

# KIC 008752914

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008752914-01	OBS	No	1.088135	132.284048	9.8	10.573	7.4	6.9	1.68	5622	0.52	5634.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008752914-01	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—CENT_FEW_DIFFS—HALO_GHOST—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.

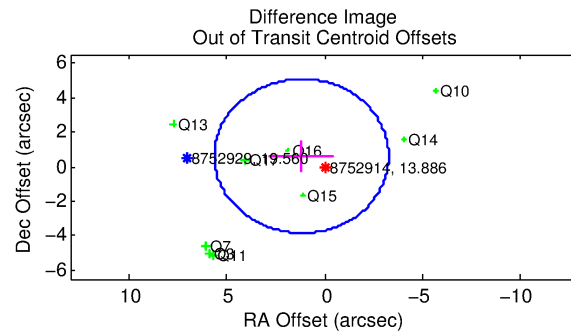
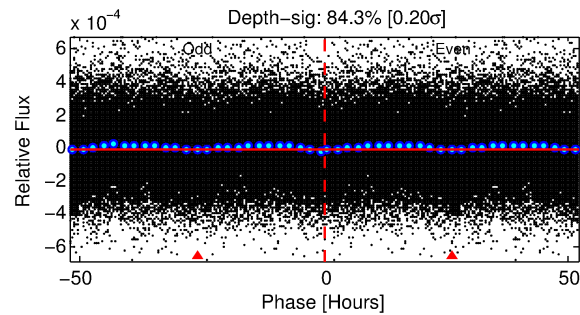
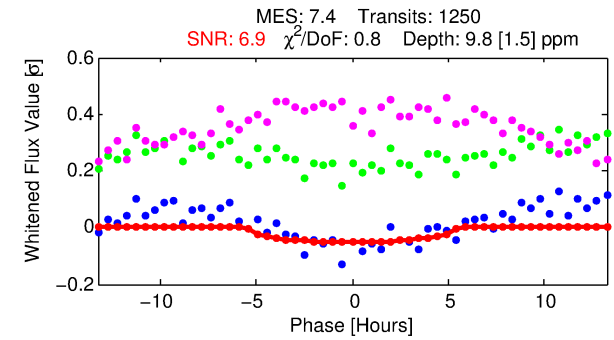
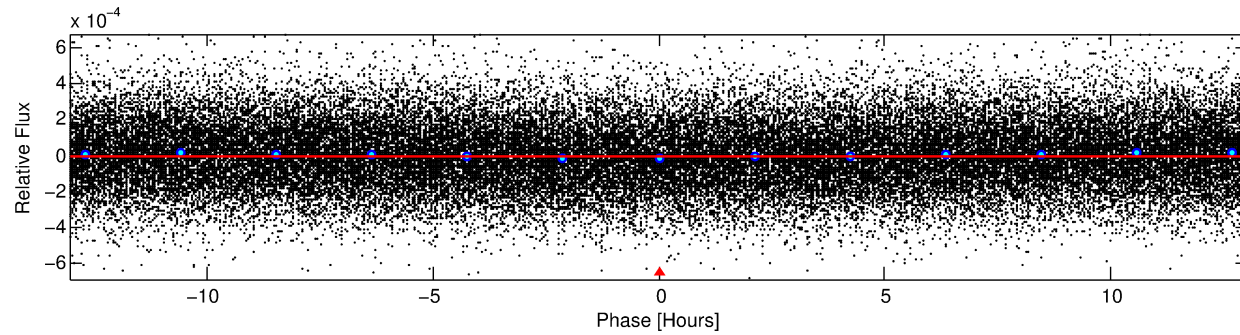
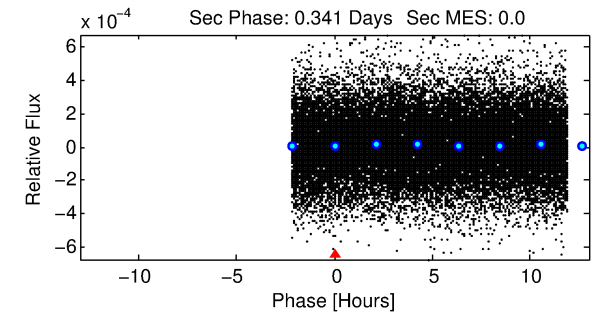
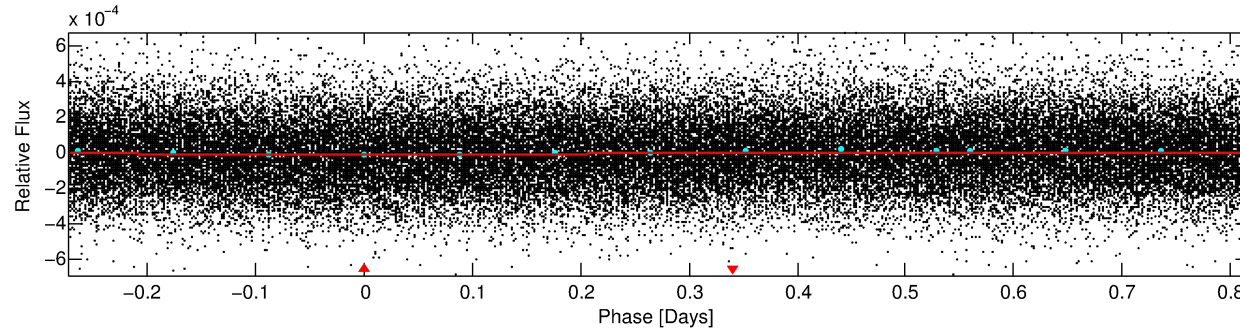
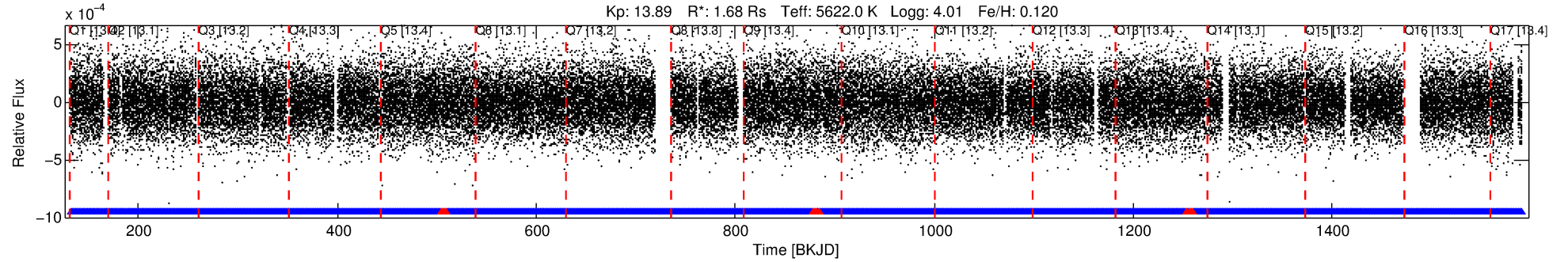
## Ephemeris Match Information For 008752914-01

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	$\sigma_P$	$\sigma_T$
008752914-01	8752914	008752817-01	8752817	1:2	81.8	-15	14	13.67	13.88	2.40	Direct-PRF	1	4.71	2.62

**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: 8752914 Candidate: 1 of 1 Period: 1.088 d



## DV Fit Results:

Period = 1.08814 [0.00003] d  
Epoch = 132.2840 [0.0161] BKJD  
Rp/R\* = 0.0028 [0.0042]  
a/R\* = 1.05 [0.57]  
b = 0.07 [94.07]  
Seff = 5634.95 [2147.21]  
Teff = 2209 [210] K  
Rp = 0.52 [0.77] Re  
a = 0.0211 [0.0051] AU  
Ag = N/A  
Teffp = N/A

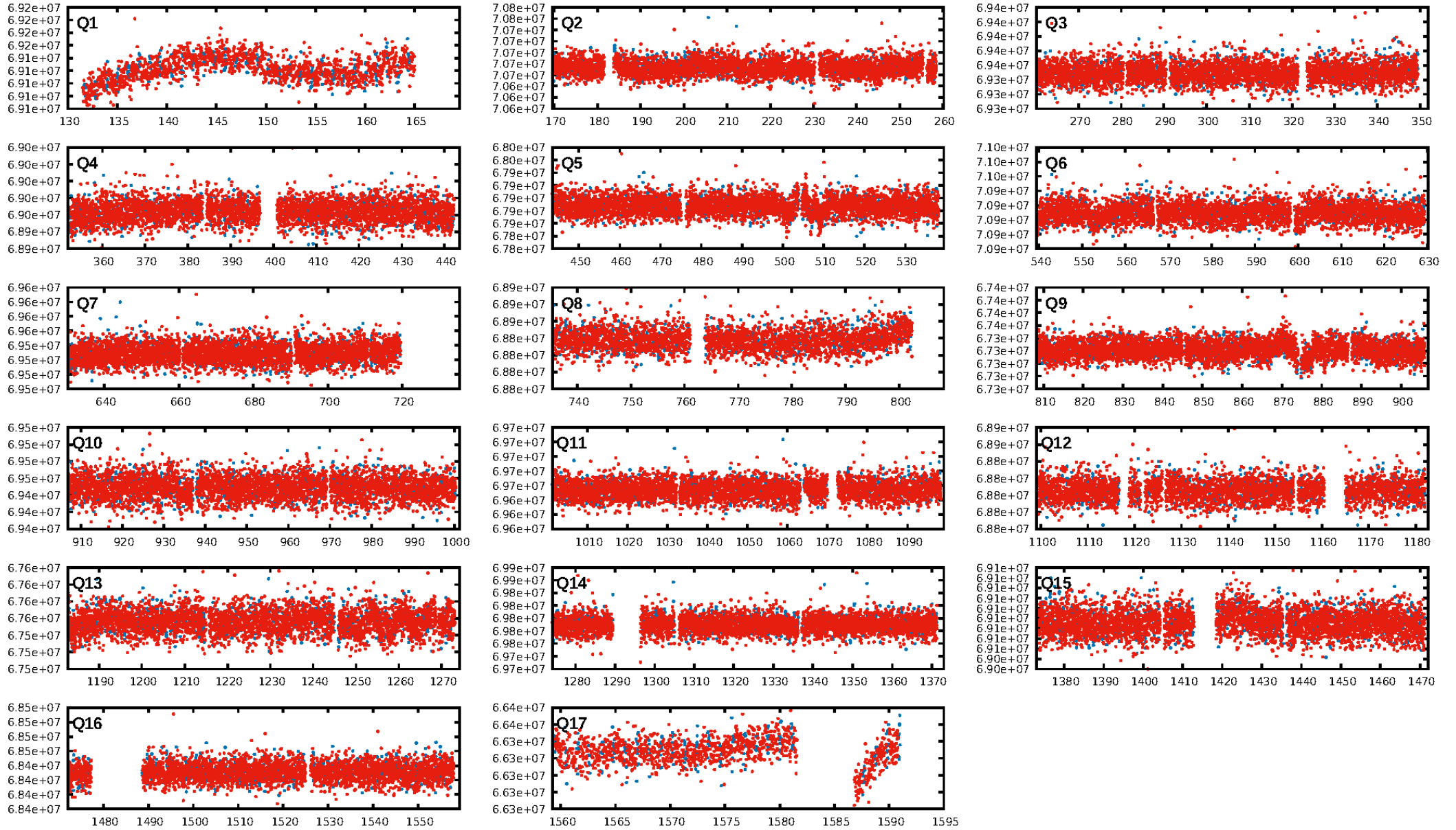
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.99 [1180/1194]  
GhostDiagnostic-chr: 0.06253  
Centroid-sig: 0.0%  
Centroid-so: 7.174 arcsec [3.41σ]  
OotOffset-rm: 1.328 arcsec [0.89σ]  
KicOffset-rm: 1.437 arcsec [0.97σ]  
OotOffset-st: 2/4/1/2 [9]  
KicOffset-st: 2/4/1/2 [9]  
DiffImageQuality-fgm: 0.22 [2/9]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:58:17 Z

