

# KIC 006948006

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006948006-01	OBS	No	0.566841	131.664748	25.6	1.680	13.4	12.4	0.75	6055	0.43	4292.11

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006948006-01	OBS	FP	0.00	1	0	0	1	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—EPHEM_MATCH

**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.

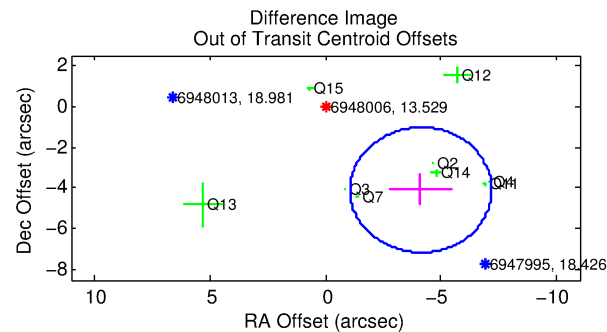
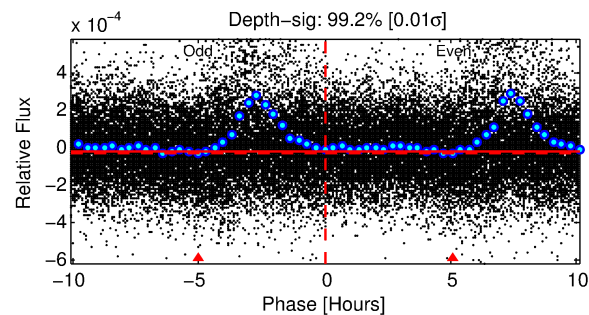
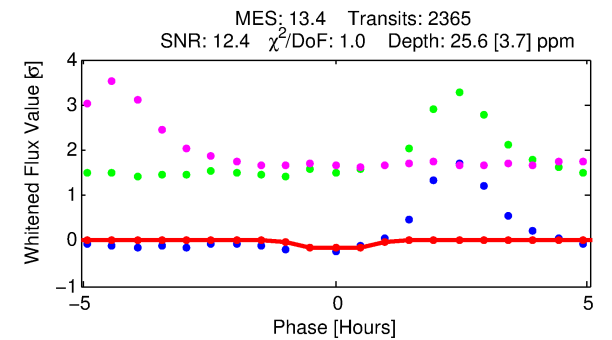
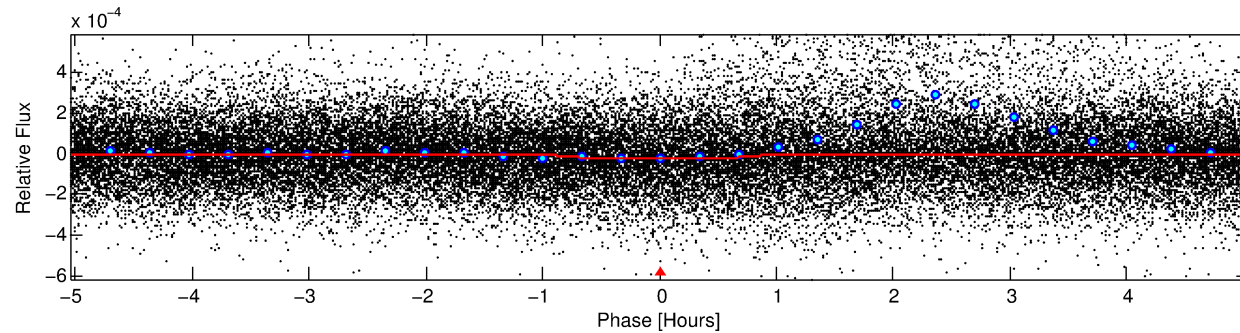
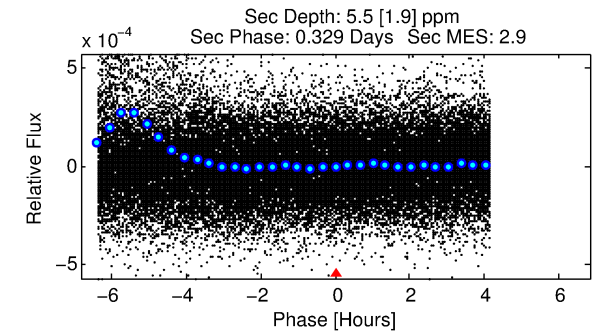
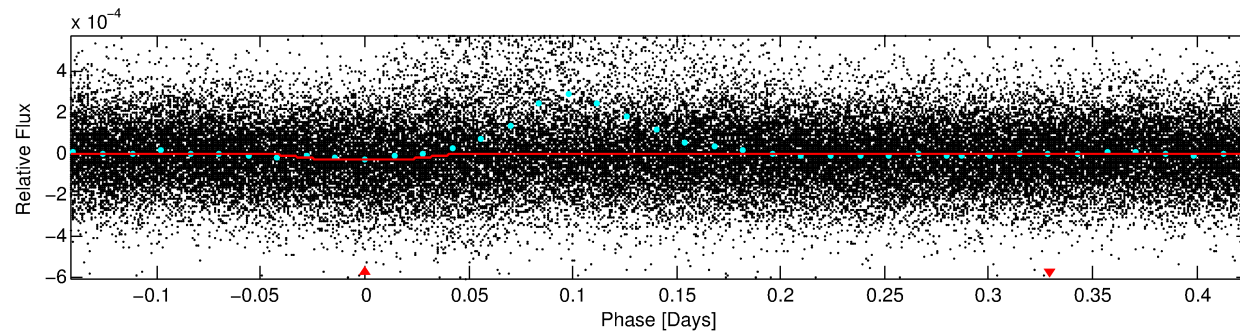
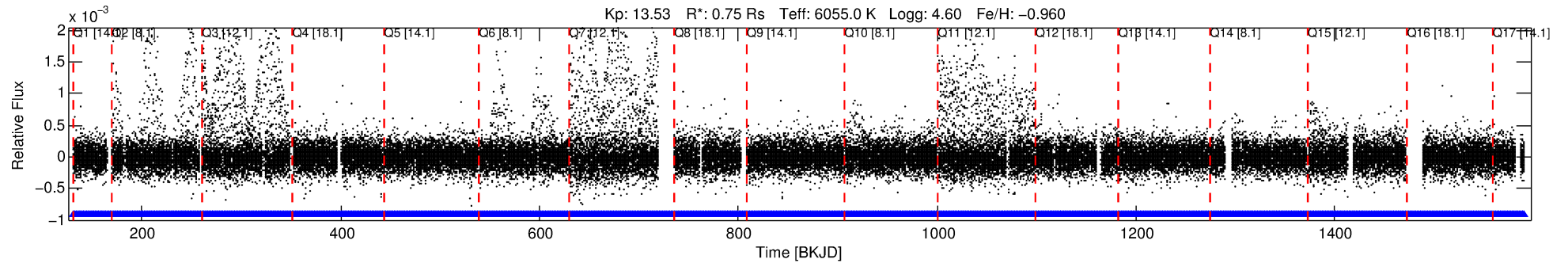
## Ephemeris Match Information For 006948006-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
006948006-01	6948006	RR-Lyr-pri	7198959	1:1	1259.1	316	2	7.86	13.53	23973.00	Direct-PRF	0	3.43	4.83

**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 6948006 Candidate: 1 of 1 Period: 0.567 d



## DV Fit Results:

Period = 0.56684 [0.00001] d  
Epoch = 131.6647 [0.0022] BKJD  
Rp/R\* = 0.0053 [0.0012]  
a/R\* = 1.65 [1.24]  
b = 0.85 [0.39]  
Seff = 4292.11 [1324.19]  
Teff = 2064 [159] K  
Rp = 0.43 [0.13] Re  
a = 0.0125 [0.0024] AU  
Ag = 2.60 [1.63] [0.98σ]  
Teffp = 4053 [575] K [3.33σ]

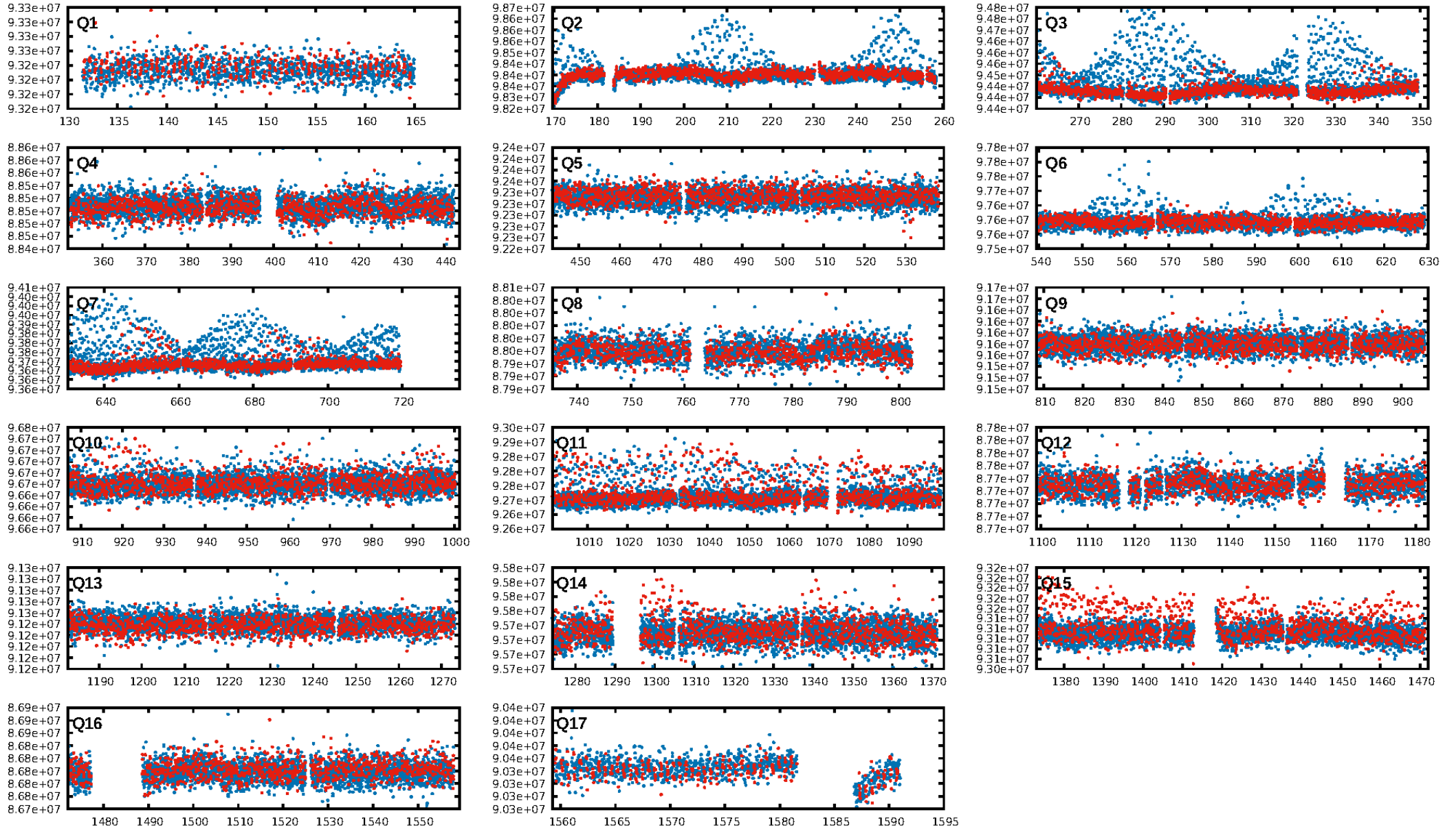
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.11e-34  
RollingBand-fgt: 1.00 [2260/2260]  
**GhostDiagnostic-chr: -0.5965**  
Centroid-sig: N/A  
Centroid-so: 2.245 arcsec [2.27σ]  
**OotOffset-rm: 5.810 arcsec [5.69σ]**  
**KicOffset-rm: 5.656 arcsec [5.42σ]**  
OotOffset-st: 2/4/2/1 [9]  
KicOffset-st: 2/4/2/1 [9]  
DiffImageQuality-fgm: 0.00 [0/9]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:39:10 Z

