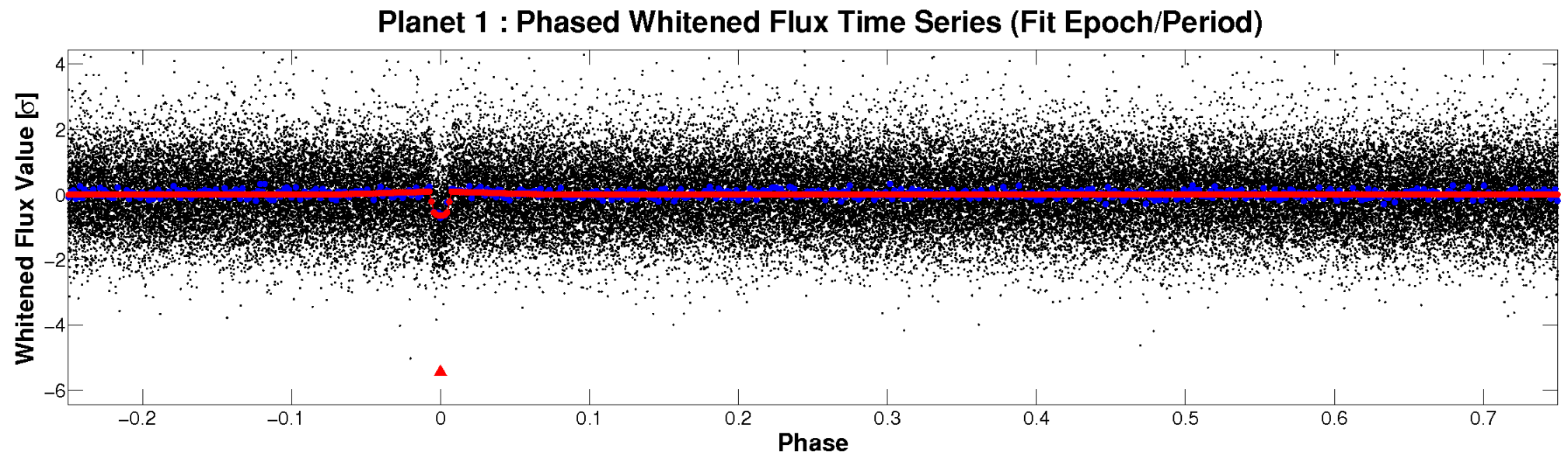
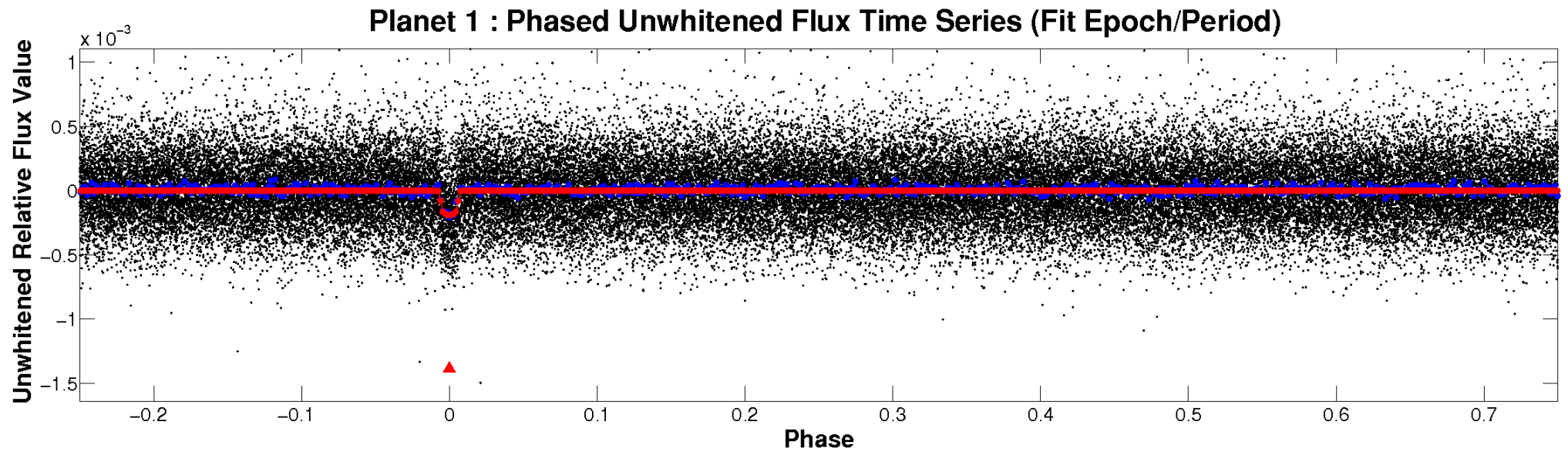


