

# KIC 004664754

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004664754-01	OBS	No	1.731416	132.042580	24.9	4.093	10.1	8.4	0.83	5882	0.48	988.30

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004664754-01	OBS	FP	0.00	1	0	1	0	LPP_ALT—MOD_NONUNIQ_ALT—CENT_UNRESOLVED_OFFSET

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

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

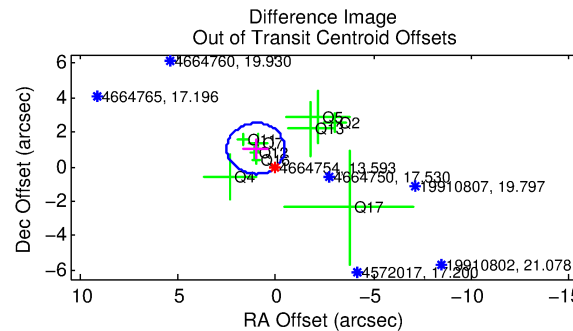
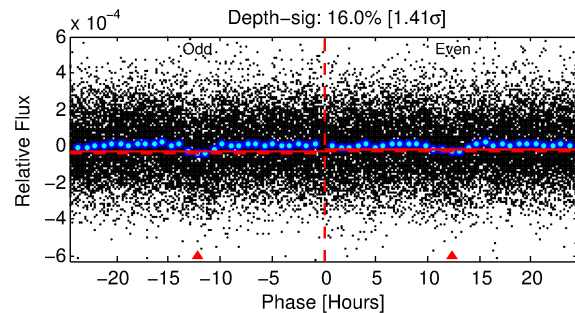
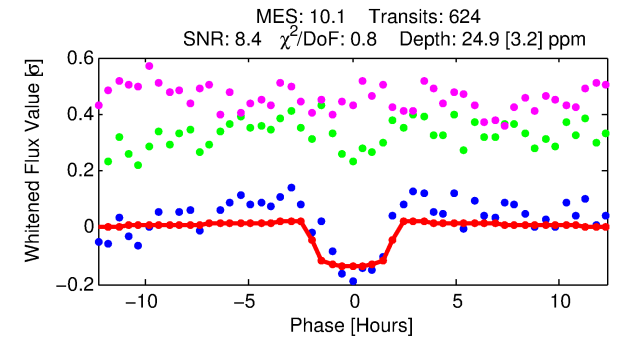
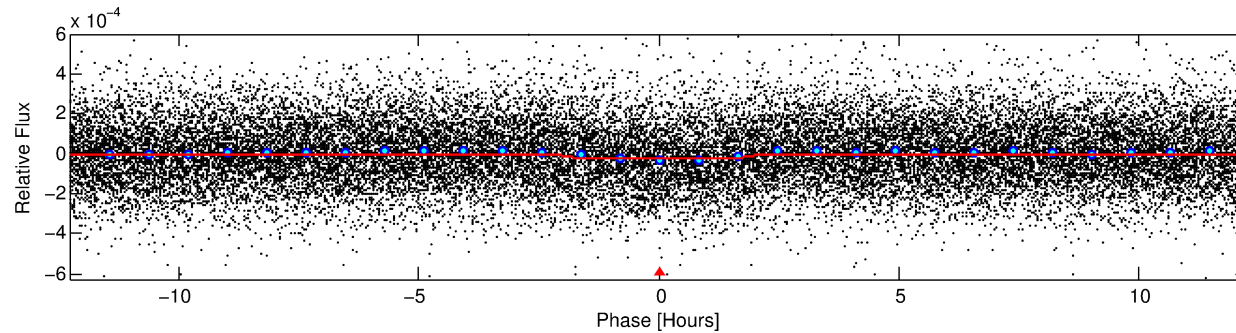
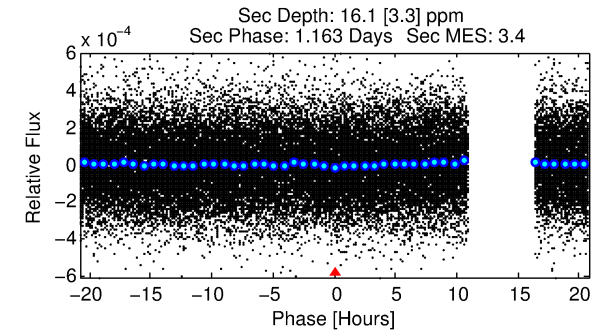
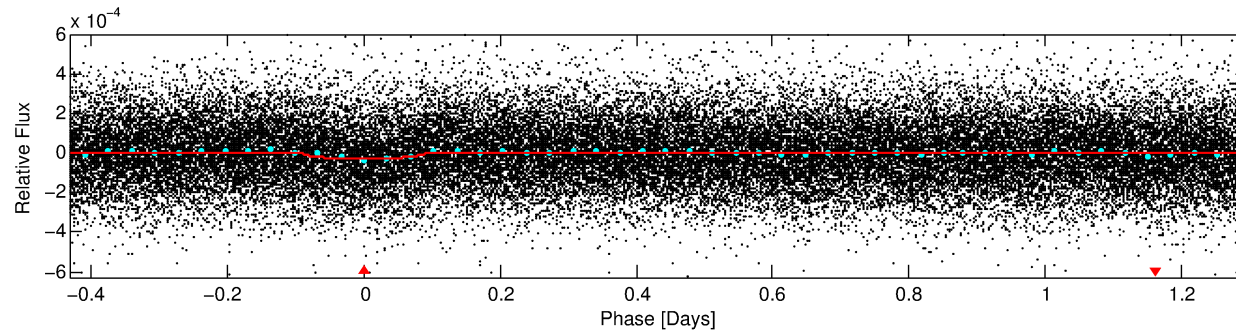
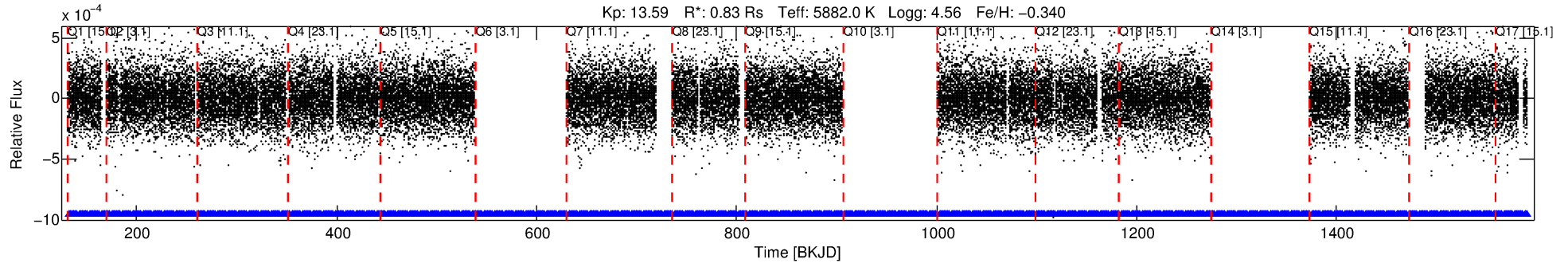
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004664754-01

No Significant Match Found

# DV One-Page Summary

KIC: 4664754 Candidate: 1 of 1 Period: 1.731 d



## DV Fit Results:

Period = 1.73142 [0.00002] d  
Epoch = 132.0426 [0.0055] BKJD  
Rp/R\* = 0.0053 [0.0028]  
a/R\* = 1.80 [3.30]  
b = 0.88 [0.66]  
Seff = 988.30 [350.53]  
Teq = 1430 [127] K  
Rp = 0.48 [0.28] Re  
a = 0.0274 [0.0063] AU  
Ag = 28.44 [31.47] [0.87σ]  
Teffp = 5105 [1352] K [2.71σ]

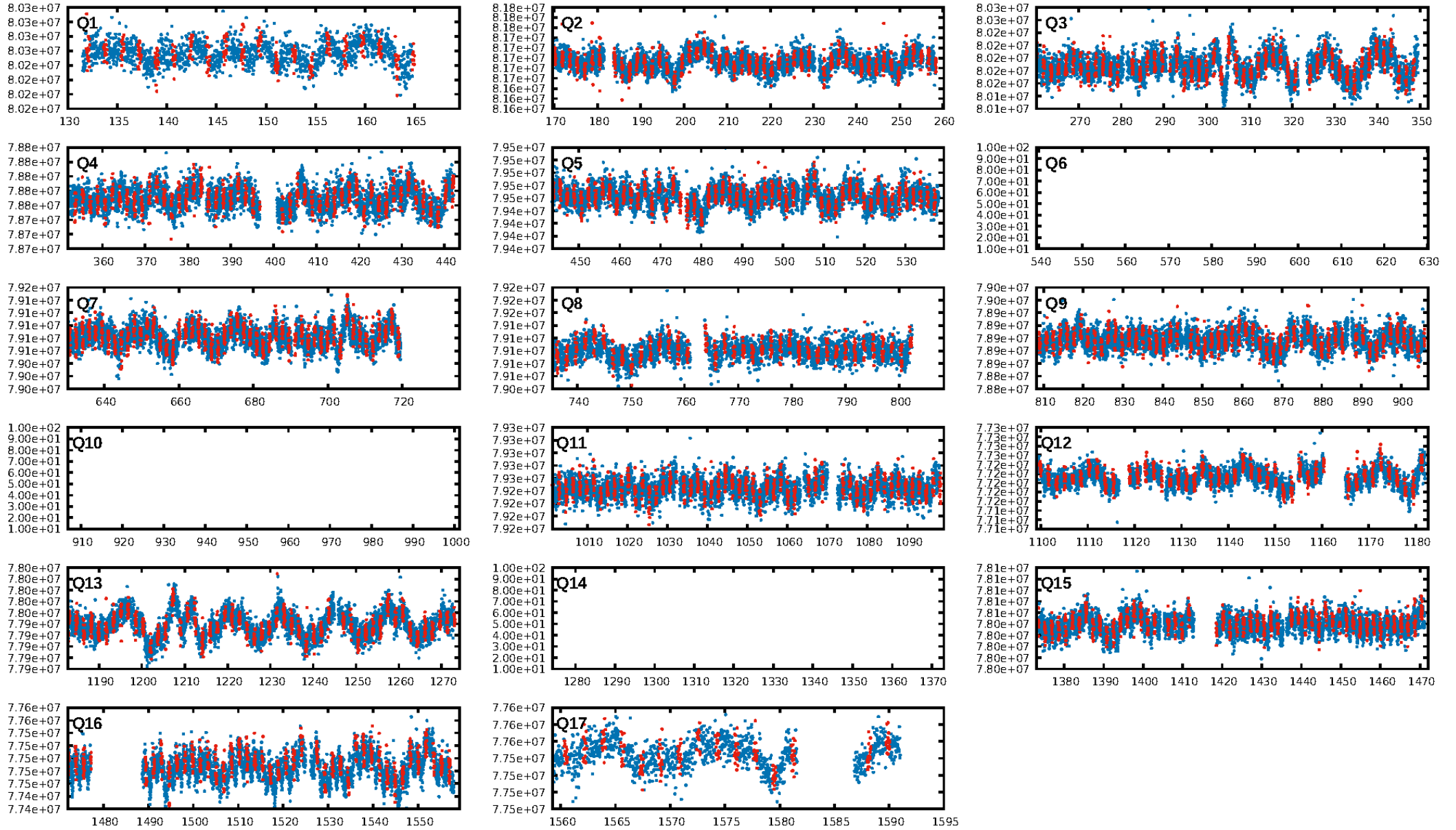
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.48e-23  
RollingBand-fgt: 1.00 [589/589]  
GhostDiagnostic-chr: -3.88  
Centroid-sig: 0.0%  
Centroid-so: 4.045 arcsec [2.83σ]  
OotOffset-rm: 1.460 arcsec [2.96σ]  
KicOffset-rm: 1.460 arcsec [2.43σ]  
OotOffset-st: 1/2/3/3 [9]  
KicOffset-st: 1/2/3/3 [9]  
DiffImageQuality-fgm: 0.44 [4/9]  
DiffImageOverlap-fno: 1.00 [14/14]