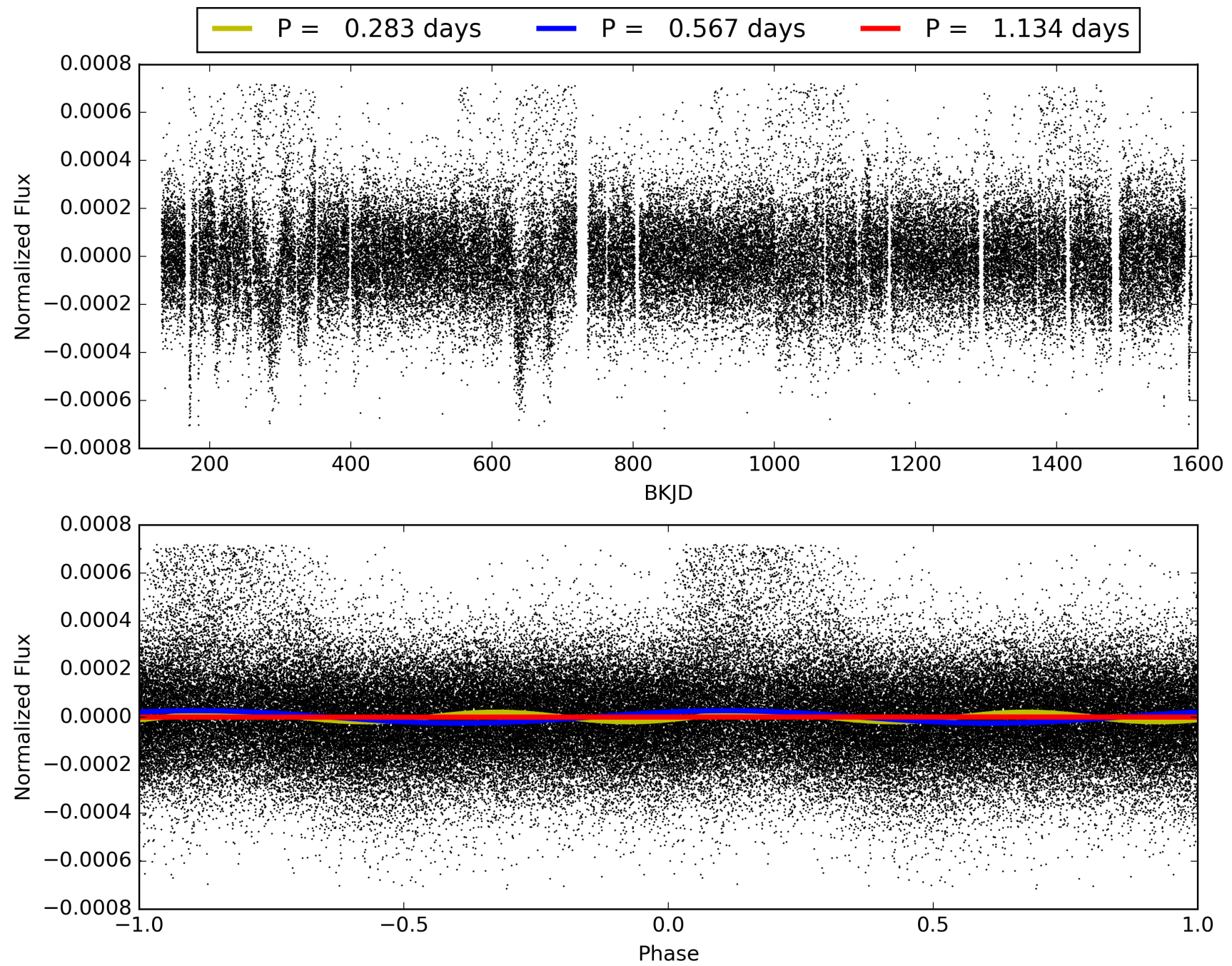
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 006948006-01, PDC Light Curves