# ALT Odd/Even

TCE 011461844-01

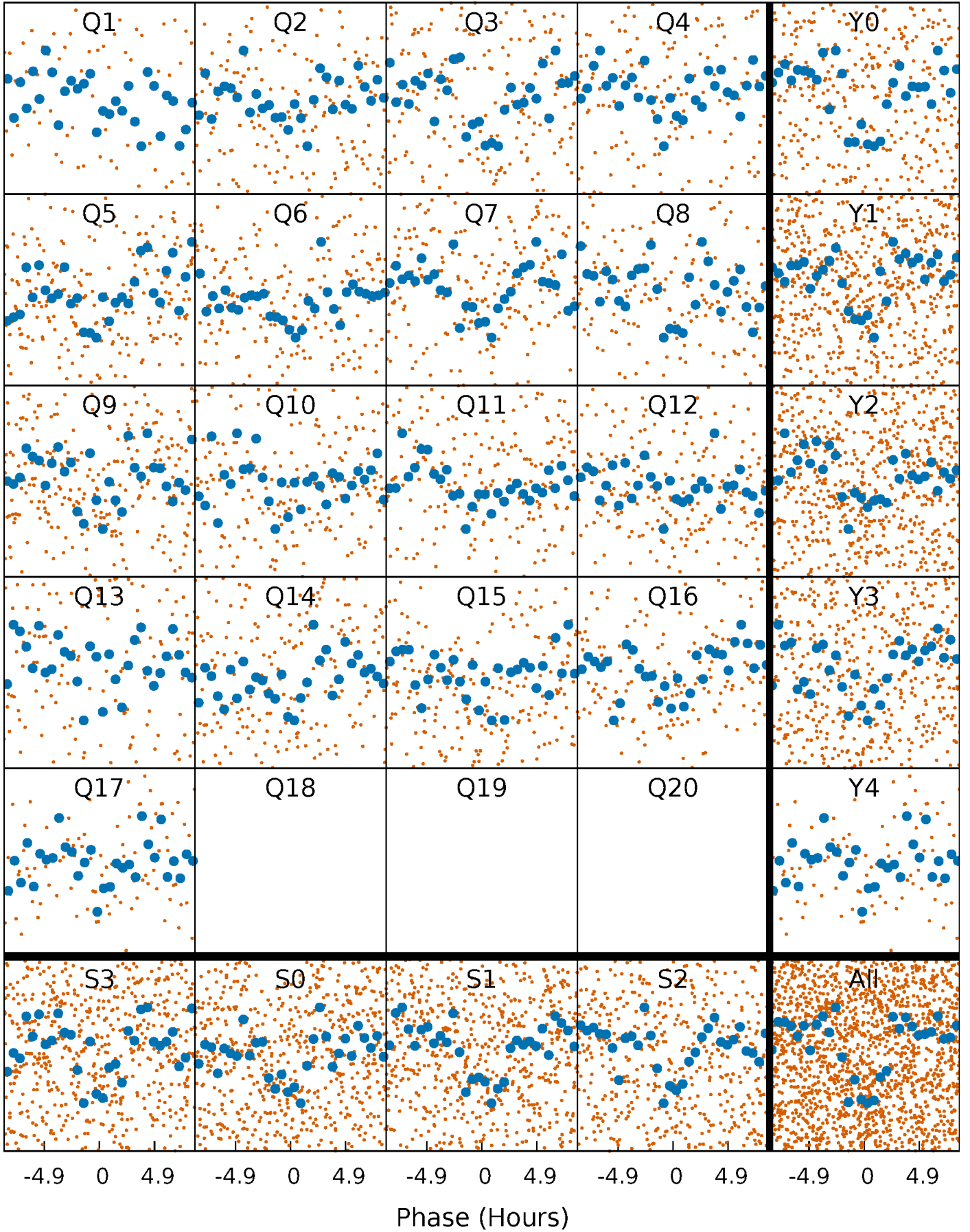


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

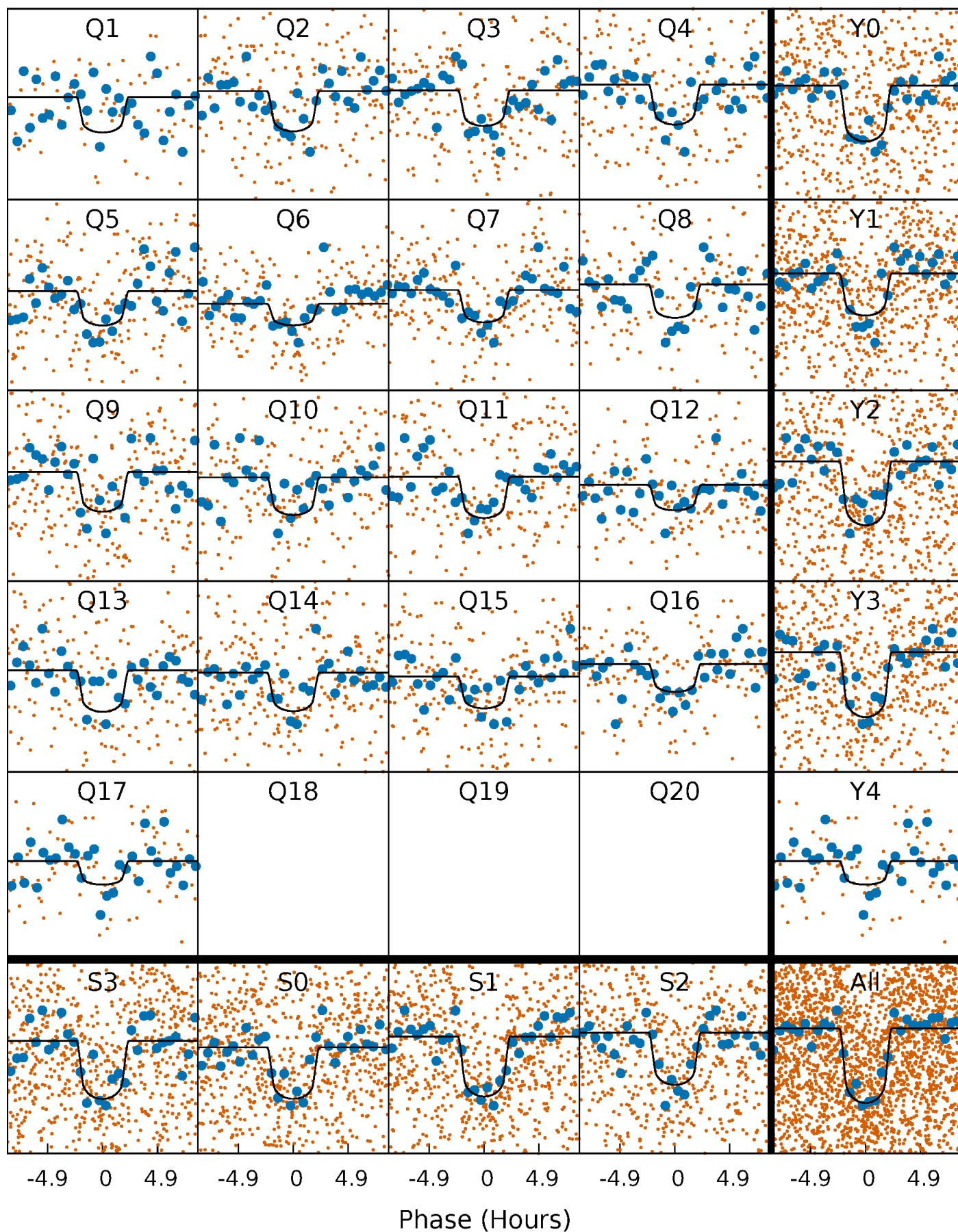
TCE 011461844-01 P= 13.682493 Days  $T_0=139.180129$  (BKJD)





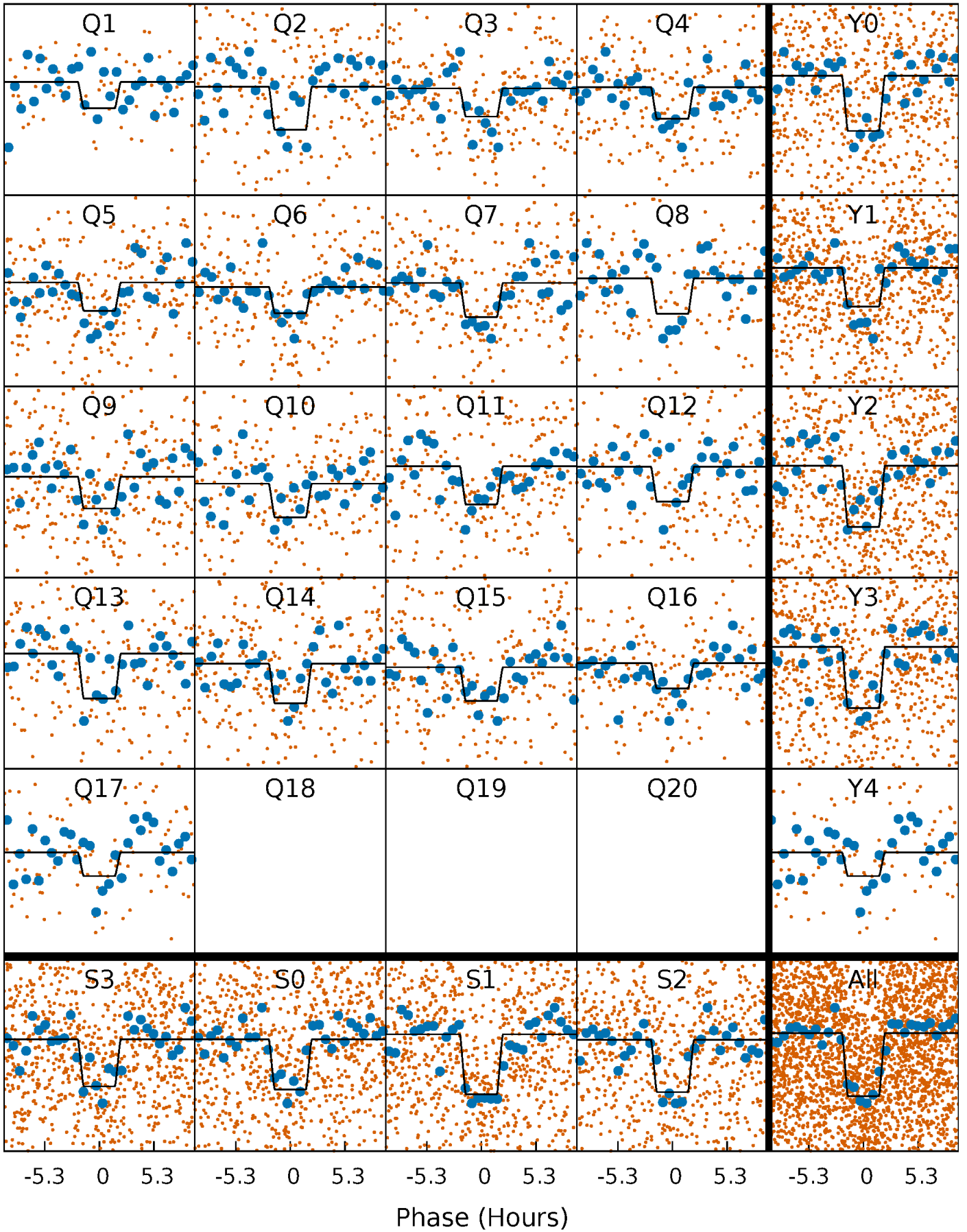
# DV Quarter-Phased Transit Curves

TCE 011461844-01 P= 13.682493 Days  $T_0=139.180129$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