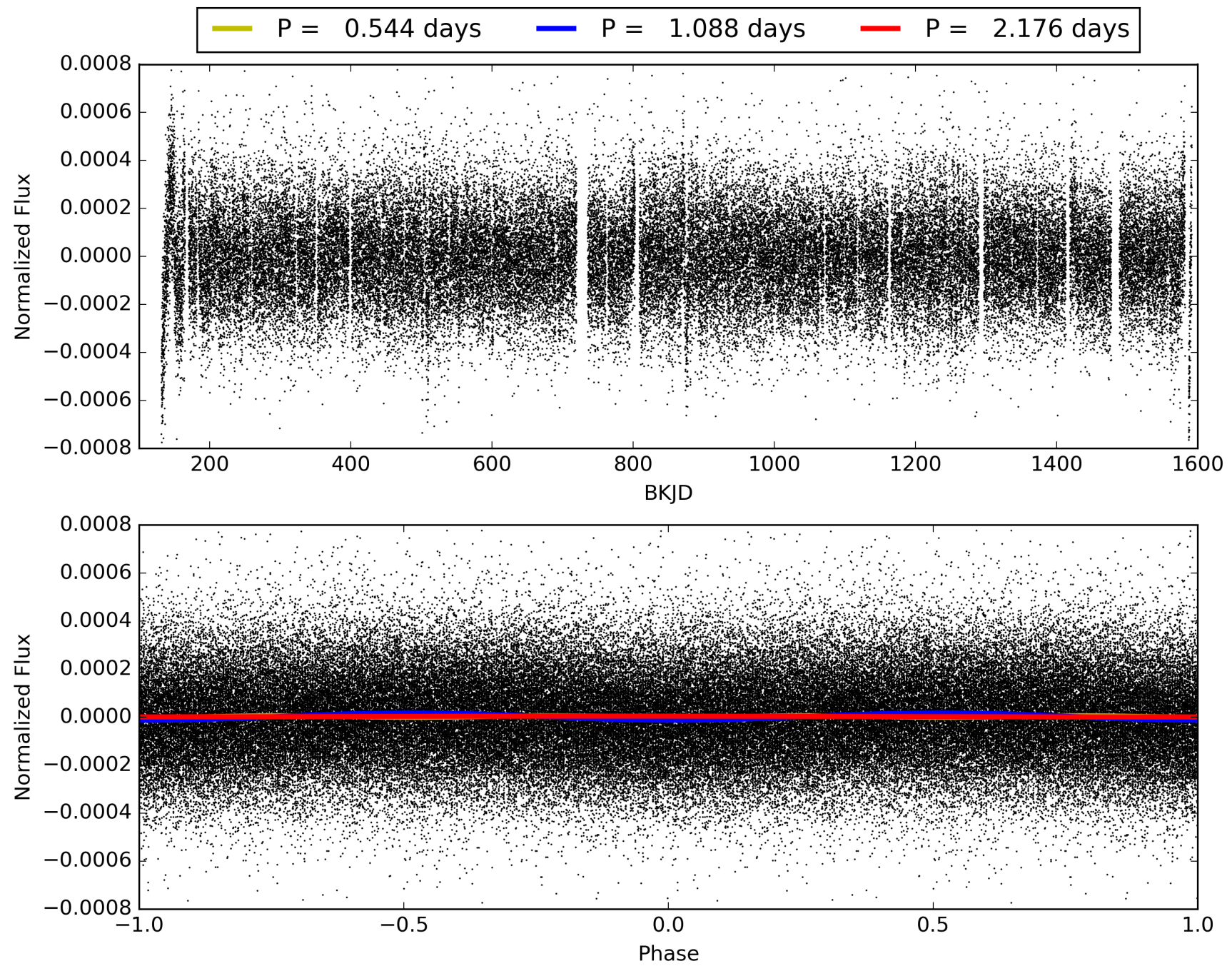
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008752914-01, PDC Light Curves