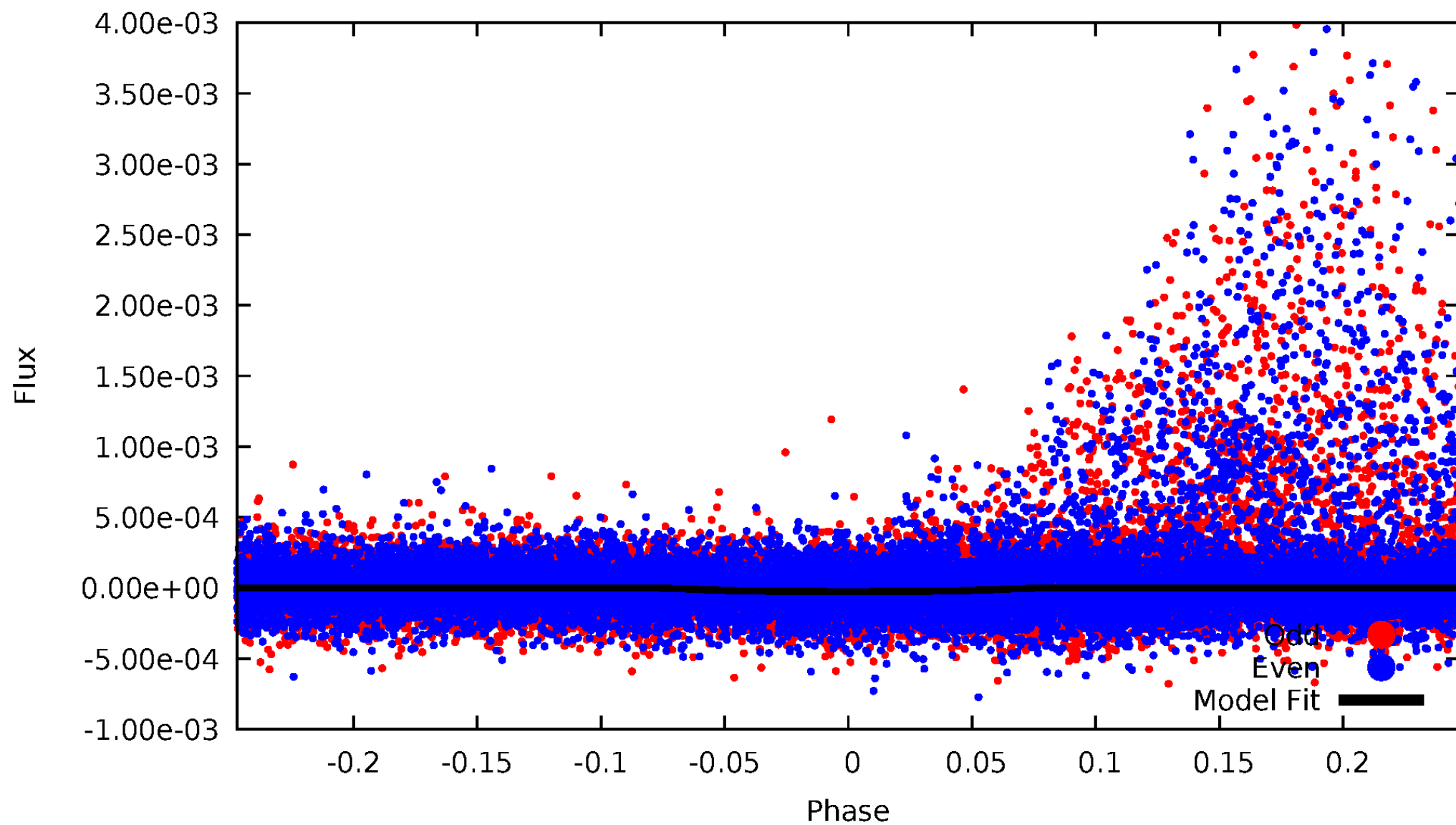


TCE 006948006-01



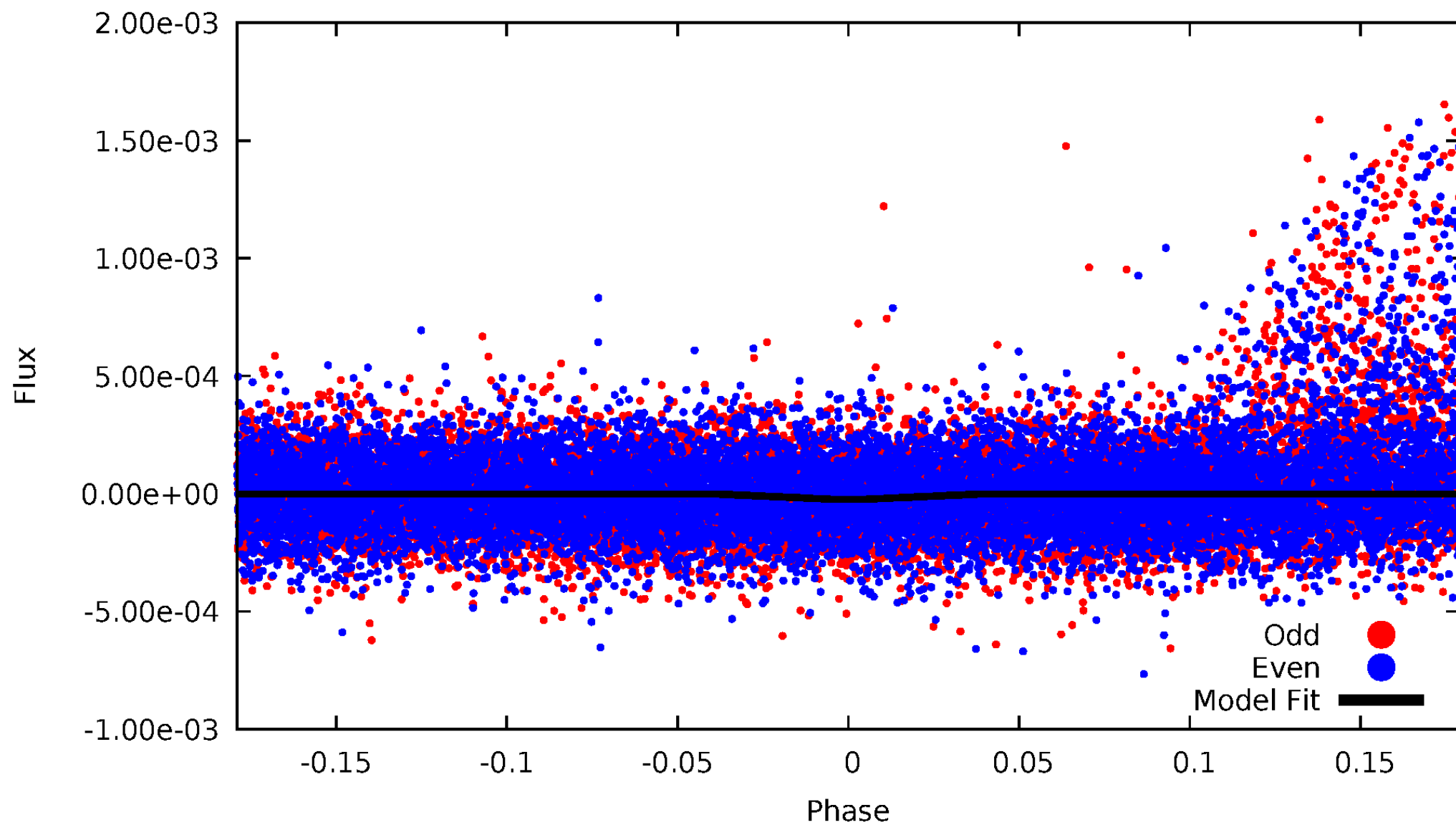
# DV Odd/Even

TCE 006948006-01



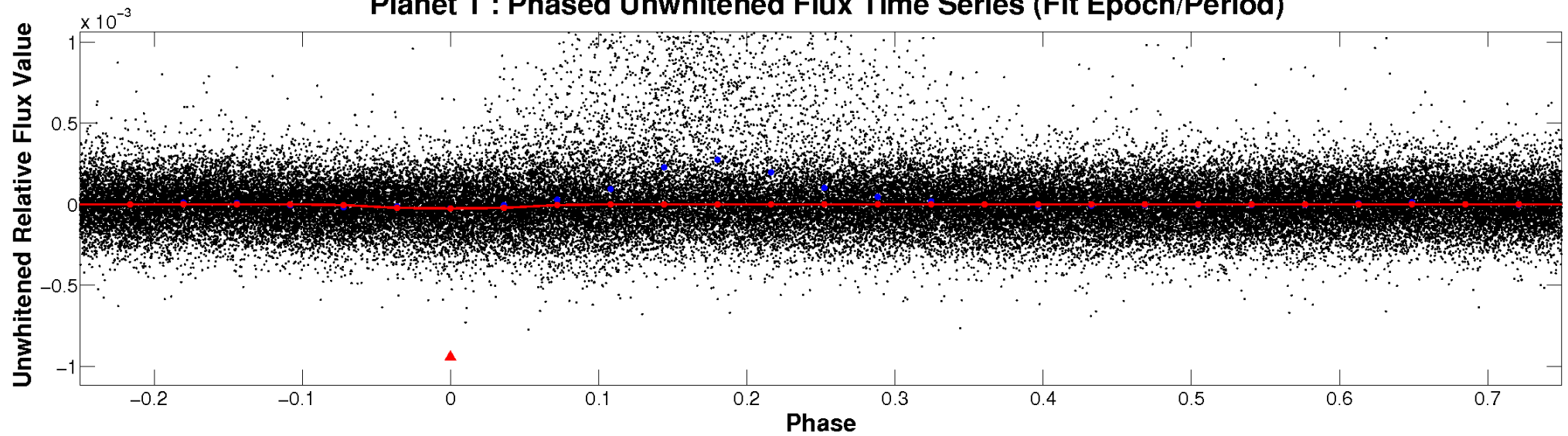
# ALT Odd/Even

TCE 006948006-01

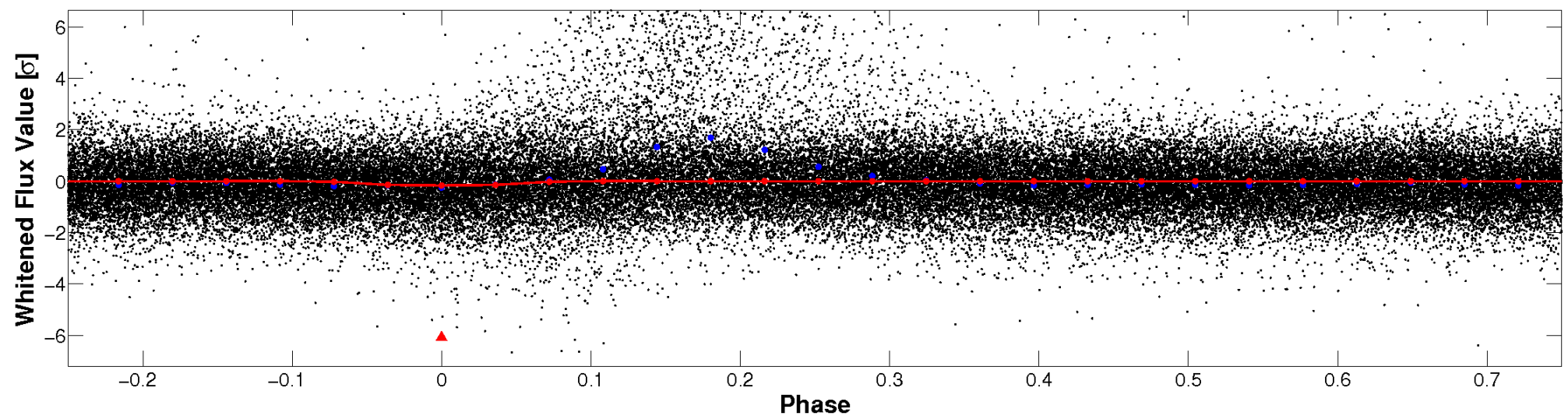


# Non-Whitened Vs. Whitened Light Curve

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



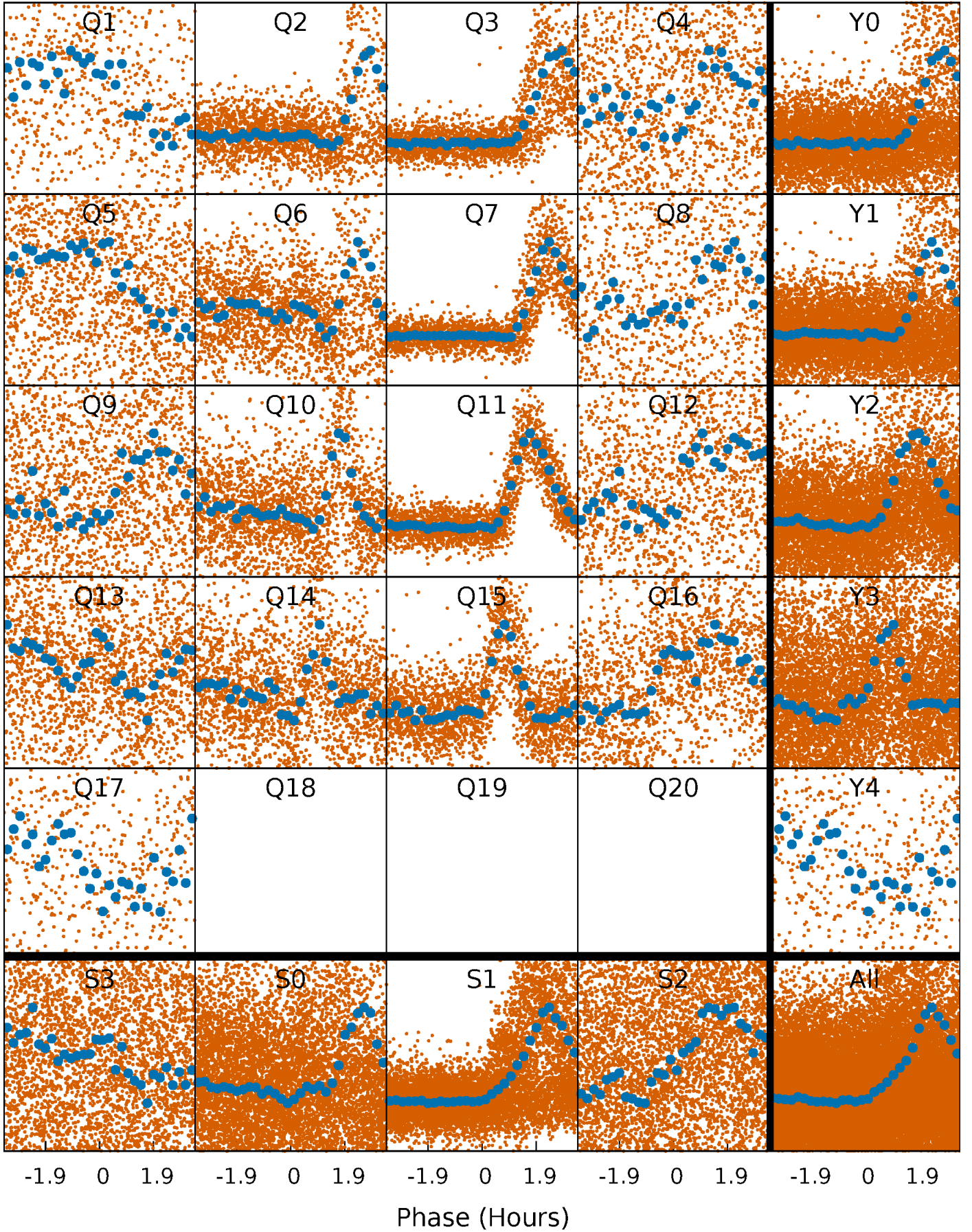
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

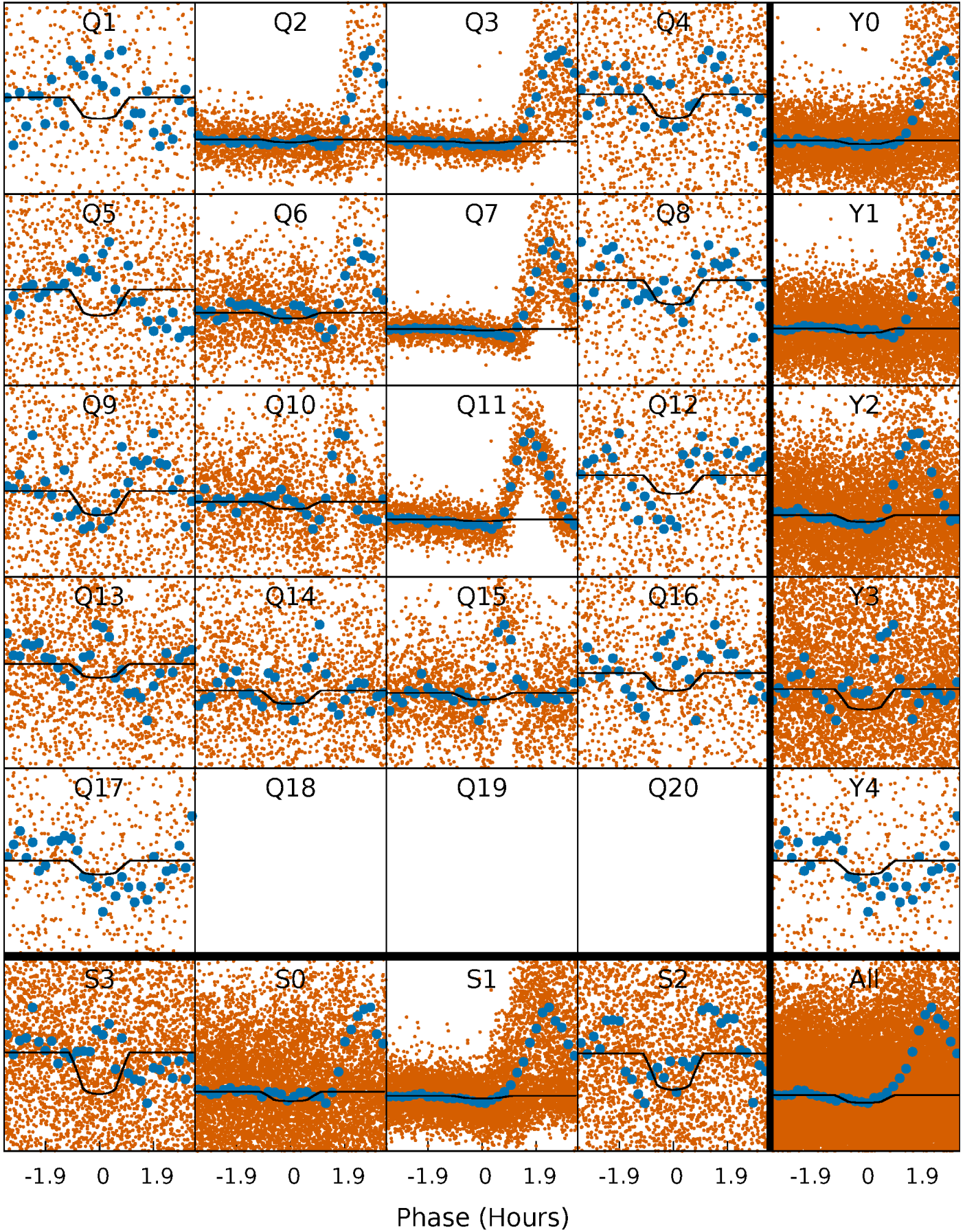
TCE 006948006-01 P= 0.566841 Days  $T_0=131.664748$  (BKJD)