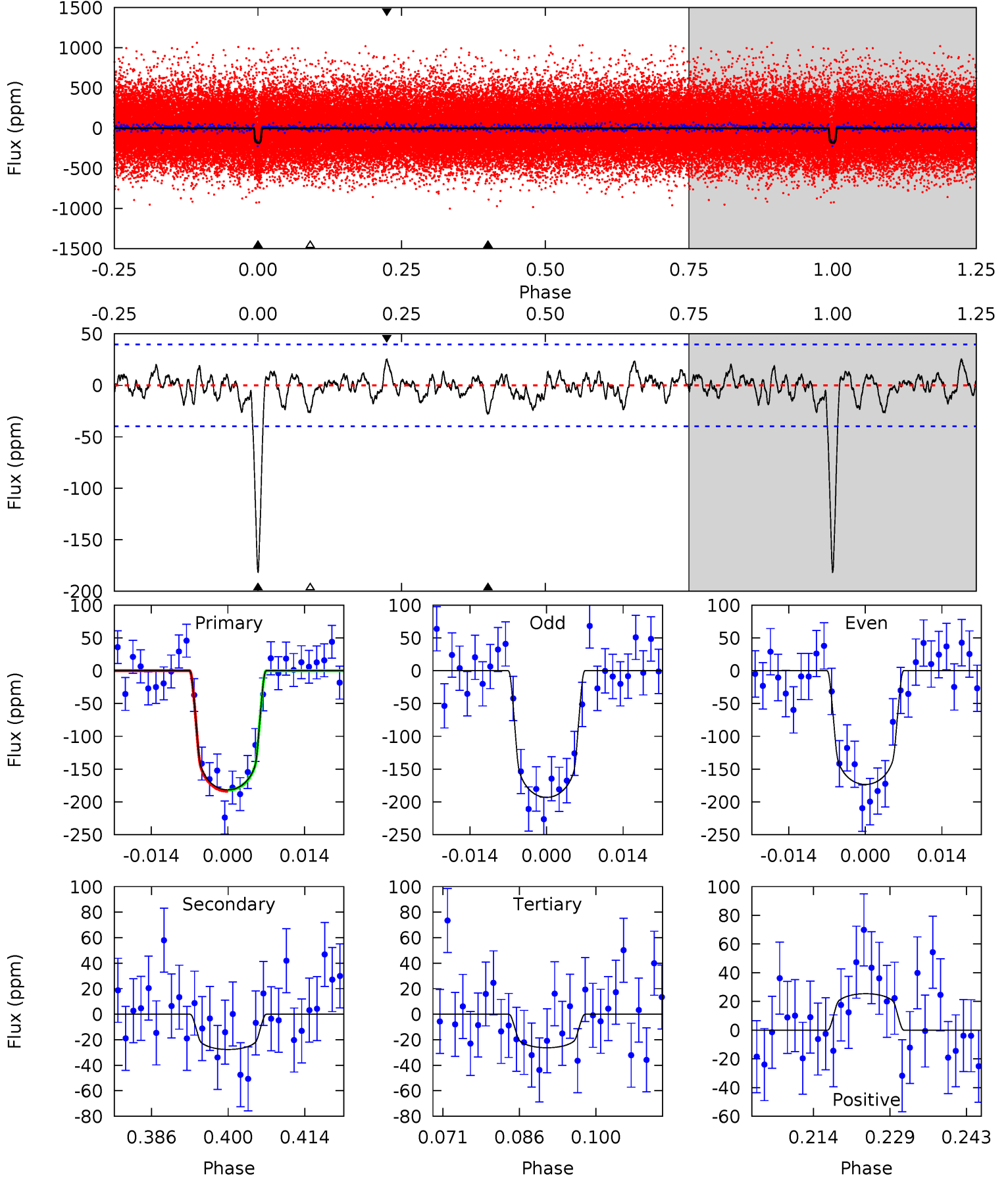
TCE 011461844-01 P= 13.682569 Days  $T_0=139.175635$  (BKJD)



# DV Model-Shift Uniqueness Test

011461844-01, P = 13.682493 Days, E = 125.497636 Days

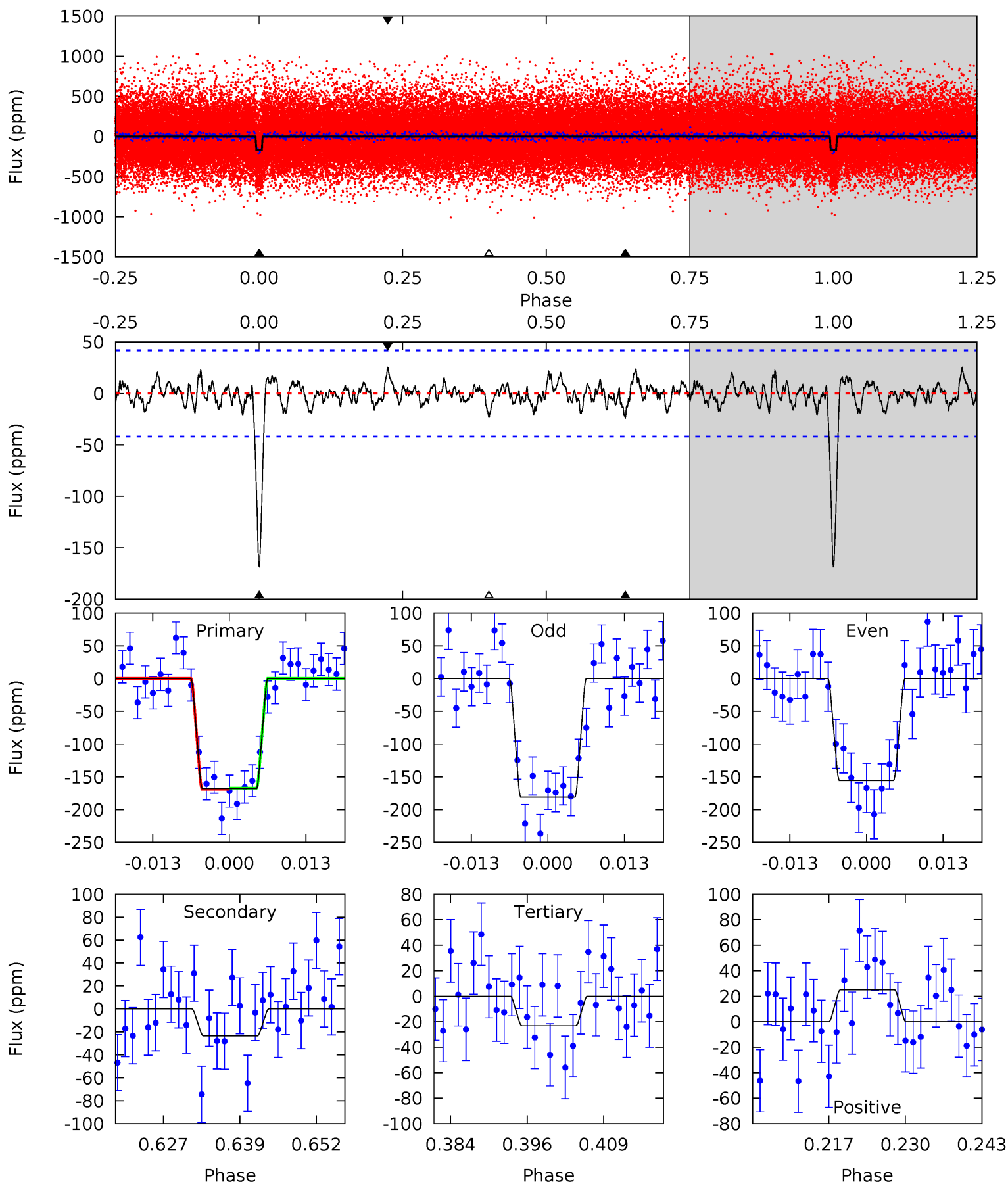
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.7	3.45	3.28	3.17	4.96	2.45	1.14	19.4	19.5	0.17	0.28	1.23	0.95	0.12	0.10