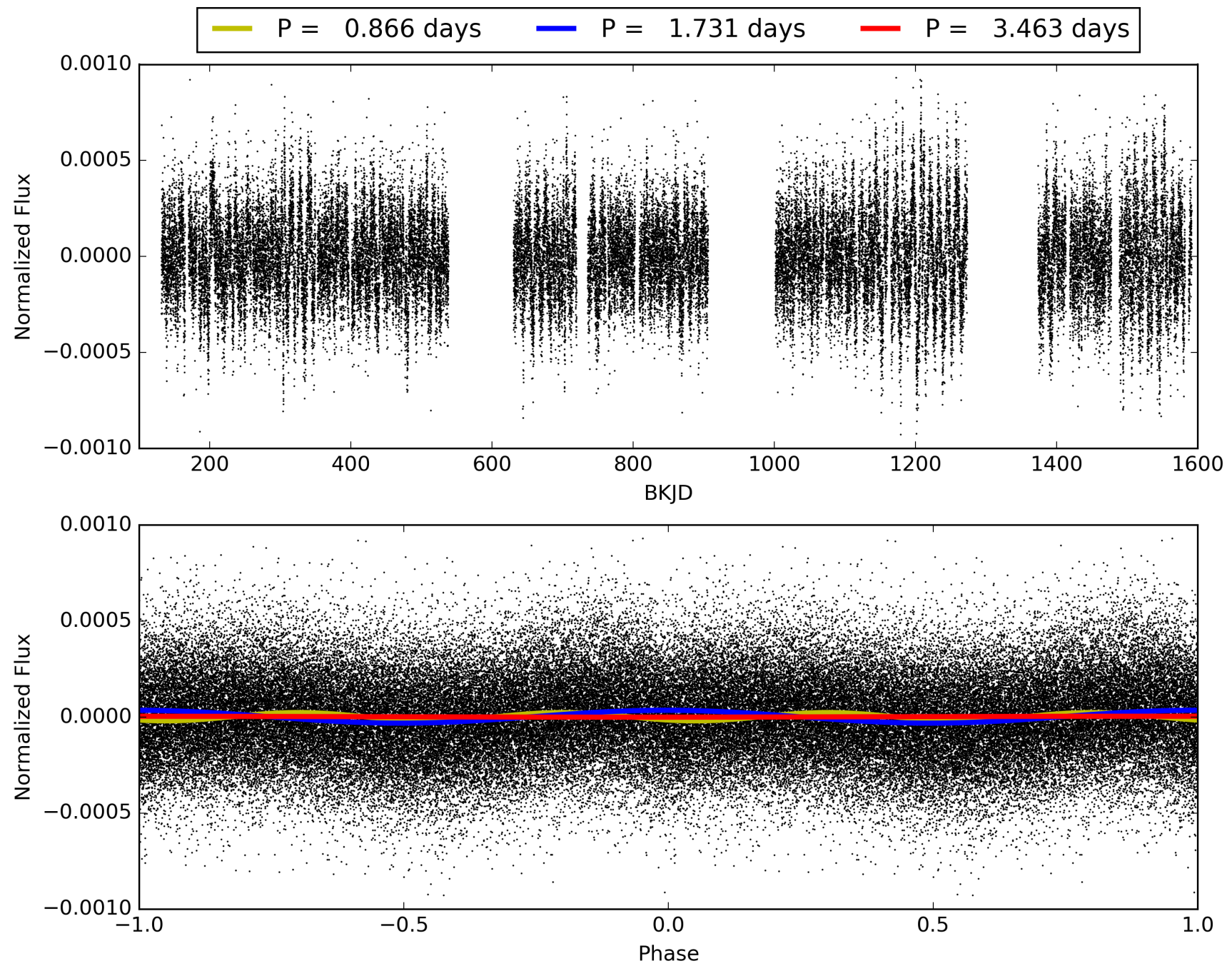
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:05:18 Z