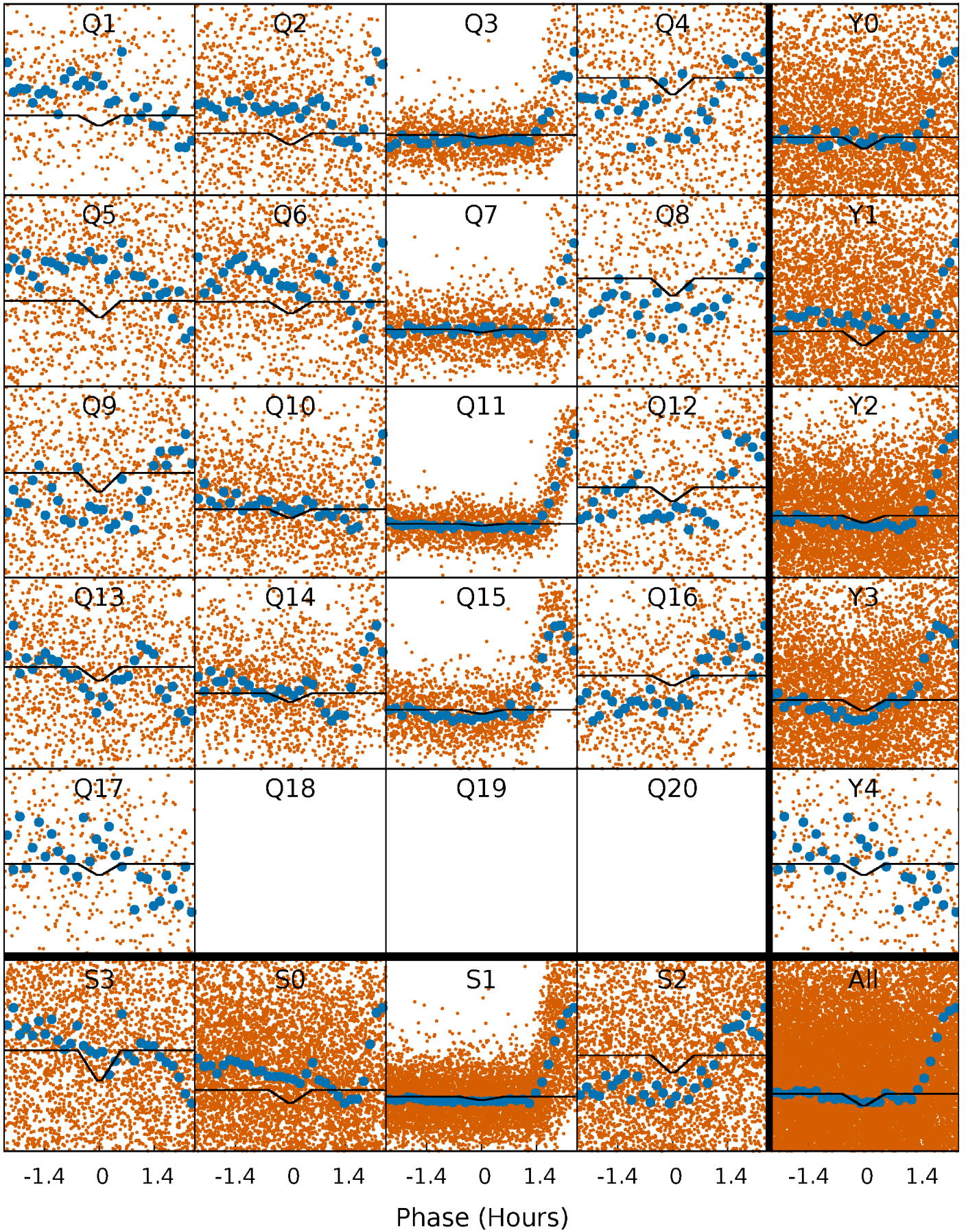
# DV Quarter-Phased Transit Curves

TCE 006948006-01 P= 0.566841 Days  $T_0=131.664748$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

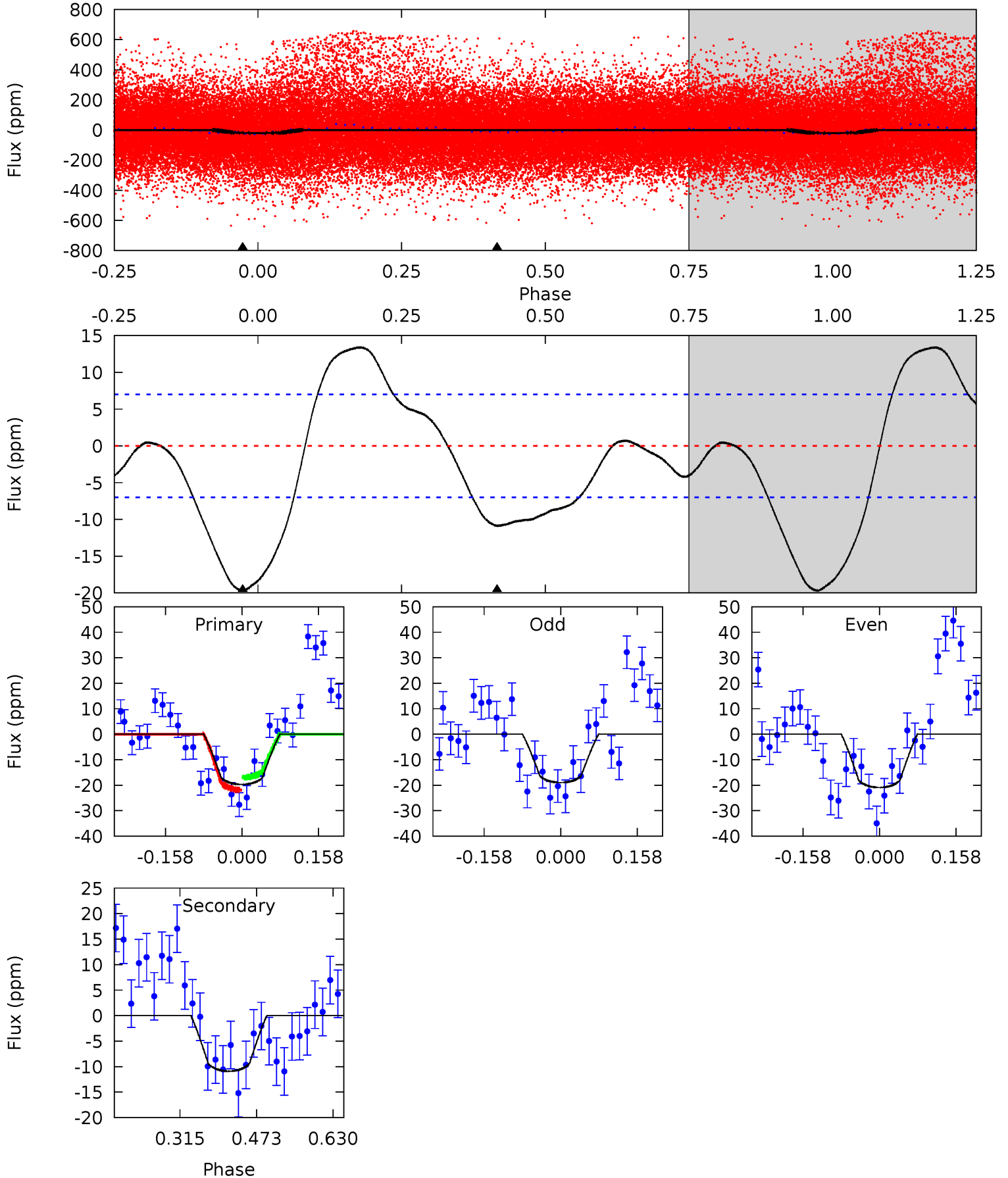
TCE 006948006-01 P= 0.566821 Days  $T_0=131.659741$  (BKJD)



# DV Model-Shift Uniqueness Test

006948006-01, P = 0.566841 Days, E = 131.097907 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
12.6	6.95	0	0	4.47	1.41	3.85	12.6	12.6	6.95	6.95	0.62	1.01	0.41	1.54