# Alt Model-Shift Uniqueness Test

011461844-01, P = 13.682569 Days, E = 125.493066 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
20.0	2.78	2.75	2.98	4.98	2.49	1.00	17.3	17.0	0.04	-0.20	1.51	1.02	0.13	0.12



### Stellar Parameters For KIC 011461844

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6102^{+165}_{-220}$	$4.457^{+0.054}_{-0.216}$	$0.000^{+0.250}_{-0.350}$	$1.026^{+0.312}_{-0.125}$	$1.099^{+0.133}_{-0.148}$	$1.433^{+0.399}_{-0.744}$
	+3%/-4%	+1%/-5%	+inf%/-inf%	+30%/-12%	+12%/-13%	+28%/-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 011461844-01 / KOI 2356.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-28 \pm 8$	$1.71^{+0.61}_{-0.55}$	$1149^{+88}_{-60}$	$3969^{+667}_{-424}$	$67^{+83}_{-34}$
Alt.	$-23 \pm 8$	$1.50^{+0.62}_{-0.53}$	$1143^{+79}_{-55}$	$4013^{+786}_{-485}$	$73^{+114}_{-40}$

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



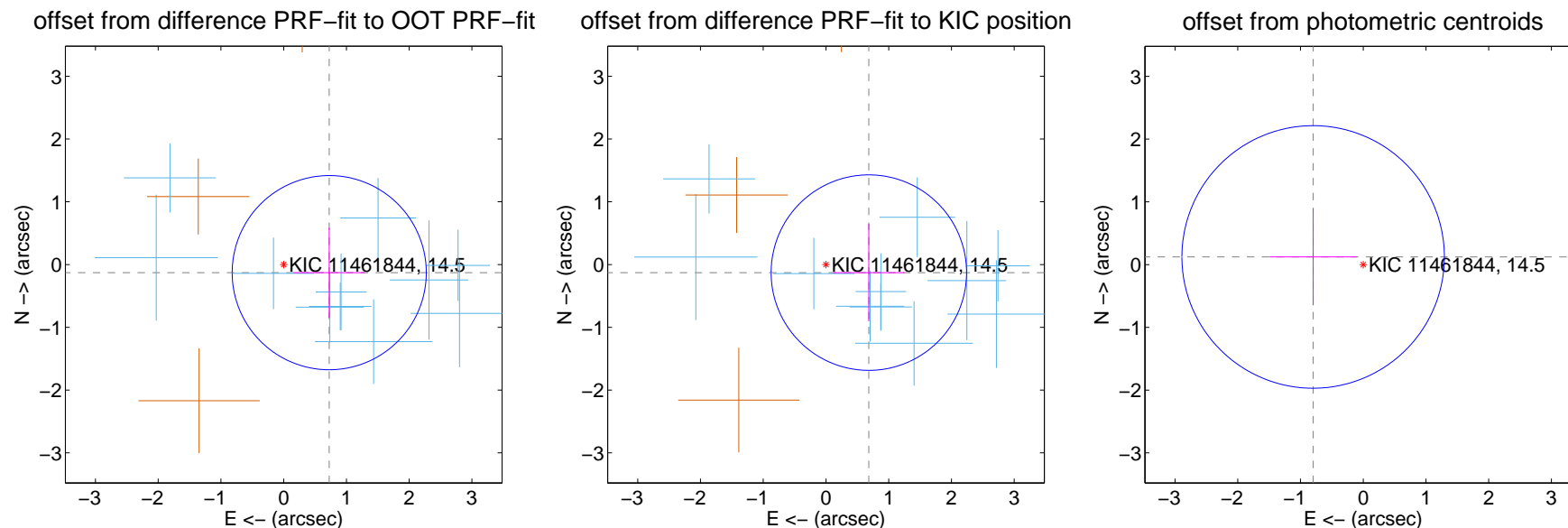
## DV Centroid Data

Supplemental centroid analysis for 011461844-01. Kepler magnitude: 14.50. Transit SNR 16.29