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

# TCE 004664754-01, PDC Light Curves



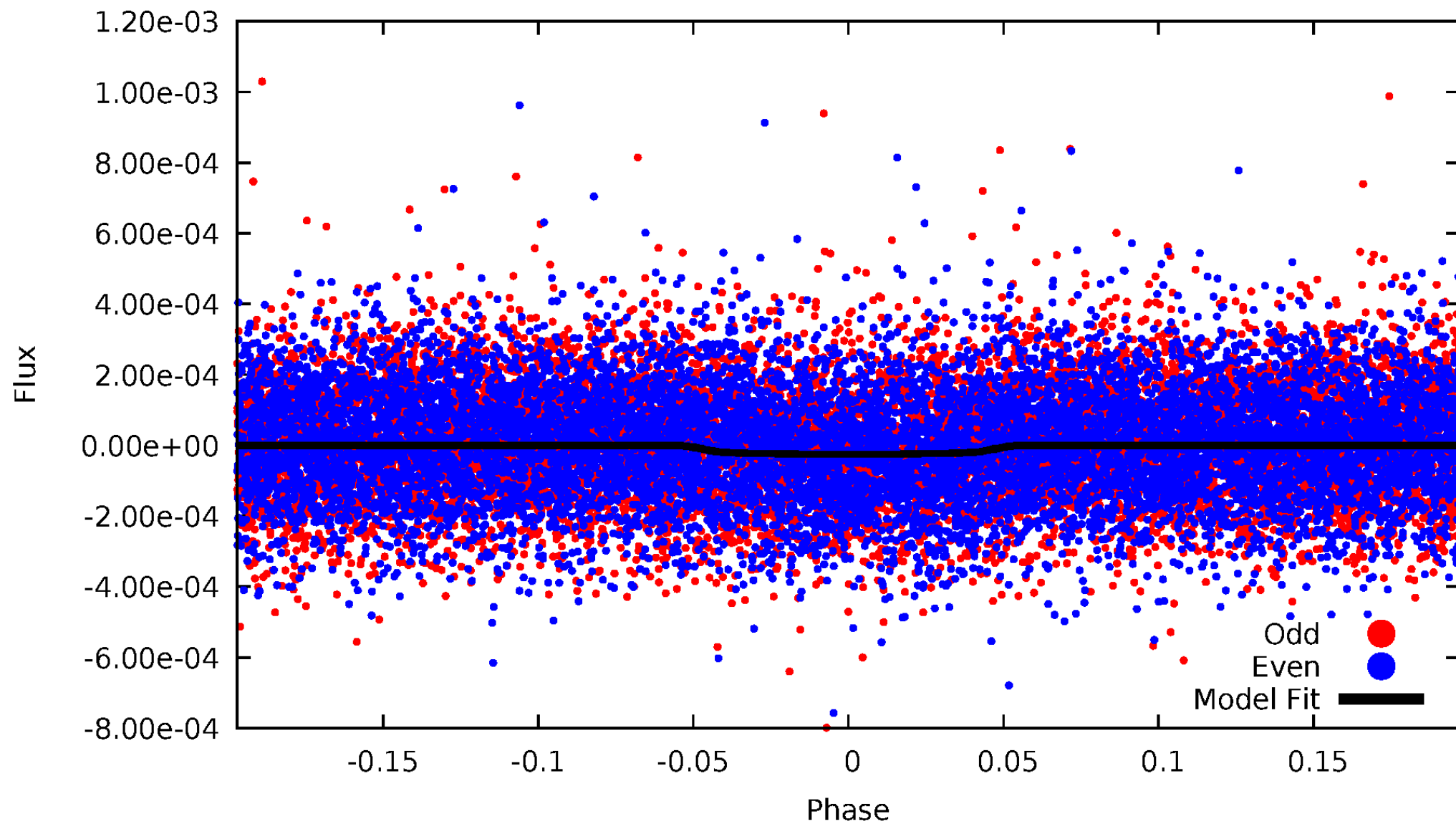
TCE 004664754-01





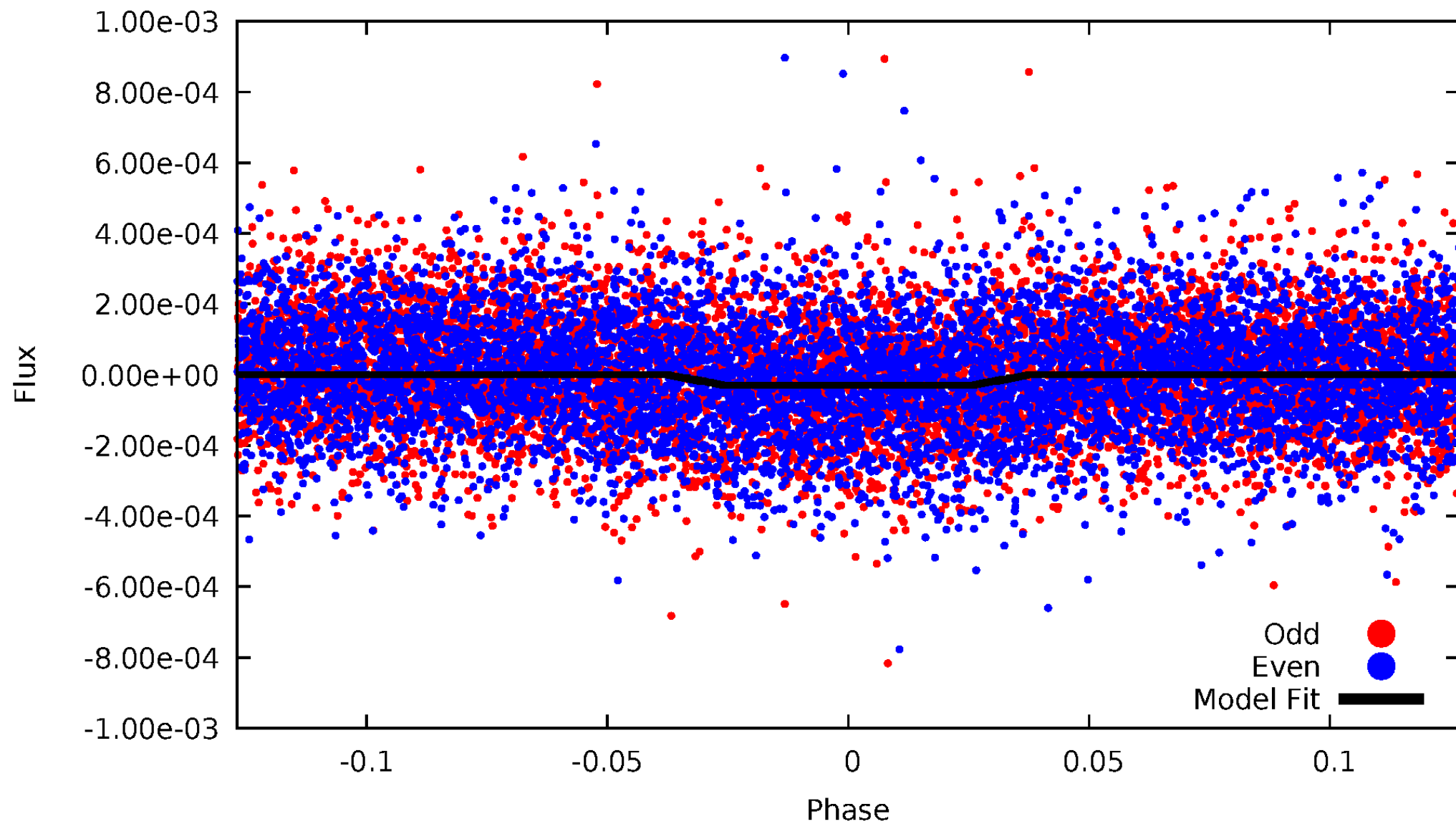
# DV Odd/Even

TCE 004664754-01



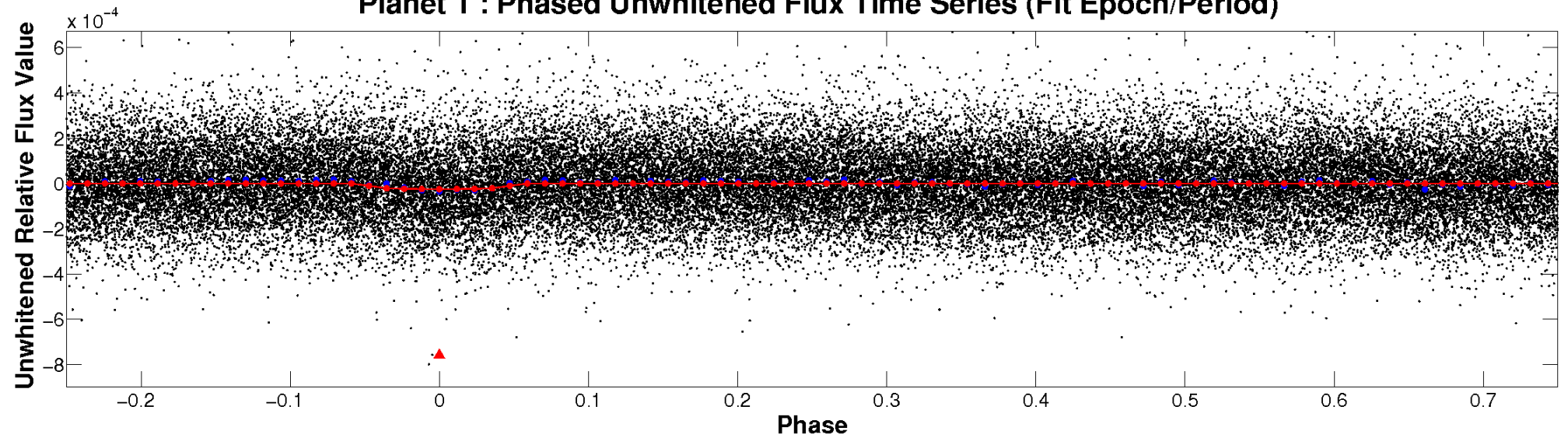
# ALT Odd/Even

TCE 004664754-01

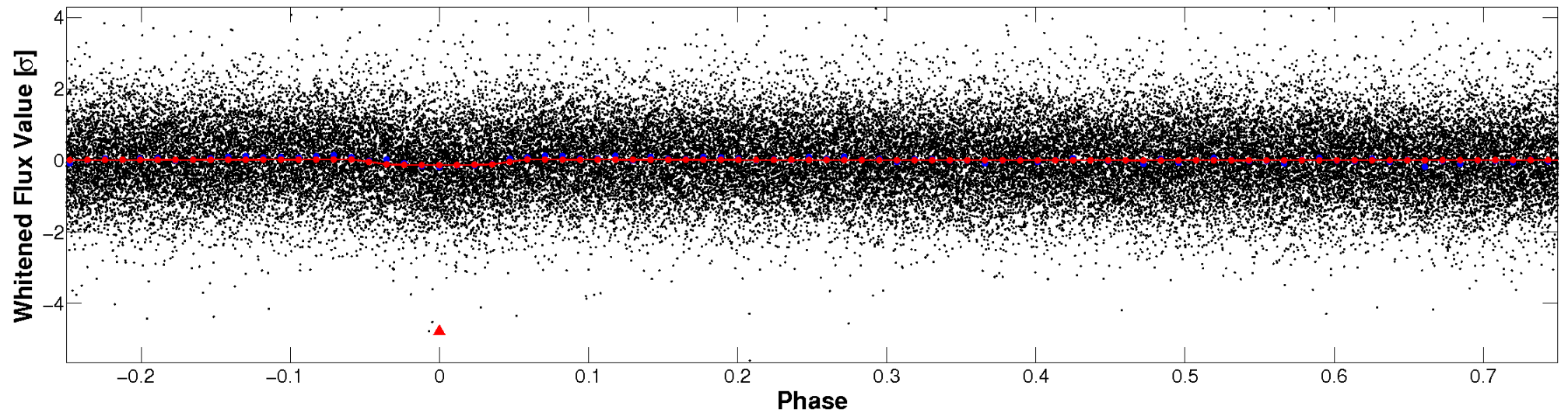


# Non-Whitened Vs. Whitened Light Curve

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