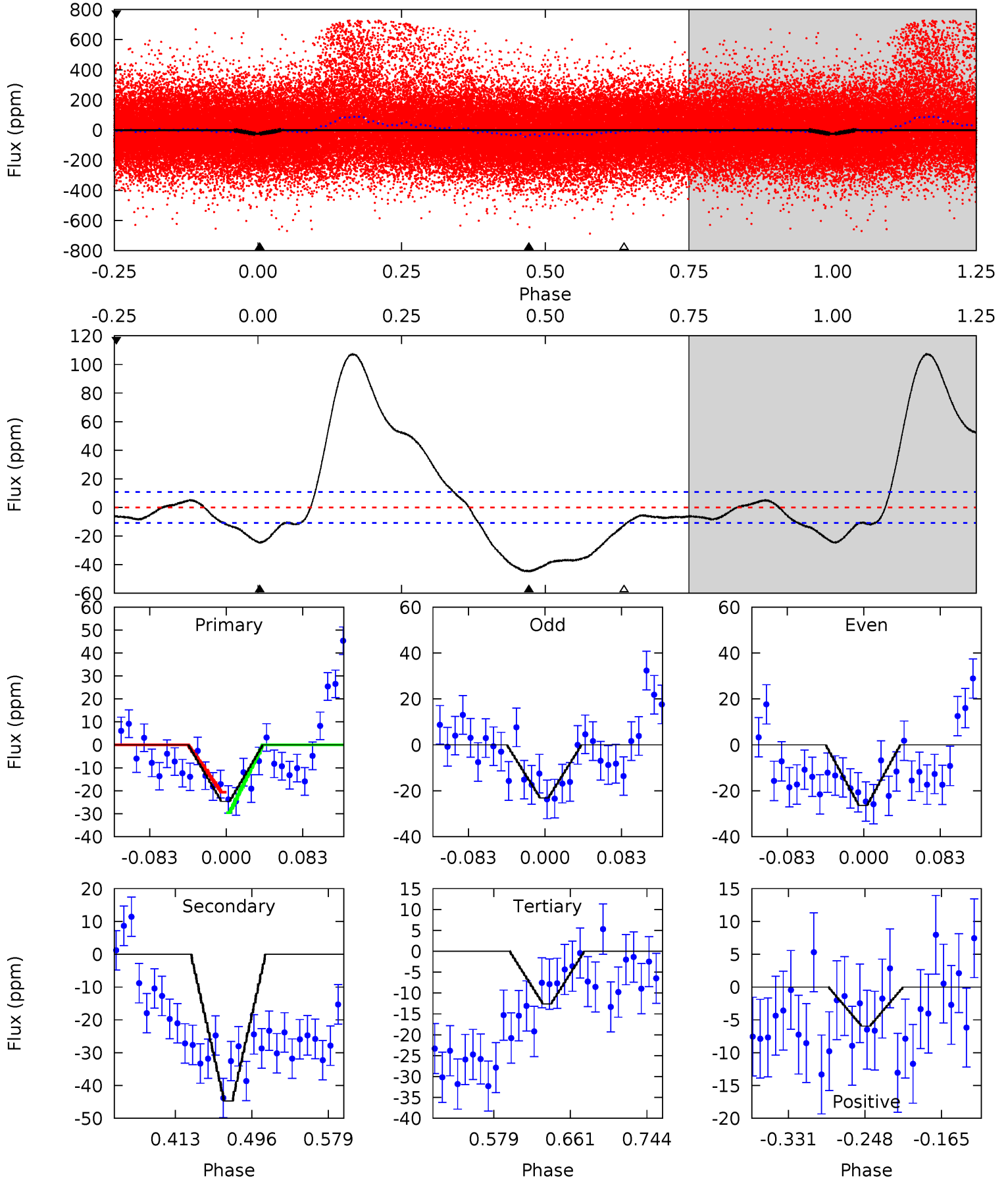




# Alt Model-Shift Uniqueness Test

006948006-01, P = 0.566821 Days, E = 131.092920 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
10.5	19.1	5.37	-2.54	4.60	1.74	15.3	5.13	13.0	13.7	21.6	0.70	0.88	0.71	1.85





### Stellar Parameters For KIC 006948006

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6055^{+162}_{-162}$	$4.602^{+0.038}_{-0.162}$	$-0.960^{+0.300}_{-0.300}$	$0.748^{+0.166}_{-0.052}$	$0.816^{+0.062}_{-0.068}$	$2.746^{+0.428}_{-1.212}$
	+3%/-3%	+1%/-4%	+31%/-31%	+22%/-7%	+8%/-8%	+16%/-44%
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 006948006-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-11 \pm 2$	$0.44^{+0.11}_{-0.11}$	$2930^{+178}_{-108}$	$4847^{+629}_{-440}$	$4.682^{+3.362}_{-1.699}$
Alt.	$-45 \pm 2$	$0.42^{+0.10}_{-0.11}$	$2940^{+173}_{-115}$	$7084^{+1304}_{-788}$	$22^{+16}_{-8}$

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

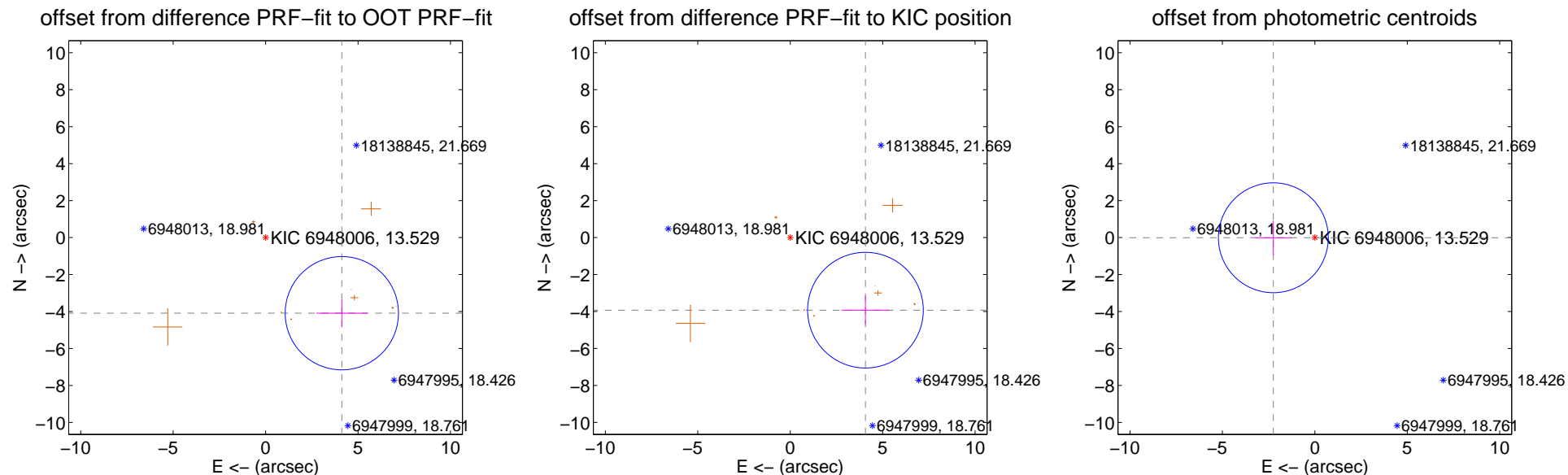
## DV Centroid Data

Supplemental centroid analysis for 006948006-01. Kepler magnitude: 13.53. Transit SNR 12.41

There are 0 quarters with good PRF difference image offsets

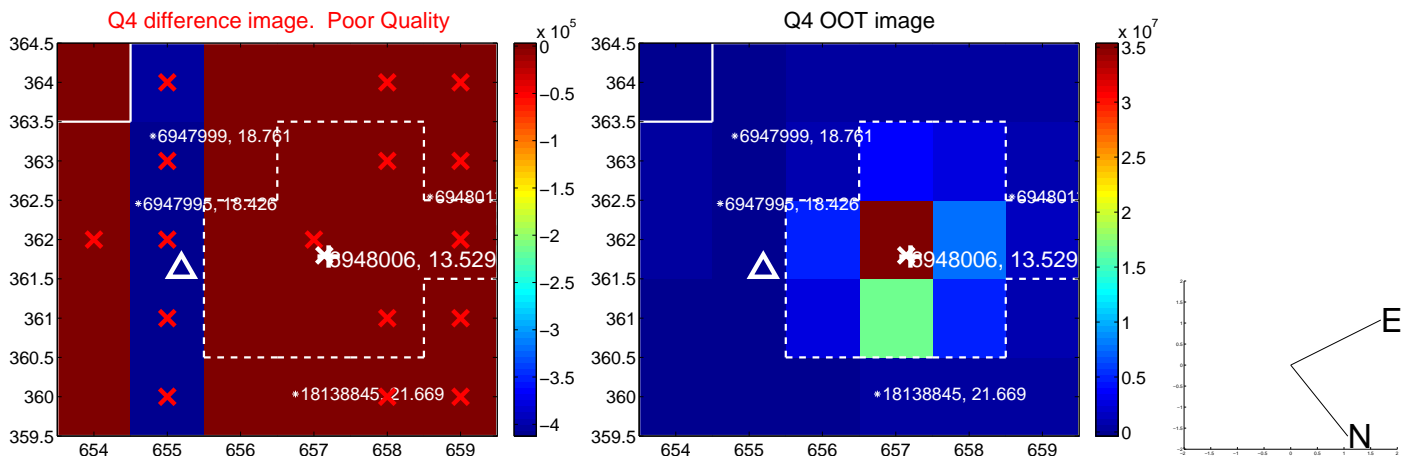
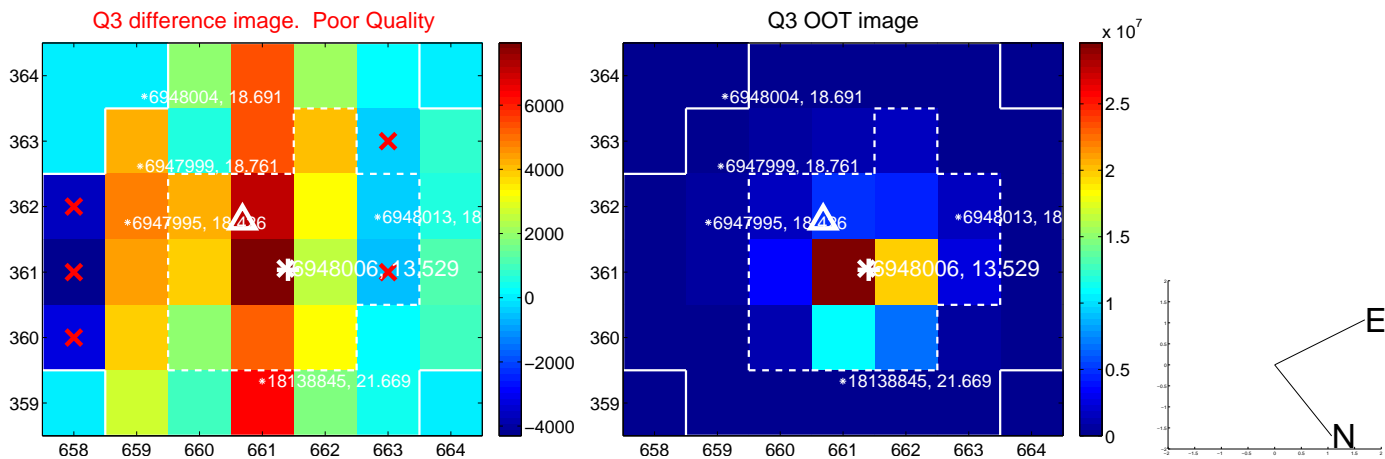
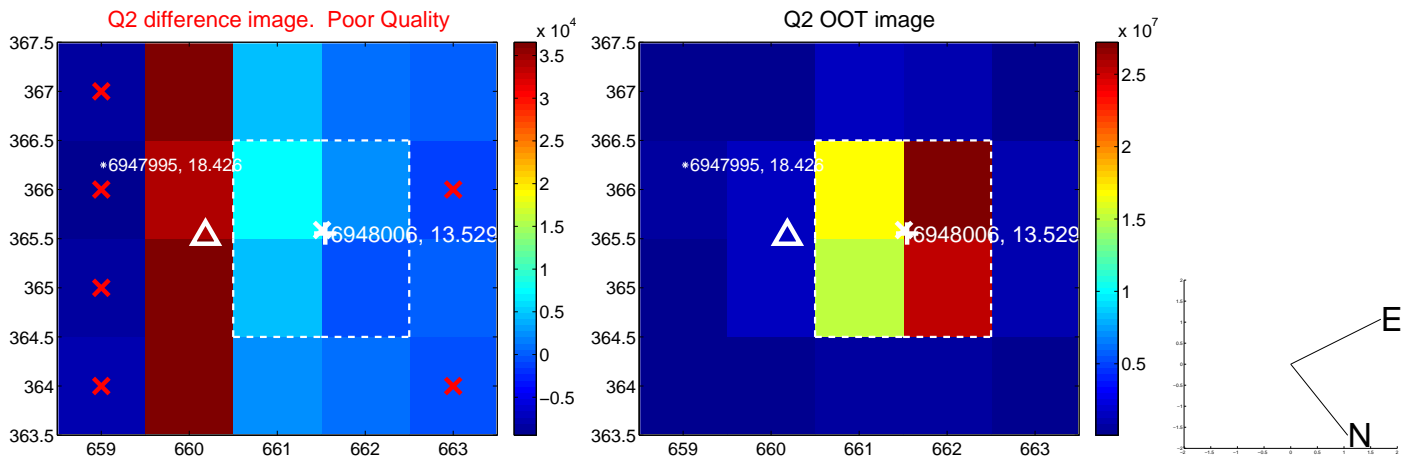
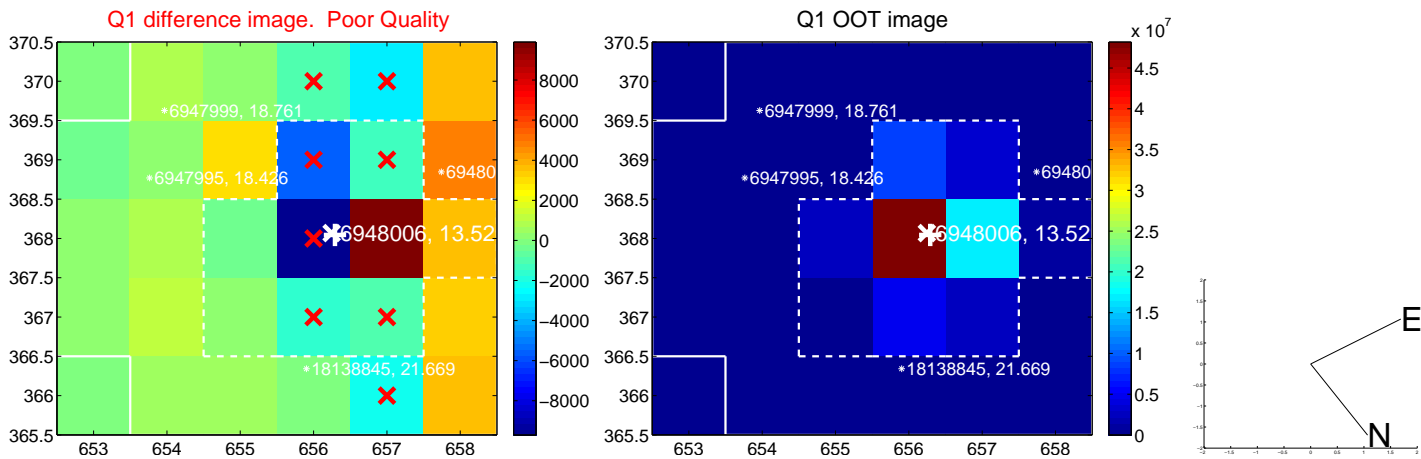
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$5.810 \pm 1.021$	5.69	$-4.125 \pm 1.375$	$-4.092 \pm 0.735$
PRF-fit source offset from KIC position	$5.656 \pm 1.043$	5.42	$-4.070 \pm 1.304$	$-3.927 \pm 0.776$
photometric centroid source offset	$2.25 \pm 0.99$	2.27	$2.25 \pm 0.99$	$-0.01 \pm 0.93$