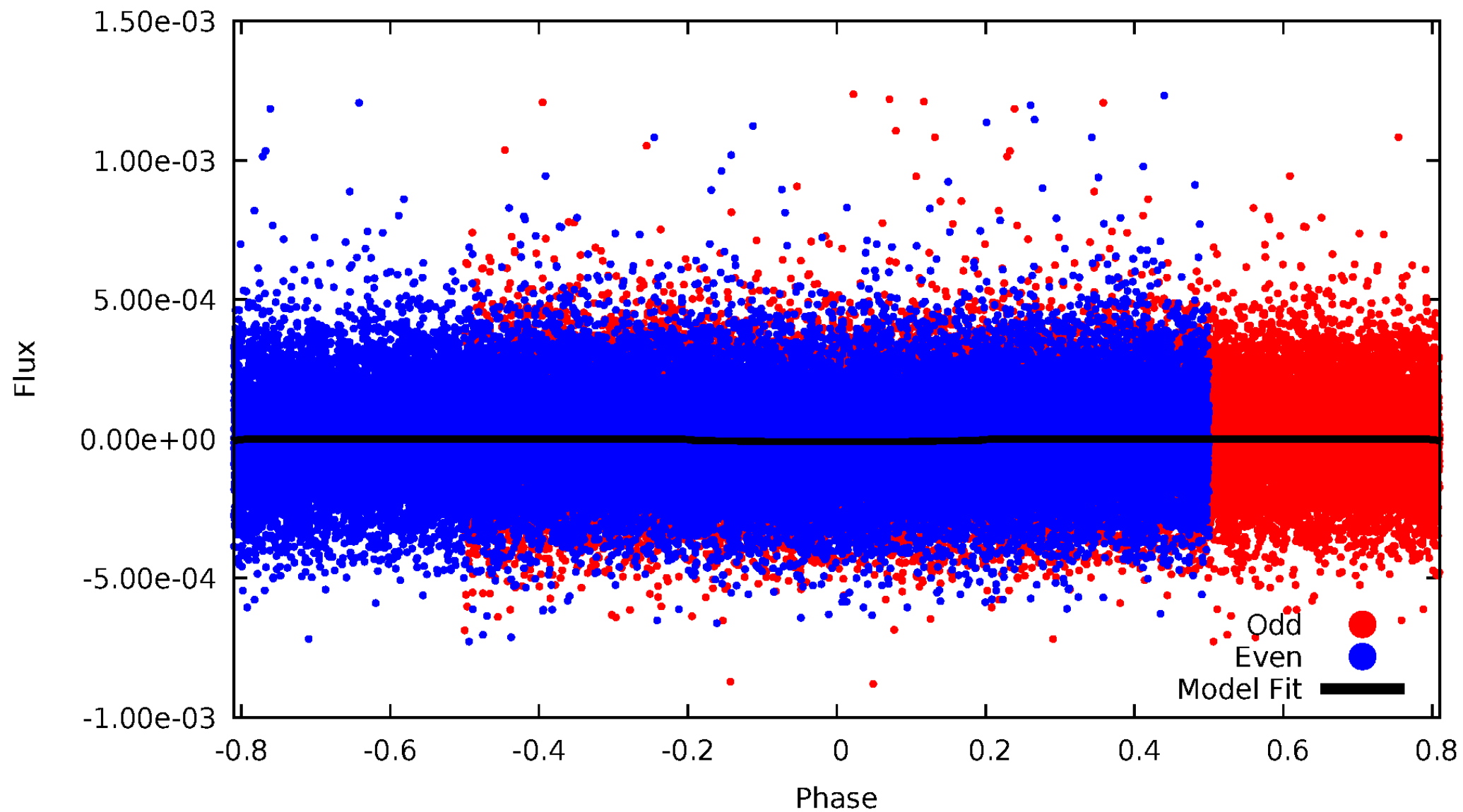


TCE 008752914-01



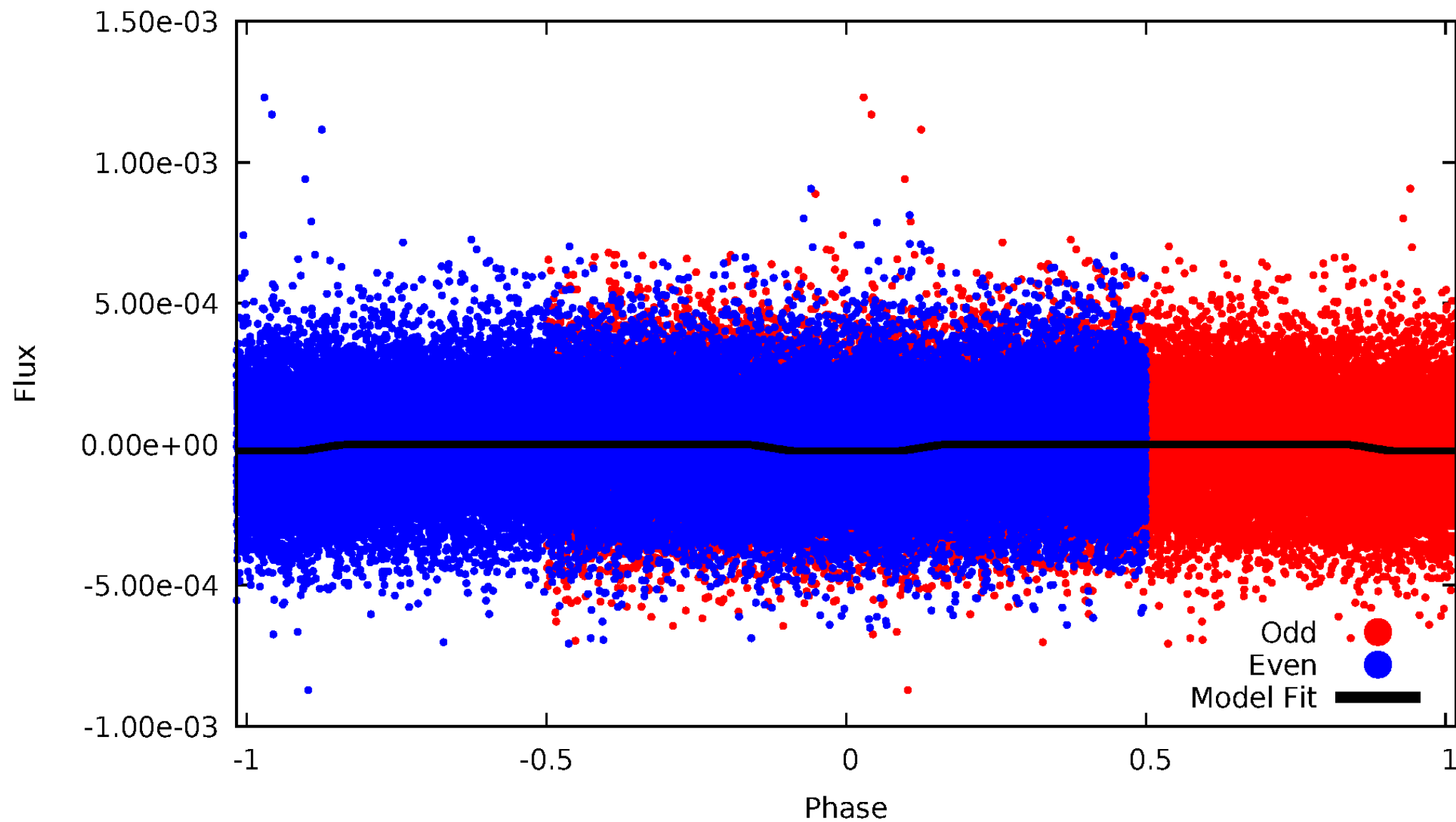
# DV Odd/Even

TCE 008752914-01



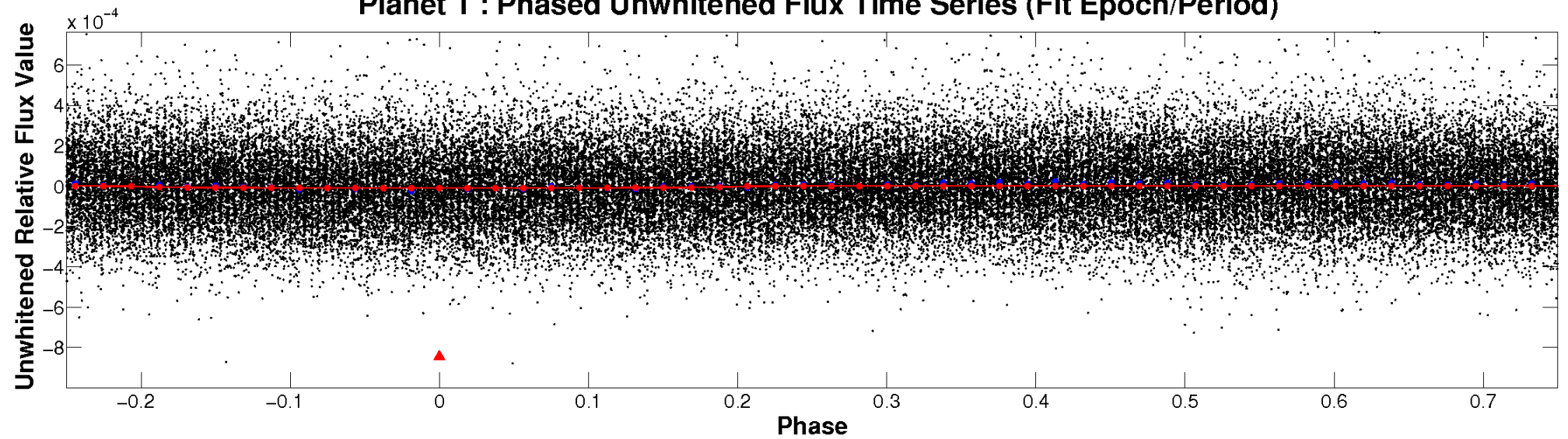
# ALT Odd/Even

TCE 008752914-01

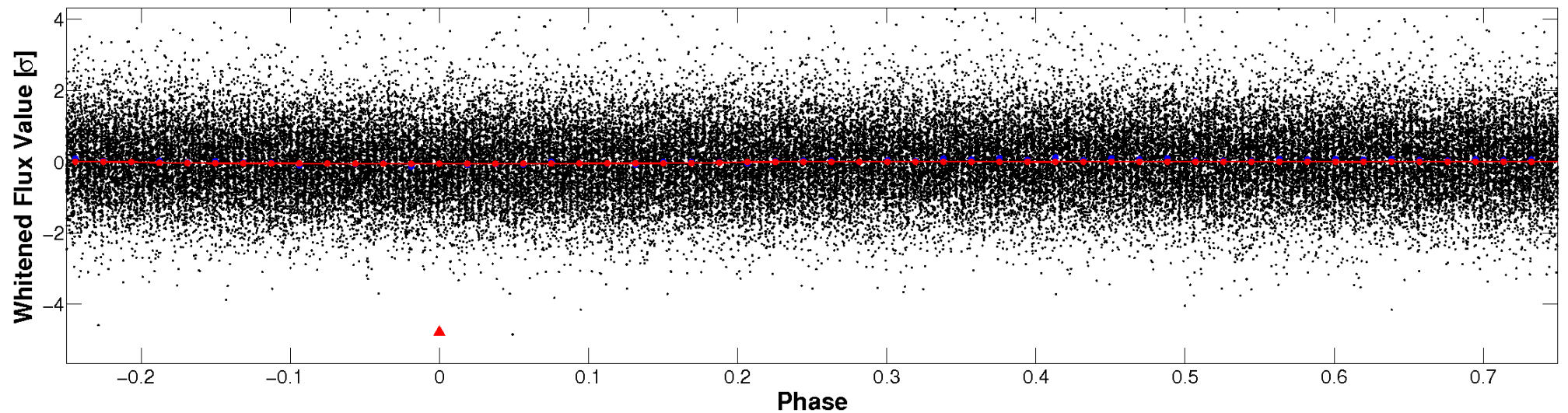


# Non-Whitened Vs. Whitened Light Curve

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



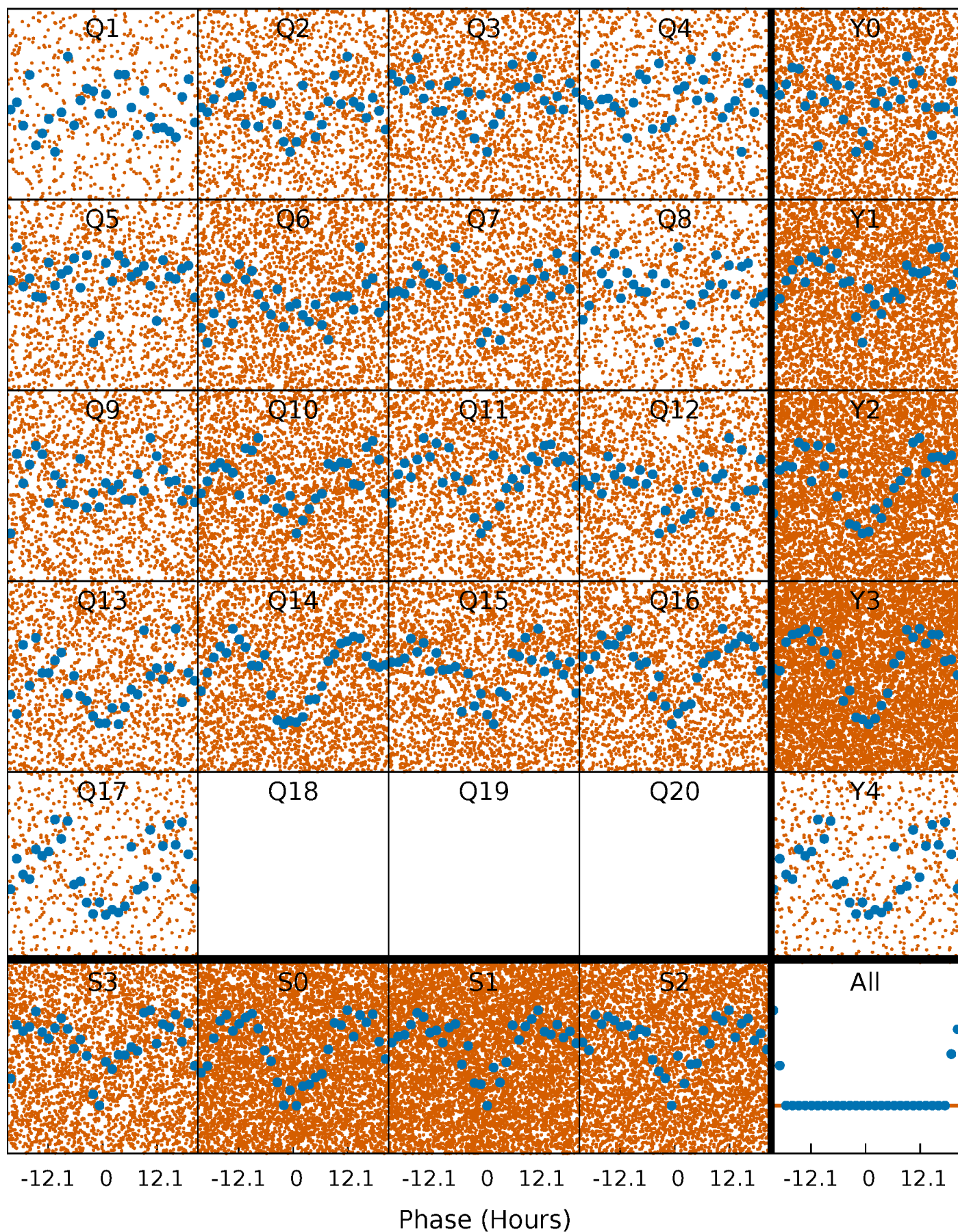
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

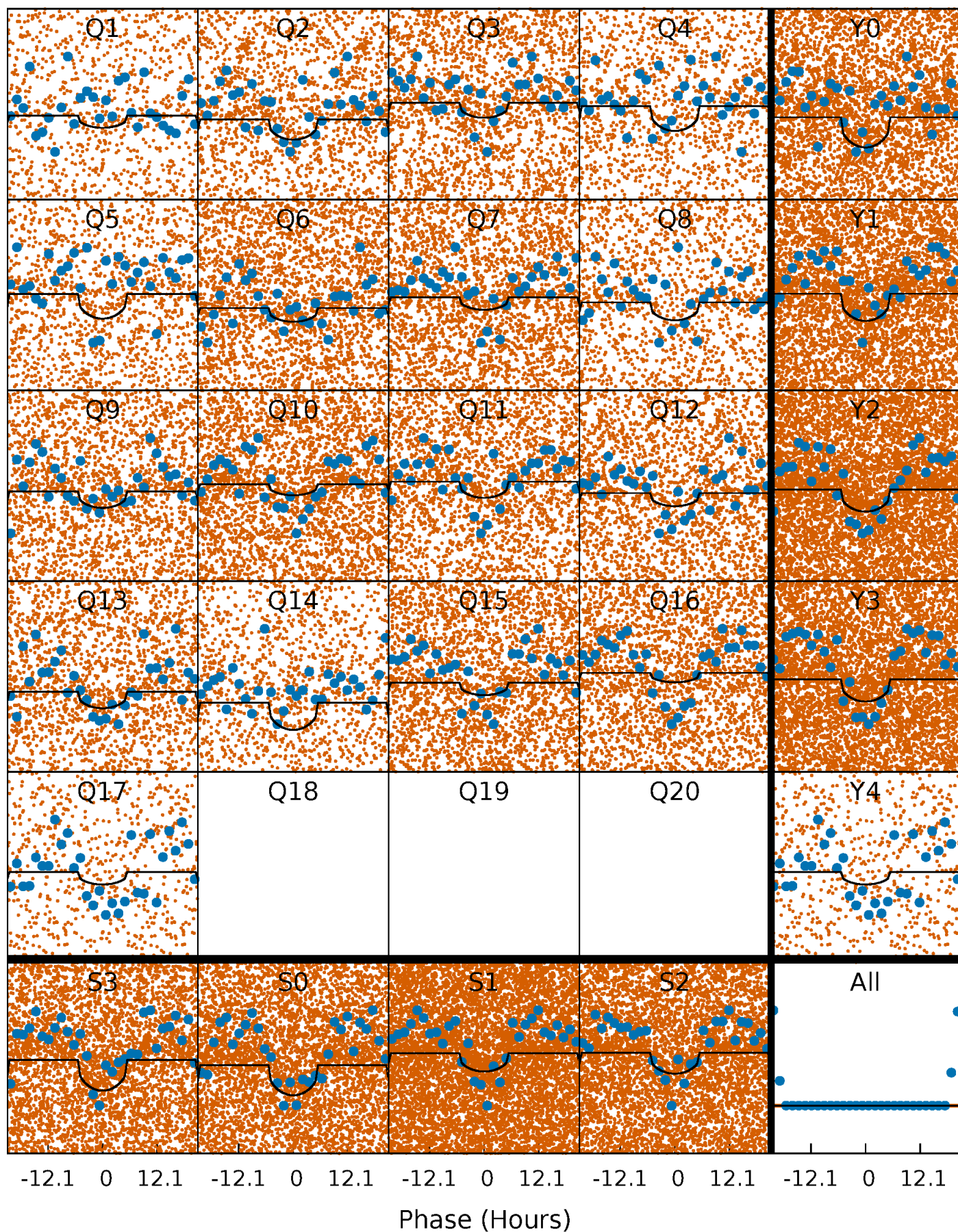
TCE 008752914-01 P= 1.088135 Days  $T_0=132.284048$  (BKJD)