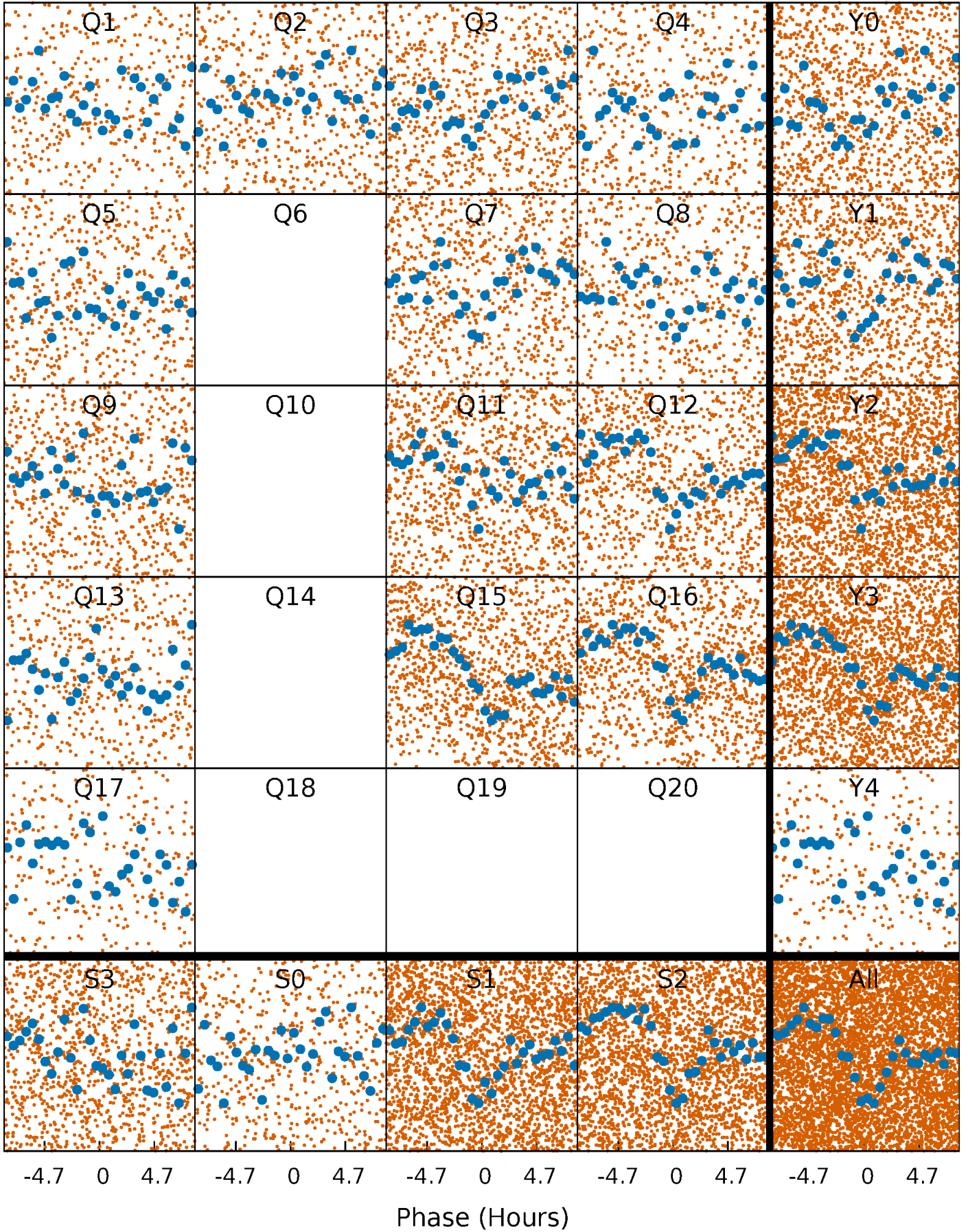


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

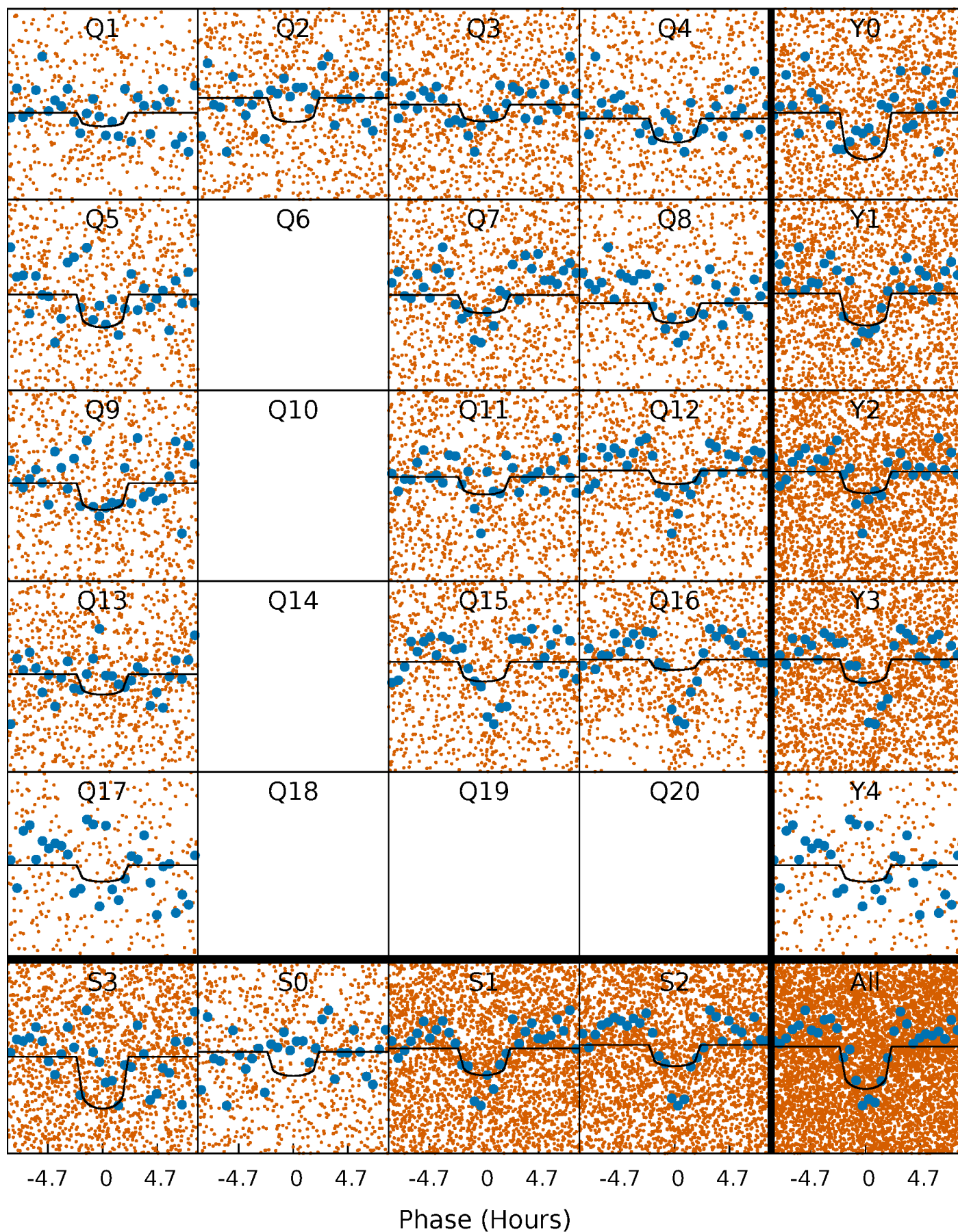
TCE 004664754-01 P= 1.731416 Days  $T_0=132.042580$  (BKJD)





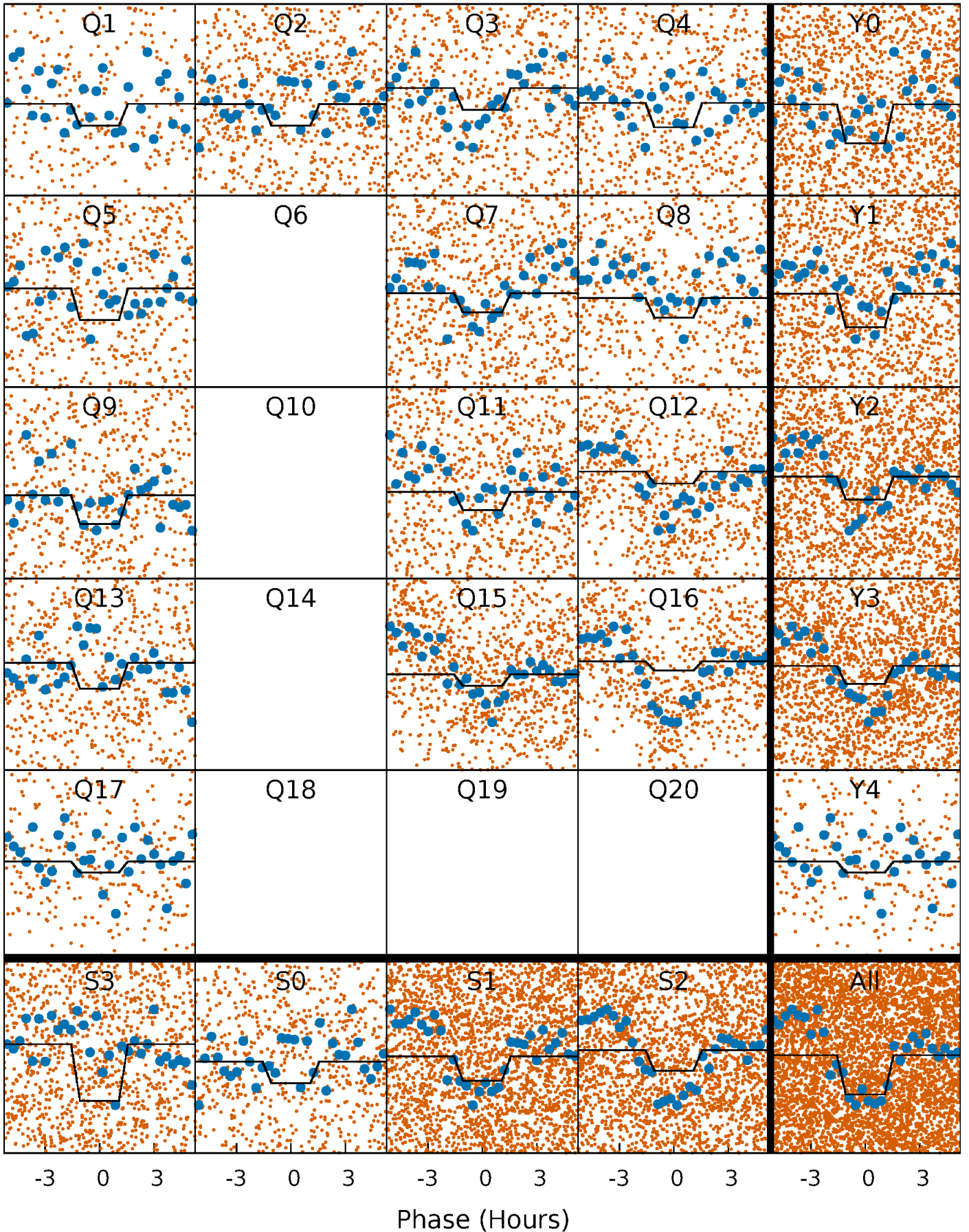
# DV Quarter-Phased Transit Curves

TCE 004664754-01 P= 1.731416 Days  $T_0=132.042580$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