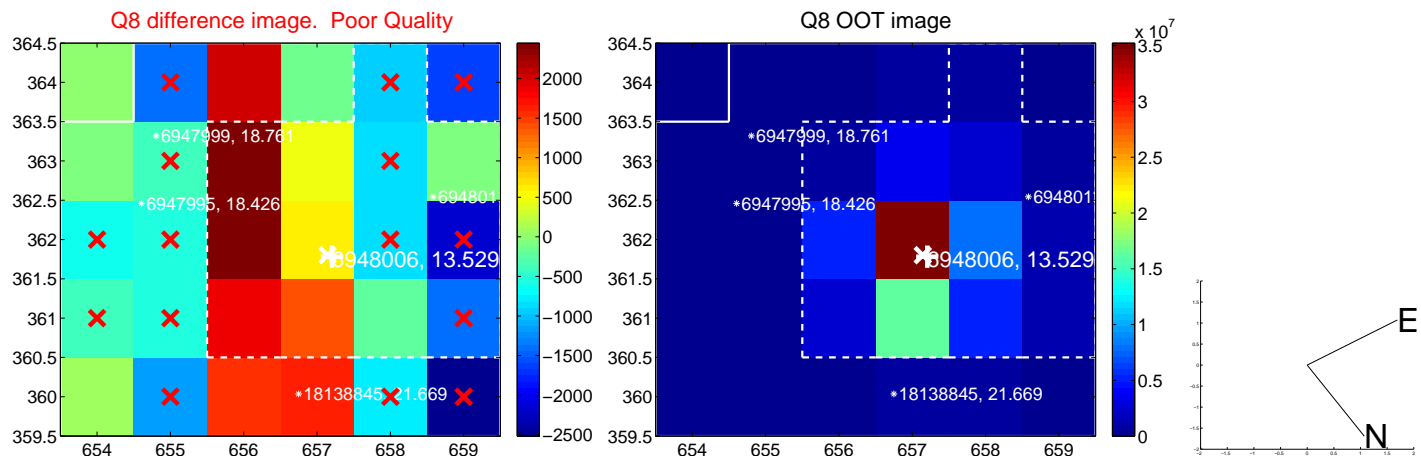
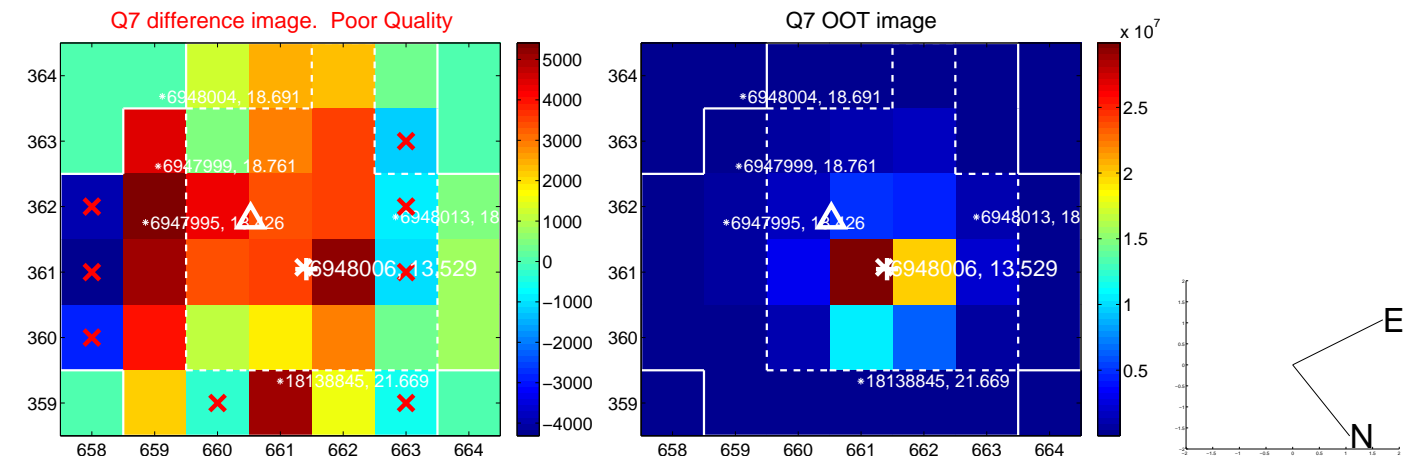
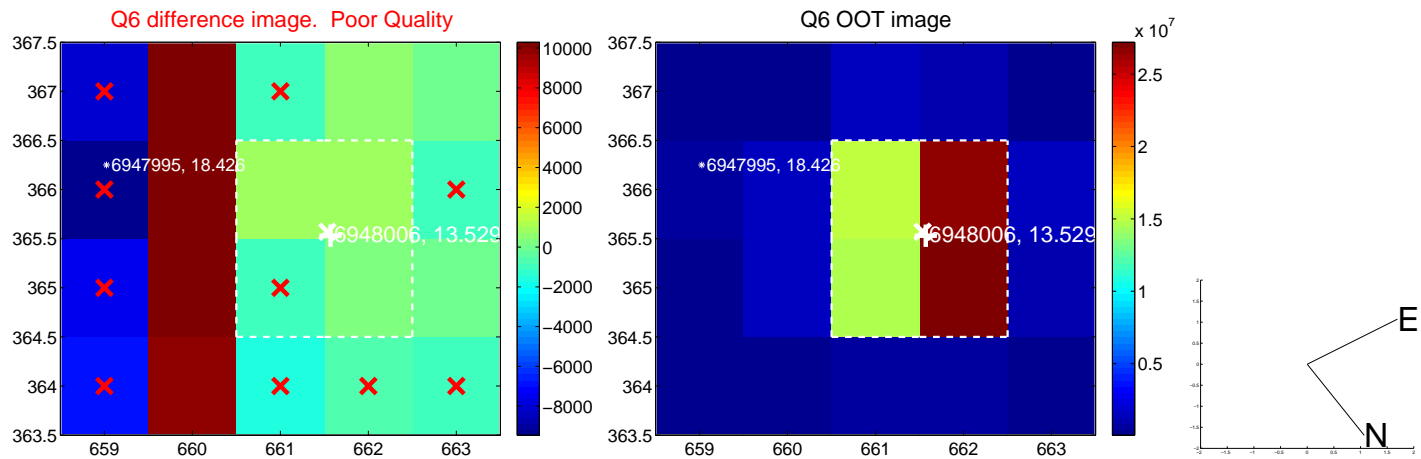
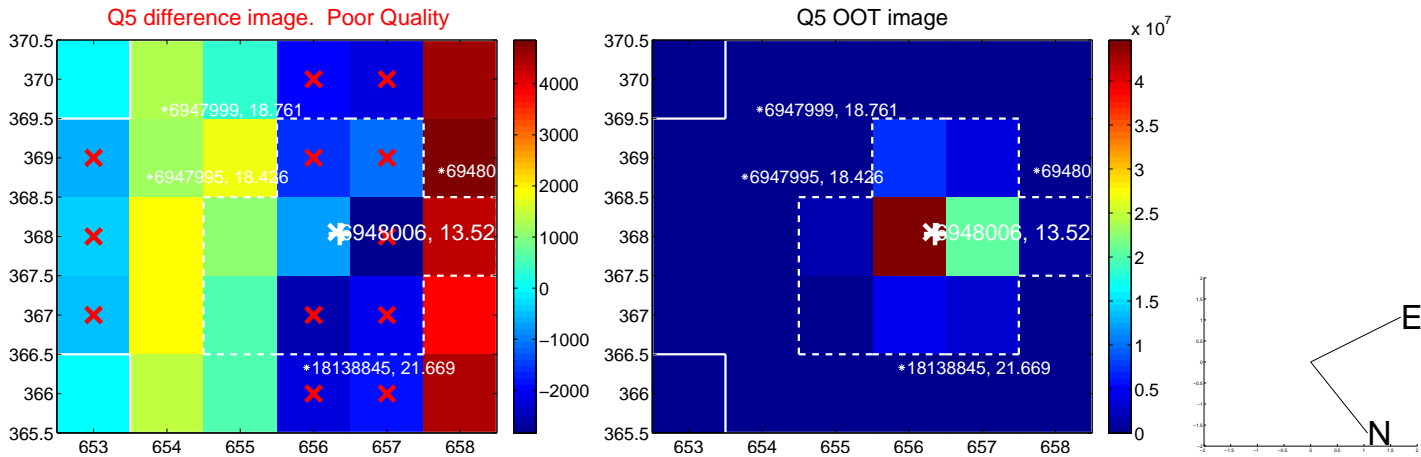