There are 11 quarters with good PRF difference image offsets

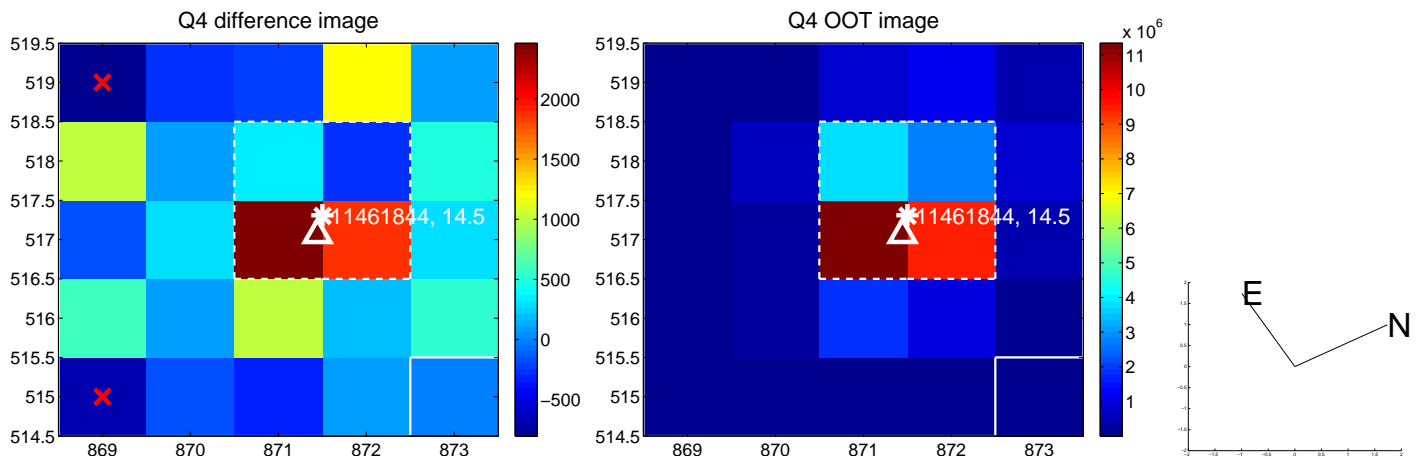
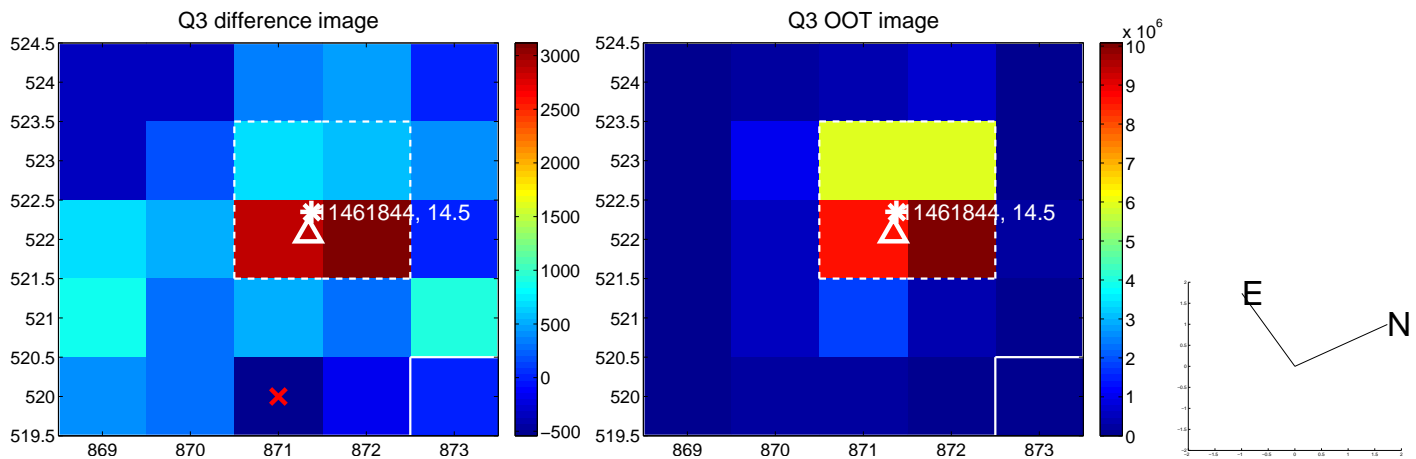
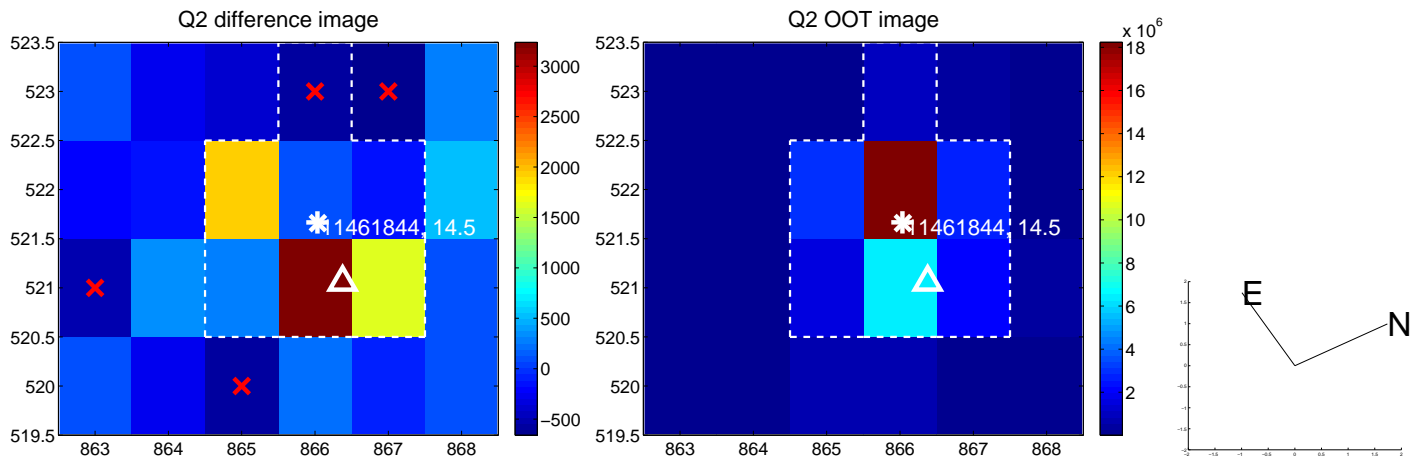
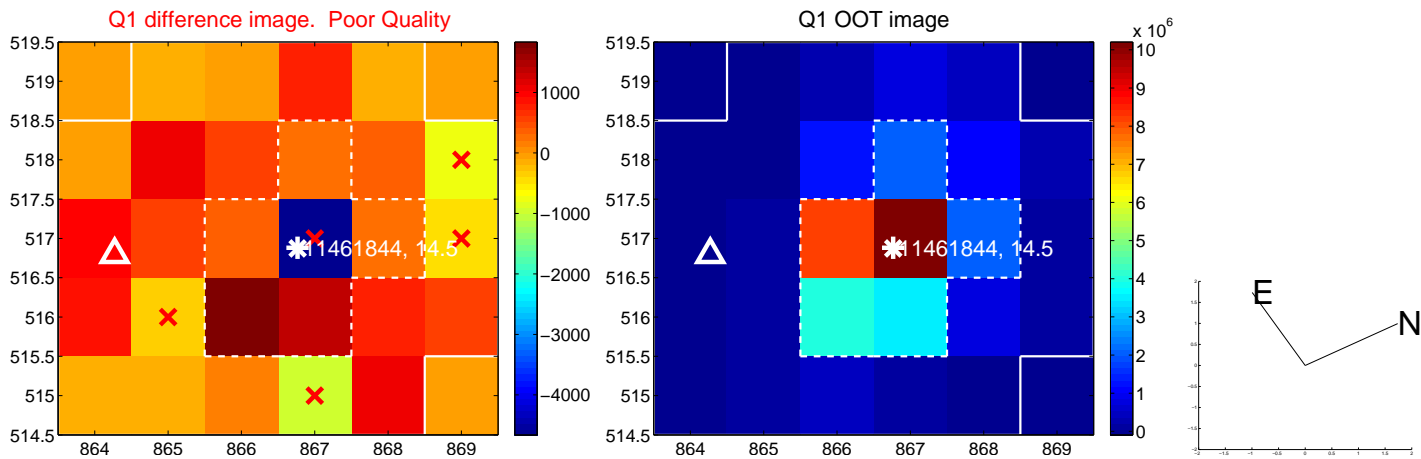
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.737 \pm 0.516$	1.43	$-0.726 \pm 0.567$	$-0.129 \pm 0.717$
PRF-fit source offset from KIC position	$0.695 \pm 0.519$	1.34	$-0.683 \pm 0.571$	$-0.128 \pm 0.776$
photometric centroid source offset	$0.81 \pm 0.70$	1.16	$0.80 \pm 0.70$	$0.12 \pm 0.77$