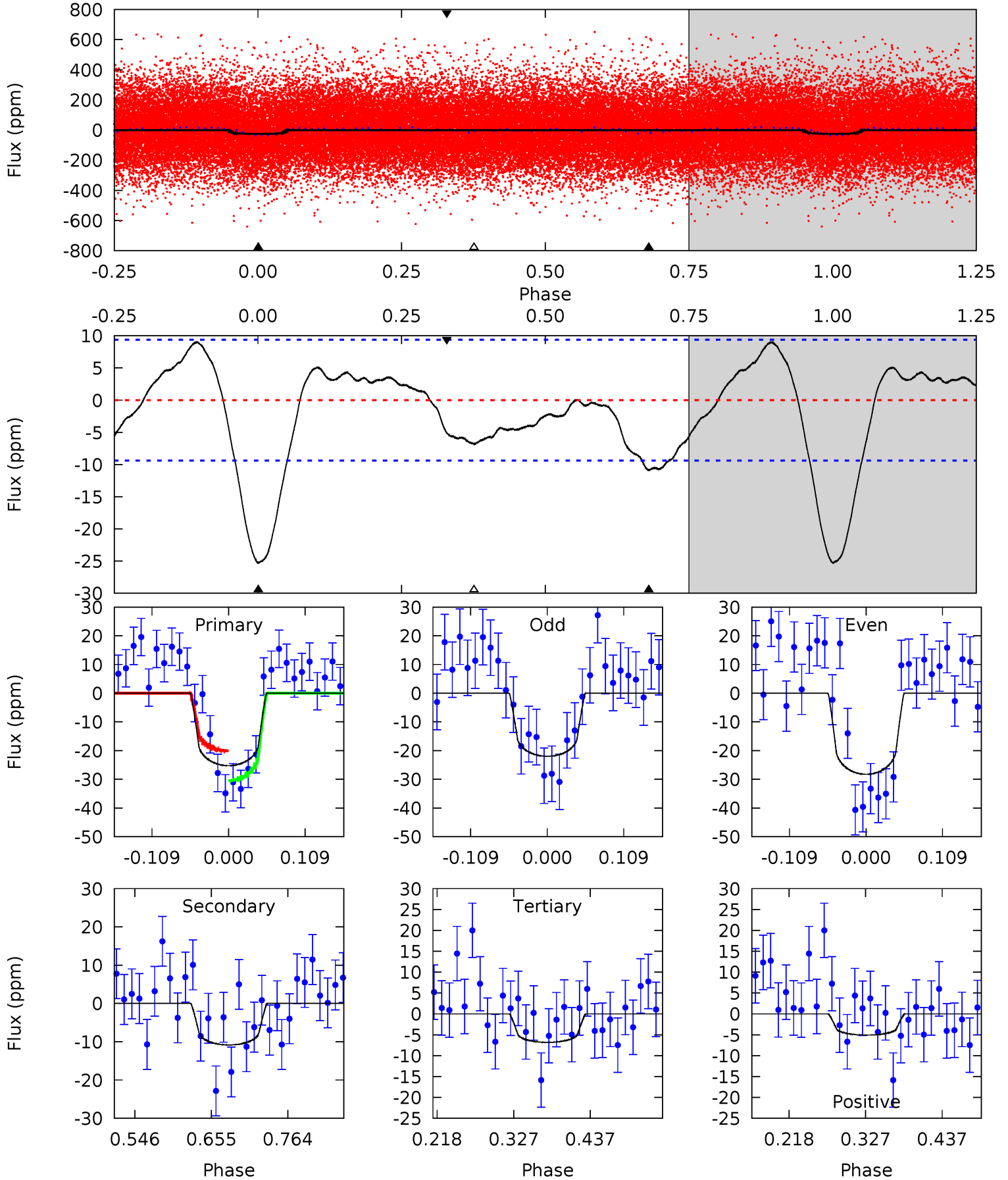
TCE 004664754-01 P= 1.731492 Days  $T_0=132.013813$  (BKJD)



# DV Model-Shift Uniqueness Test

004664754-01, P = 1.731416 Days, E = 130.311164 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
12.2	5.25	3.30	-2.46	4.55	1.60	1.97	8.92	14.7	1.95	7.71	1.52	1.08	0.26	2.52

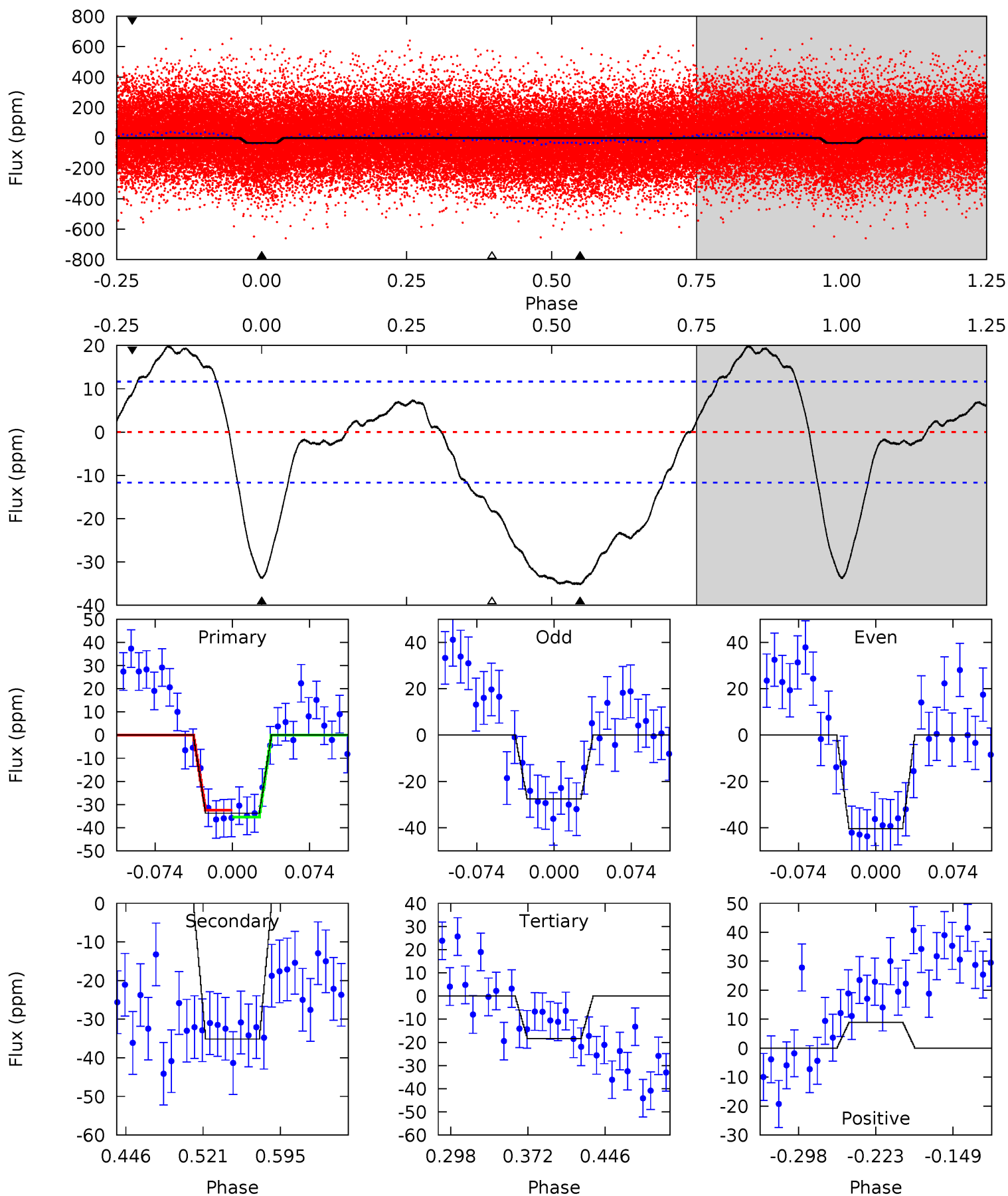




# Alt Model-Shift Uniqueness Test

004664754-01, P = 1.731492 Days, E = 130.282321 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
13.4	13.9	7.27	3.53	4.63	1.78	5.50	6.08	9.83	6.64	10.4	2.55	1.12	0.36	0.57





### Stellar Parameters For KIC 004664754

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5882^{+140}_{-158}$	$4.560^{+0.033}_{-0.187}$	$-0.340^{+0.300}_{-0.300}$	$0.833^{+0.223}_{-0.074}$	$0.923^{+0.097}_{-0.108}$	$2.247^{+0.400}_{-1.076}$
	+2%/-3%	+1%/-4%	+88%/-88%	+27%/-9%	+11%/-12%	+18%/-48%
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 004664754-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-11 \pm 2$	$0.51^{+0.27}_{-0.24}$	$2046^{+128}_{-83}$	$4755^{+1641}_{-743}$	$17^{+46}_{-10}$
Alt.	$-35 \pm 3$	$0.51^{+0.30}_{-0.24}$	$2053^{+132}_{-88}$	$6185^{+2737}_{-1152}$	$54^{+141}_{-32}$

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

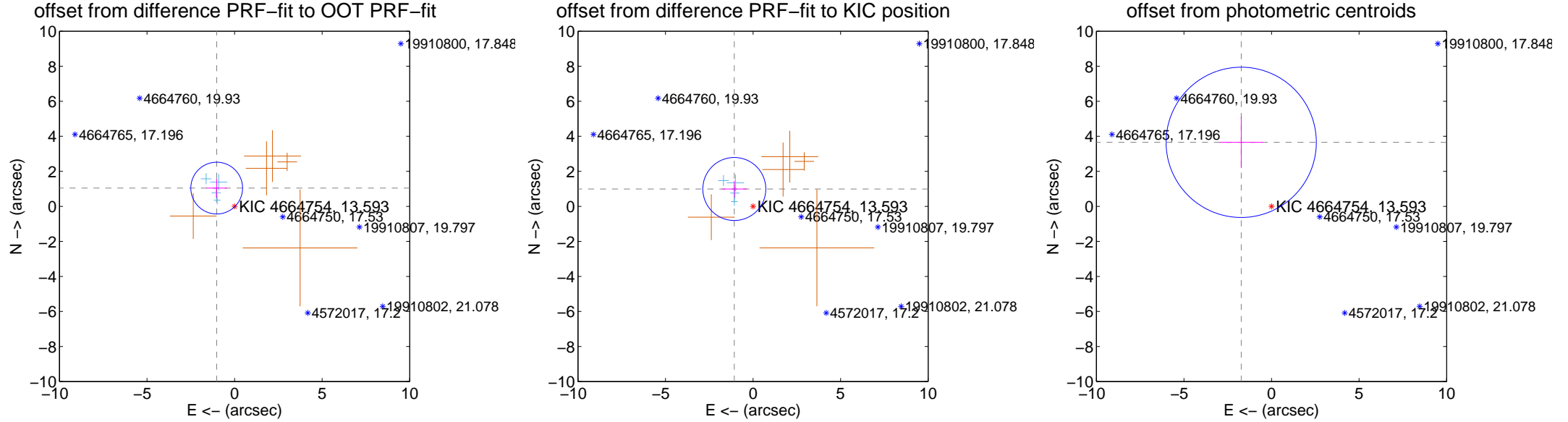
## DV Centroid Data

Supplemental centroid analysis for 004664754-01. Kepler magnitude: 13.59. Transit SNR 8.40