# DV Quarter-Phased Transit Curves

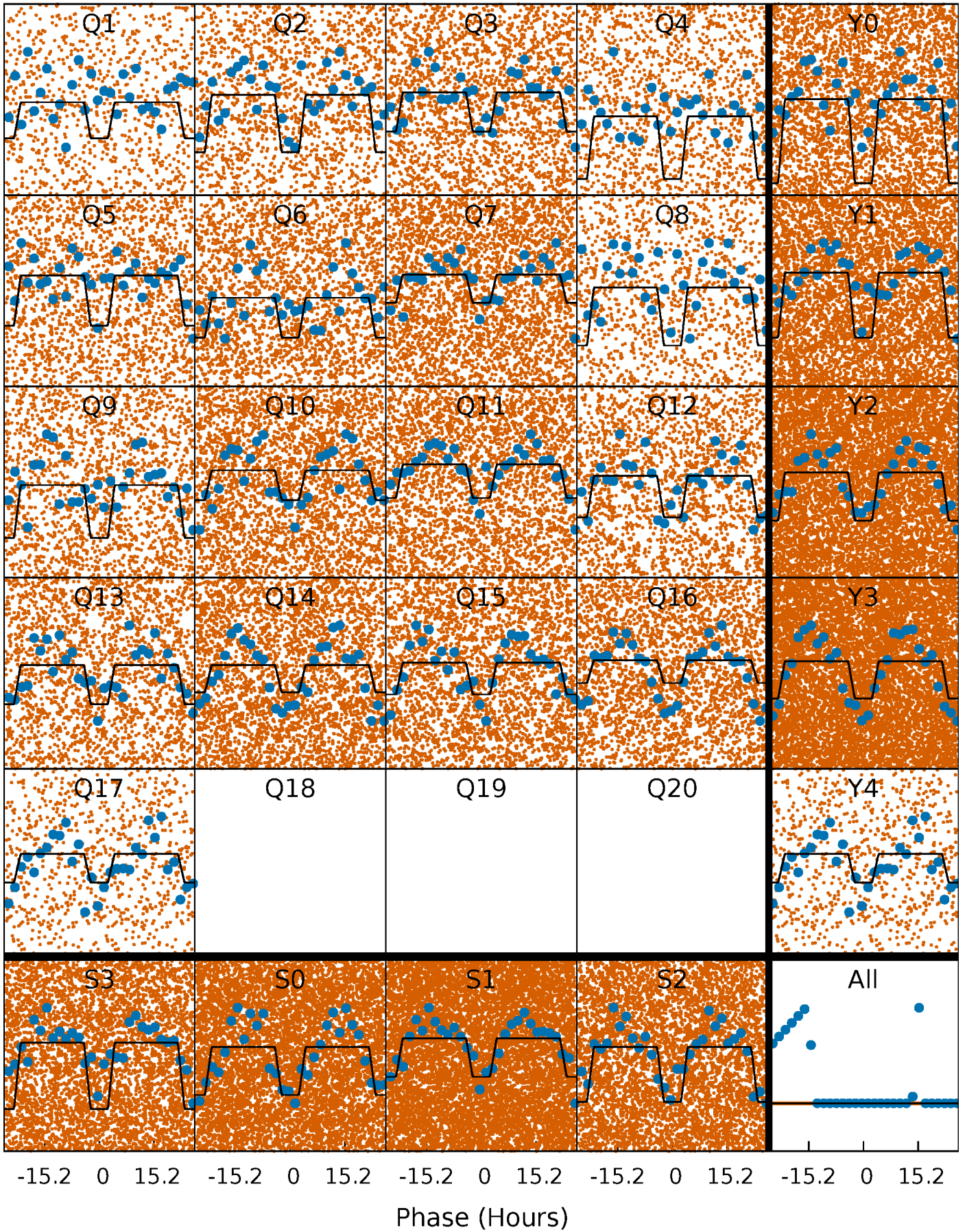
TCE 008752914-01 P= 1.088135 Days  $T_0=132.284048$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

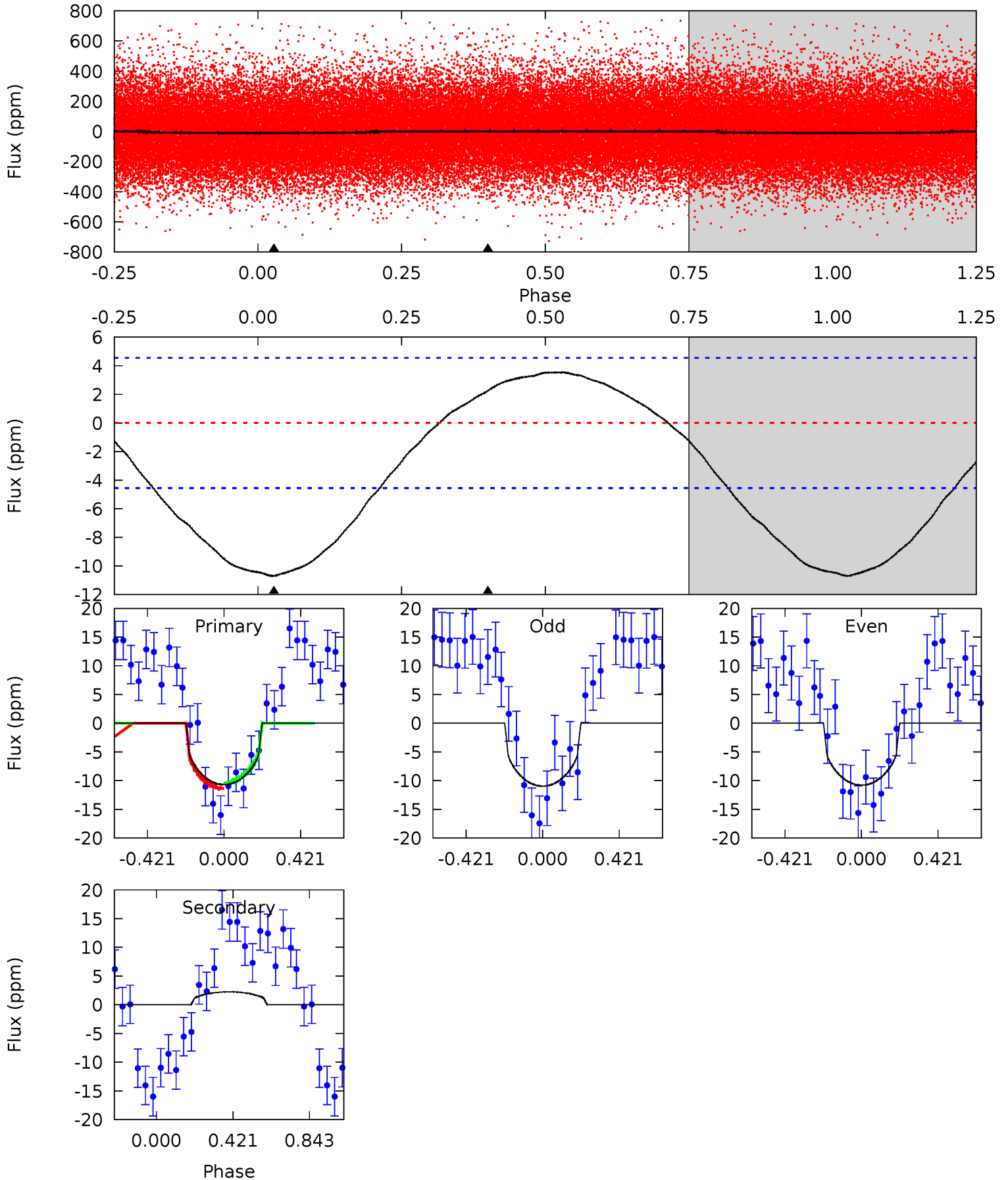
TCE 008752914-01 P= 1.088222 Days  $T_0=132.218302$  (BKJD)



# DV Model-Shift Uniqueness Test

008752914-01, P = 1.088135 Days, E = 131.195913 Days

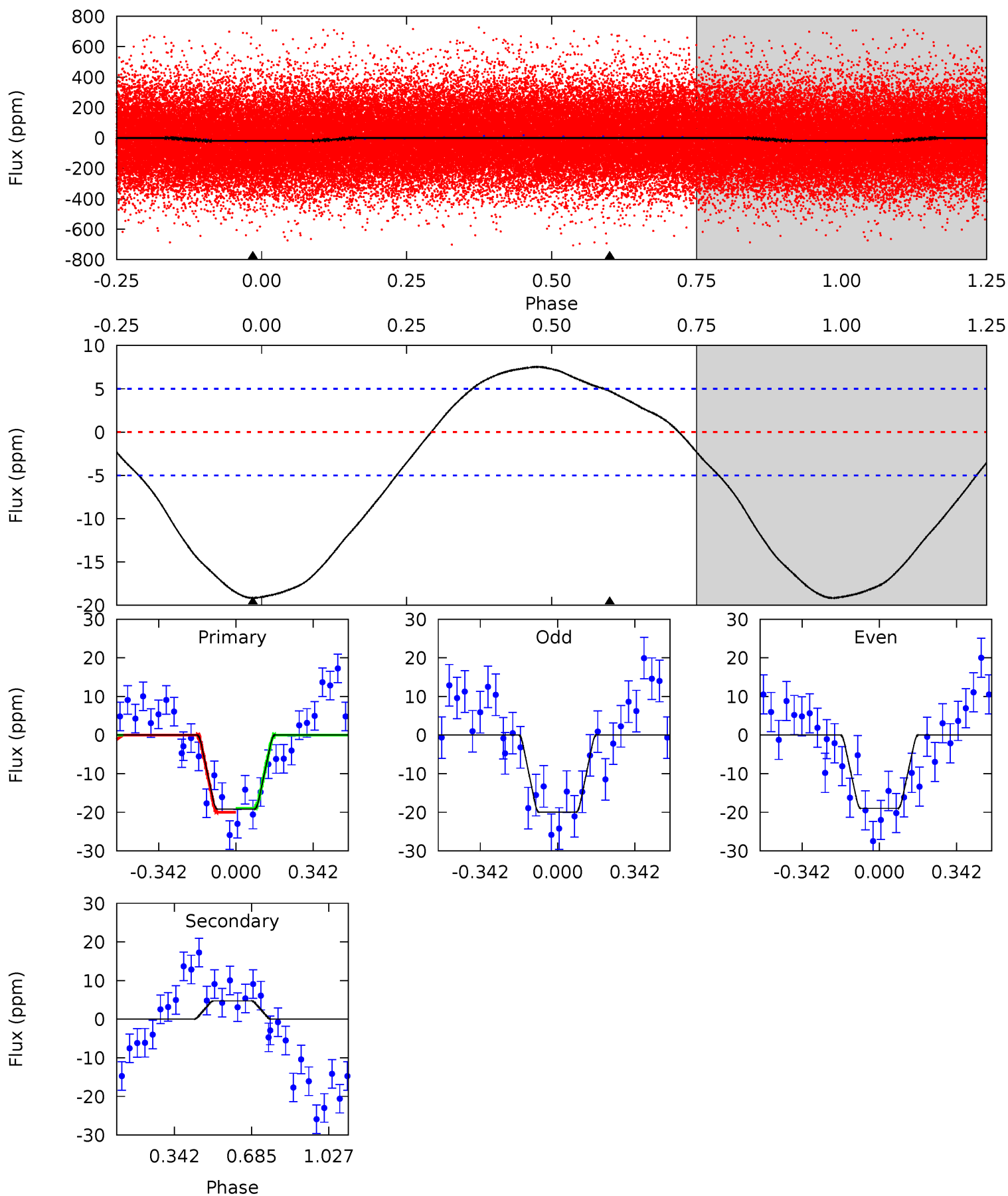
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.0	-2.11	0	0	4.25	0.80	0.89	10.0	10.0	-2.11	-2.11	0.08	0.96	0.25	0.48