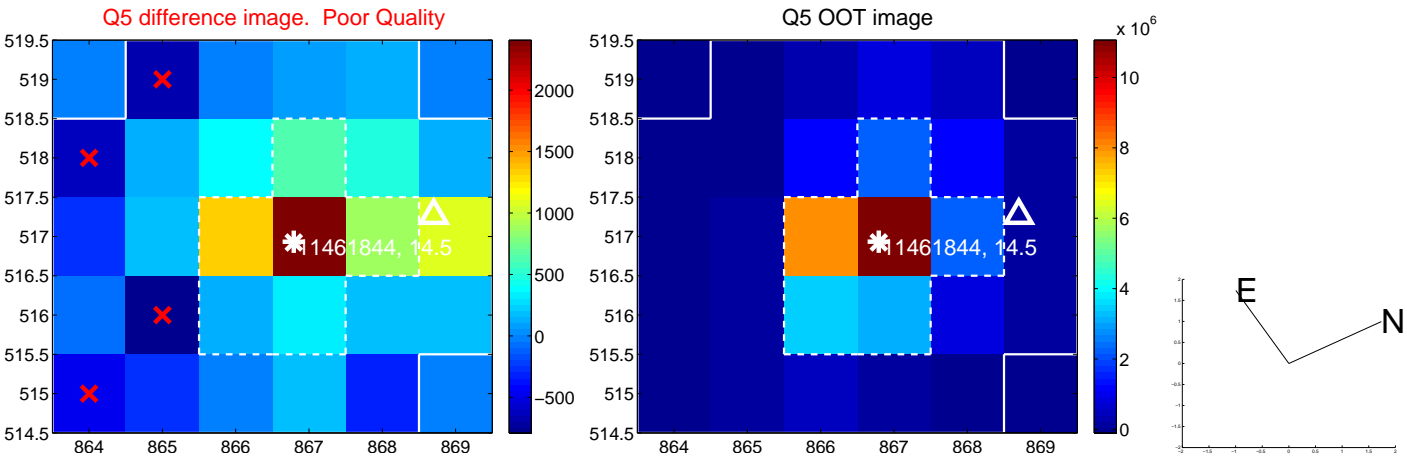


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

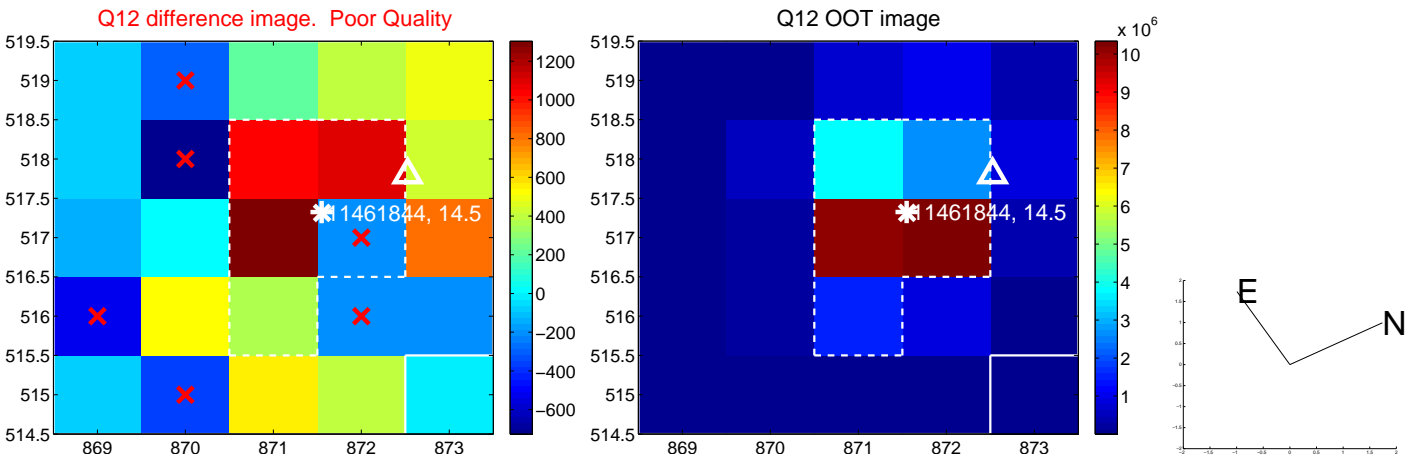
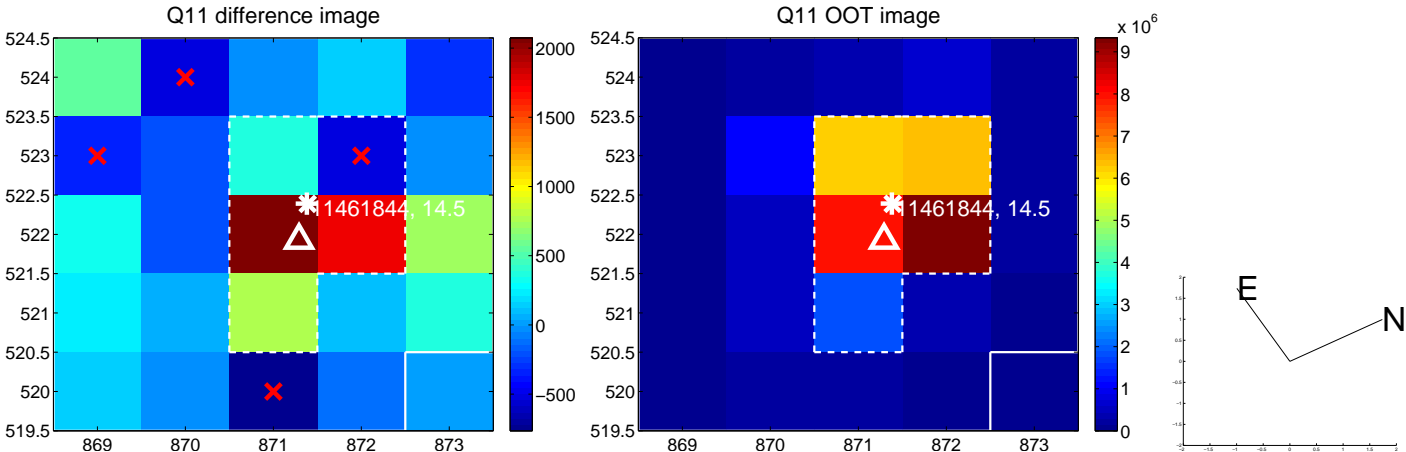
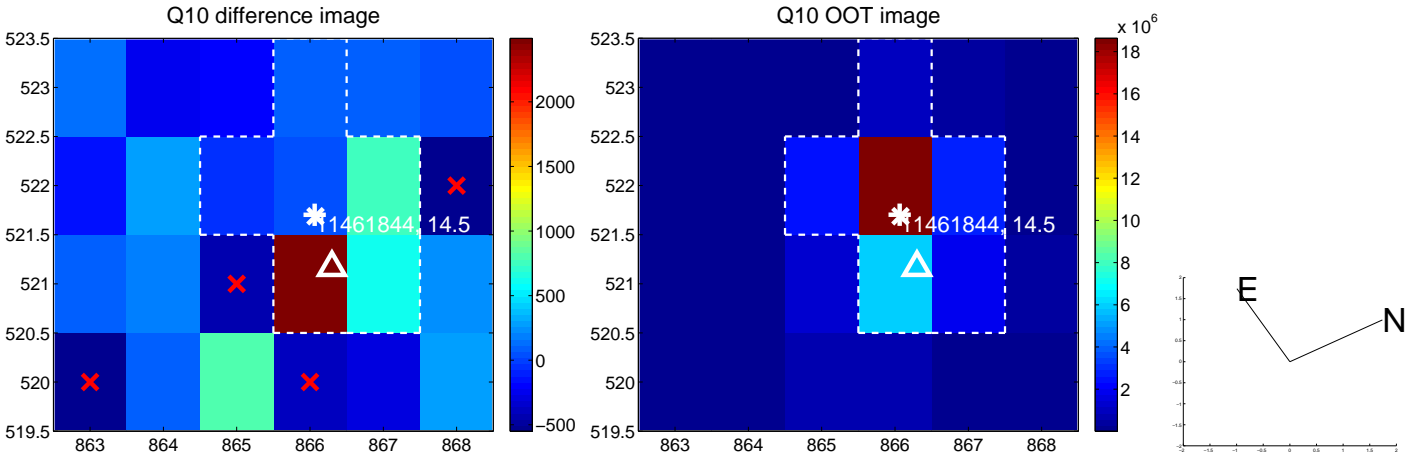
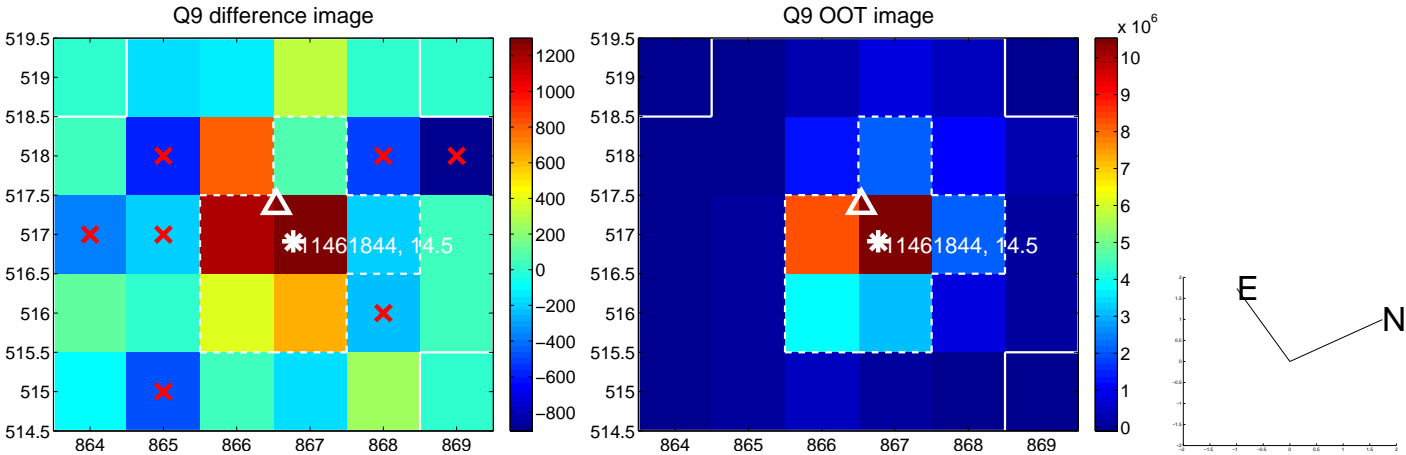
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