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

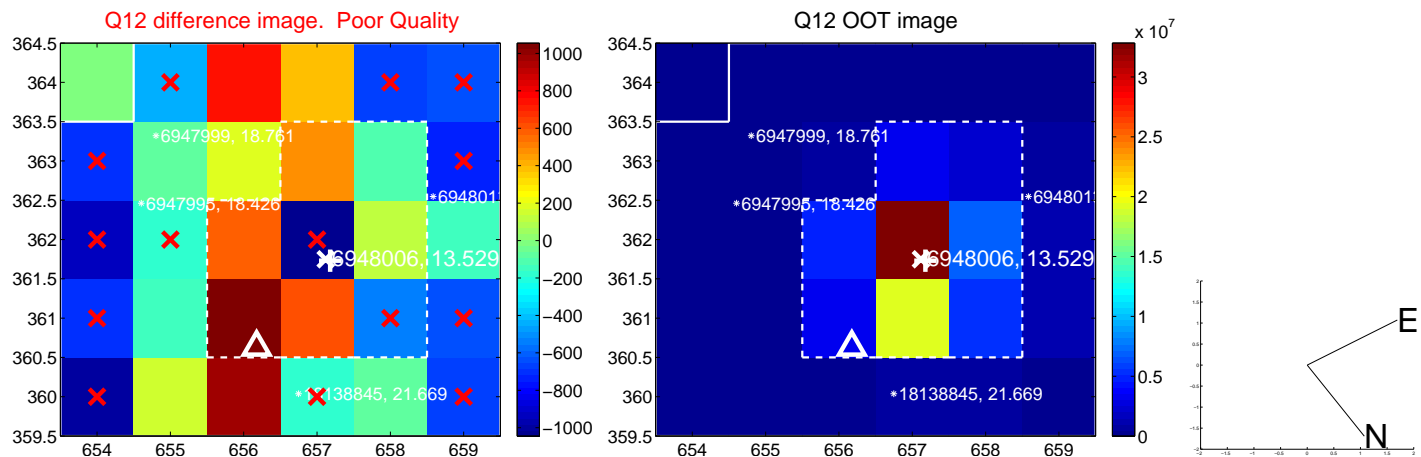
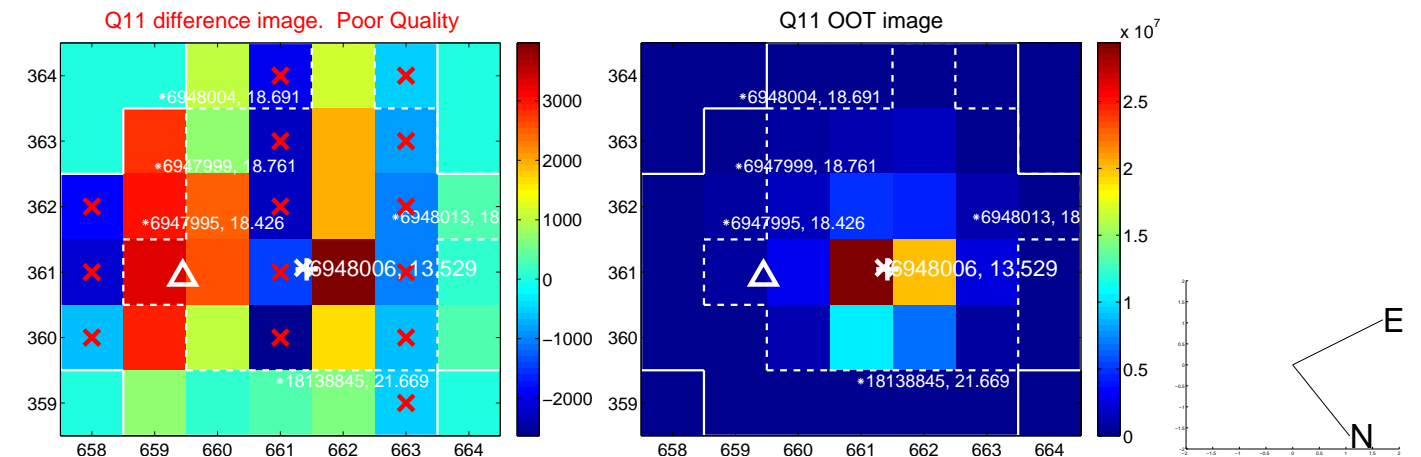
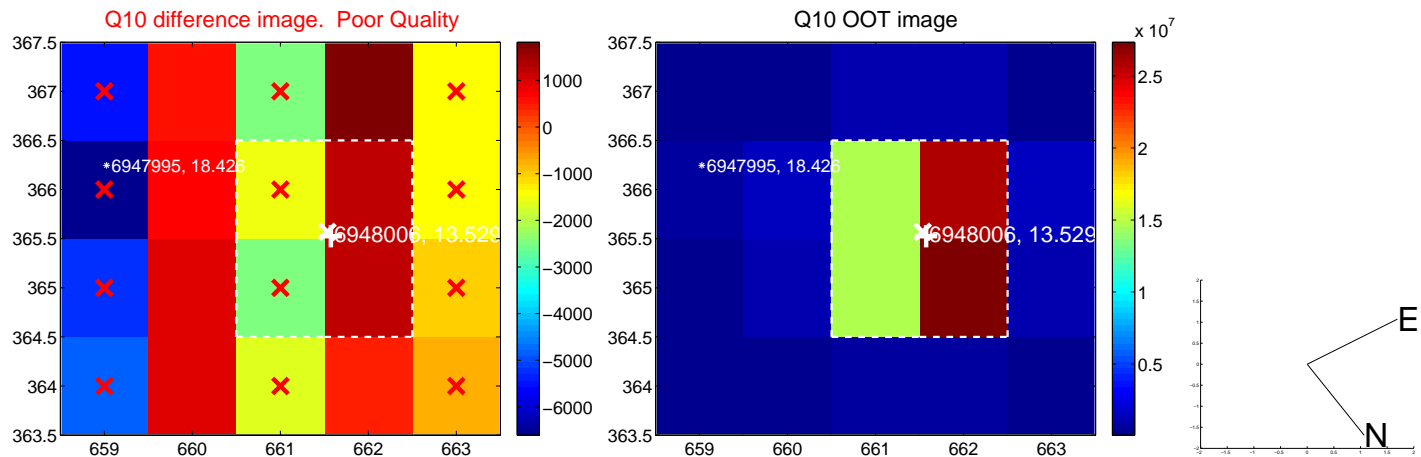
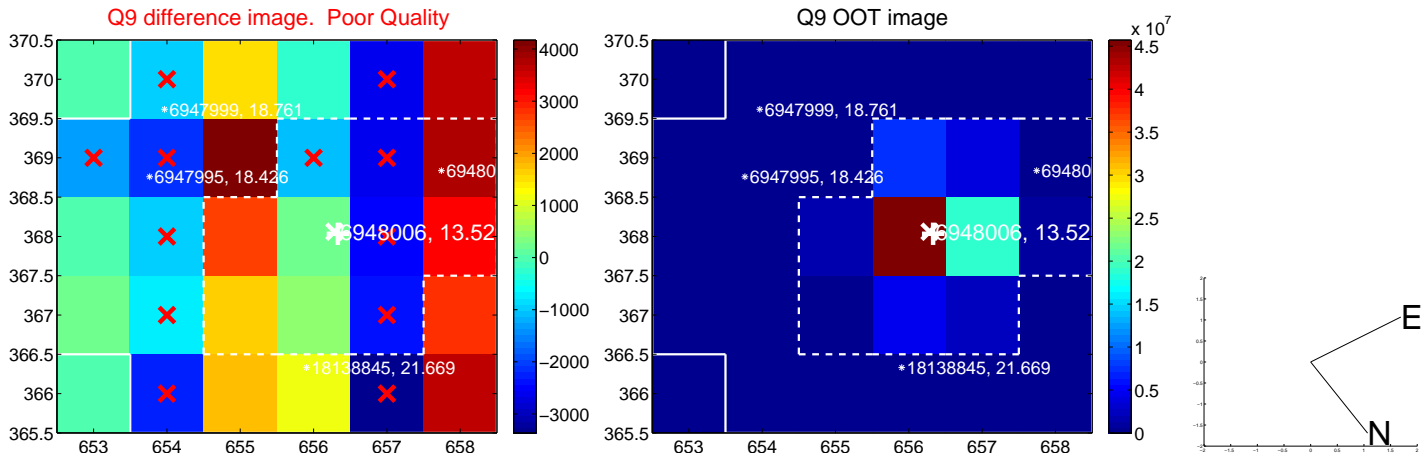