# Alt Model-Shift Uniqueness Test

008752914-01, P = 1.088222 Days, E = 131.130080 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
16.5	-4.07	0	0	4.30	0.95	2.04	16.5	16.5	-4.07	-4.07	0.42	0.98	0.28	0.43





### Stellar Parameters For KIC 008752914

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5622^{+84}_{-76}$	$4.015^{+0.217}_{-0.093}$	$0.120^{+0.150}_{-0.150}$	$1.675^{+0.237}_{-0.440}$	$1.058^{+0.098}_{-0.109}$	$0.317^{+0.401}_{-0.088}$
	+1%/-1%	+5%/-2%	+125%/-125%	+14%/-26%	+9%/-10%	+126%/-28%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 008752914-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$2\pm 1$	$0.75^{+0.64}_{-0.48}$	$3078^{+133}_{-206}$	$-3833^{+443}_{-1875}$	$-0.791^{+0.577}_{-6.852}$
Alt.	$5\pm 1$	$0.95^{+0.70}_{-0.57}$	$3074^{+139}_{-201}$	$-4038^{+487}_{-1556}$	$-1.226^{+0.835}_{-6.296}$

$T_{max}$  = 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

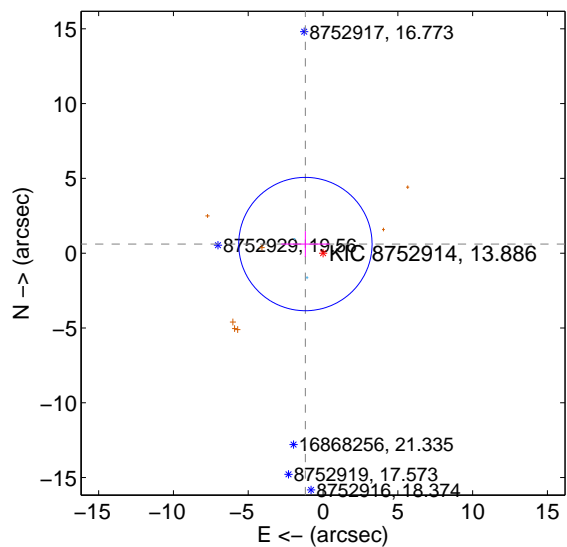
Supplemental centroid analysis for 008752914-01. Kepler magnitude: 13.89. Transit SNR 6.86

There are 2 quarters with good PRF difference image offsets

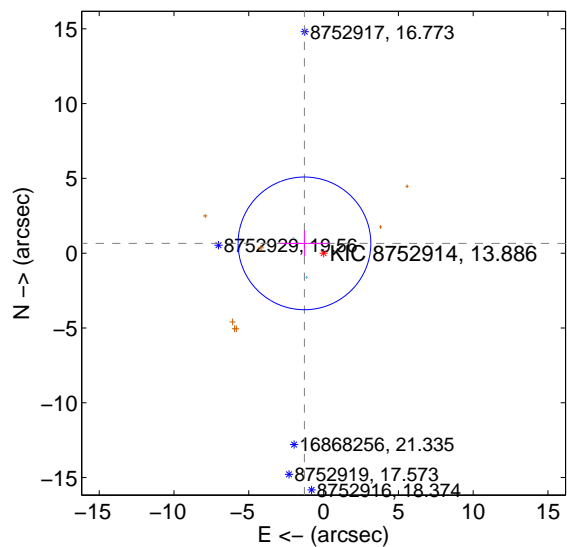
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.328 \pm 1.485$	0.89	$1.180 \pm 1.612$	$0.610 \pm 0.857$
PRF-fit source offset from KIC position	$1.437 \pm 1.479$	0.97	$1.279 \pm 1.602$	$0.656 \pm 0.862$
photometric centroid source offset	$7.17 \pm 2.10$	3.41	$2.95 \pm 1.96$	$6.54 \pm 2.13$

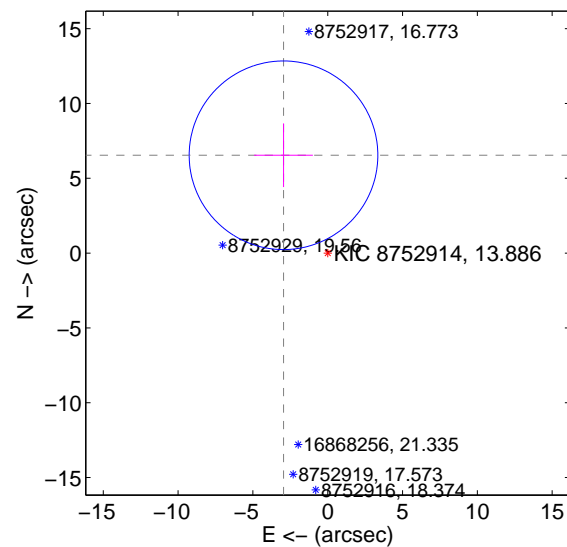
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

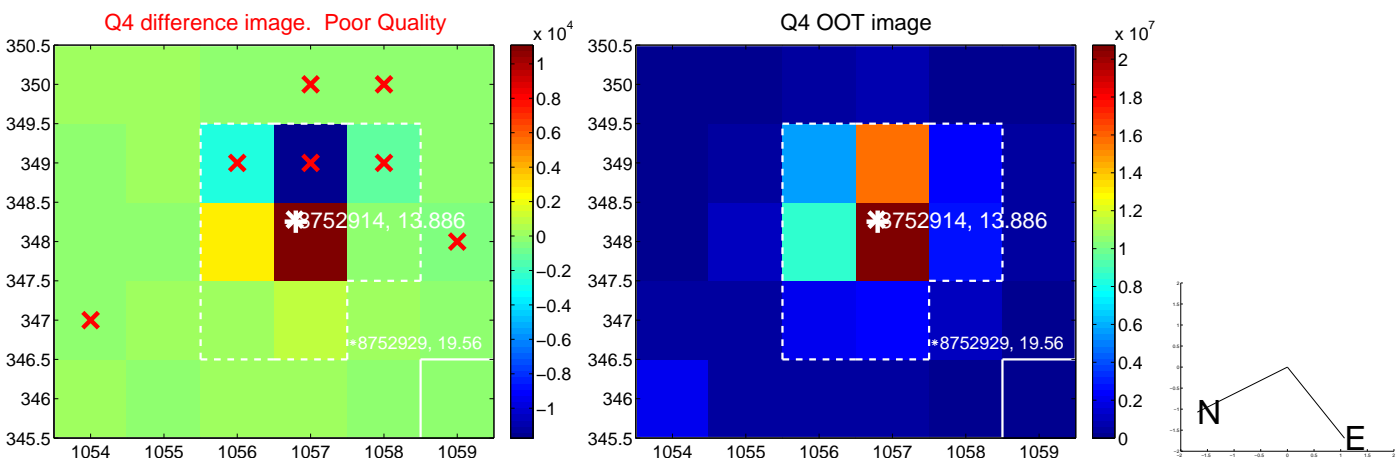
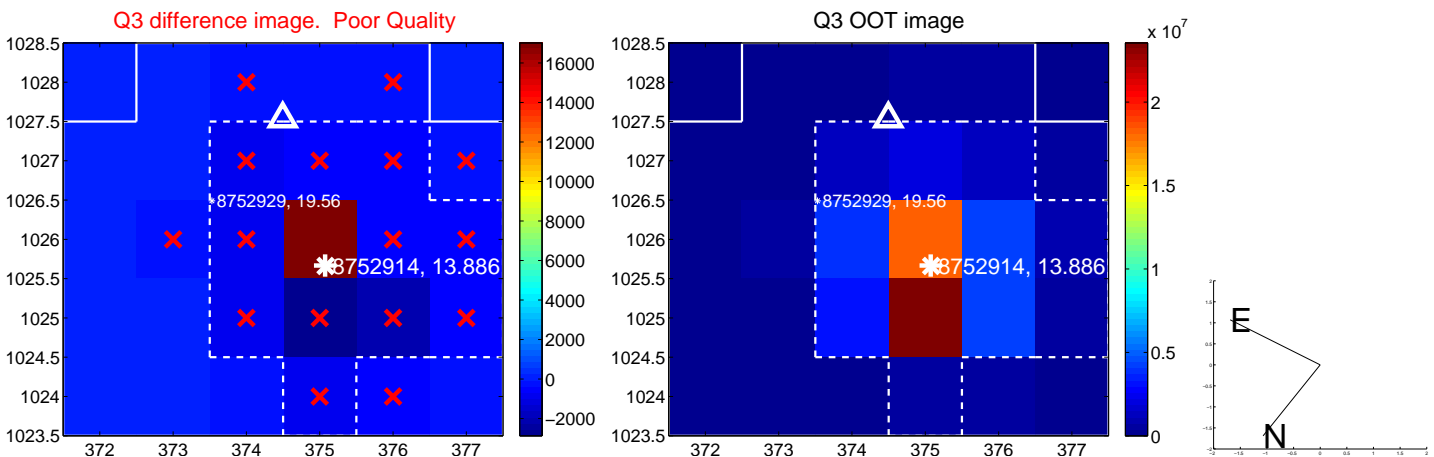
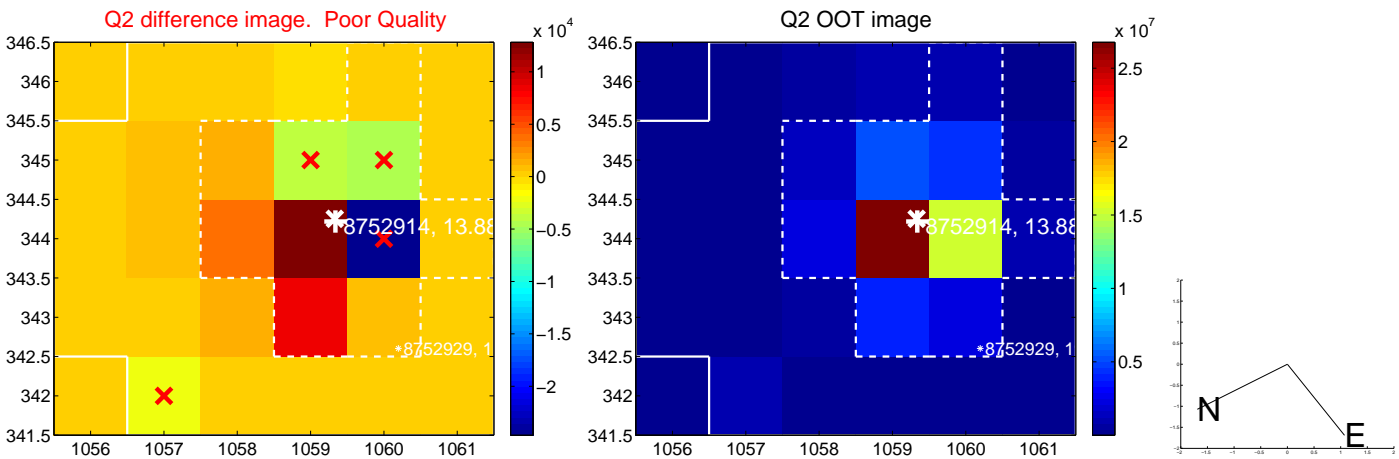
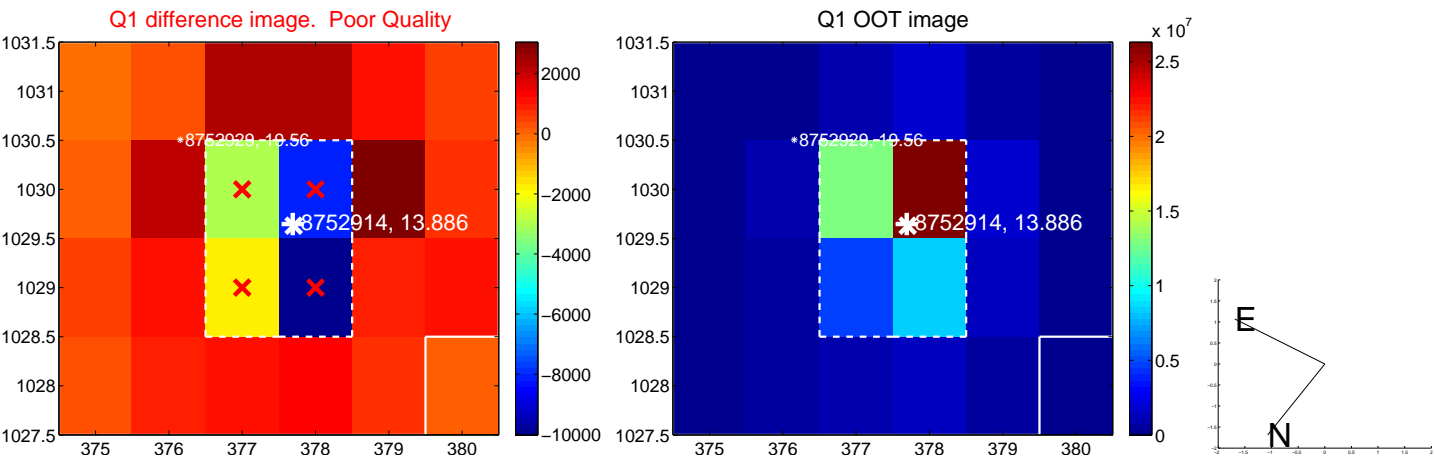