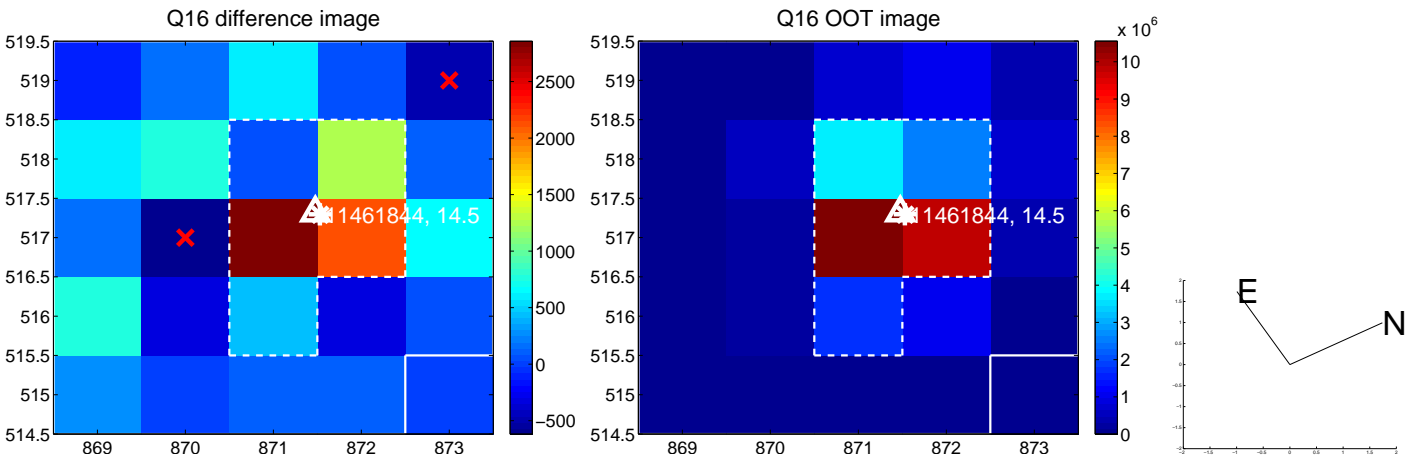
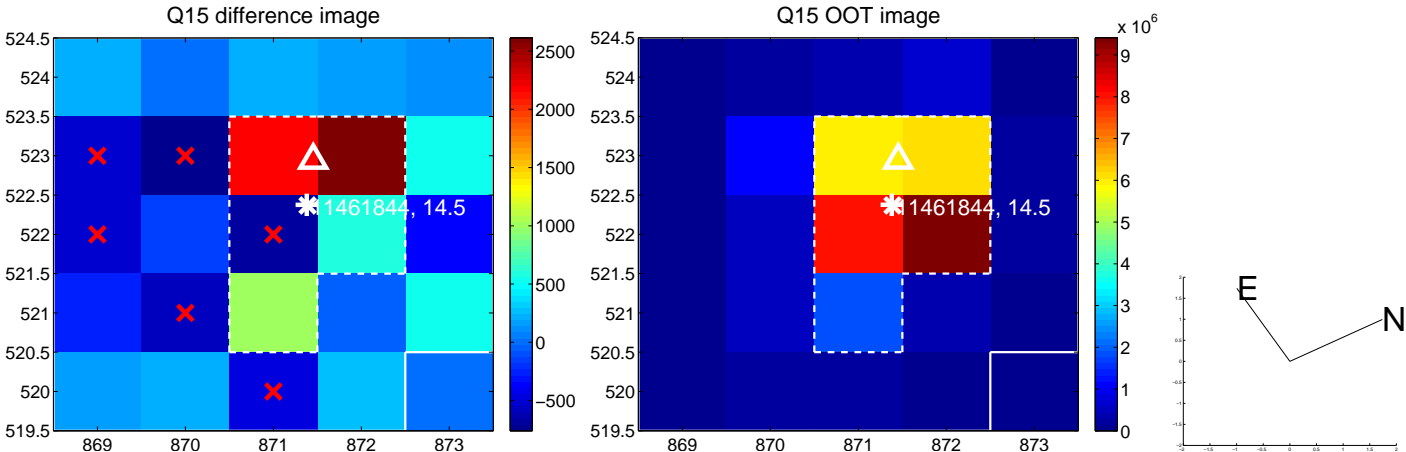
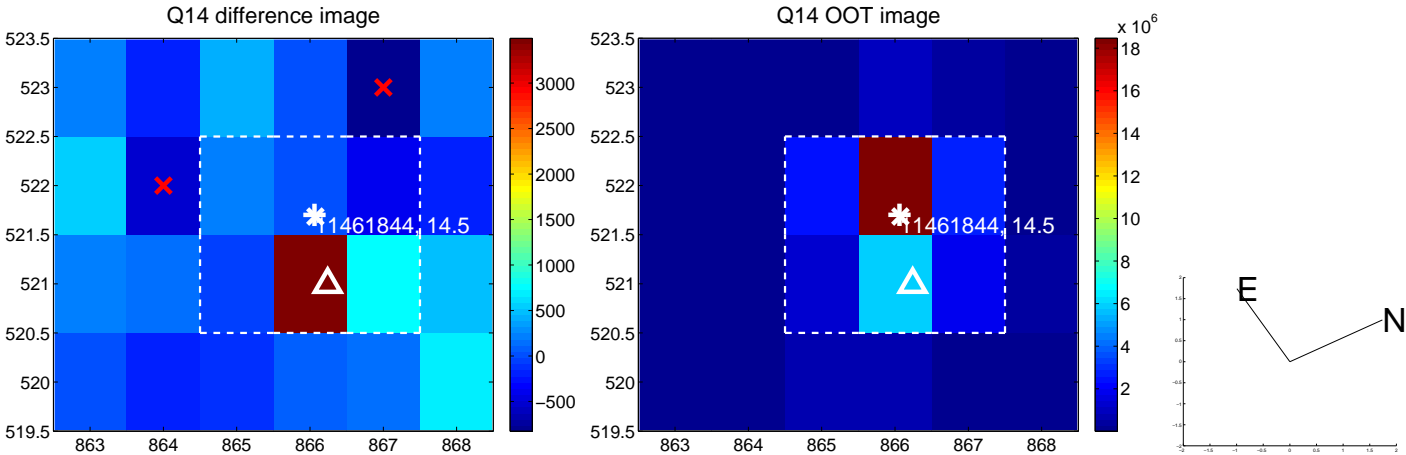
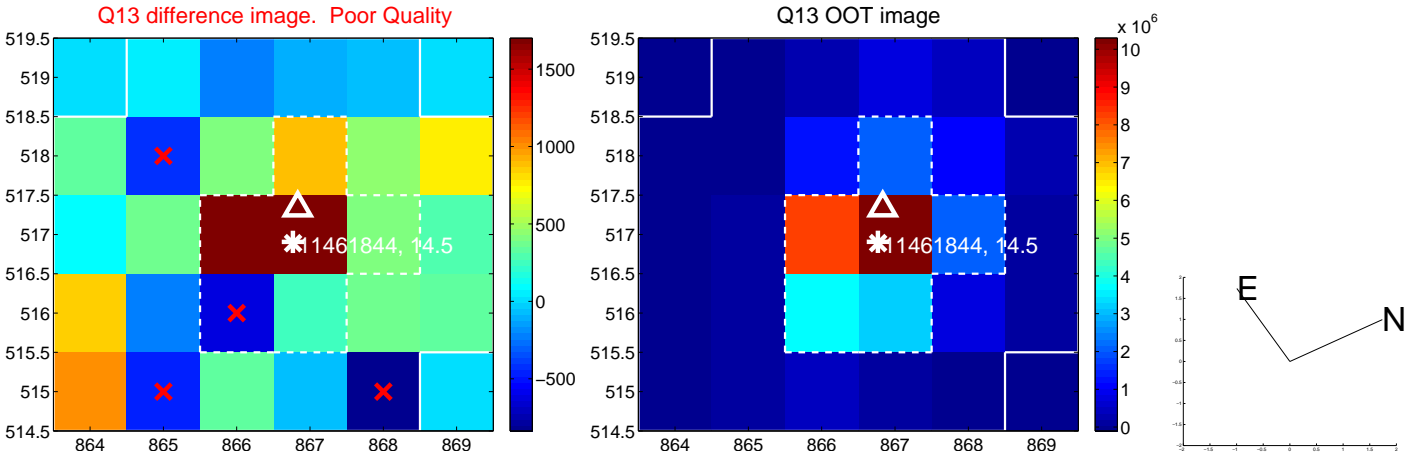
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