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

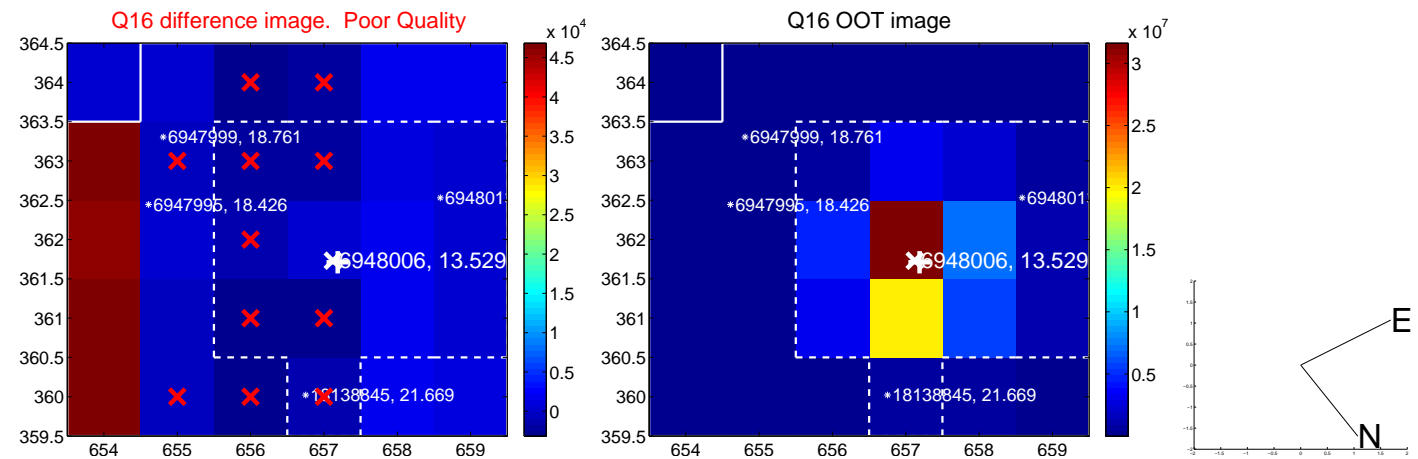
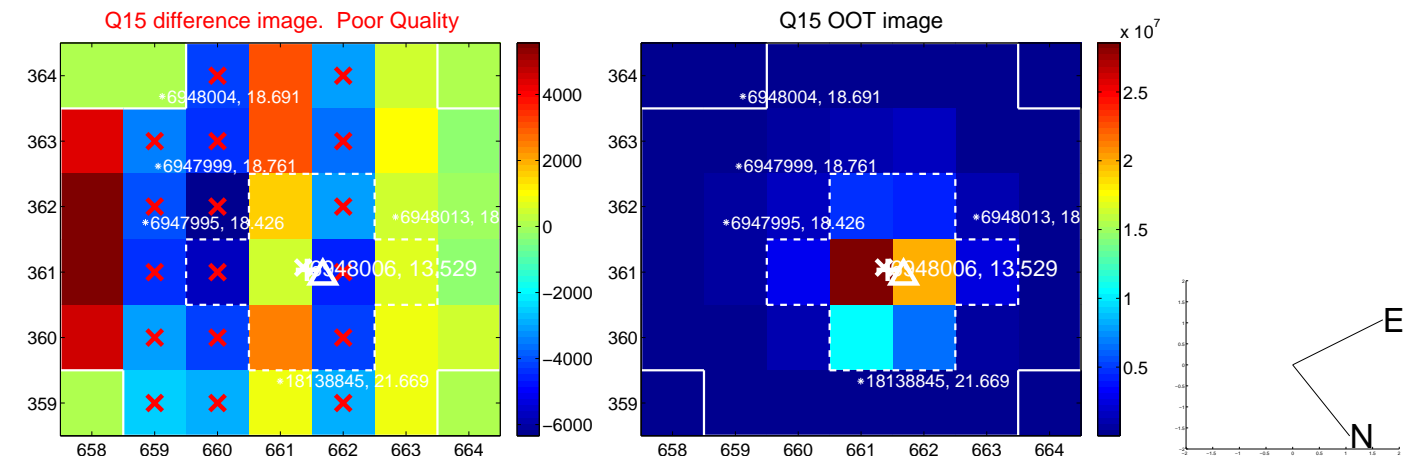
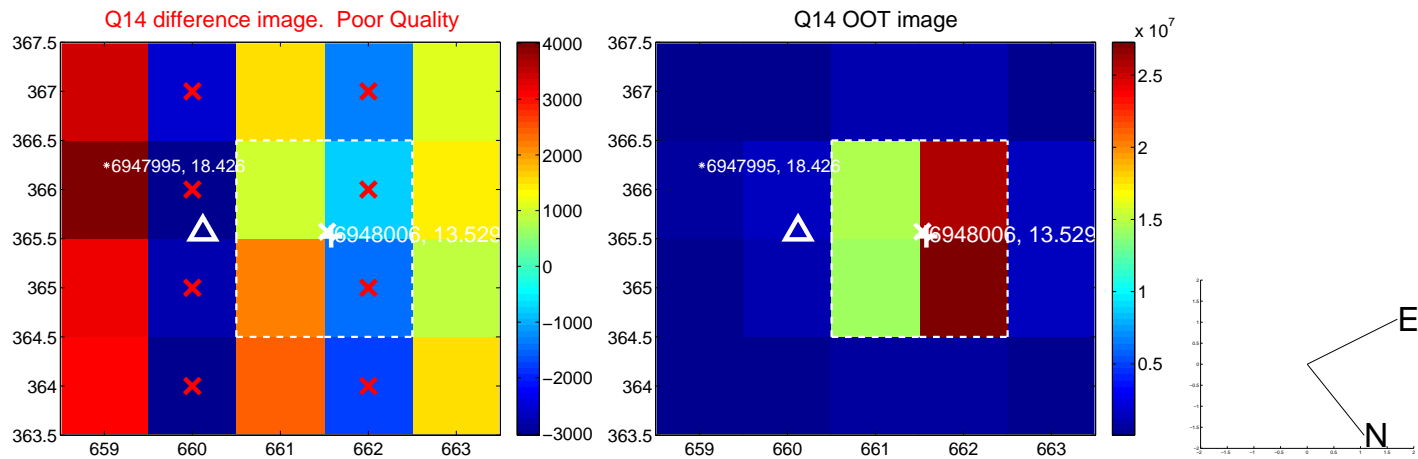
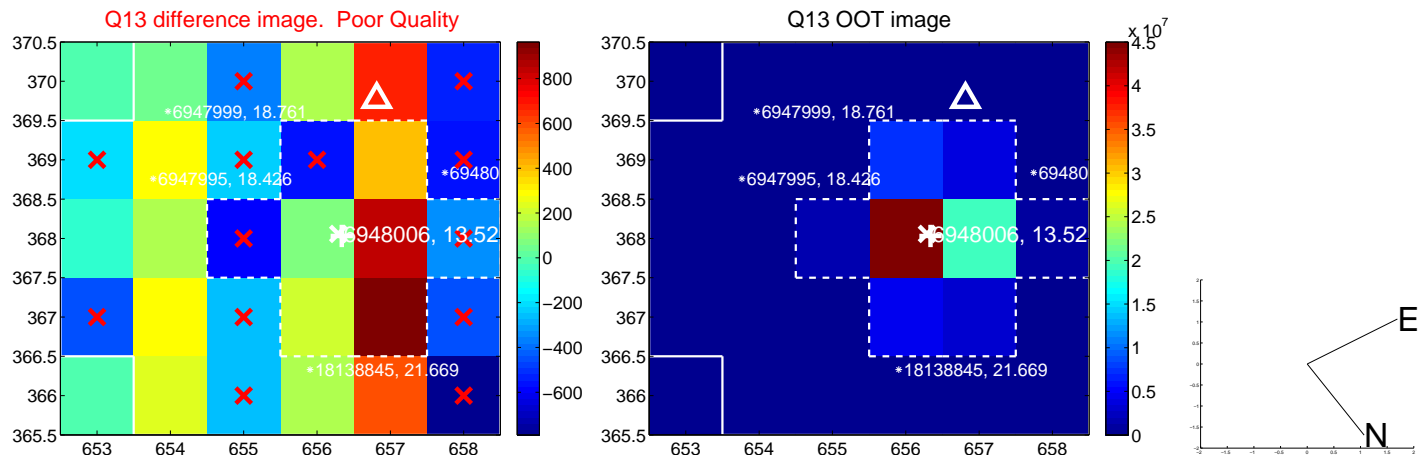




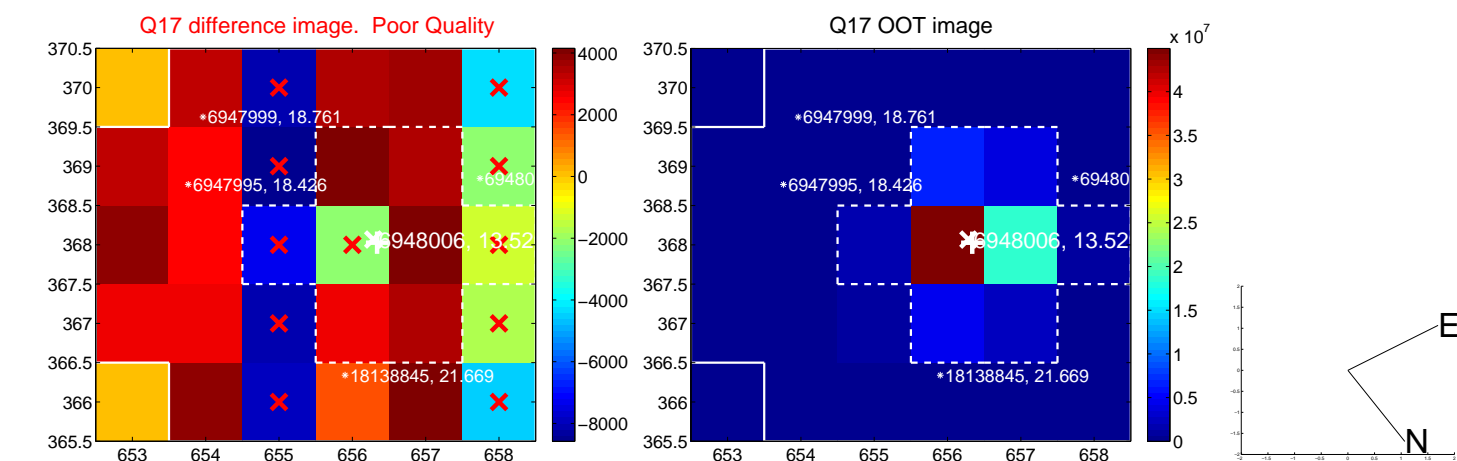
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



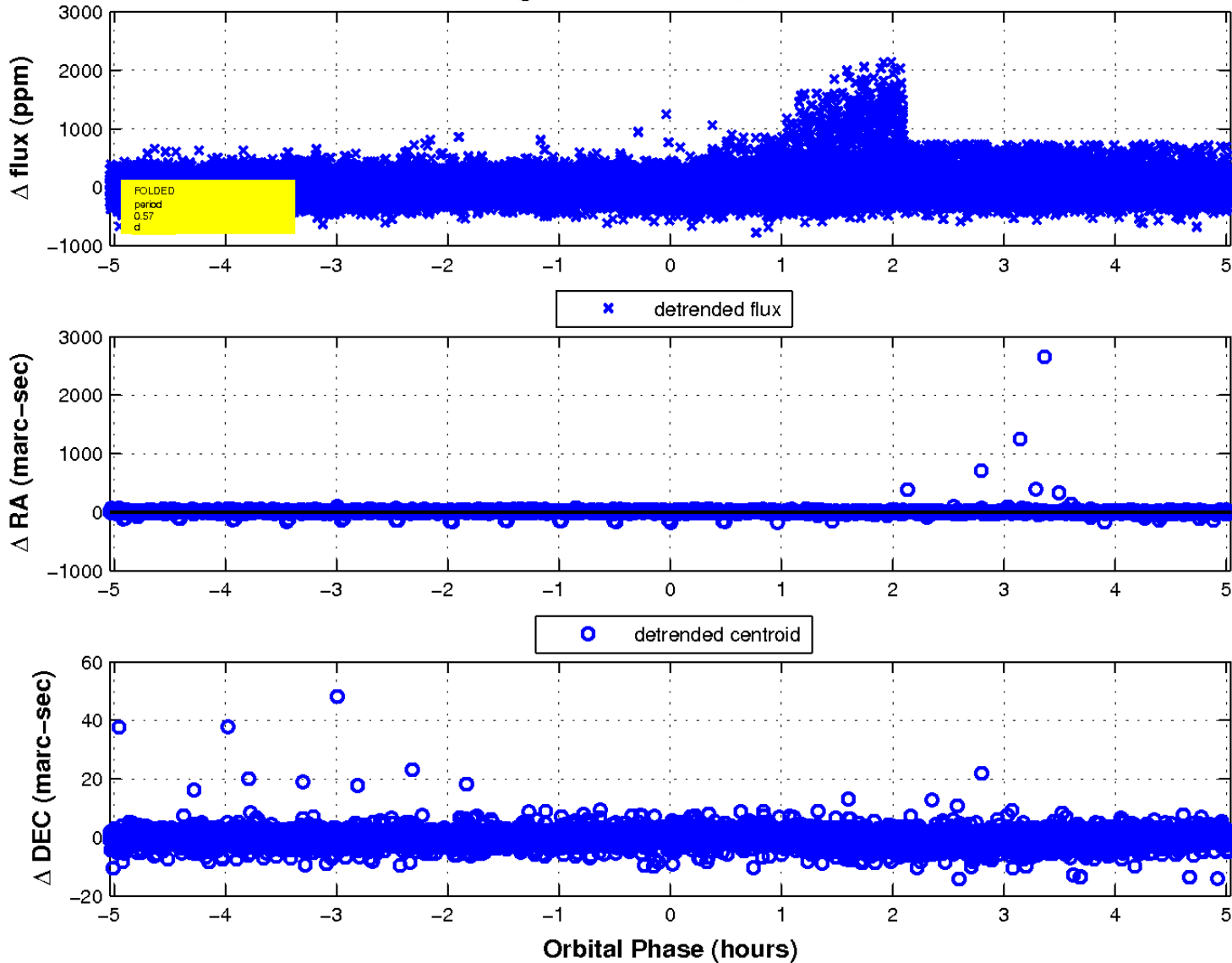
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