offset from photometric centroids

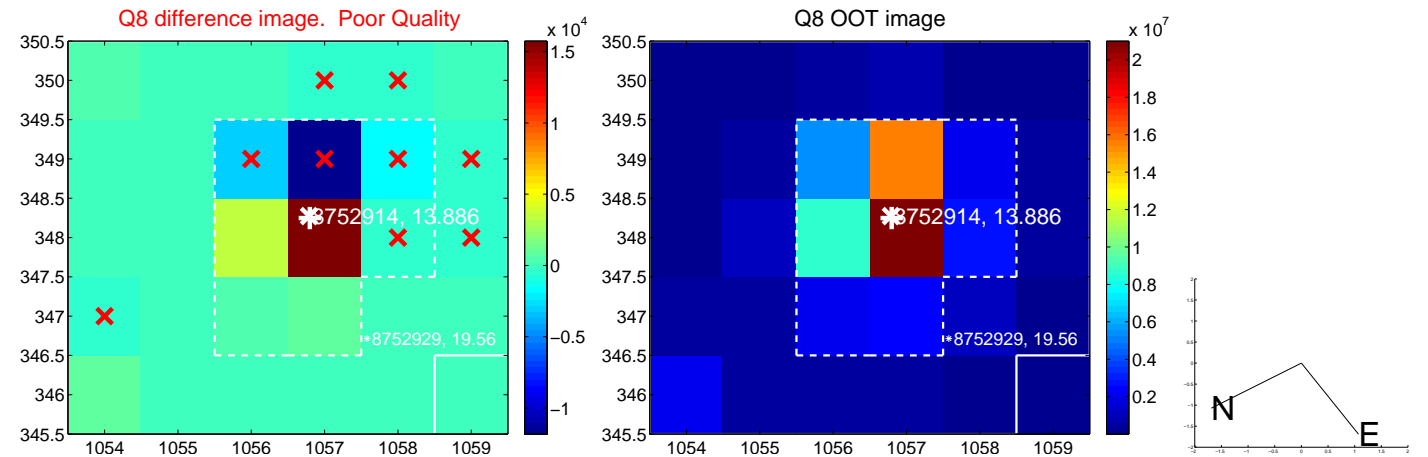
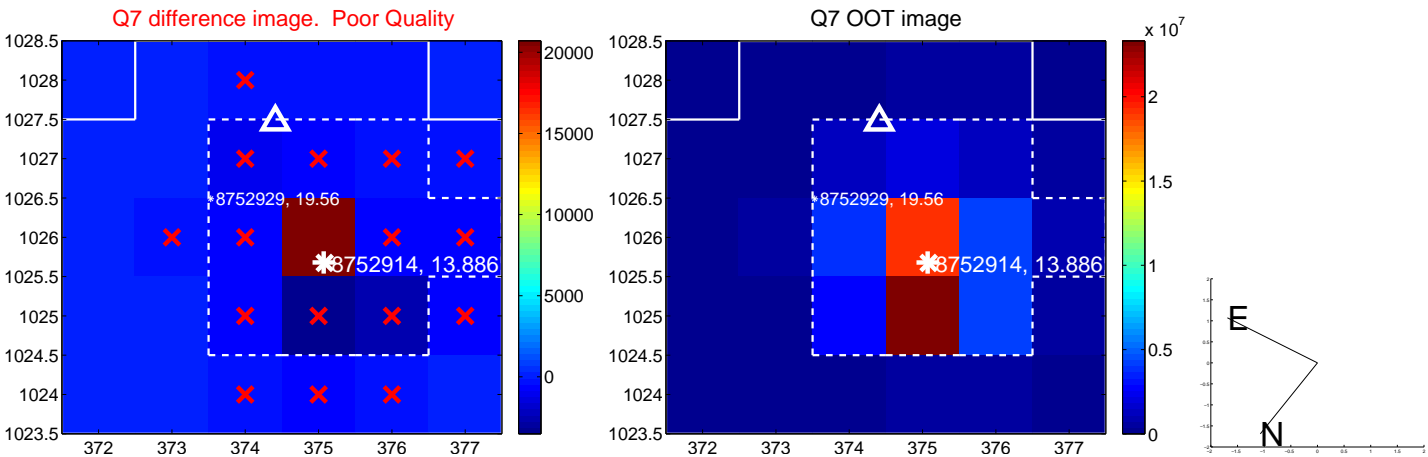
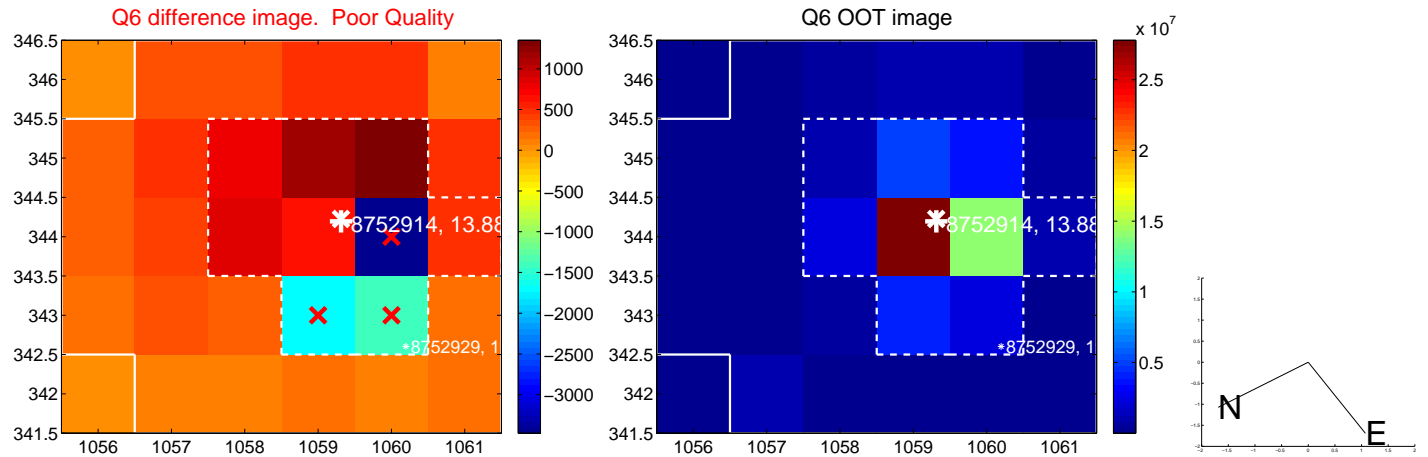
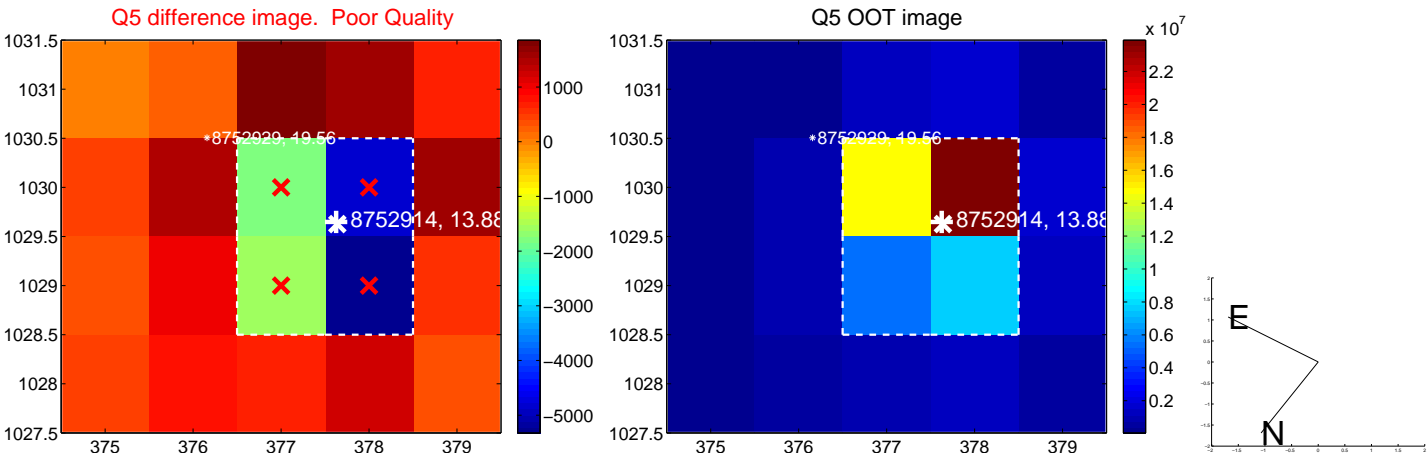