There are 4 quarters with good PRF difference image offsets

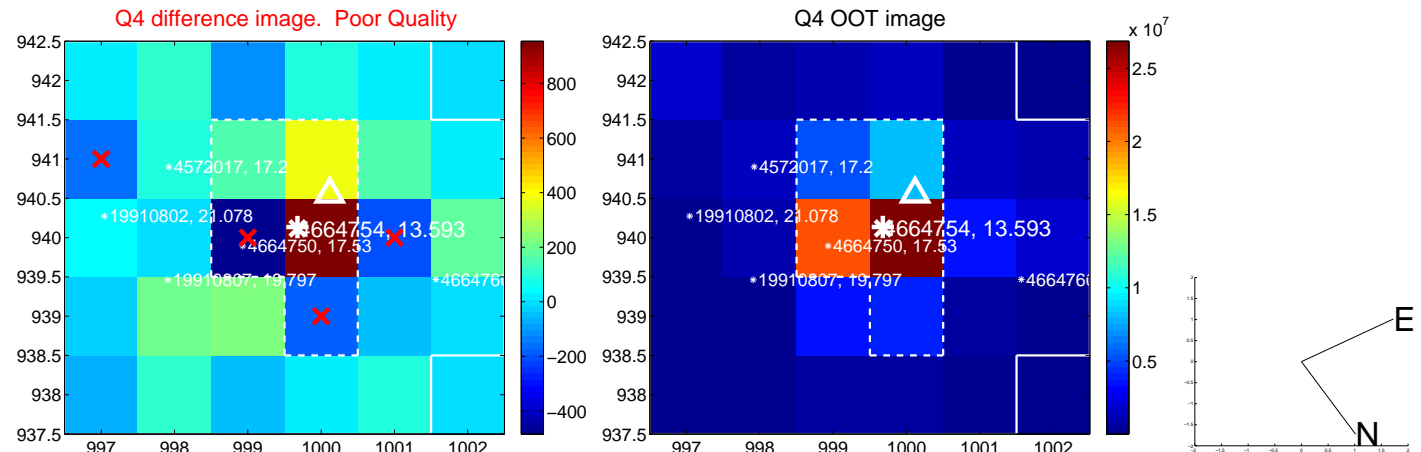
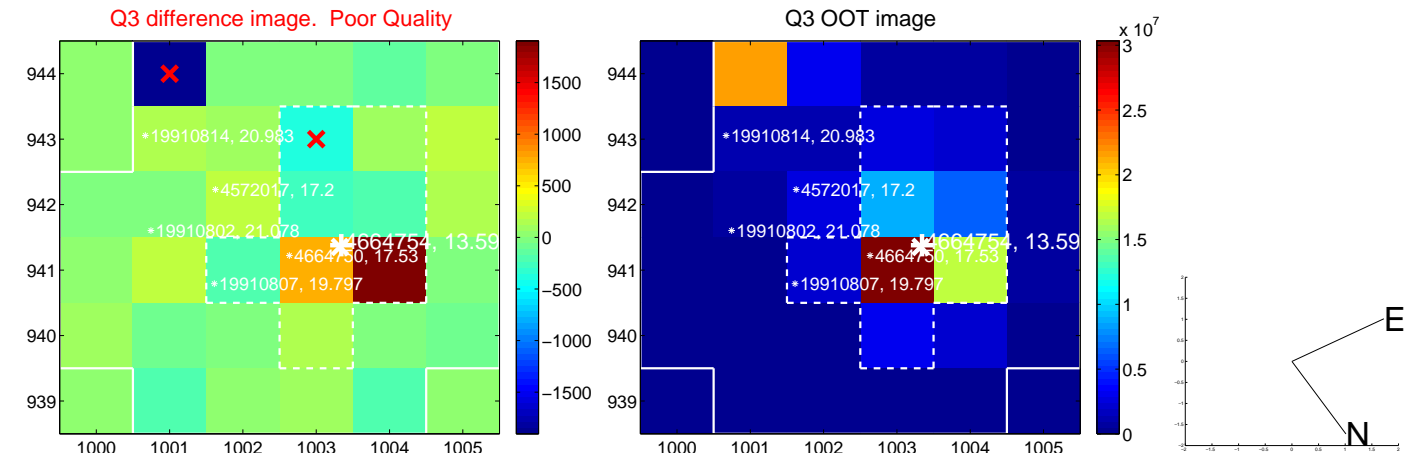
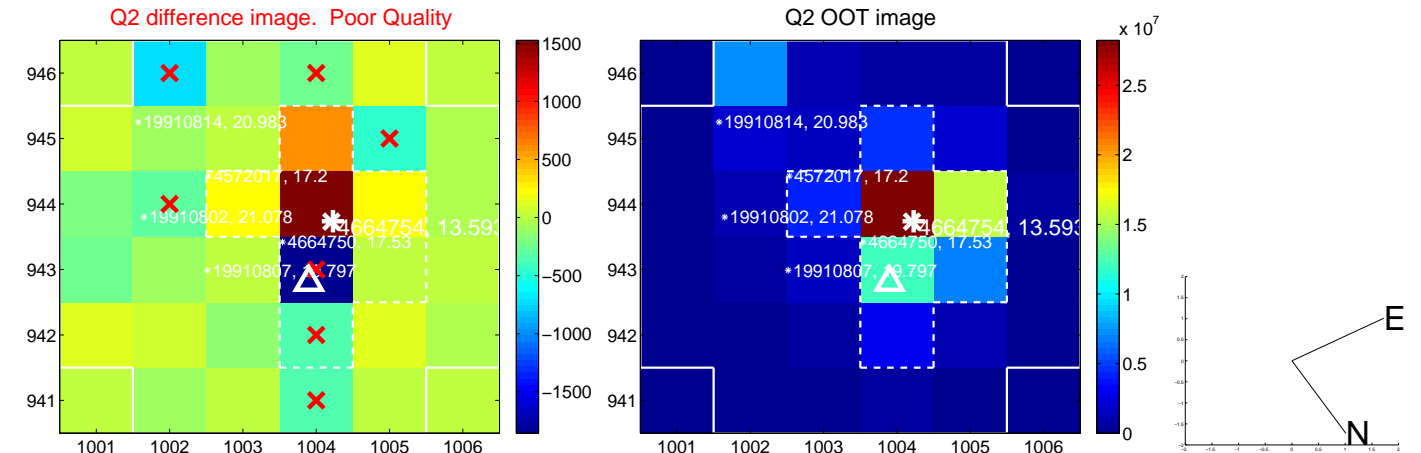
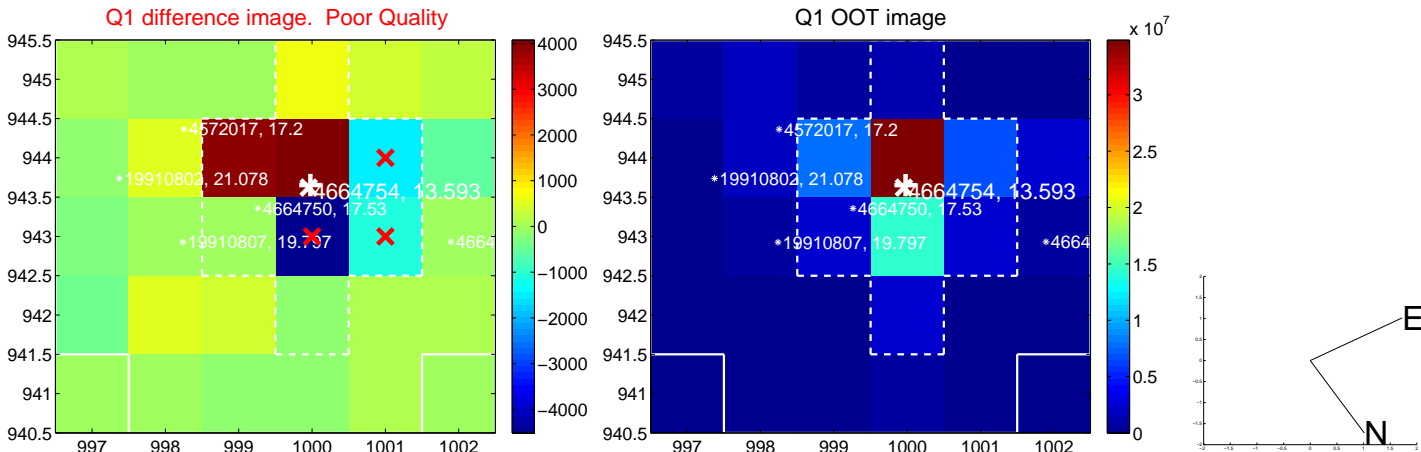
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.460 \pm 0.493$	2.96	$1.021 \pm 0.590$	$1.043 \pm 0.531$
PRF-fit source offset from KIC position	$1.460 \pm 0.600$	2.43	$1.070 \pm 0.707$	$0.992 \pm 0.469$
photometric centroid source offset	$4.04 \pm 1.43$	2.83	$1.73 \pm 1.24$	$3.66 \pm 1.47$