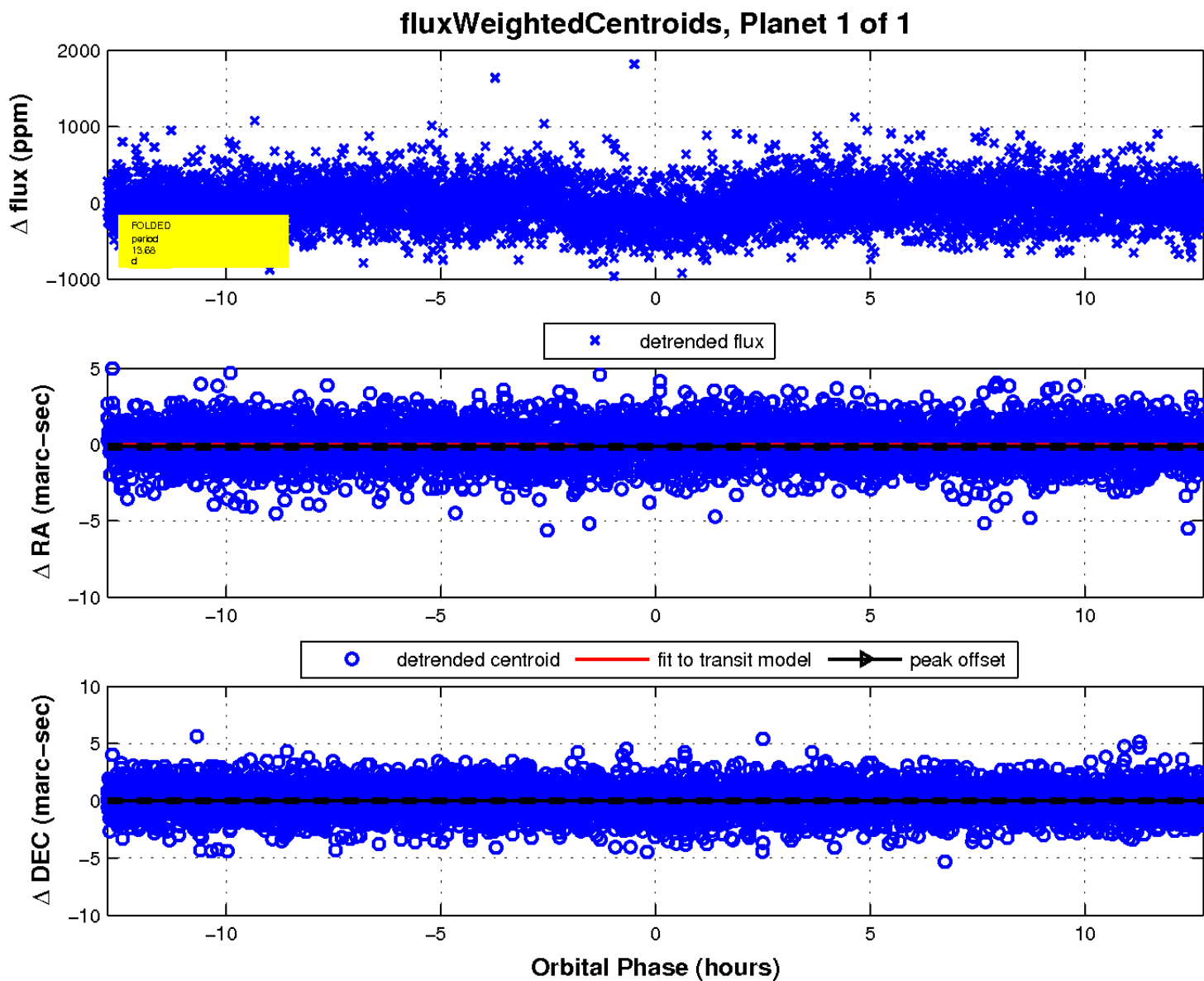
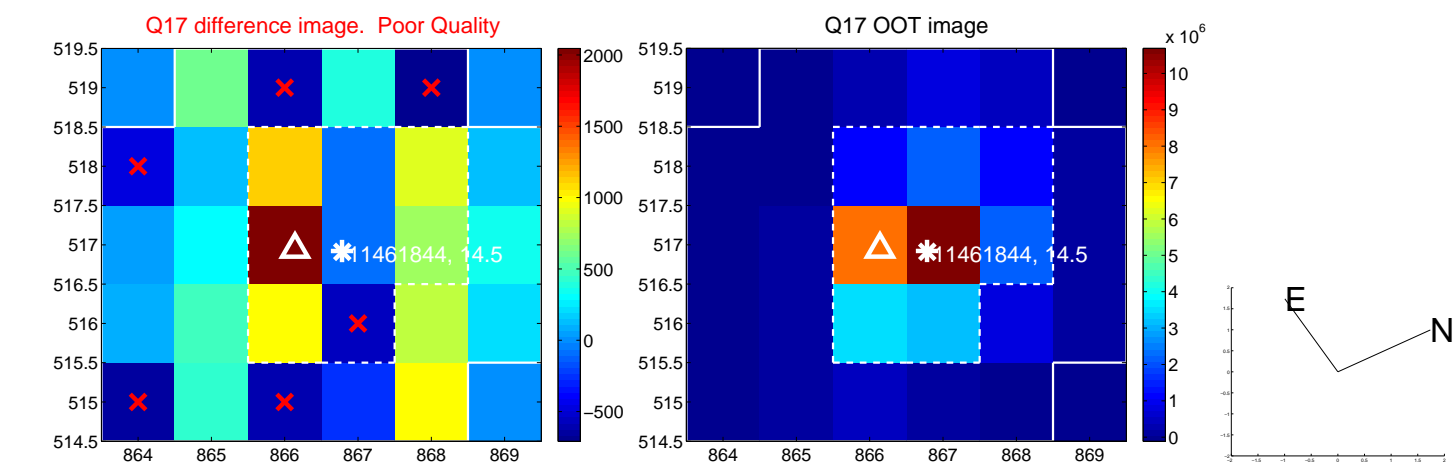


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



# UKIRT Image

Declination