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

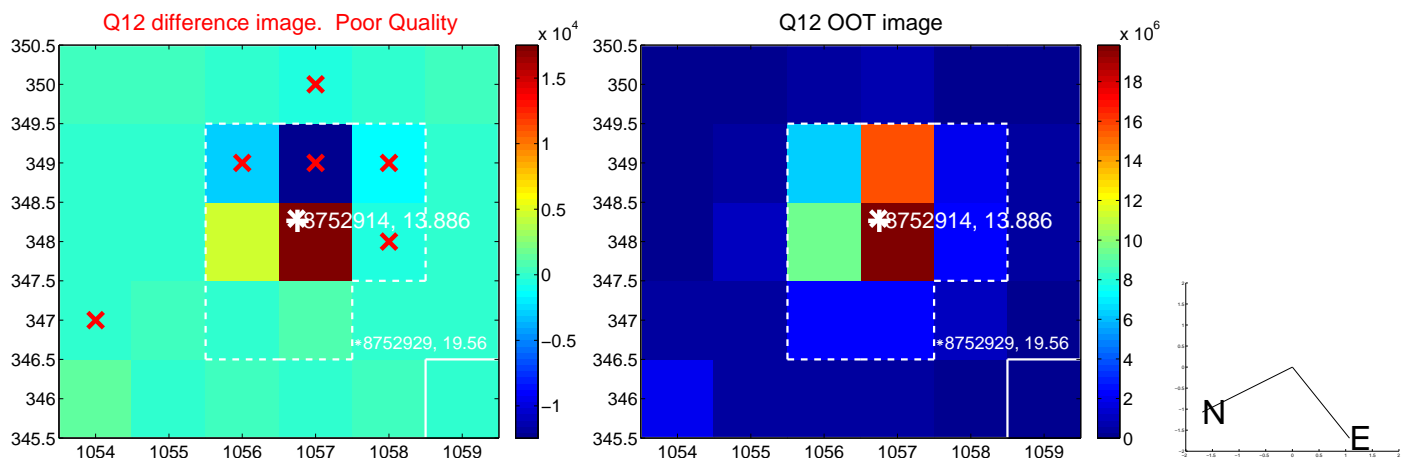
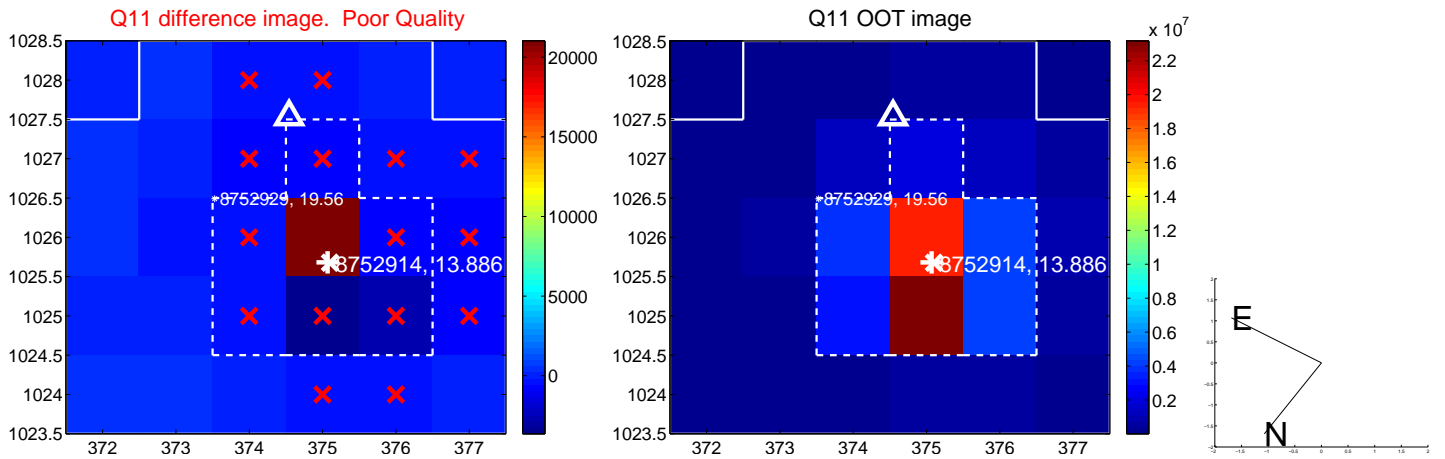
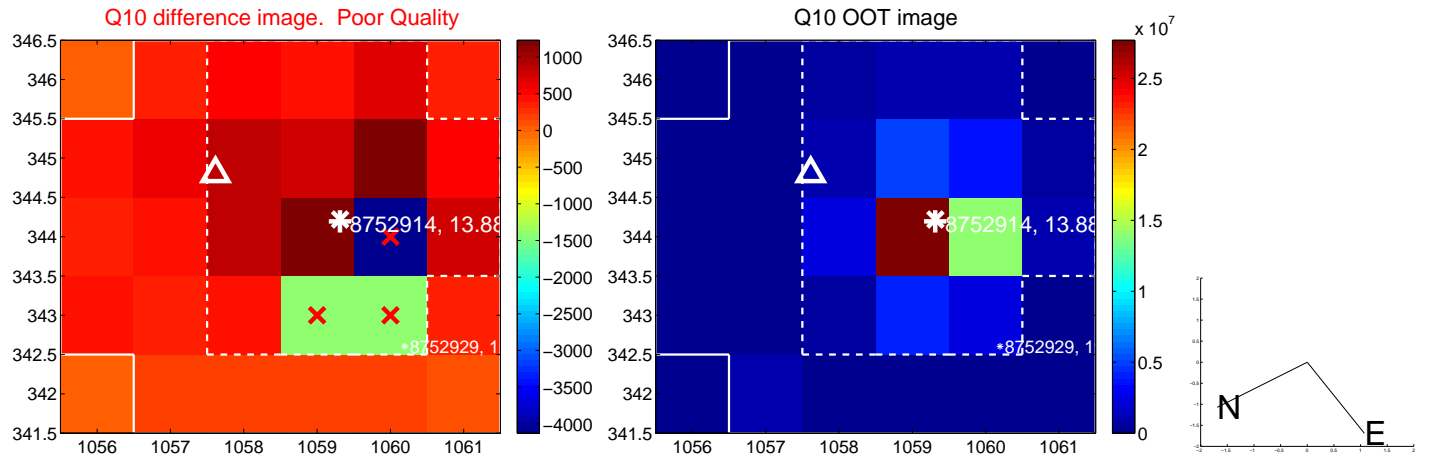
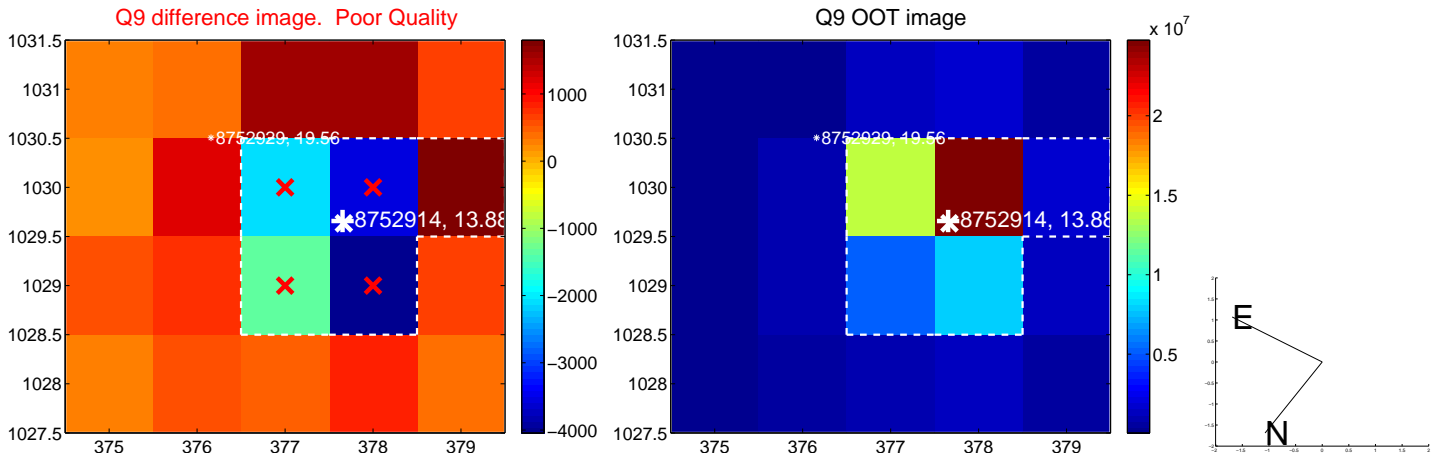