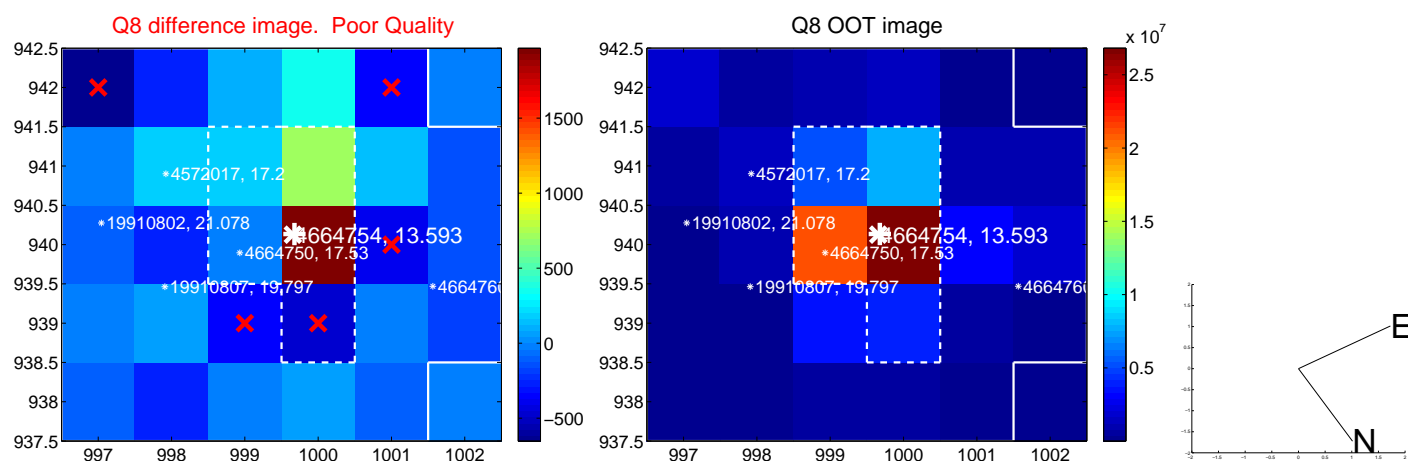
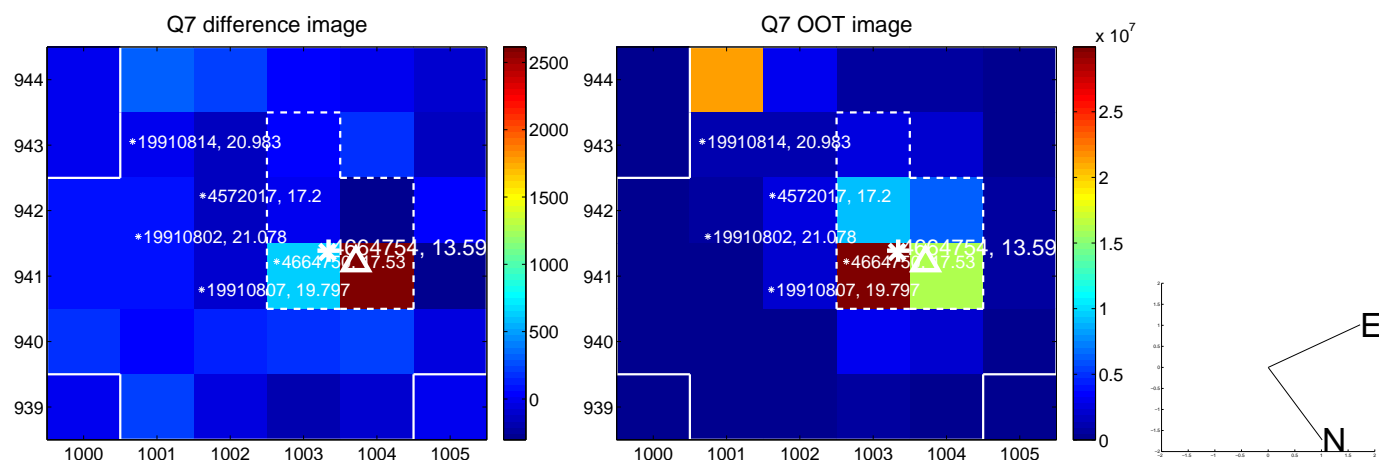
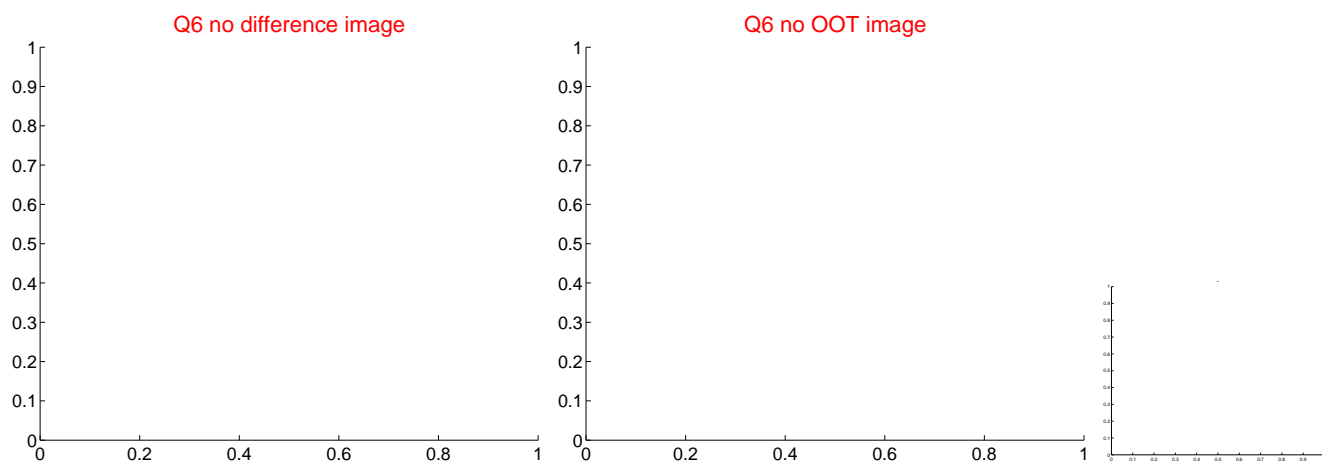
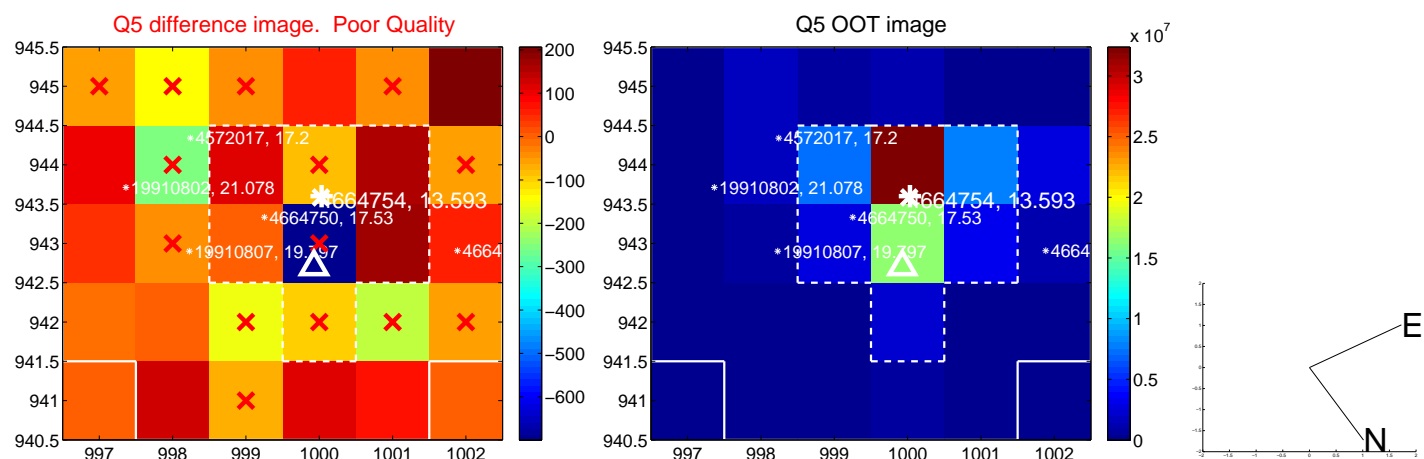


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

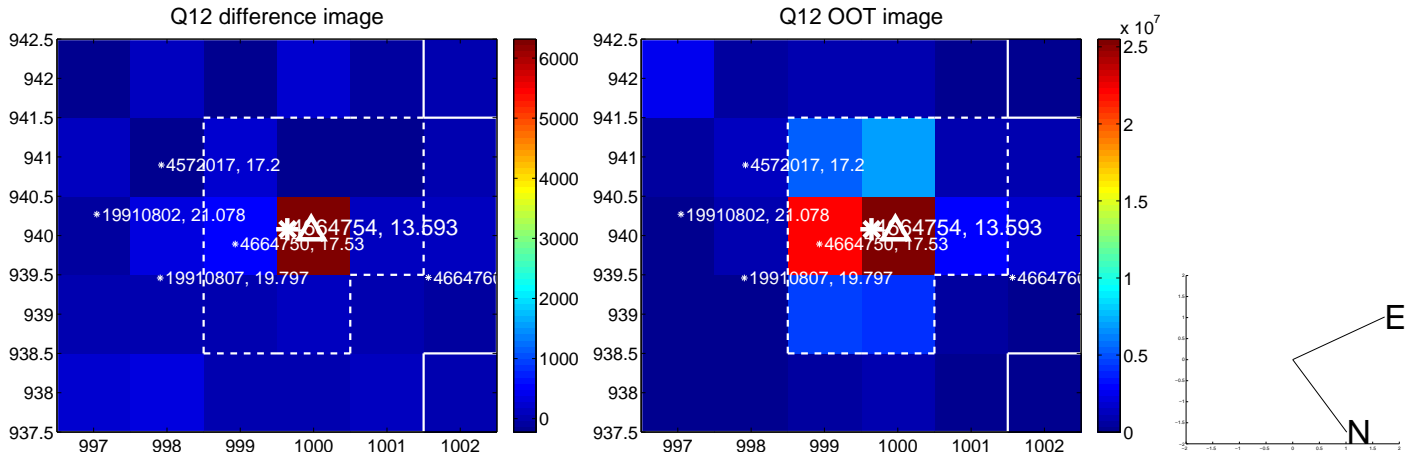
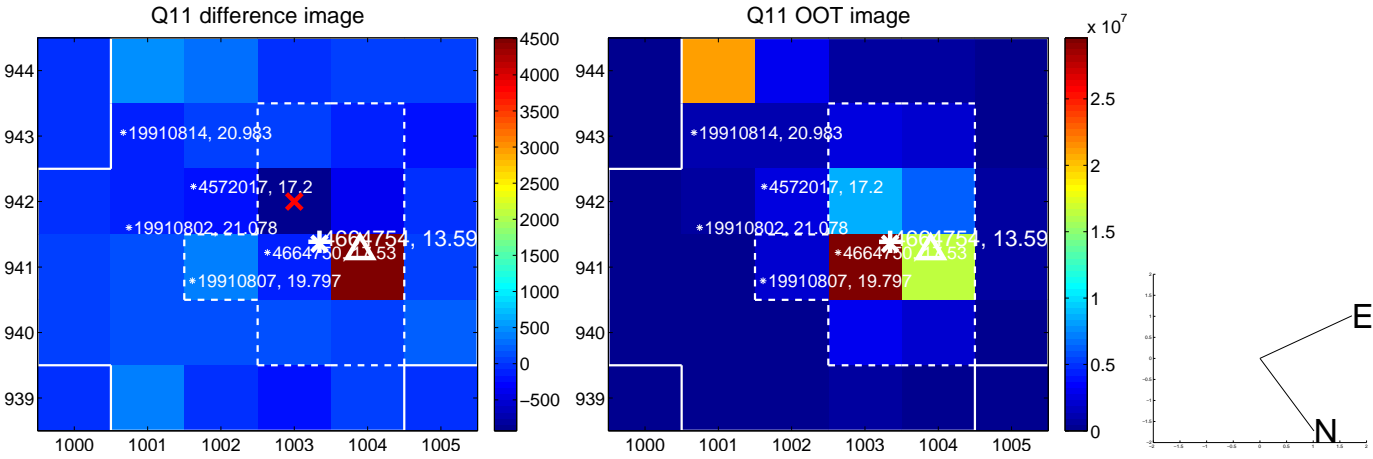
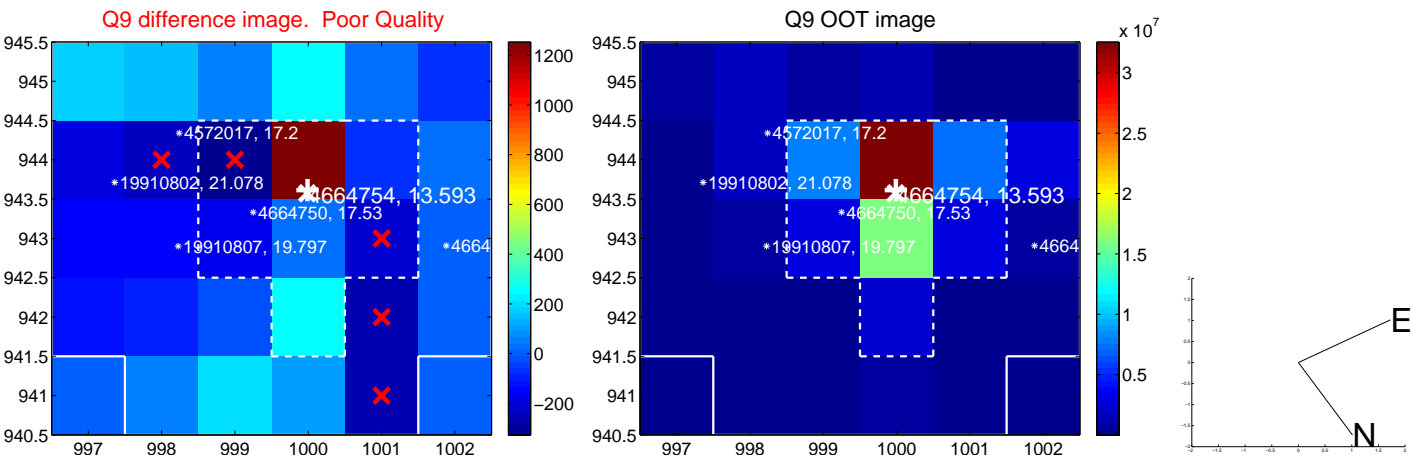