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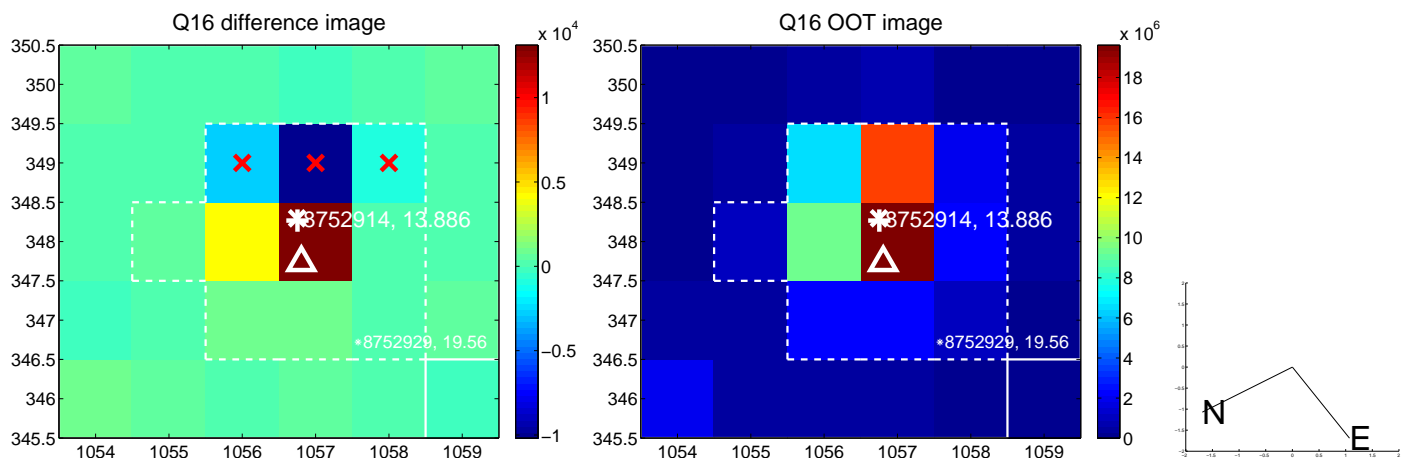
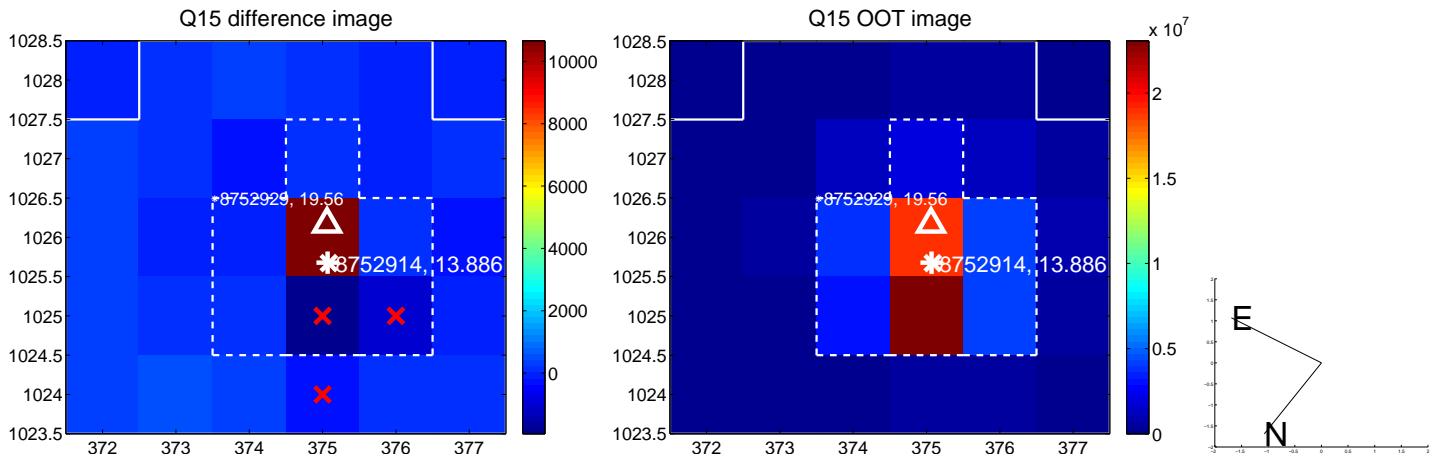
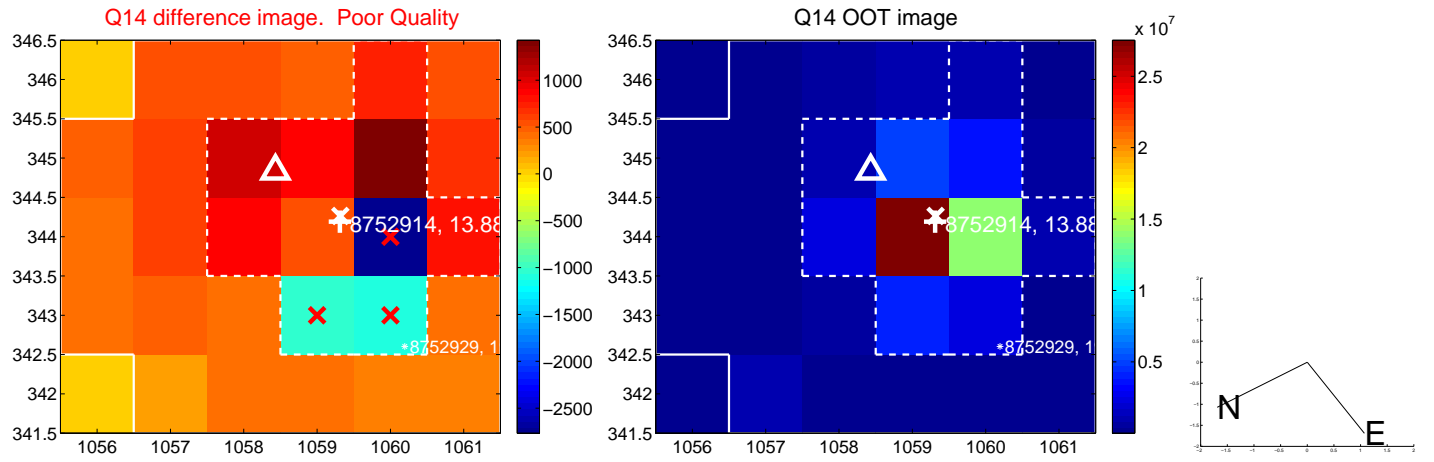
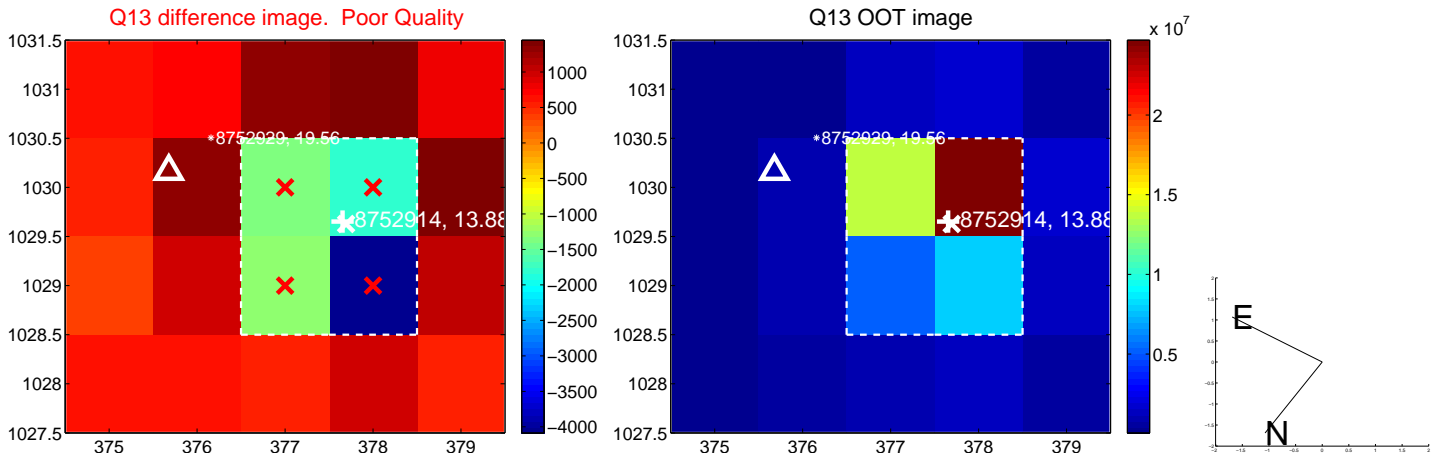




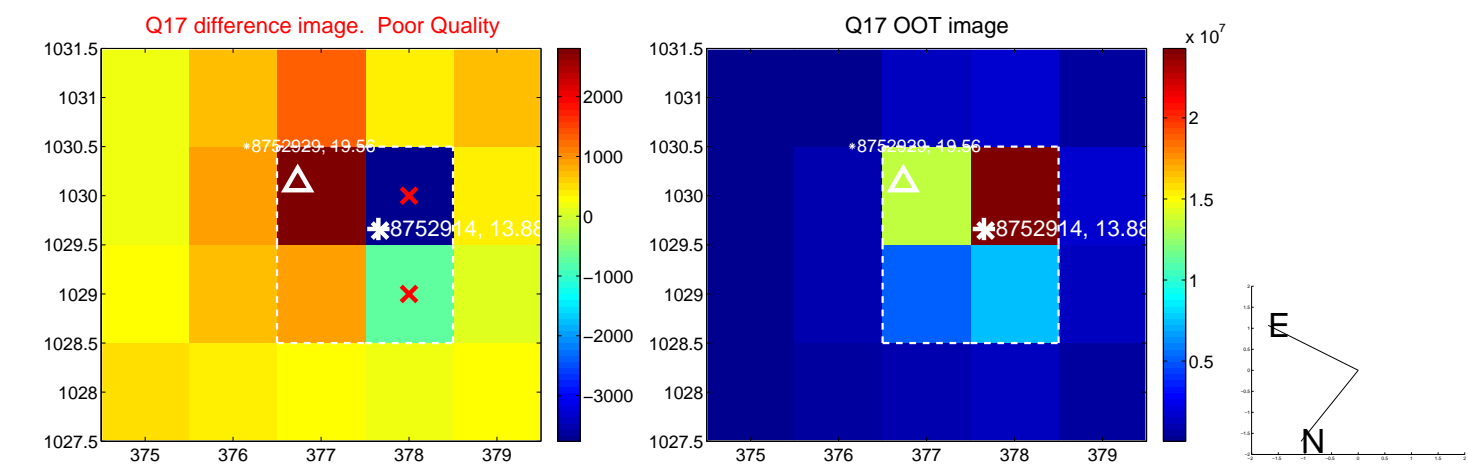
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



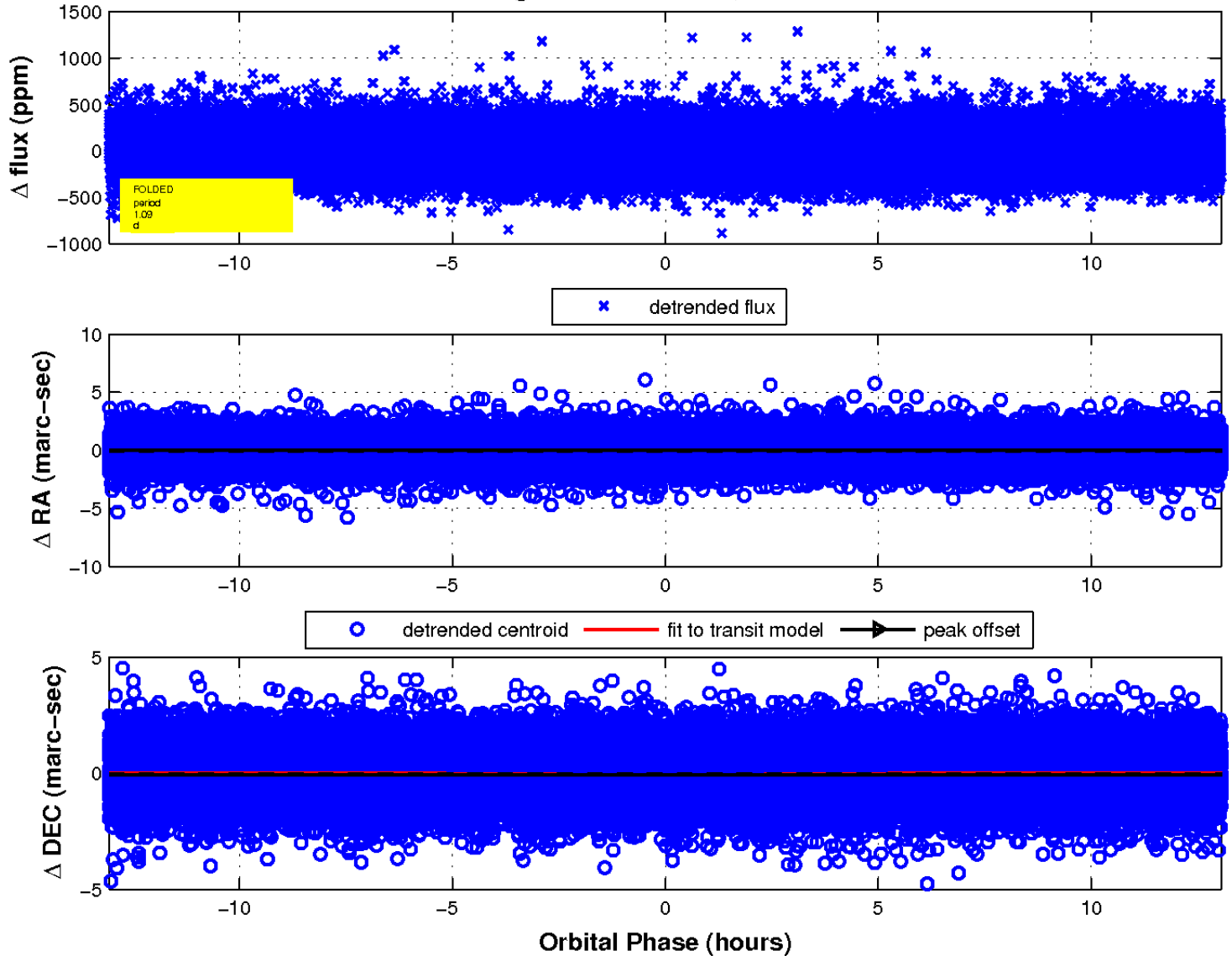
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