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

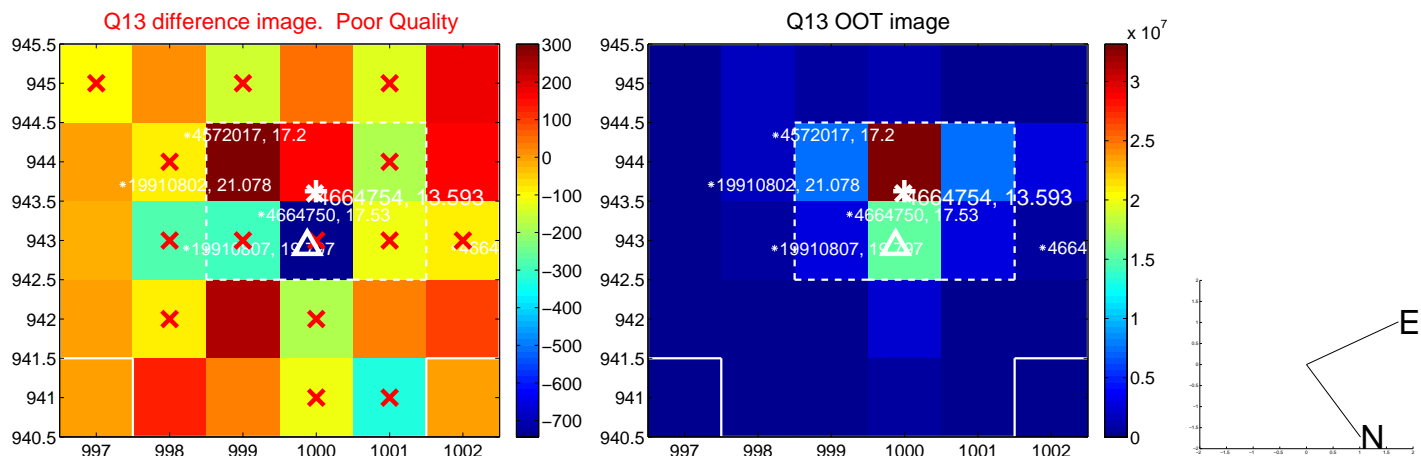




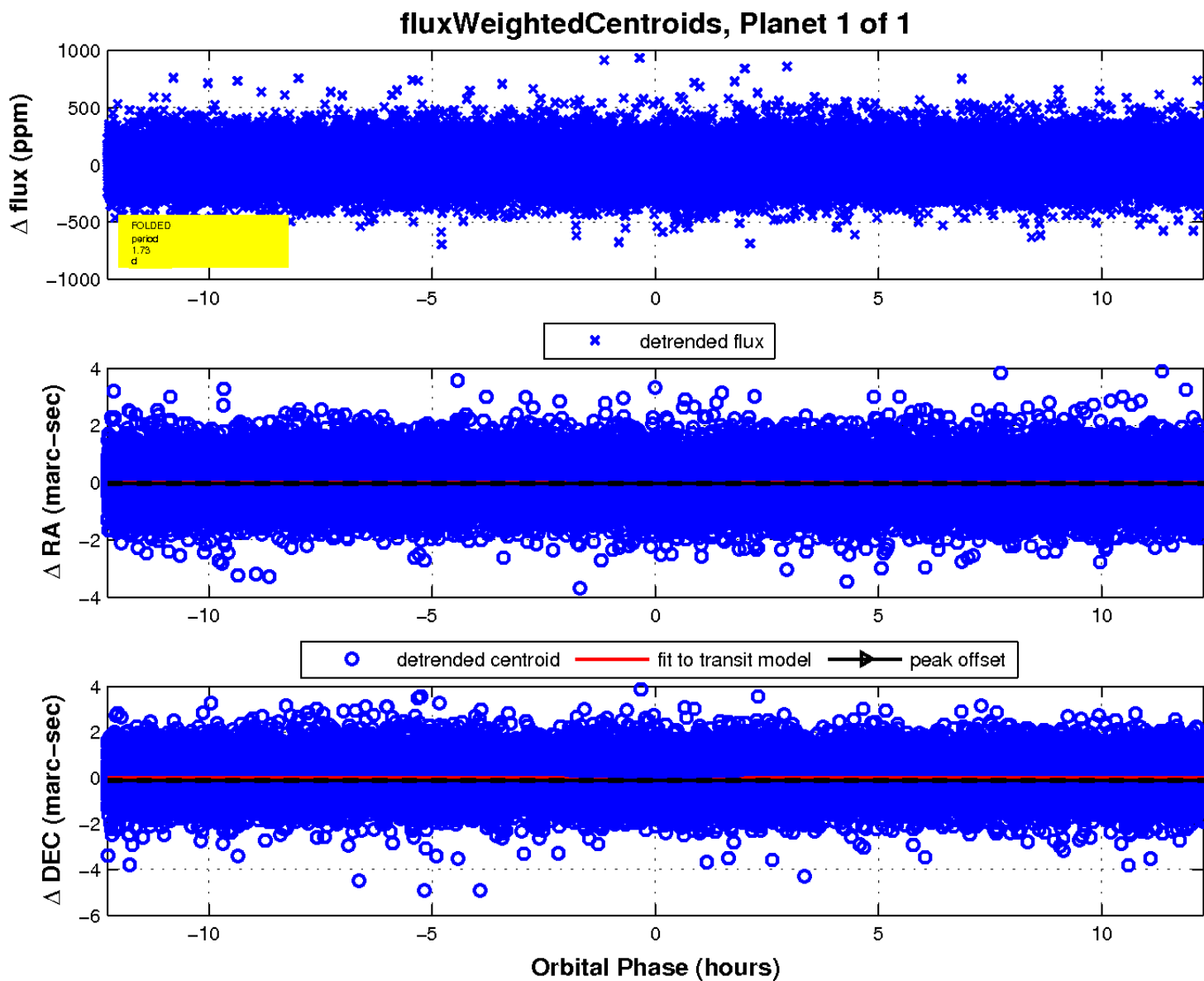
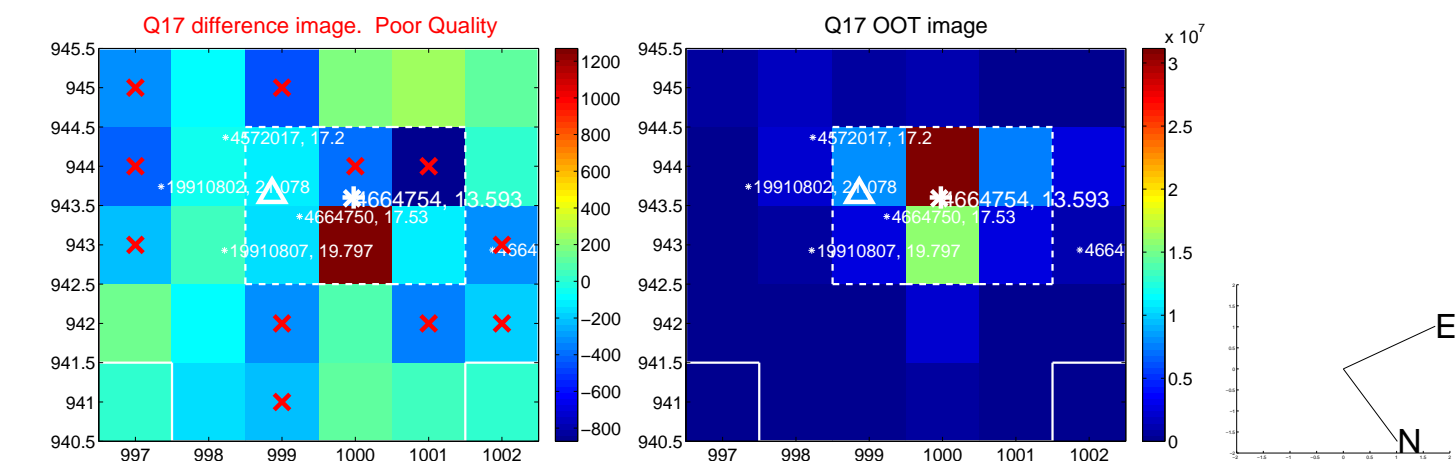
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

